

January 2020

FXMONTHLY

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long-term valuations



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What to watch for in 2020



Bernhard Eschweiler, PhD, Senior Economist
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As eventful as 2019 was, it didn't move currency markets very much. So, what's in store for 2020? There are a number of potential stories to watch, but will they play out or will central banks stay in control?

The year 2019 was full of drama and surprises. It started in the shadow of a big sell-off at the end of 2018. The risk of a hard Brexit, the trade conflict between the US and China and the growing risk of a recession created much uncertainty. In the end, however, it was not as bad as feared. The US Fed lowered interest rates and other central banks followed suit, recession was avoided, the US-China trade conflict was eased by a last-minute interim trade deal and the outcome of the UK election defused much of the Brexit uncertainty.

One could almost imagine that currency markets had perfect foresight, as they seemed to correctly anticipate

these benign outcomes. The fact is, currency markets moved remarkably little in 2019. Overall, the USD gained a bit, mostly versus currencies with bigger problems, notably the EUR and some emerging markets currencies. So, is there anything brewing that might shake up the status quo in 2020? We take a look at some potential disruptors:

1: Reflation

After the global slowdown last year, recovery is widely expected in 2020. Signs of economic stabilization and even improvement are emerging. Reflation is viewed as positive for riskier currencies and negative for the USD. In our view, reflation is indeed a possibility, but its extent could fall short of expectations and relative economic performances may vary. We do not expect a boom in the US, but neither would we be surprised if the US economy does better than some other majors, like the Eurozone.

2: More, not less, political uncertainty

All in all, we don't think economic developments will be the key drivers in 2020 but political events. The greatest uncertainty is probably the US presidential election, not only because the final outcome and its implications will be unknown until November, but also because the campaign itself promises to be an ugly one. While the US-Chinese trade conflict is not yet terminated, the path to Brexit now looks clearer but the final outcome could still be negative for both the UK and the EU. The Eurozone has also not become more stable, with many member governments looking fragile and Italy still posing a threat to the overall stability of the currency union. Fi-

nally, there are plenty political trouble spots around the globe that could flare up, especially in the Middle East.

3: Central banks still on guard

Central banks would prefer to stay on the sidelines in 2020. They feel they have done their job and are comfortable with the economic outlook and their policy positions. There is also a growing consensus among the central bankers that stimulus efforts are becoming less effective. Still, while central banks may keep their powder dry, if possible, they will remain ready to step in to prevent or defuse a crisis. Thus, monetary policy will probably act less as a trend setter for currencies in 2020 and more as a lifeguard in case of trouble.

4: Deficits still matter

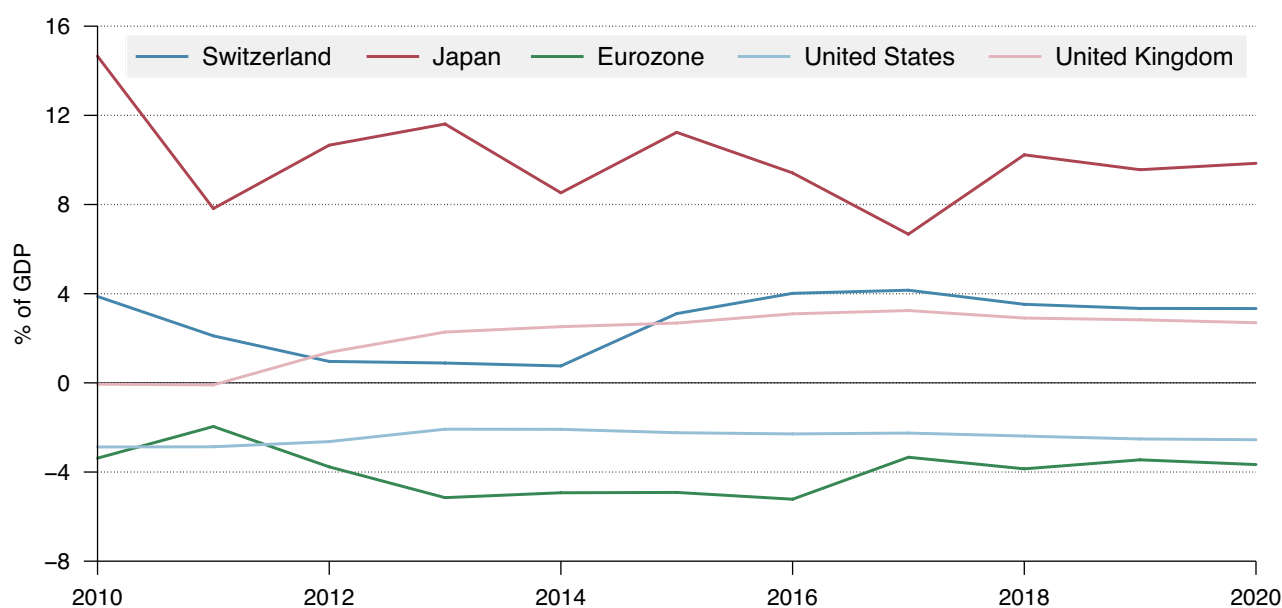
External balances are important exchange-rate factors. Countries with large and persistent current account deficits risk currency depreciation unless they can attract capital inflows. This applies in particular to the three

major: The USD needs to attract capital inflows to fund its huge current account deficit, while the EUR and the JPY typically experience capital outflows to recycle their surpluses. Given the large US deficit and the surpluses of the Eurozone and Japan, we think the USD could get into trouble if bad news eroded investor confidence.

Better safe than sorry

At present, we see no combination of factors among the potential disruptors just outlined, that will drive currency markets in a particular direction in 2020. However, there is a potential for large currency movements if markets lose trust in central banks' ability to maintain stability. The USD's key vulnerabilities are its twin deficit and its overvaluation. EUR's main risk is Italy exposing the common currency's inherent structural deficiencies. GBP is a deficit currency like USD, and it carries the risk that Brexit, could still wreak economic havoc. Under these circumstances, JPY and CHF look safer. They are surplus currencies with no acute risk issues.

