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FX MONTHLY

QCAM Insight ++ The macro perspective ++ FX market talk
Economic activity ++ Inflation ++ FX markets ++ Financial markets
Number of the month

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QCAM Currency Asset Management AG
Guthirtstrasse 4
6300 Zug
Switzerland

Wellershoff & Partners Ltd.
Zürichbergstrasse 38
8044 Zürich
Switzerland

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Contents

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QCAM Insight

Currencies under the banner of inflation, interest rates and hedging costs

Abroad, we have recently seen both inflation and interest rate levels rise, sometimes significantly, and we think this development is likely to continue. In Switzerland, meanwhile, we expect the current low levels of both rates to persist for quite some time. The interest rate differential is thus widening, which should lead to higher hedging costs for currency risks. We discuss these developments and present a practical approach for investors to deal with them.

Inflation, interest rates and hedging costs

As a general rule, if Country A has a higher rate of inflation than Country B for an extended period of time, Country A's currency will depreciate versus Country B's. If investors from Country B nonetheless still should invest in projects and financial investments in Country A, they want to be compensated for the expected depreciation. The capital market interest rate should, in the long term, be higher in Country A than in Country B.

What this means for Swiss investors

For a variety of reasons – among them economic stability and, until the financial crisis, conservative monetary policies – Switzerland has experienced lower inflation rates than most other economies for decades. In our little model, it would have the role of Country B. Accordingly, for some time now, Swiss interest rate levels have also been substantially lower than those of comparable large markets, as the upper chart in the figure on the next page shows.

A decade of exceptional conditions

The expansive monetary policies adopted by various central banks in response to the global financial crisis of 2007-8 have led to an unprecedented convergence of interest rates globally. The goal of this monetary policy response was – and still is – clear. First, the total collapse of the banking system had to be prevented. Thereafter, the economy needed to be boosted and with it inflation was to be heated up in order to prevent a dangerous deflationary spiral.

One consequence of the alignment of interest rates was years of low currency hedging costs. For Swiss investors, this was a completely new and very attractive environment. In a historical comparison, currency-hedging costs were minimal during these years, at times literally almost nothing.

Outlook

Where does the current path lead us? For one, the threat of looming deflation has definitely passed. Inflation rates are on the rise all over the world. Suddenly there is even a risk of overheating – thanks to Donald Trump's plans for an extensive fiscal package and at the same time substantial tax cuts. The Fed might even be tempted to raise interest rates even faster than previously thought.

In the Eurozone as well, the economic data promises at least a speedy change of course in the ECB's expansive monetary policy. However, the first ECB interest rate hike is not yet in sight. And in Switzerland, thanks to the stubborn overvaluation of the franc versus the euro, interest rates are unlikely to rise anytime soon.

The development of the interest rate differentials of various key currency pairs (lower chart) illustrates this trend. The rate differences are again rising to pre-crisis levels. Accordingly, currency hedging for Swiss investors is likely to become much more expensive compared to the recent past.

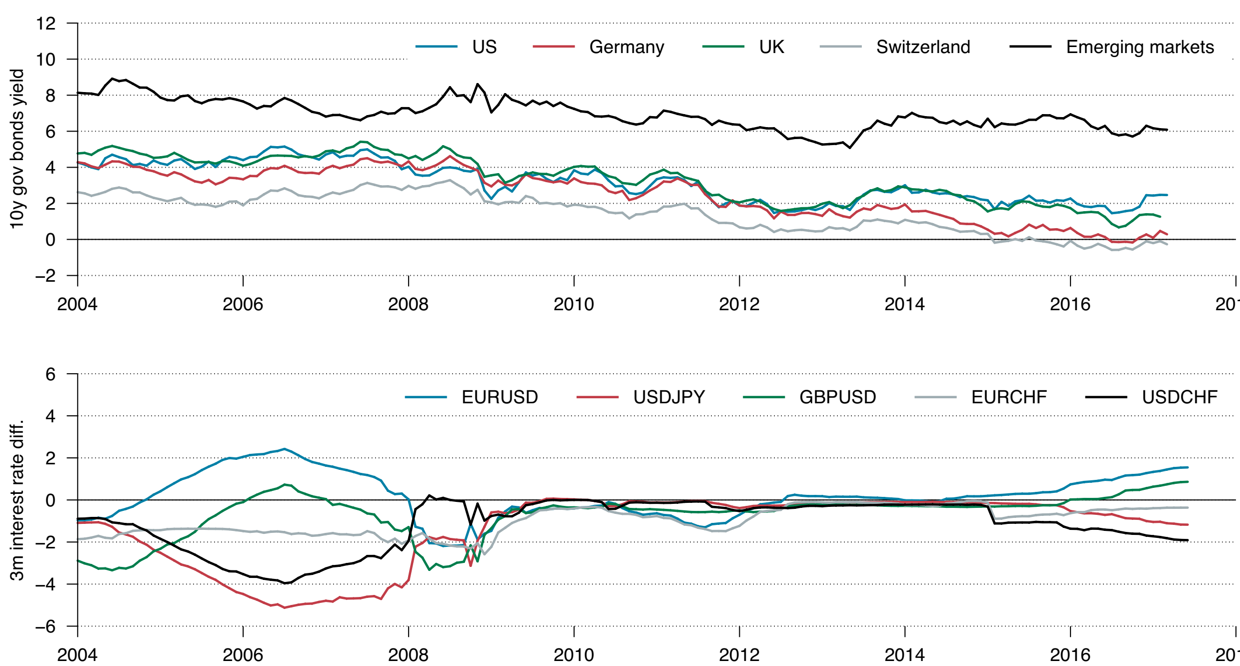
Alternatives for investors – Dynamic Overlay

The appealing market environment of near-zero hedging costs will in all likelihood be replaced by "courant normal" and correspondingly rising costs. The big challenge for Swiss investors is how to deal with these developments.

Doing without hedging in any form is not an option for most institutional investors, in particular. To bear the full hedging costs, however, is also not attractive. There is a hybrid approach that aims at currency hedging but deviates from it during favorable market movements in order to cut hedging costs or simply to profit from those movements. The challenge, of course, is the eternal difficulty of foreseeing future market movements. For this reason, an investor should pre-define specific risk budgets, according to which these strategies can then be implemented.

In practice, we note, the investor usually profits from such a strategy in the case of market movements that conform to trend.

Current and historical interest rates



Source: Thomson Reuters Datastream, QCAM Currency Asset Management

The macro perspective

The long road to monetary policy normalization

In April, the European Central Bank reduced its monthly bond purchases from 80 to 60 billion euros. Even if the ECB's monetary policy remains extremely expansive, this was a first small step towards the normalization of its monetary policy. But a look at the US shows that the ECB still has a long way to go.

In mid-March, the US central bank had already hiked its key interest rate for the third time since the global financial crisis. However, even if the Federal Reserve's central bankers are expecting two further interest rate increases this year, US monetary policy must still be described as expansive in historical terms. This is because the Fed's bloated balance sheet has not yet been reduced. However, rumors have been circulating lately that a possible balance sheet reduction could begin at the end of this year.

The Fed's bloated balance sheet

Instead of fanning these rumors and speculating on unknown outcomes, we prefer to examine the facts and look at the plausible scenarios here. The Federal Reserve's balance sheet currently totals USD 4.5 trillion, which is equivalent to about 25 percent of the US economy's annual output. The two largest items on the balance sheet are US government bonds (USD 2.5 trillion) as well as mortgage-backed securities (USD 1.8 trillion), which were acquired over the course of the three quantitative easing rounds between 2008 and 2014. To date, all proceeds from these investments have been reinvested.

High annual maturities

If the Fed wants to reduce the debt on its balance sheet, ending its reinvestments would rapidly achieve that goal. Considering US government bonds alone, about 400 billion US dollars in bonds will be due in 2018. Refinancing the US government's deficit amounts to some 600 billion US dollars annually. Thus, if the Fed were to let all government bonds expire in the coming year, the supply of US government bonds on the market would increase by a whopping 66 percent compared to the previous year. We think such an increase in supply would not be possible without a significant rise in capital market rates. And because such an increase in interest rates raises the danger of stopping the economic upturn in its tracks, we find it likely that the Federal Reserve will not end its reinvestment activities so abruptly. Instead, we think an approach similar to the gradual reduction of bond purchases, the so-called *tapering*, which took place over a period of ten months in 2014, looks more plausible. The reinvestment sum could simply be reduced by a certain amount each month.

After the 2014 tapering

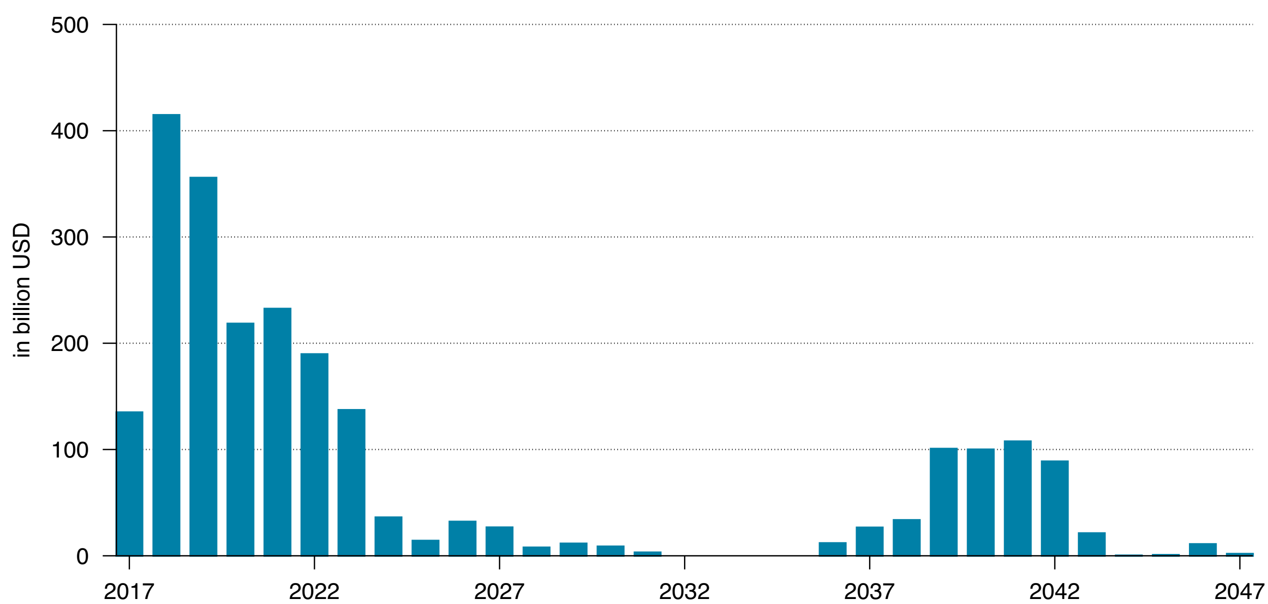
The timing and size of such a reduction in reinvestments can only be speculated about at present. Similarly unclear is how strongly the reduction in the balance sheet total, and the ensuing increase in the supply of US government bonds, would affect interest rate levels. Calculation models indicate that a reduction of USD 20 billion dollars per month over the course of one year could correspond to two interest rate increases. In order to prevent possible fears of too rapid a rate rise, a Fed-representative recently introduced the possibility of dispensing with interest rate increases during the period of the balance sheet reduction. This would further lengthen the normalization process.