Current account balances % of GDP



Source: IMF and QCAM

The macro perspective

Will China save the global economy in 2020?

2019 was an unusual year for global trade. Despite solid economic growth, global trade activity shrank. The last time this happened was during the financial crisis. In addition to trade disputes and tariffs, an economic slowdown in China also contributed to a declining world trade. We think things are looking up for China in early 2020, but will that be enough to lift the global economy?

The new year has started with a mixed economic outlook. At the end of 2019, the US again posted impressive labor market performance, with unemployment remaining at a fifty-year low. At the same time, companies from the services sector were feeling optimistic about the future and things are also going well in the construction sector. On the other hand, the sentiment indicator for manufacturing reached a new low, near its level in 2009. And it seems that manufacturing has not yet reached the bottom. The situation is similar in the Eurozone, where indicators for manufacturing may have stabilized at a low level, but there certainly is no sign of revived optimism.

The fact that manufacturing companies around the world are in trouble is closely related to the weak international trade dynamics, as it is primarily the export business that causes problems for producers. Many pundits were quick to blame Donald Trump and his protectionist policies for this development. However, this is only part of the explanation. The economic slowdown in China, for which

the trade conflict with the US was only partially responsible, has also played a role. China is by far the world's largest exporter and it is already the second largest importer after the US. Given the importance of China for the global economy, the question arises as to how the Chinese economy is currently doing. Two observations can be made at present.

A more optimistic outlook

A positive dynamic has recently been observed in China's economy. For example, the Caixin Manufacturing Index, which measures sentiment among small and medium-sized companies, set a new three-year high in November. In December, it slipped only slightly from this high level. At the same time, production figures in various industrial sectors are rising. Even import and export numbers are poised to recover, if the US is excluded. But there is even upside potential for an increase in trade between the two world's largest economies - given a trade agreement will actually be signed on January 15, as Trump had announced (this is after the editorial deadline).

The construction boom is over

The positive picture of China's economy is clouded by the construction sector. Total investment in construction has decreased significantly year on year, and the growth of steel production is slowing. There are historical reasons why the government is currently not helping the construction sector. China overcame an economic downturn in 2015/16 mainly through large infrastructure projects and looser lending policies, which led to a construction boom

at the time. However, the boom was fed by a massive increase in debt. China's debt to economic output ratio is approaching the 300 percent mark, which is a worryingly high level for an emerging economy.

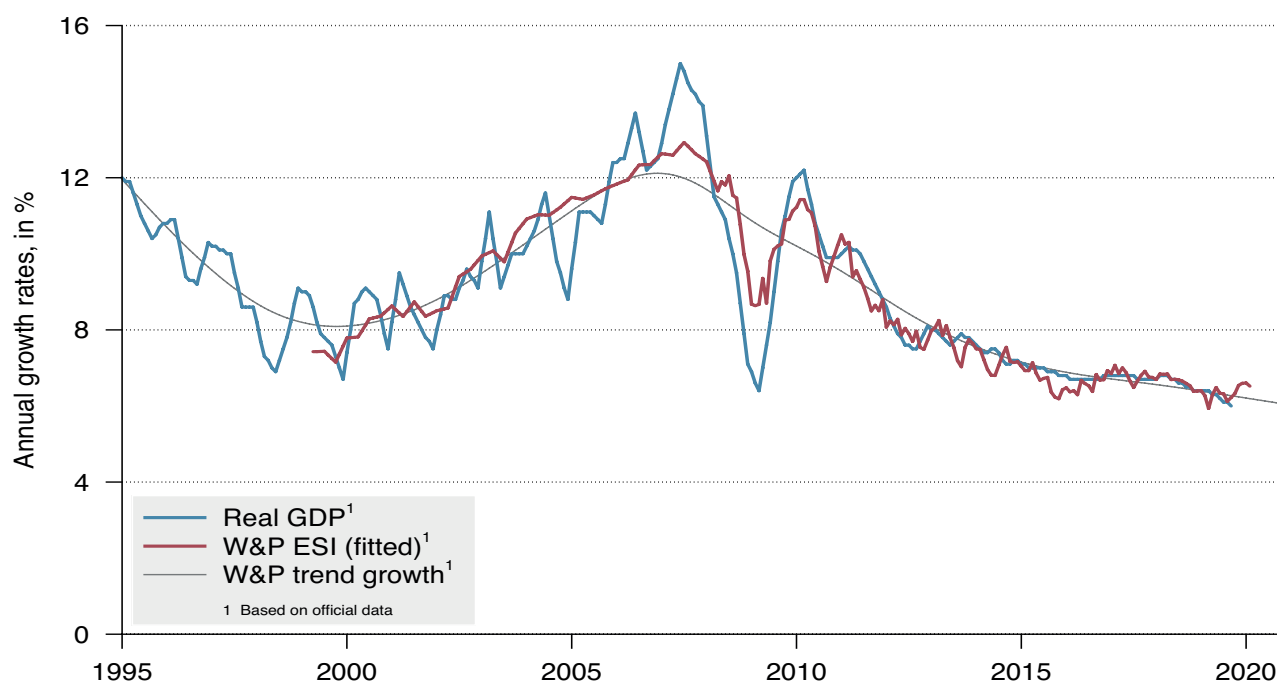
Quality not quantity

The Chinese authorities are aware of the risks associated with this elevated level of debt. Current government stimulus measures aim to stabilize the economic situation, but a new construction boom like the one seen in 2015 should be avoided. For example, while central banks around the world significantly lowered their key interest rates in 2019, the People's Bank of China cut its key interest rate for repo transactions by just -0.05 percent. The government has also indicated its willingness to accept lower growth rates in favor of more sustainable economic development.