Europe is just at the beginning of the process

Regardless of how long the normalization of monetary policy takes in the US, that same process could well take longer in Europe. It is nonetheless to be assumed that we will soon see the end of the quibbling phase at ECB press conferences – for example, the question of how "balanced" the risks now are, actually. Indeed, even as soon as the next ECB meeting, on 8 June, more concrete adjustments to monetary policy could be an issue.

However, interest rate increases are unlikely to be on the ECB's agenda, despite Europe's positive economic outlook, rising inflation rates and the encouraging outcome of the French elections. This, we think, is a bad omen for the Swiss National Bank, which is so focused on the interest rate differential with the euro.

The remaining time-to-maturity of the Fed's US government bond holdings



Source: Federal Reserve Bank of New York, Wellershoff & Partners

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FX market talk

Emerging market currencies still have potential

Emerging market currencies are less attractive than they were a year ago but you don't have to sell them, either. Short-term setbacks due to commodity price developments are countered by solid economic development.

Darkest hour in February 2016

The darkest hour notoriously comes before dawn and that moment arrived for emerging market currencies in February 2016. After plummeting throughout 2015, the further collapse in commodity prices then drove almost all emerging market currencies to new lows. The depreciation was so massive that our emerging market currency index, consisting of 14 currencies, showed the largest purchasing power parity mispricing in almost twenty years versus the Swiss franc: 23 percent!

In the meantime, since that 23-percent appreciation gap opened up in February 2016, about 10 percent of that potential still remains to be recovered. Emerging market currencies have since gained in value, and, compared to Switzerland, the higher inflation rates in the emerging markets have influenced the fair exchange rates. Is the remaining appreciation potential sufficiently appealing to compensate for the high risks associated with emerging economies? We think so.

A renewed collapse of commodity prices unlikely

Falling commodity prices are again hurting emerging market currencies. But with losses of between 1 and 3 percent versus the Swiss franc, the depreciation of the commodities-dependent Latin American currencies, the Russian ruble and the Indonesian rupiah have actually been rather moderate. The latest economic data makes a clear case against the likelihood of another collapse of commodity prices. The global economy is picking up and the manufacturing sector in particular is experiencing its first real upturn since 2013-14.

China's demand for industrial raw materials is hampered by the more restrictive credit policies introduced by the authorities. Overall, however, the growth signs from the Middle Kingdom remain robust. According to the *W&P GDP Growth Stat for China*, Chinese GDP grew by 6.5 percent in the first quarter of this year compared to the previous year.

Even though the recent dip in commodity prices will be reflected in the revenues of commodity-exporters in the emerging markets, the majority are still running solid foreign-trade balances. Precisely in that cohort dubbed the Fragile Five in 2013-14 – Turkey, Brazil, India, South Africa and Indonesia – current account deficits have clearly contracted. Today, only Turkey is running a current account deficit large enough to cause concern. Overall, for commodity-exporting emerging countries (excluding the oil-exporters of the Middle East) since 2013-14, the deficit from the trade in goods and services has shrunk by 2 percentage points, down to 1 percent of GDP.

Ultimately, the development of the US dollar is highly relevant for emerging market currencies. In the past, emerging market currencies have gained more momentum in times of dollar weakness than have European currencies. Of course, the opposite is also true, should the dollar again strengthen.

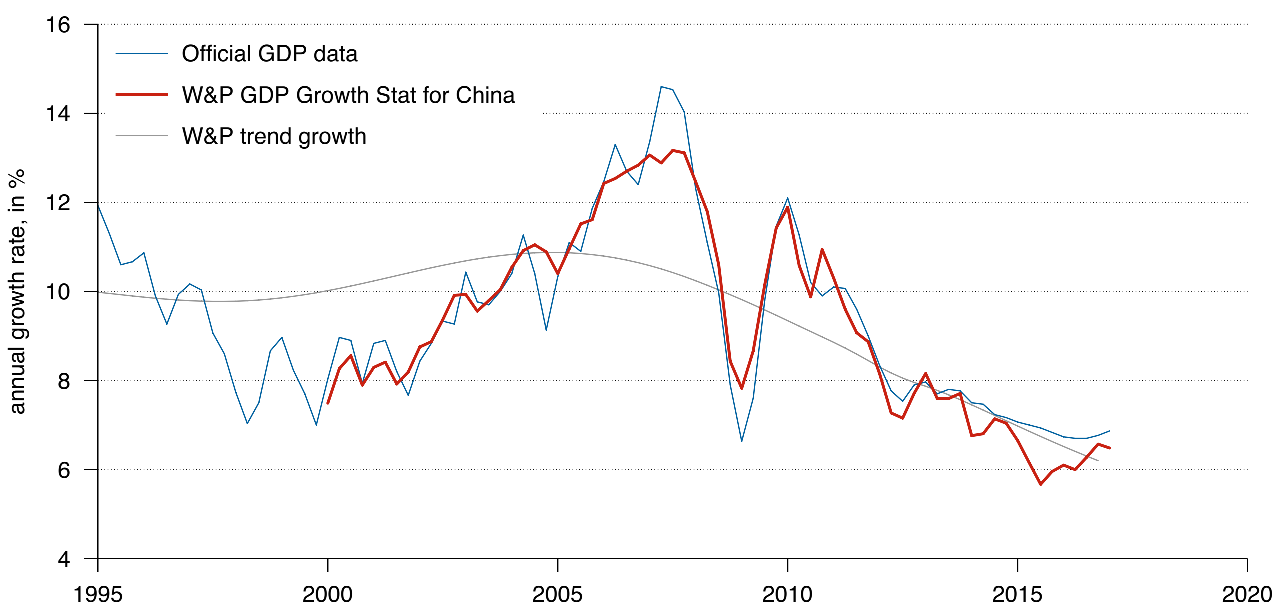
Reticent investors

The markets for emerging market assets are far less liquid than those for assets in developed countries. Changes in the perceptions of investors, both local and international, can in turn easily influence prices. The risk of price movements comes mainly from international investors who grow pessimistic after making acquisitions. In our view, the actual economic developments in the emerging markets offer little reason for pessimism. Our leading indicators for the emerging markets show a recovery. And the dynamics of our indicators are significantly higher than they have been in the last two years. Ultimately, after years of losses, it seems many investors have not yet found the courage to ramp up their positions in emerging market assets. Thus, from our point of view, the risk of a herd-driven sell-off of emerging market currencies is moderate.

Ruble and ringgit especially attractive

From a valuation point of view, we consider the Malaysian ringgit and the Russian ruble particularly attractive right now. The Brazilian real and the South African rand show no significant undervaluation, but they are also interesting, in our view, in connection with local-currency bonds.

The W&P GDP Growth Stat for China indicates a growth rate of 6.5 percent year-over-year



Source: Thomson Reuters Datastream, Wellershoff & Partners

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Economic activity

The economic environment in the US continues to be robust. A year-over-year GDP growth rate of 1.9 percent was posted in the first quarter of 2017. Wellershoff & Partners' proprietary leading indicators show further growth potential in the US economy for the second and third quarters as well. This is underpinned not only by the 211 000 newly created jobs in April but also by the continuing positive data coming from the industrial and service sectors.

Business sentiment in the Eurozone is at its highest level in nearly a decade. This is particularly evident in the European Commission's survey. The purchasing managers indexes of the individual member states also point to a growth acceleration. The positive sentiment data is confirmed by Europe's GDP growth, which increased by 0.5 percent in the first quarter of 2017 compared to the fourth quarter of 2016.

In the first quarter of the year, the UK recorded GDP growth of 2.1 percent year-over-year. But some caution is appropriate. Consumer sentiment has been hit hard by rising prices in recent weeks.

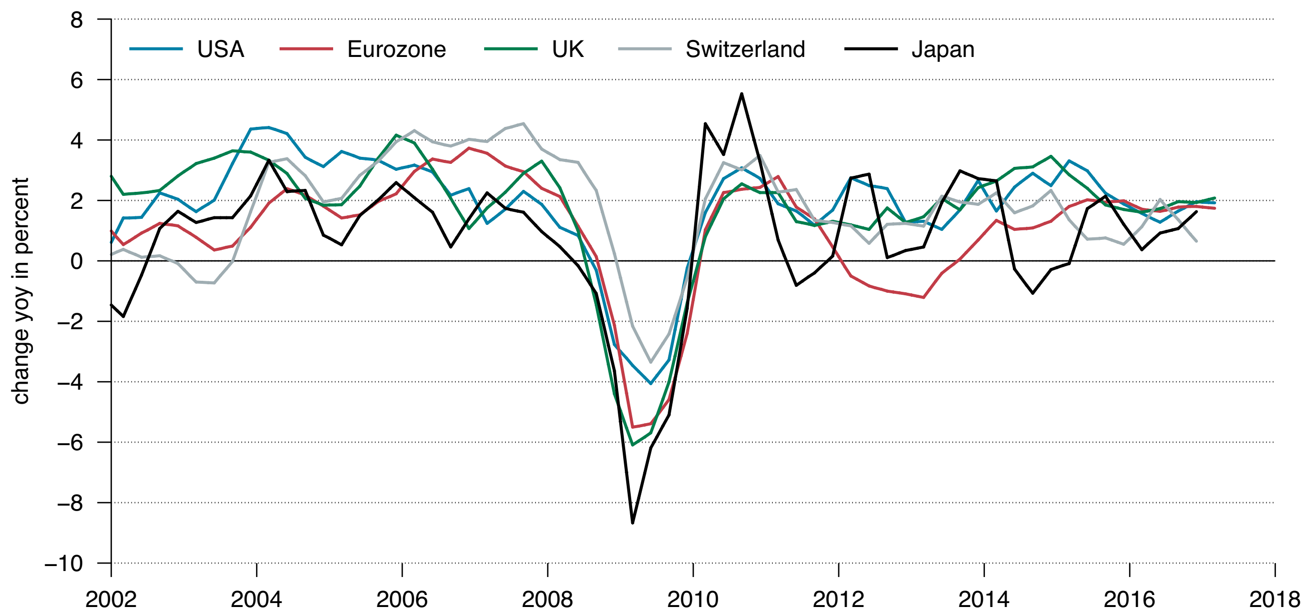
Growth overview

	Trend growth[1]	Real GDP growth[2]				W&P economic sentiment indicators[3]			
		Q2/2016	Q3/2016	Q4/2016	Q1/2017	1/2017	2/2017	3/2017	4/2017
United States	1.7	1.3	1.6	2.0	1.9	2.8	3.1	2.9	2.8
Eurozone	1.0	1.6	1.8	1.8	1.7	2.1	2.1	2.1	2.4
Germany	1.4	1.8	1.7	1.8	1.7	2.8	2.7	2.8	3.1
France	0.7	1.1	0.9	1.2	0.8	1.2	1.3	1.3	1.4
Italy	0.2	0.8	1.0	1.0	0.9	0.7	0.8	0.7	1.0
Spain	1.6	3.4	3.2	3.0	–	2.1	2.4	2.0	2.2
United Kingdom	1.8	1.7	2.0	1.9	2.1	2.2	2.5	2.6	2.6
Switzerland	1.5	2.0	1.4	0.6	–	1.3	1.5	1.4	1.6
Japan	0.4	0.9	1.1	1.6	–	2.0	2.1	2.3	2.2
Canada	1.6	1.1	1.4	2.0	–	1.3	1.3	1.6	1.6
Australia	2.4	3.1	1.9	2.4	–	2.6	2.6	2.6	2.6
Brazil	1.4	-3.6	-2.8	-2.5	–	-2.2	-0.4	1.2	1.5
Russia	0.1	-0.5	-0.3	0.3	–	4.6	2.6	2.6	1.1
India	7.7	7.2	7.4	7.0	–	7.2	7.2	7.4	7.4
China	7.4	6.7	6.7	6.8	6.9	7.0	7.2	7.1	6.7
Advanced economies[4]	1.4	1.7	1.6	1.8	–	2.7	2.9	2.8	2.9
Emerging economies[4]	6.0	4.9	4.7	5.0	–	5.0	5.2	5.3	5.0
World economy[4]	3.5	3.3	3.2	3.4	–	3.8	4.0	4.1	3.9

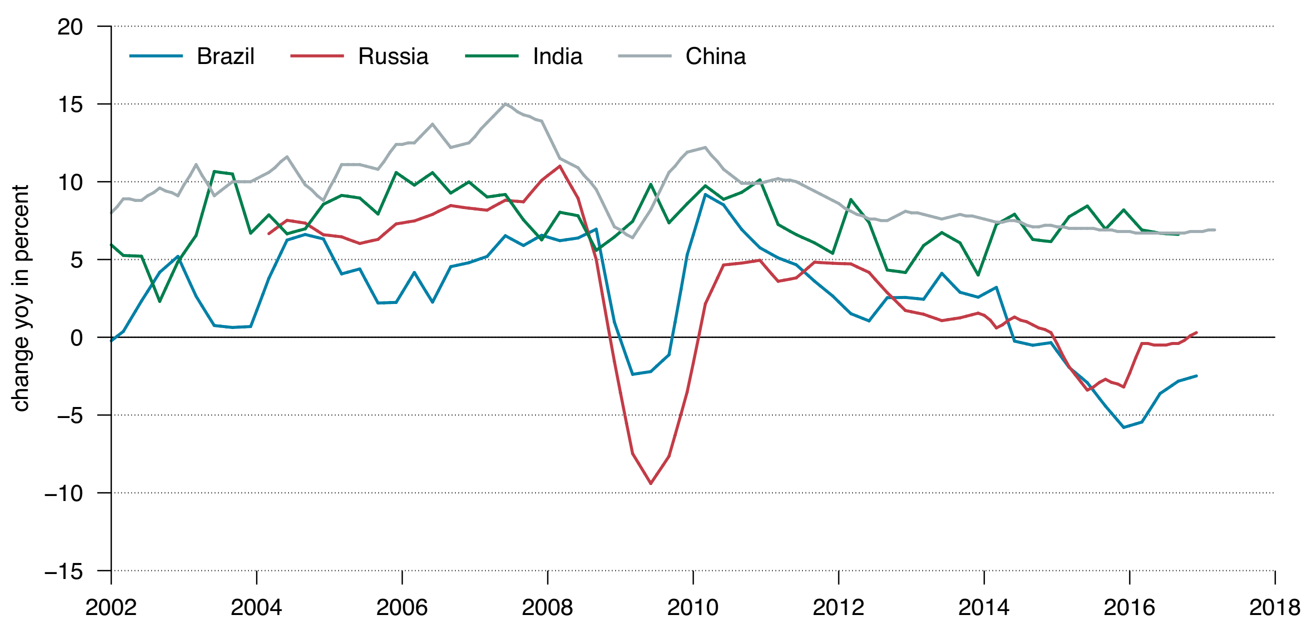
[1] Current year-on-year trend growth rate of real GDP, in percent, according to the proprietary trend growth model of Wellershoff & Partners.
[2] Year-on-year growth rate, in percent.
[3] Wellershoff & Partners economic sentiment indicators are based on consumer and business surveys and have up to 6 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

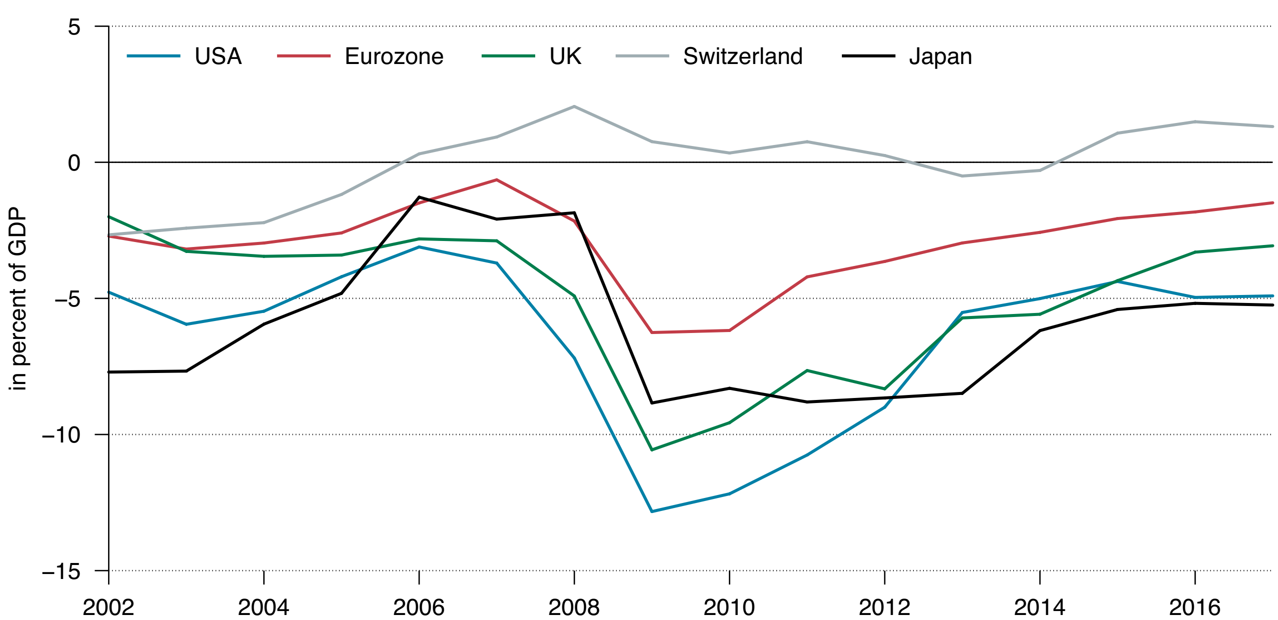
Economic indicators

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	22.9	24.9	-2.5	-2.6	113.3	116.9	-5.8	-4.9	6.4	4.4
Eurozone	16.6	15.0	3.2	4.0	108.1	108.3	-2.6	-1.5	11.2	9.5
Germany	4.8	4.4	7.8	8.8	80.5	71.7	0.2	0.5	6.6	5.8
France	3.5	3.1	-0.9	-0.8	117.1	124.1	-3.9	-3.0	9.8	9.7
Italy	2.6	2.3	1.5	3.0	152.2	159.5	-2.7	-2.4	11.8	11.7
Spain	1.7	1.6	1.2	1.7	110.4	119.1	-6.6	-3.6	23.4	18.2
United Kingdom	3.7	3.2	-4.7	-4.8	109.6	113.1	-5.5	-3.1	6.1	4.7
Switzerland	0.9	0.8	10.3	9.2	45.0	41.7	0.4	1.3	3.1	3.3
Japan	6.7	6.2	2.0	3.8	225.6	237.5	-6.8	-5.2	3.7	2.8
Canada	2.3	2.1	-3.2	-2.9	88.0	91.2	-1.4	-2.4	7.0	6.5
Australia	1.8	1.7	-3.5	-2.8	34.3	42.9	-2.9	-2.2	5.7	5.9
China	13.5	15.1	2.2	1.3	40.0	49.3	-1.7	-3.7	4.1	–
Brazil	2.9	2.7	-3.0	-1.3	67.1	81.2	-6.1	-9.1	8.4	13.7
India	2.7	3.1	-2.0	-1.5	69.1	67.8	-7.1	-6.4	–	–
Russia	2.4	2.0	2.9	3.3	14.7	17.1	-1.8	-2.6	5.4	5.4