Nonetheless, despite, or precisely because of, the government's reluctance to intervene on a large

scale and the flagging construction sector, the overall positive trend we are seeing in China suggests a strengthening economy in the coming months. This sets China apart from other major economies, where slowing economic development can be expected. The positive dynamics in China also encourage hope that global trade will regain momentum.

Positive signs from China



Source: Refinitiv, Wellershoff & Partners

FX market talk

Exchange rates, short-term shocks and long-term valuations

The 2020s started off with a stress test: a surge in Middle East tensions. Oil and gold outperformed the US dollar, as did the traditional currency safe havens. The new year offered a stark reminder that short-term shocks often have a bigger impact on exchange rates than long-term equilibrium models can predict. But there is value of knowing the fundamentals.

Oil spikes and spillover effects

As the new year opened, the trend of a somewhat weaker US dollar had been underway for about a month. The further increase in oil prices, driven by supply-side concerns, and the rise in the price of gold produced textbook currency responses. Floating, oil-linked currencies, including the Norwegian krone, the Brazilian real and the Russian ruble, appreciated against the US dollar. Those net oil importers whose currencies tend to do less well when oil spikes – the Indian rupee and Turkish lira among them – weakened against the US dollar.

The Swiss franc, which is heavily constrained by the central bank from playing its traditional safe-haven role, still managed to eke out a three percent appreciation against the US dollar over the past month. The Japanese yen saw a mere one percent appreciation, but at least in the direction that the textbooks predict. And how did the Chinese renminbi perform? It, too, appreciated against the dollar, by almost 1.5 percent – close to what the euro achieved.

This diverse performance across a range of currencies is a reminder that short-term events often have a stronger impact on exchange rates than what long-term equilibrium models predict. An example: A three-percentage point appreciation in the Swiss franc against the US dollar between the first week of December 2019 and the first week of January 2020 more than compensates for a negative Swiss franc cash rate of -0.75 percent. Evidently, as we've said here often, there is more to currency movements than models of interest rate differentials can explain.

The value of knowing the fundamentals

Just as currencies sometimes behave the way textbooks suggest they should, there are also countless times when currencies go off on a random walk. Obviously, a lot more can happen in the market than can be perfectly modelled. Point forecasts are therefore of little value, in our view.

What we have found that does have a useful level of predictive power for currencies is to know whether they are cheap or expensive relative to their purchasing power parity. The bigger the misalignment, the greater the likelihood that the exchange rate is at an unsustainable level. What cannot be sustained, won't be – as the saying goes. While the misalignment does not give us any information about the timing of any adjustment, it does give us useful information about the potentially more profitable directional bets.

As can be seen from the chart, we have ranked ten currencies in terms of their valuation against the Swiss franc. This is based on monthly data through the end of November 2019. Here we see that, at the time, the Australian dollar and the US dollar were about five percent overvalued against the Swiss franc – an almost negligible differential in the context of currency moves across a year. This differential is too small to offer useful information for us.

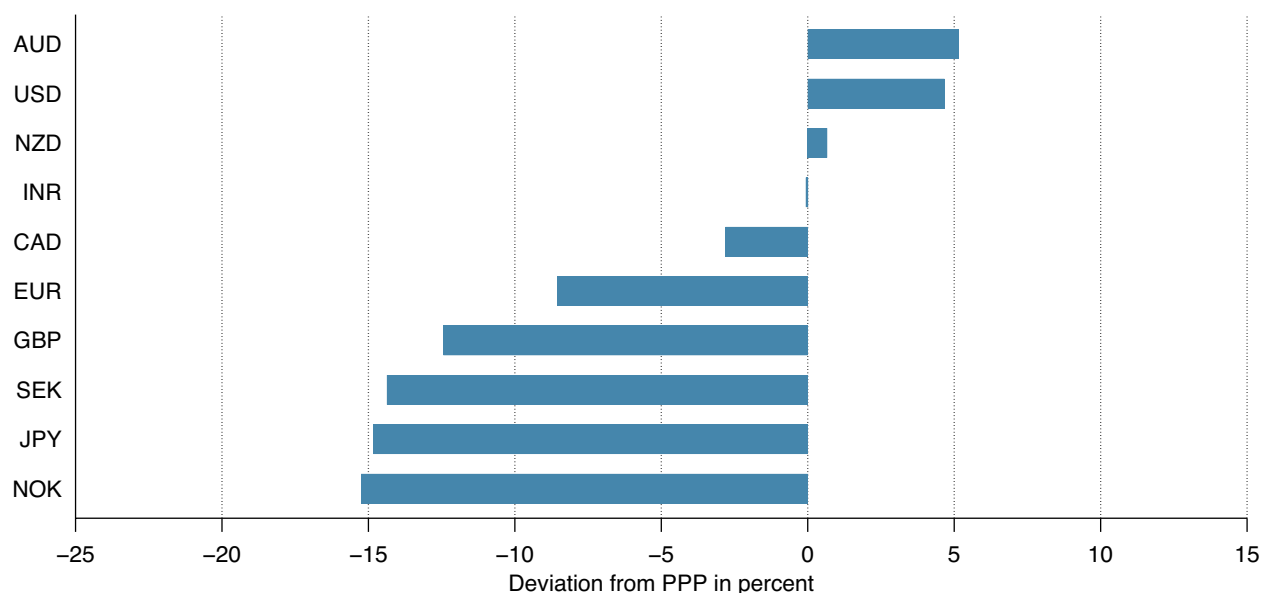
When we look at the bigger picture, though, the undervaluation of the Japanese yen, the Norwegian krone and the Swedish krona against the Swiss franc (and even more so against the US dollar), were excessive at the time of this snapshot. Not surprisingly, a directional bet on the gap narrowing somewhat would have been the logical approach. We could not have known that the Norwegian krona would indeed appreciate by five percent against the US dollar and by two percent against the Swiss franc since then. But the direction appears consistent with a move away from extreme undervaluation towards fairer

value. That's the kind of big-picture context that purchasing power parity provides.