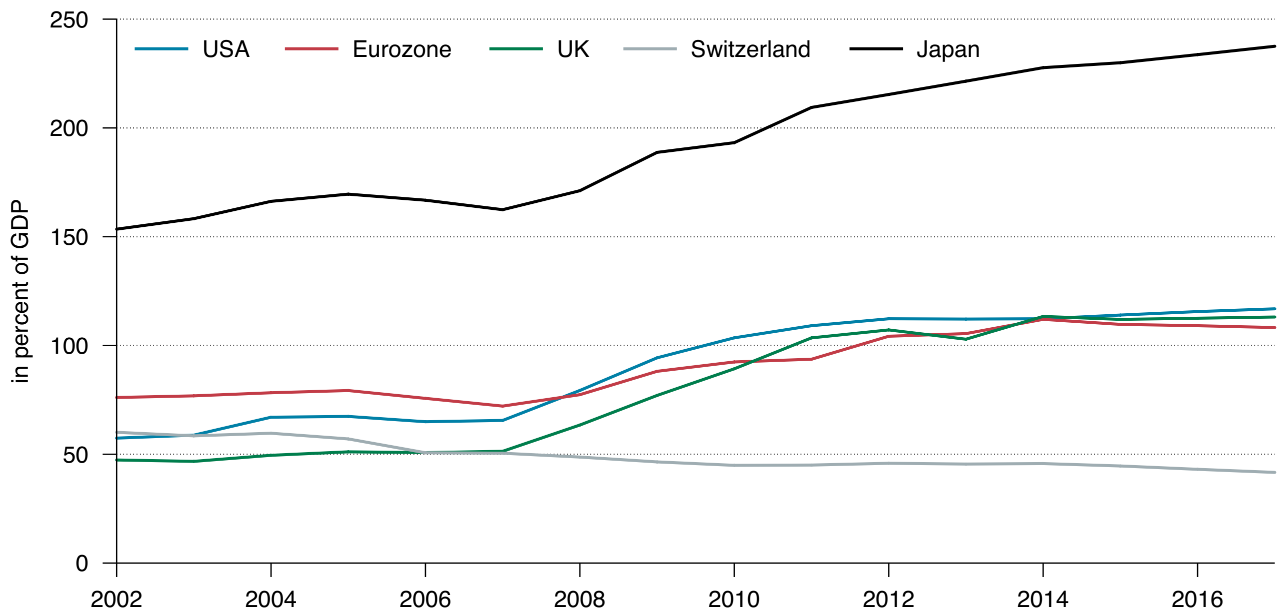
[1] In percent; calculations based on market exchange rates. [2] In percent of nominal GDP. [3] In percent.

Budget deficits in advanced economies

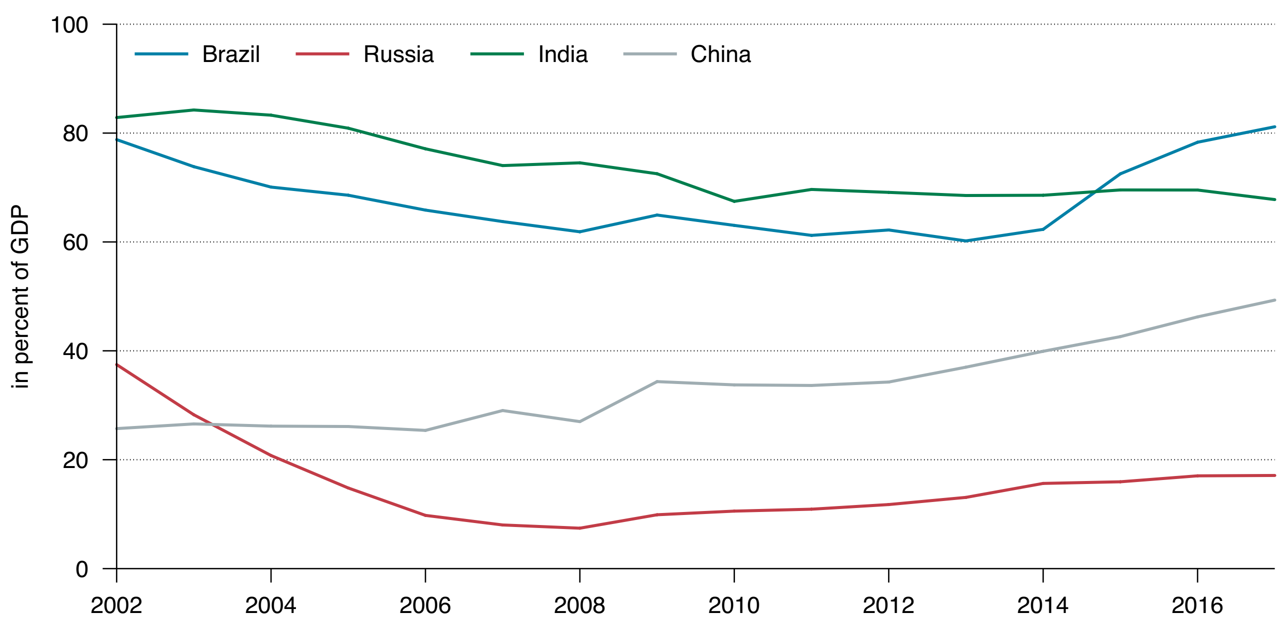


Source: Thomson Reuters Datastream, Wellershoff & Partners

Public debt in advanced economies



Public debt in emerging economies



Source: Thomson Reuters Datastream, Wellershoff & Partners

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Inflation

Inflation rose sharply in the Eurozone in April. Overall inflation climbed from 1.5 to 1.9 percent but it was the jump in the core rate, from 0.7 to 1.2 percent, that caused an uproar, since typically the core rate shows little if any volatility. In addition, its April level of 1.2 percent is the highest in the past four years. These rates increase the pressure on the ECB. At the least, the discussion about normalizing monetary policy should continue to gain momentum. In addition to higher rates of inflation, we also see robust economic data and, with the benign outcome of the French presidential elections, a distinct reduction of political risks in the Eurozone.

In Switzerland too, the normalization of inflation gained traction in April. After the overall rate of consumer price inflation, core inflation also climbed into the positive range in April for the first time since the EURCHF-peg was abandoned, in January 2015. An increase in import prices of around 3 percent compared to a year earlier also indicates that the *Frankenschock* has by now largely been digested.

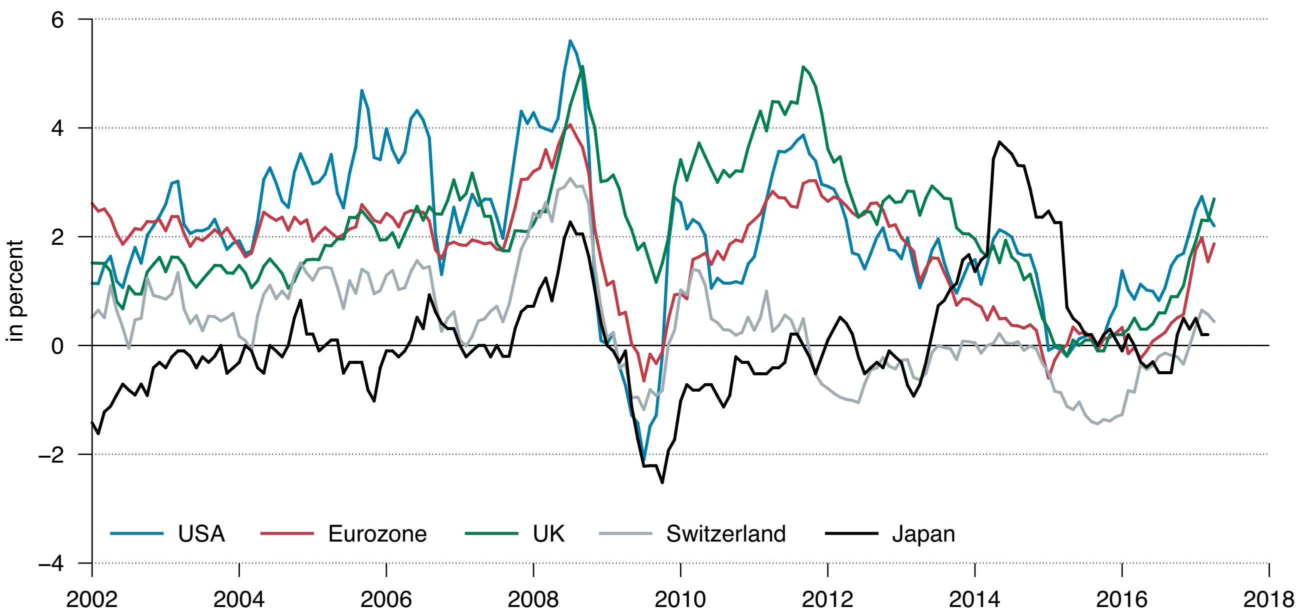
Inflation overview

	Ø 10 years[1]	Inflation[2]				Core inflation[3]			
		1/2017	2/2017	3/2017	4/2017	1/2017	2/2017	3/2017	4/2017
United States	1.8	2.5	2.7	2.4	2.2	2.3	2.2	2.0	1.9
Eurozone	1.5	1.8	2.0	1.5	1.9	0.9	0.9	0.7	1.2
Germany	1.4	1.9	2.2	1.6	2.0	1.6	1.7	1.4	1.3
France	1.2	1.3	1.2	1.1	1.2	–	–	–	–
Italy	1.5	1.0	1.6	1.4	1.9	0.5	0.6	0.7	1.1
Spain	1.5	3.0	3.0	2.3	2.5	1.1	1.0	0.9	1.2
United Kingdom	2.3	1.8	2.3	2.3	2.7	1.6	2.0	1.8	2.4
Switzerland	0.1	0.3	0.6	0.6	0.4	-0.2	-0.1	0.1	0.1
Japan	0.3	0.5	0.2	0.2	–	0.1	-0.1	-0.3	–
Canada	1.6	2.1	2.0	1.6	–	1.7	1.6	1.3	–
Australia	2.4	1.7	1.9	2.1	–	1.3	1.4	1.5	–
Brazil	6.2	5.3	4.8	4.6	4.1	5.6	5.3	5.5	5.0
Russia	9.1	5.1	4.6	4.2	4.1	5.5	5.0	4.5	4.1
India	7.9	3.2	3.7	3.9	3.0	–	–	–	–
China	0.0	0.7	-1.5	-1.4	-1.1	2.2	1.8	2.0	2.1
Advanced economies[4]	1.5	1.9	2.1	1.8	1.9	1.5	1.5	1.3	1.4
Emerging economies[4]	3.6	2.1	0.9	0.9	0.9	3.0	2.6	2.7	2.7
World economy[4]	2.4	2.1	1.5	1.4	1.5	1.9	1.7	1.7	1.7