What does this ranking tell us today? First, the Swiss franc started the new year reasonably valued against the US dollar and the euro but is expensive relative to the Japanese yen, Norwegian krone, Swedish krona and Sterling. Second, the US dollar is expensive against an even broader range of currencies, including the euro. Third, not all emerging market currencies are cheap – the Indian rupee looks fairly valued.

Our prediction for the decade ahead? Currencies that are misaligned relative to their fundamental value will provide us with directional trading opportunities. The US dollar is expensive!

Ranking currency over- or undervaluation relative to the Swiss franc



Source: Refinitiv, Wellershoff & Partners

Economic climate

The economic verdict on 2019 was rather mixed. A feared recession did not materialize but a real recovery was also missing. Manufacturing is declining in many larger economies. In the US, the ISM Manufacturing PMI was again lower in December than in November and at 47.2 index points is lower than it's been in a decade.

The situation in the Eurozone is similar. Industrial production was unable to achieve positive growth all year long. Germany's industrial sector in particular had to contend with weak global demand last year, as well as home-grown problems in the all-im-

portant auto branch. Overall, the decline in world trade is remarkable. Most major economies saw a significant drop in goods imports and exports.

But consumers worldwide are feeling far better. Labor markets are robust and this means that consumer sentiment has so far been unaffected by the subdued mood in industry. Christmas business seems to have been brisk in many places. Overall, solid trend growth rates can be expected in the developed economies in 2020, in our view.

Growth overview

	Trend growth ¹	Real GDP growth ²				W&P economic sentiment indicators ³			
		Q4/2018	Q1/2019	Q2/2019	Q3/2019	9/2019	10/2019	11/2019	12/2019
United States	1.7	2.5	2.7	2.3	2.1	1.5	1.8	1.7	1.8
Eurozone	1.0	1.2	1.4	1.2	1.2	1.4	1.3	1.4	1.4
Germany	1.4	0.6	1.0	0.3	0.5	1.2	1.2	1.2	1.3
France	0.7	1.2	1.3	1.4	1.4	1.4	1.4	1.4	1.4
Italy	0.2	-0.1	0.0	0.1	0.3	0.0	0.0	0.0	0.2
Spain	1.6	2.1	2.2	2.0	1.9	1.6	1.2	1.3	1.5
United Kingdom	1.8	1.4	2.0	1.2	1.1	0.3	0.5	0.5	0.3
Switzerland	1.5	1.4	0.9	0.2	1.1	0.9	1.2	1.0	0.9
Japan	0.4	-0.3	0.8	0.8	1.9	1.7	1.3	1.5	1.4
Canada	1.6	1.8	1.5	1.9	1.6	1.3	1.4	1.2	1.3
Australia	2.4	2.1	1.7	1.6	1.7	2.4	2.4	2.4	2.3
Brazil	1.4	1.3	0.6	1.1	1.2	1.8	2.4	3.0	-
Russia	0.1	2.7	0.5	0.9	1.7	-3.1	-2.3	-3.8	-2.0
India	7.7	6.6	5.8	5.0	4.6	5.7	5.4	5.5	5.8
China	7.4	6.4	6.4	6.2	6.0	6.5	6.6	6.6	6.5
Advanced economies ⁴	1.4	1.8	2.0	1.6	1.9	1.4	1.5	1.5	1.5
Emerging economies ⁴	6.0	4.9	4.5	4.4	4.3	4.6	4.6	4.6	4.7
World economy ⁴	3.5	3.4	3.3	3.1	3.2	2.9	3.0	2.9	3.0

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

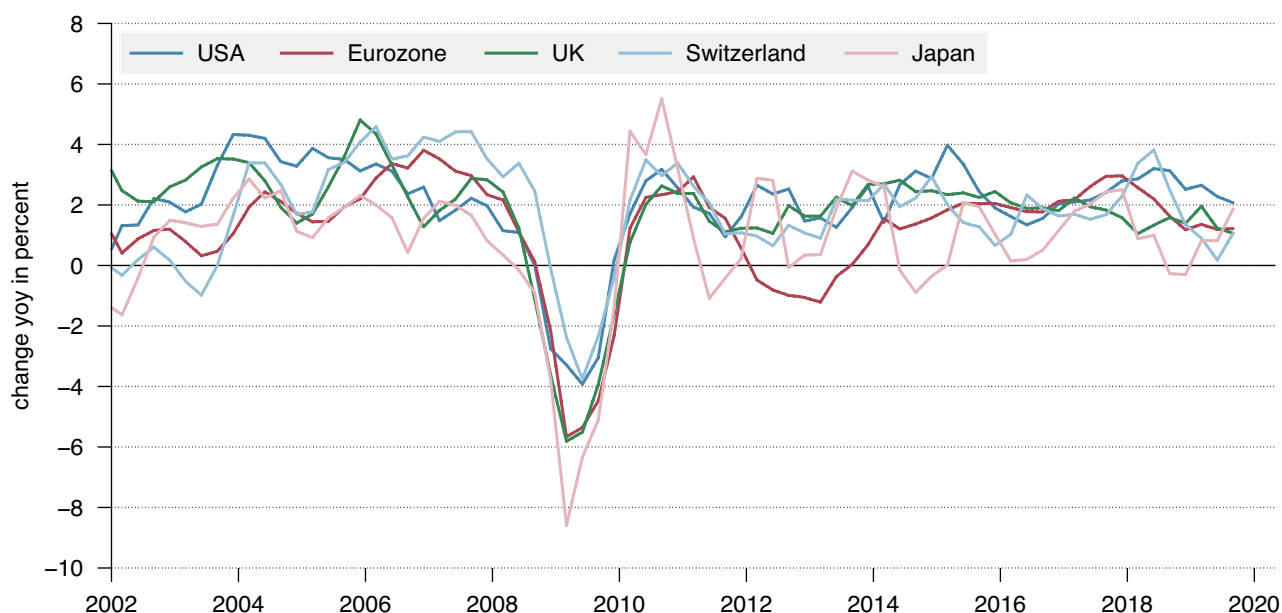
² Year-on-year growth rate, in percent.

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.

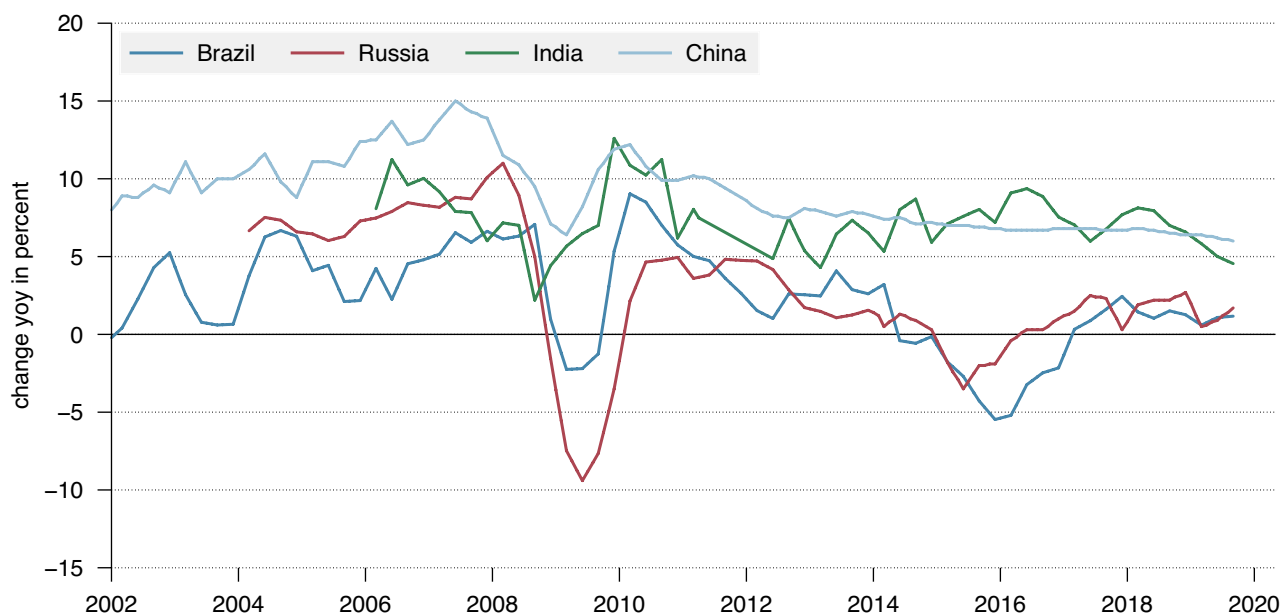
⁴ Calculations are based on nominal GDP weights derived from purchasing power parity exchange rates.