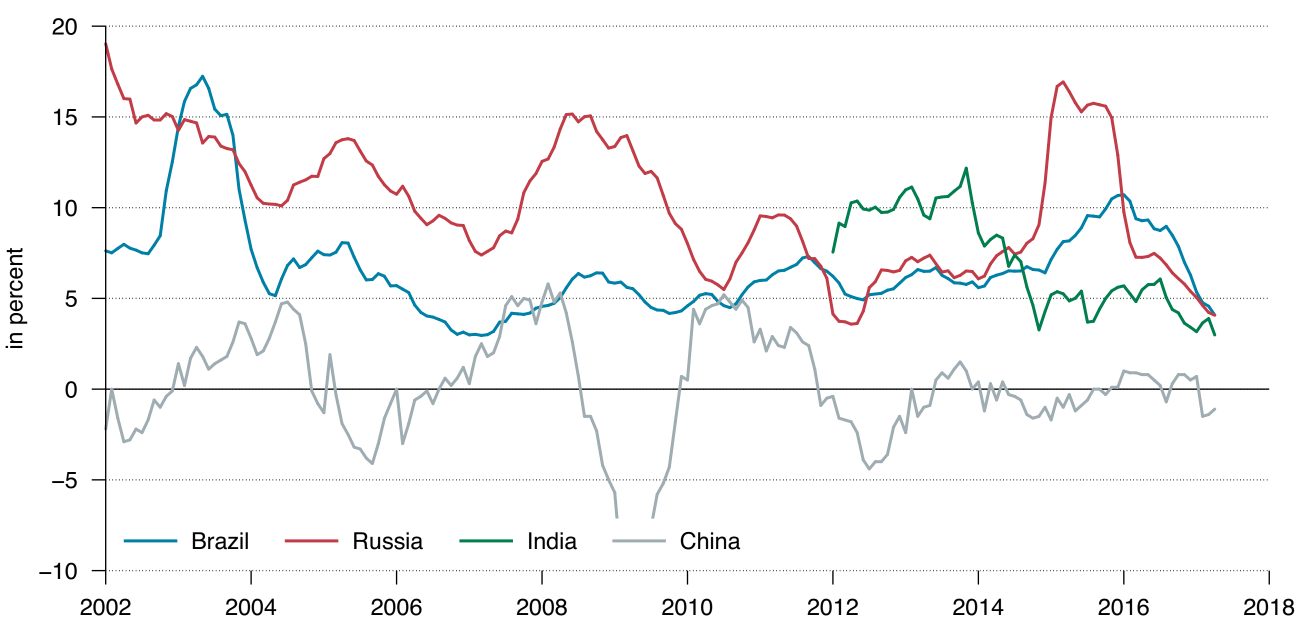
[1] Average annual consumer price inflation, in percent.
[2] Year-on-year change of the consumer price index (CPI), in percent.
[3] Core inflation is a measure of inflation that excludes certain items that can experience volatile price movements, such as energy and certain food items; year-on-year change 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

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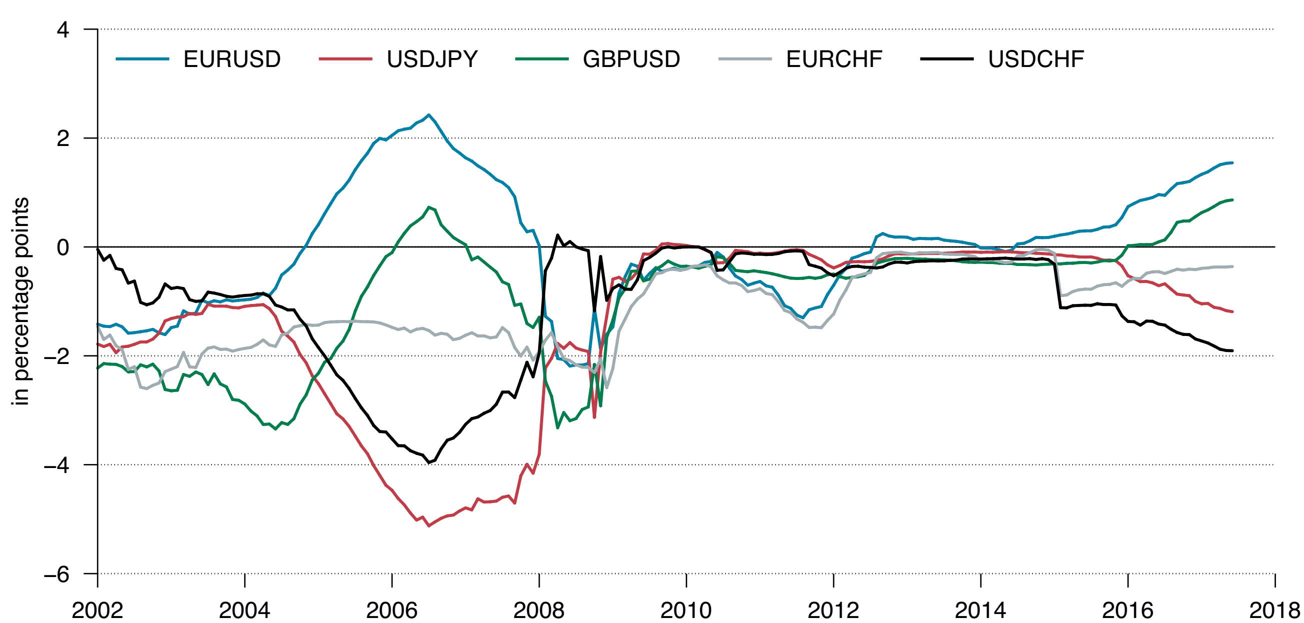
Interest rates

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	1.098	1.50	0.90	0.43	-0.11	1.87	1.26	0.65	0.00
USDJPY	113.6	-1.19	-0.66	-0.35	-0.70	-1.63	-1.15	-0.64	-0.91
GBPUSD	1.292	0.87	0.04	-0.10	-0.53	1.11	0.24	-0.05	-0.53
EURCHF	1.094	-0.41	-0.46	-0.35	-0.77	-0.38	-0.50	-0.41	-0.86
USDCHF	0.997	-1.91	-1.36	-0.78	-0.67	-2.25	-1.76	-1.07	-0.86
GBPCHF	1.287	-1.04	-1.32	-0.88	-1.20	-1.14	-1.51	-1.12	-1.39
CHFJPY	114.0	0.72	0.70	0.44	-0.04	0.62	0.61	0.43	-0.05
AUDUSD	0.742	-0.31	-1.05	-1.84	-2.57	0.27	-0.28	-1.24	-2.08
USDCAD	1.366	-0.29	0.28	0.66	0.50	-0.59	-0.12	0.39	0.29
USDSEK	8.819	-1.65	-1.14	-0.08	0.37	-2.02	-1.47	-0.25	0.26
USDRUB	56.4	8.27	10.25	9.30	7.98	7.18	9.77	8.78	8.09
USDBRL	3.105	8.63	13.43	10.74	10.06	7.16	11.95	10.35	9.87
USDCNY	6.898	3.23	2.28	3.54	2.73	2.51	1.81	3.20	2.44
USDTRY	3.555	11.35	9.82	8.91	9.44	11.04	9.26	8.77	9.62
USDINR	64.12	7.47	7.47	8.67	7.36	5.42	5.77	6.59	4.66

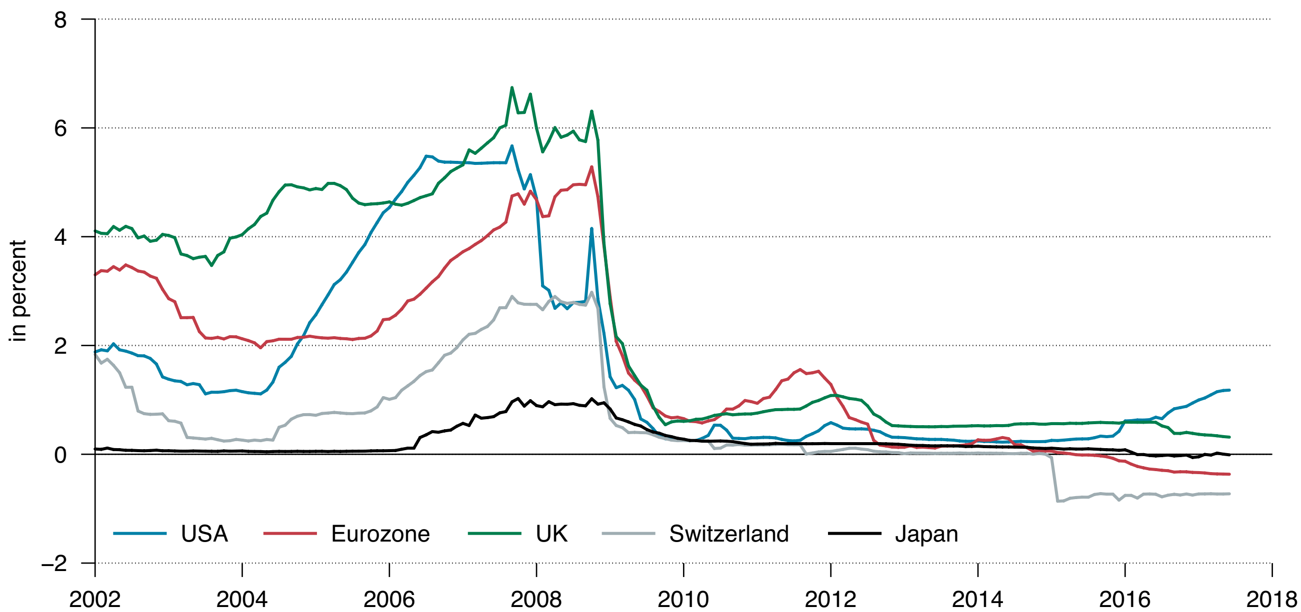
[1] The gap in interest rates between the second currency and the first one, in percentage points; e.g. US dollar minus euro for EURUSD.