Source: European Commission, Penn World Table, Refinitiv, Wellershoff & Partners

Economic growth in advanced economies



Economic growth in emerging economies



Source: Refinitiv, Wellershoff & Partners

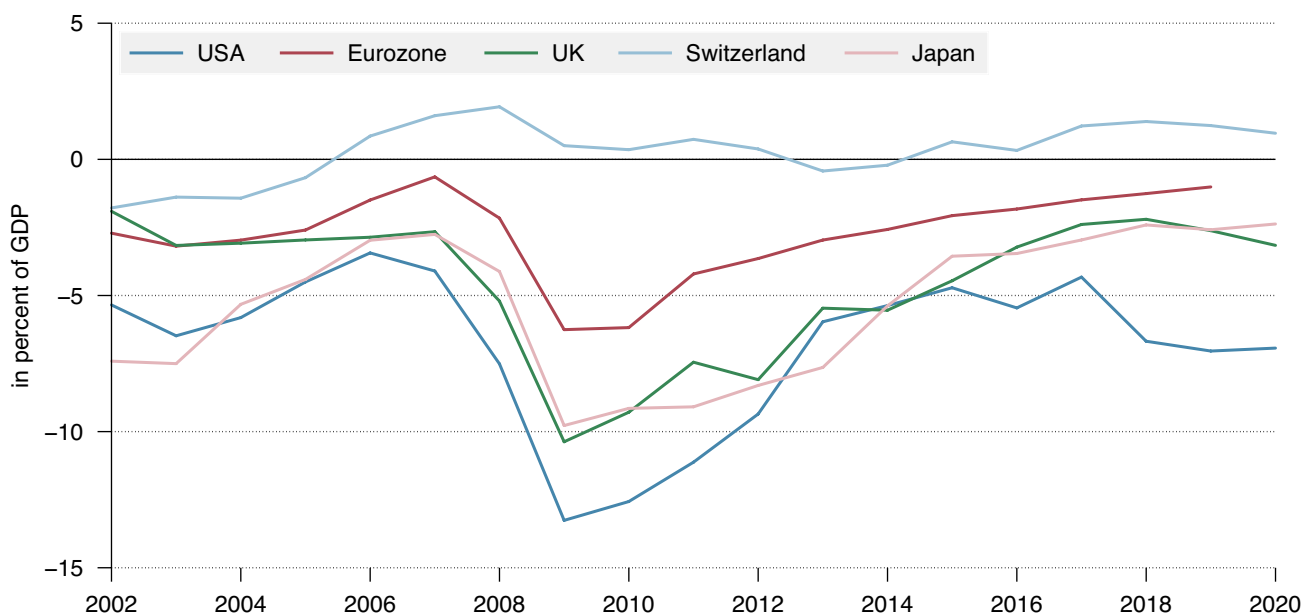
Economic indicators

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	24.5	24.7	-2.3	-2.5	106.5	111.9	-5.6	-6.9	4.4	3.5
Eurozone	15.7	15.1	-	-	-	-	-	-	9.6	7.5
Germany	4.5	4.4	8.0	6.5	74.6	67.5	1.3	0.3	5.7	5.0
France	3.2	3.1	-0.6	-0.8	122.5	123.7	-3.1	-2.3	9.4	8.3
Italy	2.4	2.2	2.3	2.7	153.3	150.1	-2.3	-2.2	11.4	9.8
Spain	1.6	1.6	2.3	1.3	115.9	114.0	-3.5	-1.8	18.5	14.1
United Kingdom	3.4	3.0	-4.5	-3.7	113.0	112.9	-3.0	-3.2	4.5	3.5
Switzerland	0.9	0.8	9.6	10.1	42.1	40.0	1.0	1.0	2.9	2.5
Japan	6.0	6.0	3.7	3.4	222.1	225.2	-3.0	-2.4	2.9	2.2
Canada	2.0	2.0	-2.8	-1.7	90.1	85.0	-0.4	-0.7	6.3	5.6
Australia	1.7	1.5	-2.6	-1.7	40.5	42.3	-1.7	-0.7	5.7	5.2
China	15.4	16.9	1.5	0.9	47.6	60.9	-4.3	-6.3	4.0	-
Brazil	2.3	2.1	-1.3	-1.0	82.9	93.9	-8.4	-6.9	11.2	11.2
India	3.1	3.5	-1.5	-2.3	68.3	68.5	-7.0	-7.2	-	-
Russia	1.9	1.8	4.3	3.9	15.8	17.7	-0.9	0.1	5.3	4.6

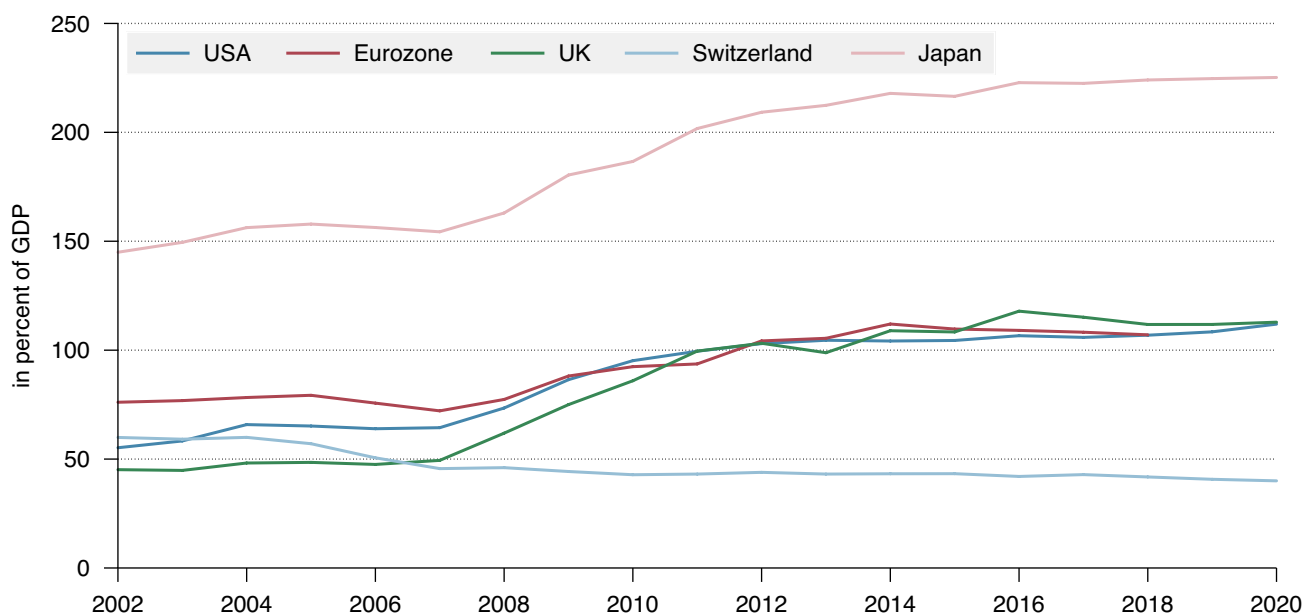
¹ In percent; calculations based on market exchange rates. ² In percent of nominal GDP. ³ In percent.