Interest rate differentials

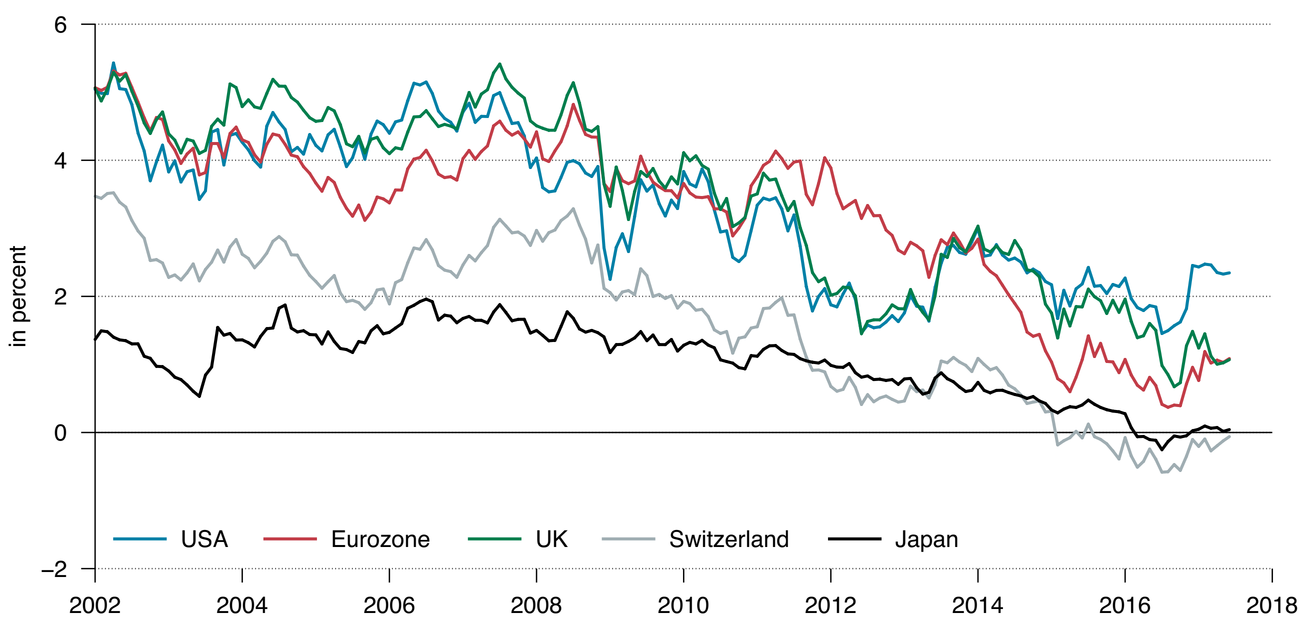


Source: Bloomberg, Thomson Reuters Datastream, Wellershoff & Partners

3-month Libor



10-year government bond yields



Source: Bloomberg, Thomson Reuters Datastream, Wellershoff & Partners

QCAM®
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FX markets

The results from the first round of the French presidential elections really moved the markets. On 23 April, Emmanuel Macron won more votes than rival Marine Le Pen and currency markets interpreted this as a positive signal for the Eurozone. Overnight the euro gained around 2 per cent, on a trade-weighted basis. Interestingly, Macron's definitive election victory, on 7 May, hardly had any effect at all on the euro. For the most part, it seems this result had already been priced-in. However, further appreciation potential for the euro remains, according to purchasing power parity estimates. By this measure, the euro is still undervalued versus the US dollar by more than 15 percent.

The French presidential election result neither left Switzerland unmoved. Immediately after Macron's victory, the euro gained 1.55 percent in value against the Swiss franc. However, according to our purchasing power parity estimates, the euro is still underperforming by about 8 percent. We think further support for the euro can be expected, particularly if the ECB were to announce steps toward normalizing its monetary policy.

FX overview

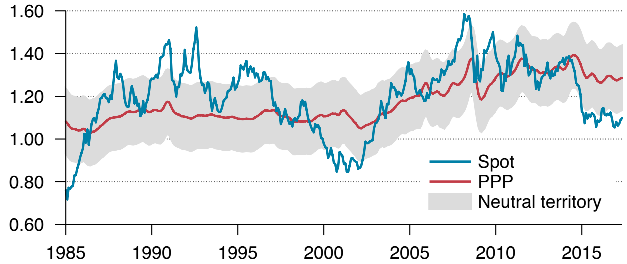
	Current exchange rate	Performance[1]				Purchasing Power Parity[2]		
		YTD	3 months	1 year	5 years	PPP	Neutral territory	Deviation[3]
EURUSD	1.098	4.1	3.9	-2.8	-14.1	1.29	1.14 - 1.44	-14.7
USDJPY	113.6	-2.6	-0.7	4.1	41.8	91.1	60.7 - 121.5	24.7
GBPUSD	1.292	4.5	3.7	-10.0	-19.5	1.62	1.42 - 1.82	-20.2
EURCHF	1.094	2.1	2.7	-0.8	-8.9	1.19	1.06 - 1.31	-7.8
USDCHF	0.997	-1.9	-1.1	2.1	6.0	0.95	0.71 - 1.18	5.4
GBPCHF	1.287	2.5	2.5	-8.1	-14.6	1.51	1.23 - 1.78	-14.5
CHFJPY	114.0	-0.7	0.4	2.0	33.8	89.7	74.5 - 104.9	27.1
AUDUSD	0.742	2.5	-2.7	2.0	-25.6	0.71	0.60 - 0.82	4.4
USDCAD	1.366	1.8	4.2	5.6	36.0	1.20	1.13 - 1.28	13.5
USDSEK	8.819	-2.9	-1.4	6.7	23.8	7.42	6.48 - 8.35	18.9
USDRUB	56.4	-7.6	-2.0	-13.6	84.1	42.4	34.2 - 50.6	33.0
USDBRL	3.105	-4.6	-0.6	-11.6	55.5	2.87	2.36 - 3.38	8.1
USDCNY	6.898	-0.7	0.4	5.8	9.2	6.90	6.67 - 7.13	0.0
USDTRY	3.555	1.1	-3.3	19.8	95.9	2.84	2.61 - 3.07	25.4
USDINR	64.12	-5.5	-4.2	-4.0	19.2	72.3	68.7 - 75.9	-11.3

[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.

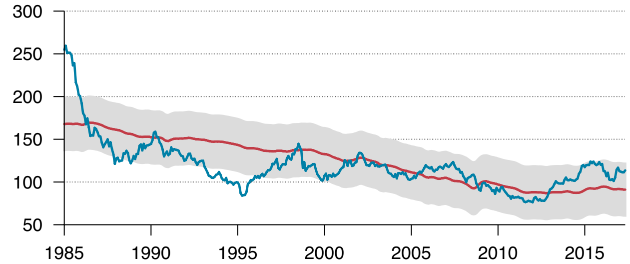
Source: Bloomberg, Thomson Reuters Datastream, Wellershoff & Partners