Budget deficits in advanced economies

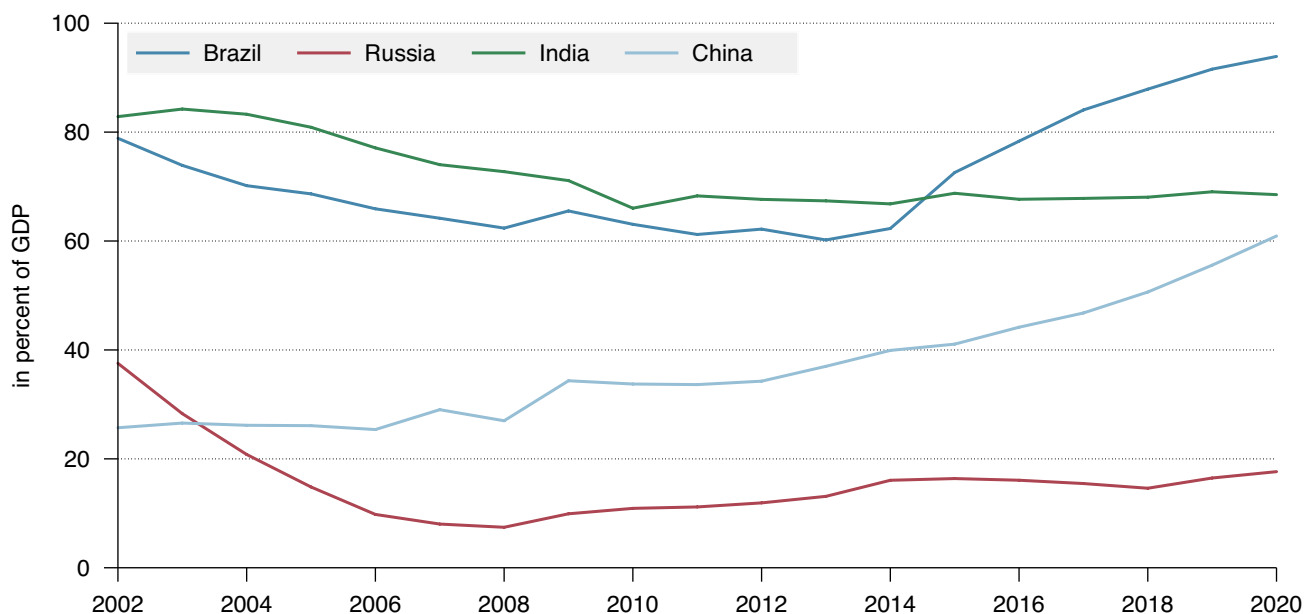


Source: Refinitiv, Wellershoff & Partners

Public debt in advanced economies



Public debt in emerging economies



Source: Refinitiv, Wellershoff & Partners

Inflation

At the turn of the year, the US Federal Reserve proactively increased the scope of its liquidity operations due to fears of another liquidity shortage. This further expanded the Fed's balance sheet. Despite the expansionary monetary policy of central banks worldwide, inflation mostly remained stable in 2019. Core inflation in the Eurozone rose to 1.3 percent at year-end, 0.4 percent higher than in 2018. Nevertheless, it can be assumed that the European Central Bank will continue to buy assets in the coming months, as inflation is still a long way from the ECB's target of 2 percent. In Switzerland, on the other

hand, core inflation remained constant at 0.4 percent in December. Swiss consumer goods prices rose 0.3 percent year over year.

Slightly higher inflation values are expected in the coming months. On the one hand, this is due to a statistical base effect due to the development of the oil price last year. Since recent surge in tensions between Iran and the US has so far had little impact on the oil price, we think an additional rise in inflation is unlikely for the time being.

Inflation overview

	Ø 10 years ¹	Inflation ²				Core inflation ³			
		9/2019	10/2019	11/2019	12/2019	9/2019	10/2019	11/2019	12/2019
United States	1.8	1.7	1.8	2.1	-	2.4	2.3	2.3	-
Eurozone	1.4	0.8	0.7	1.0	1.3	1.0	1.1	1.3	1.3
Germany	1.3	1.2	1.1	1.1	1.5	1.4	1.4	1.5	-
France	1.1	0.9	0.8	1.0	1.5	0.9	1.0	1.0	-
Italy	1.2	0.3	0.2	0.2	0.5	0.6	0.7	0.7	0.7
Spain	1.2	0.1	0.1	0.4	0.8	1.0	1.0	1.0	-
United Kingdom	2.2	1.7	1.5	1.5	-	1.7	1.7	1.7	-
Switzerland	0.0	0.2	-0.3	-0.1	0.2	0.4	0.2	0.4	0.4
Japan	0.5	0.2	0.2	0.5	-	0.6	0.6	0.8	-
Canada	1.7	1.9	1.9	2.2	-	1.9	1.9	1.9	-
Australia	2.1	1.7	-	-	-	1.9	-	-	-
Brazil	5.8	2.9	2.5	3.3	4.3	-	-	-	-
Russia	6.9	4.0	3.8	3.5	3.1	4.0	3.7	3.5	3.1
India	6.7	4.0	4.6	5.5	-	-	-	-	-
China	2.6	3.0	3.8	4.5	1.5	1.5	1.5	1.4	1.4
Advanced economies⁴	1.5	1.2	1.2	1.5	1.6	1.6	1.6	1.7	1.7
Emerging economies⁴	4.3	3.3	3.9	4.6	4.6	2.0	2.0	1.8	1.8
World economy⁴	2.8	2.3	2.6	3.0	3.1	1.6	1.6	1.6	1.6

¹ Average annual consumer price inflation, in percent.

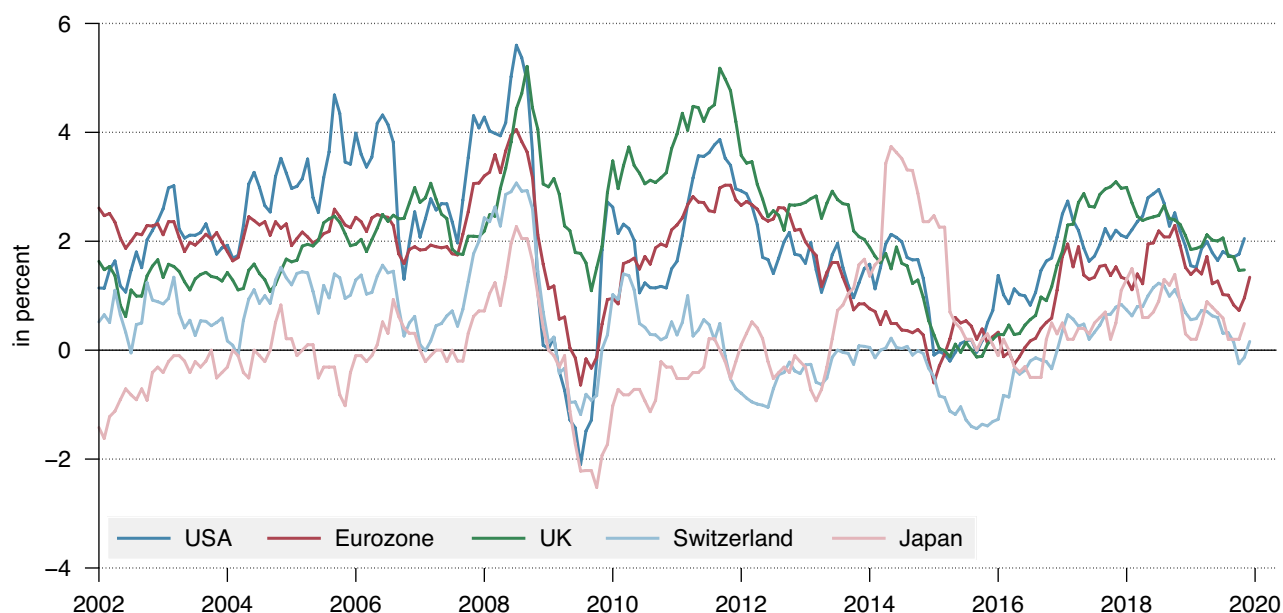
² Year-on-year change of the consumer price index (CPI), in percent.