QCAM® Currency Asset Management

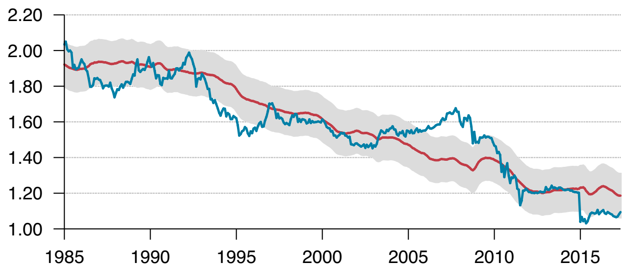
EURUSD



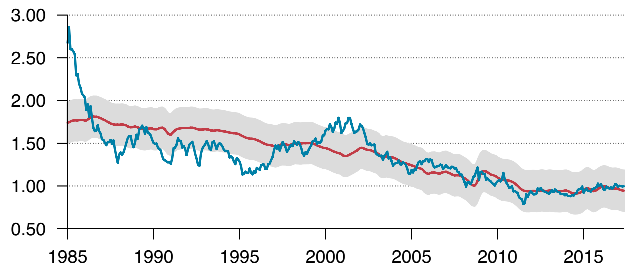
USDJPY



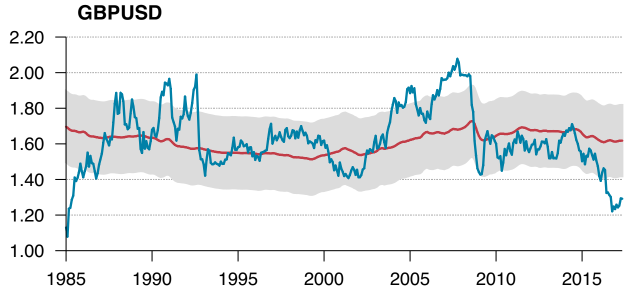
EURCHF



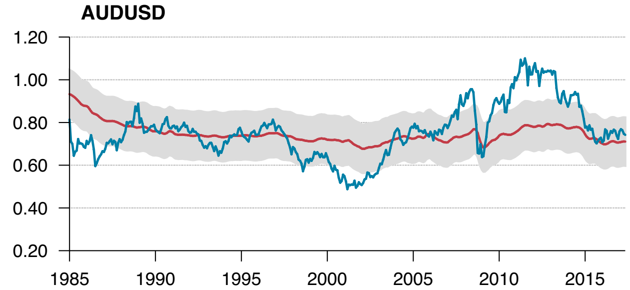
USDCHF



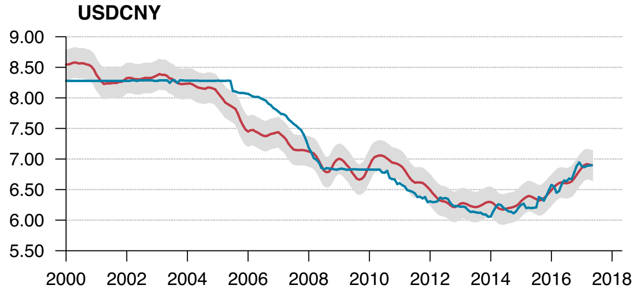
GBPUSD



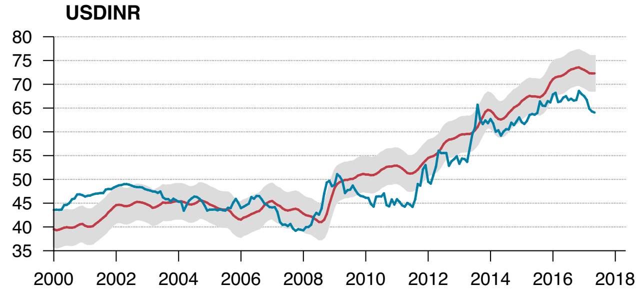
AUDUSD



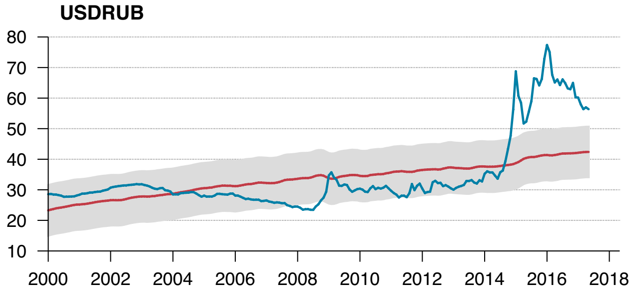
USDCNY



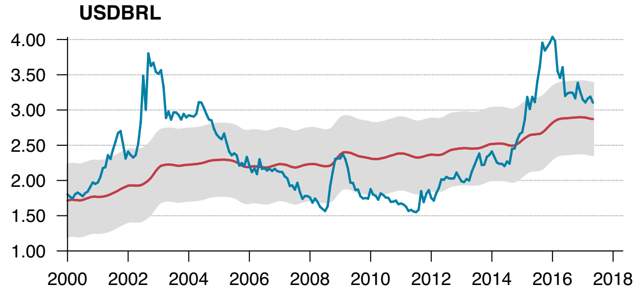
USDINR



USDRUB



USDBRL



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	1.098	7.1	7.0	8.9	10.6	8.2	7.5	9.3	10.9
USDJPY	113.6	8.3	8.4	9.9	11.0	11.4	9.3	10.3	11.3
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USDCHF	0.997	6.3	6.8	9.1	10.6	7.5	7.4	9.7	10.9
GBPCHF	1.287	7.3	6.5	8.8	10.3	12.1	7.1	9.3	10.7
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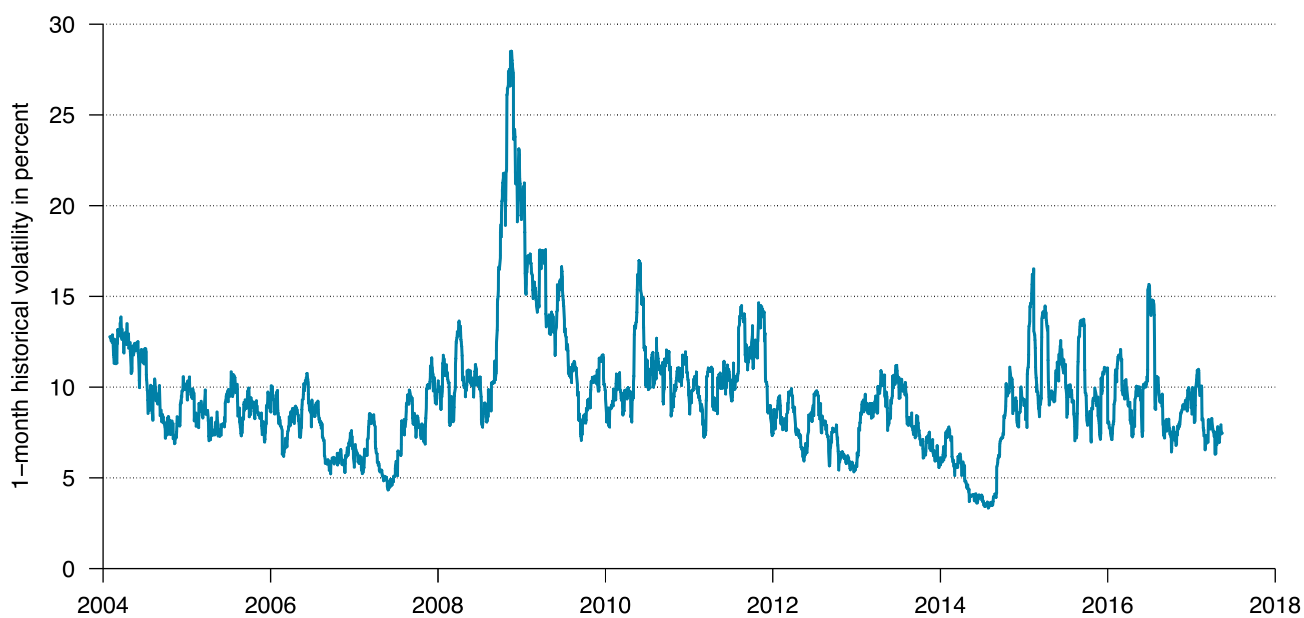
USDCAD	1.366	6.6	6.8	7.9	9.9	8.2	7.2	8.3	10.3
USDSEK	8.819	8.8	7.9	10.3	12.6	9.9	8.7	10.8	12.8
USDRUB	56.4	11.9	12.6	16.2	14.1	14.6	13.1	16.4	15.1
USDBRL	3.105	11.0	12.9	14.7	15.6	14.0	13.4	15.2	16.0
USDCNY	6.898	2.0	2.5	3.2	3.1	2.6	4.2	4.1	4.7
USDTRY	3.555	11.3	12.0	11.7	13.4	13.0	13.7	13.0	14.6
USDINR	64.12	3.9	5.2	8.7	9.6	4.0	6.6	9.8	10.5

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

QCAM volatility indicator[3]

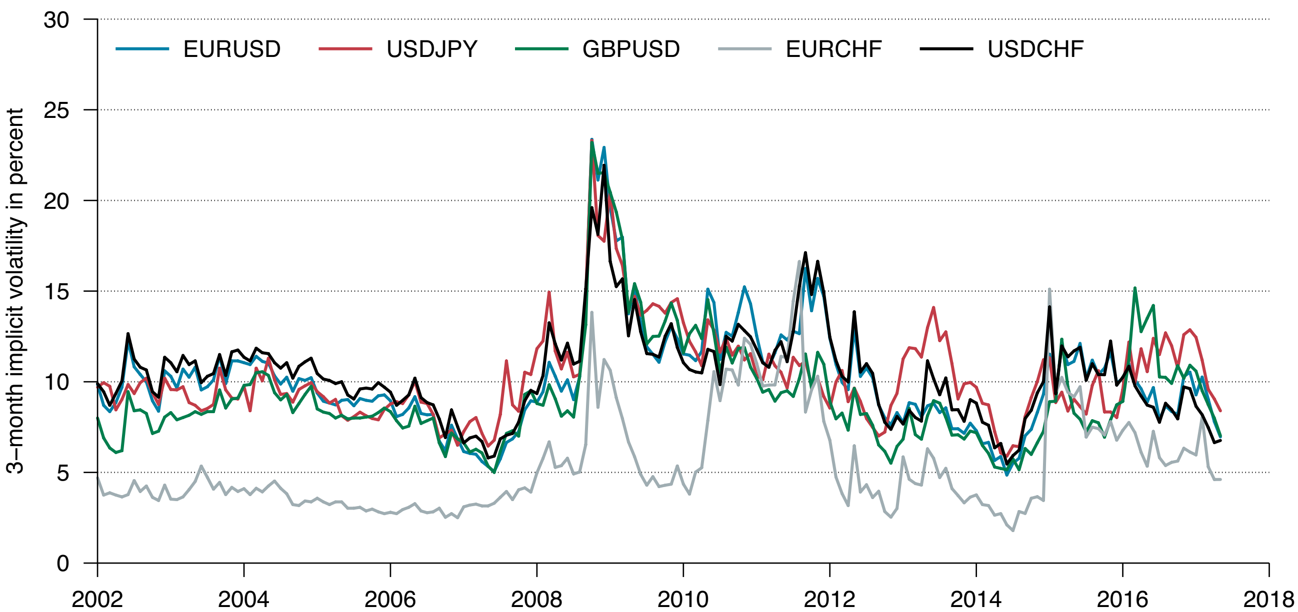


[3] The QCAM volatility indicator measures general volatility in global FX markets; the indicator is based on historical volatility of the main exchange rates, which are weighted by trading volume.

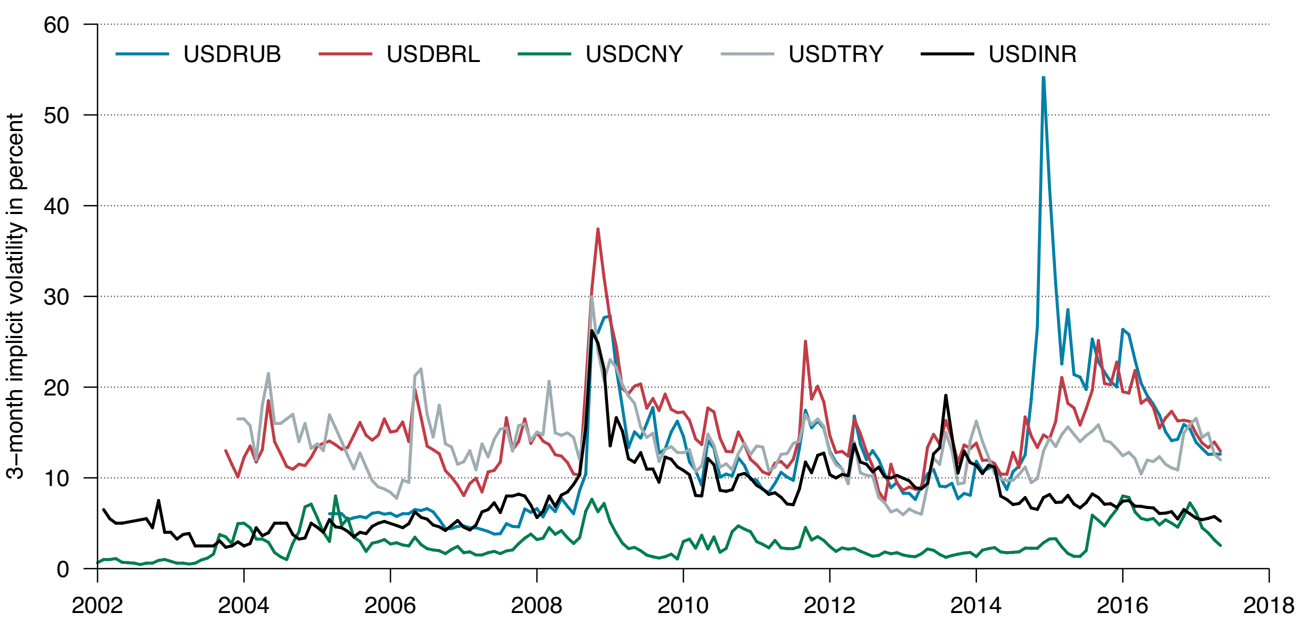
Source: Bloomberg, Thomson Reuters Datastream, QCAM Currency Asset Management, Wellershoff & Partners

QCAM® Currency Asset Management

Implicit volatility



Implicit volatility



Source: Bloomberg, Thomson Reuters Datastream, Wellershoff & Partners

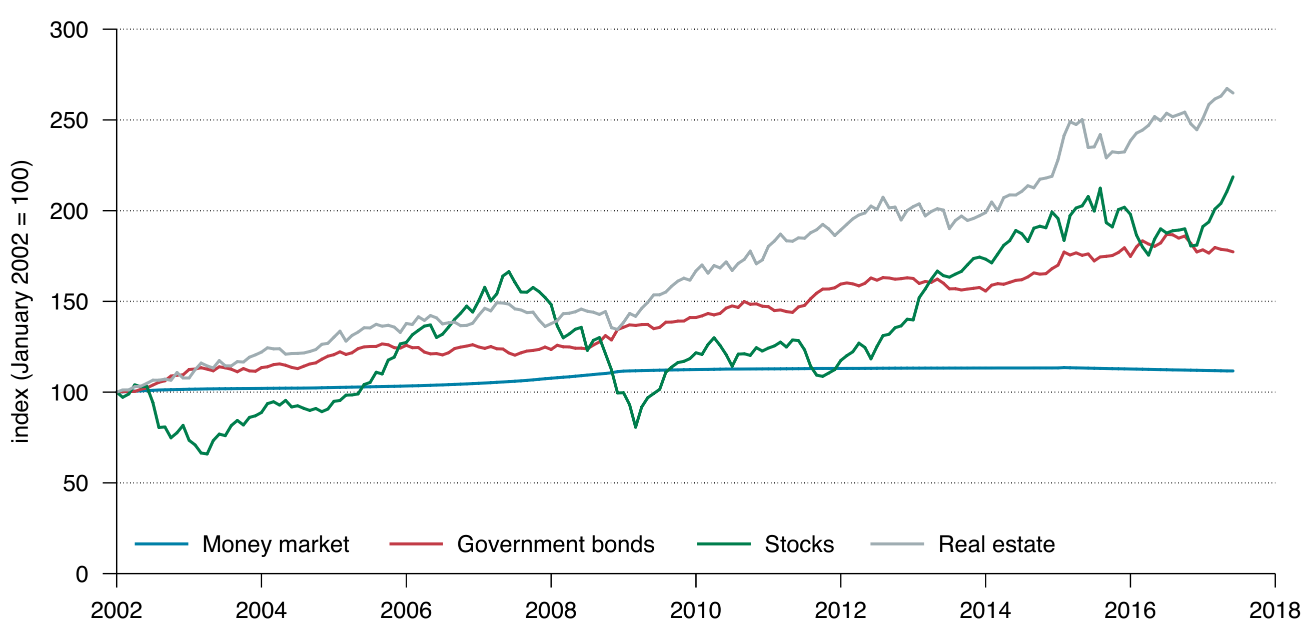
Financial markets

Performance overview

	Performance in either local curreny or USD[1]				Performance in CHF[1]			
	YTD	3 months	1 year	5 years	YTD	3 months	1 year	5 years
Swiss money market	-0.2	-0.2	-0.7	-1.2	-0.2	-0.2	-0.7	-1.2
Swiss government bonds	-0.6	0.0	-2.3	10.2	-0.6	0.0	-2.3	10.2
Swiss corporate bonds	0.2	0.2	-1.2	11.1	0.2	0.2	-1.2	11.1
Swiss equities (SMI)	14.3	11.5	19.1	81.7	14.3	11.5	19.1	81.7
European equities (Stoxx600)	11.6	8.9	22.4	91.8	13.7	11.7	21.5	74.7
UK equities (Ftse100)	6.1	4.2	26.3	65.9	9.6	7.4	16.6	42.2
Japanese equities (Topix)	5.1	3.6	22.3	137.0	6.4	3.0	20.5	77.6
US equities (S&P 500)	8.1	3.3	19.9	101.7	6.4	2.8	23.5	113.5
Emerging markets equities	17.8	8.7	30.4	25.5	15.9	8.2	34.3	32.8
Global equities (MSCI World)	9.8	5.2	19.2	79.5	8.0	4.7	22.8	90.0
Swiss real estate	5.6	1.2	5.4	34.4	5.6	1.2	5.4	34.4
Global real estate	2.9	1.2	1.9	52.4	1.3	0.8	5.0	61.4
Commodities	-4.5	-5.7	-1.1	-37.8	-6.0	-6.1	1.9	-34.1
Brent oil	-8.0	-7.3	8.8	-53.2	-9.4	-7.7	12.0	-50.5
Gold	6.6	0.7	-2.9	-19.9	4.9	0.2	0.0	-15.2

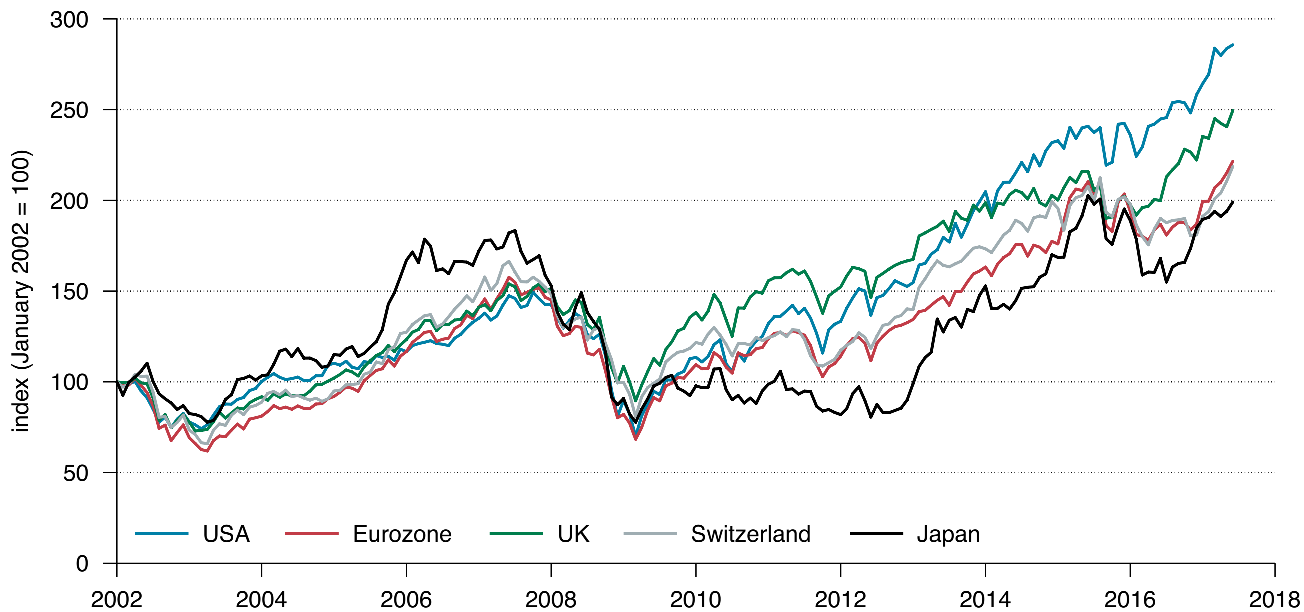
[1] Performance over the respective period of time, in percent.

Performance of selected Swiss asset classes

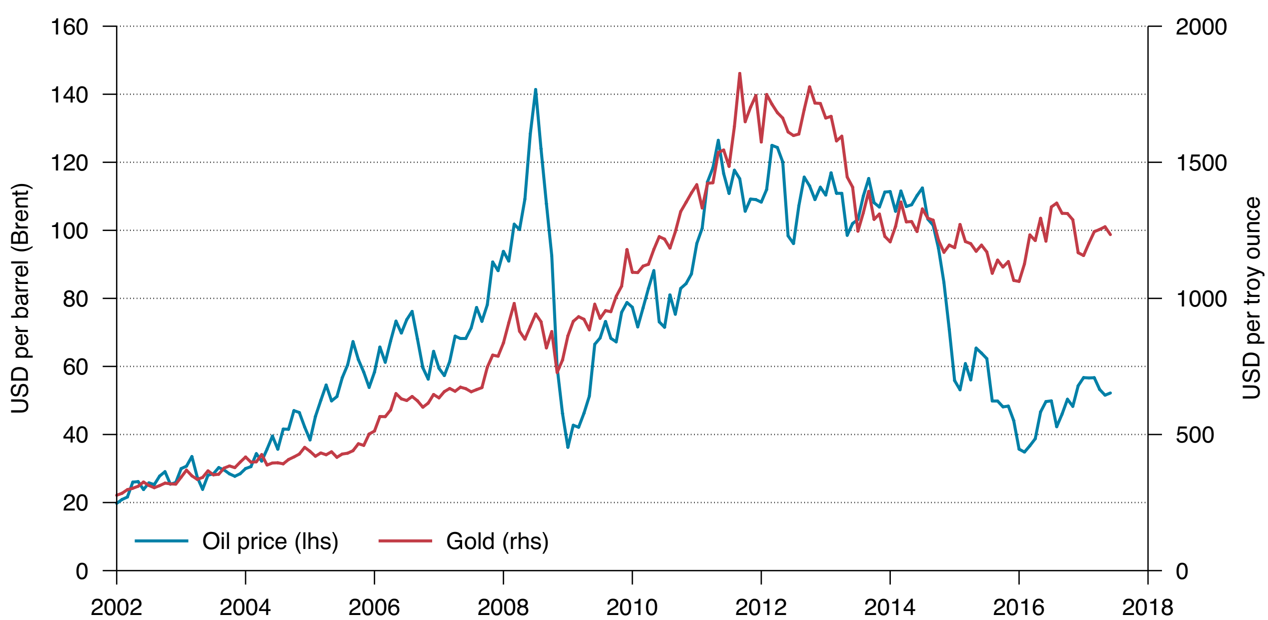


Source: Bloomberg, Thomson Reuters Datastream, Wellershoff & Partners

Performance of selected equity markets (in local currency)



Performance of selected commodity prices



Source: Bloomberg, Thomson Reuters Datastream, Wellershoff & Partners

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Number of the month

1.55 percent

After Emmanuel Macron triumphed over Marine Le Pen in the first round of the French presidential elections, the EURCHF exchange rate rose by 1.55 percent. Sounds small, but it's actually quite a lot: a one-day move of 1.55 percent exceeds 99 percent of the historical observations.