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.

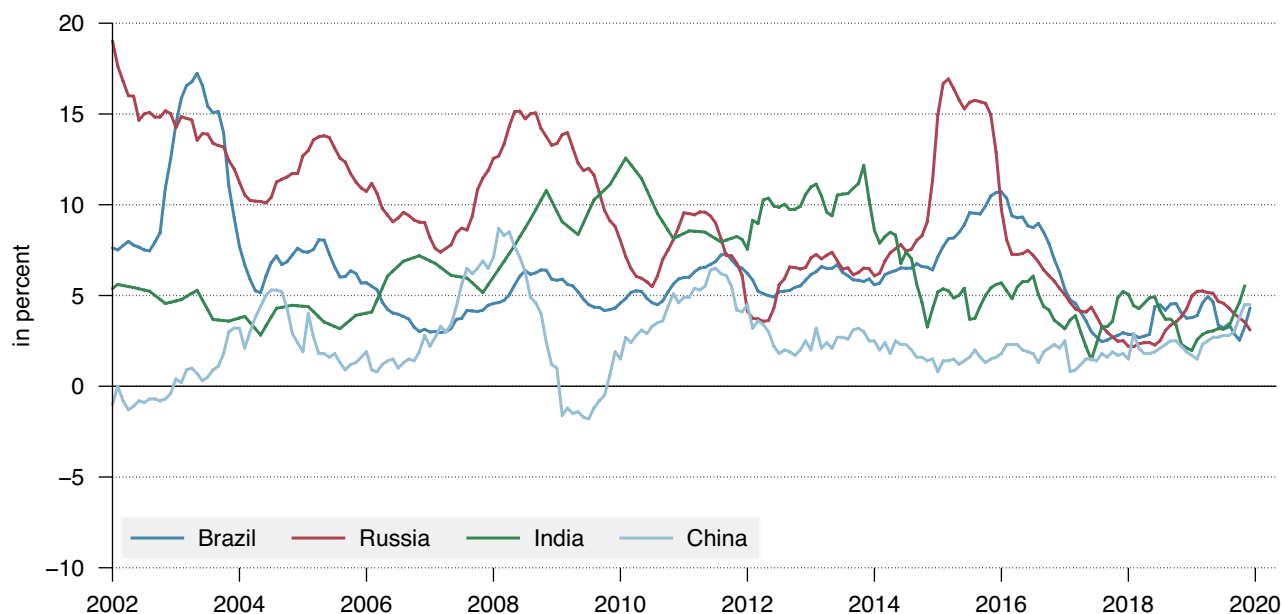
⁴ Calculations are based on nominal GDP weights derived from purchasing power parity exchange rates.

Source: Refinitiv, Wellershoff & Partners

Consumer price inflation in advanced economies



Consumer price inflation in emerging economies



Source: Refinitiv, Wellershoff & Partners

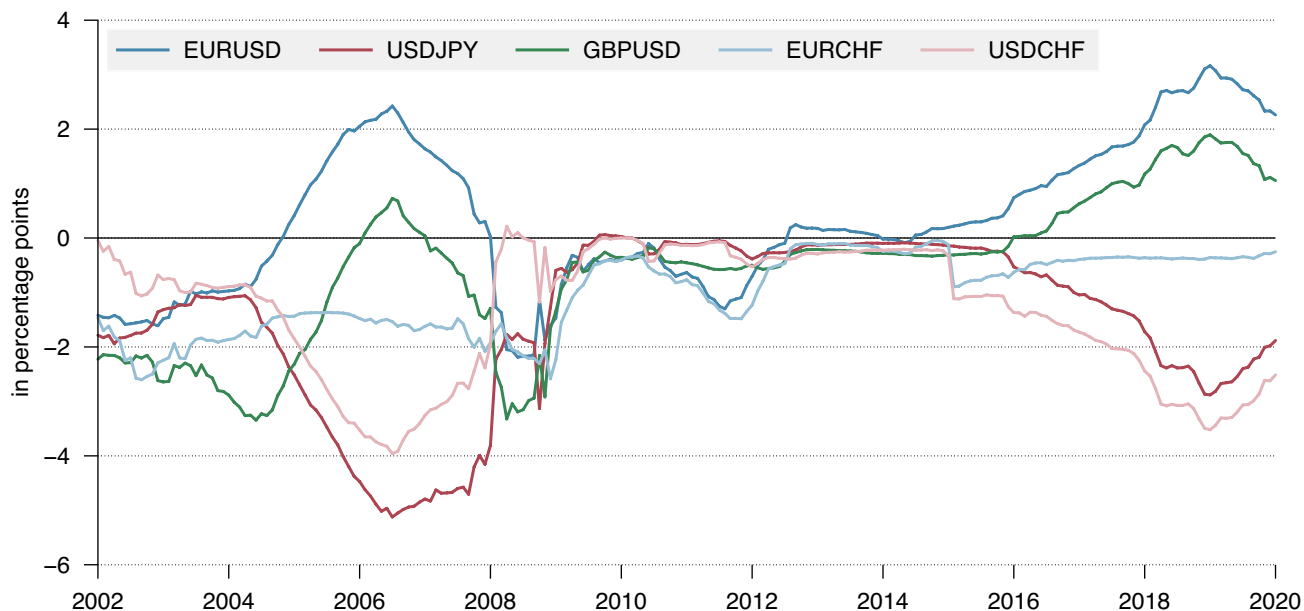
Interest rates

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	1.111	2.26	3.14	1.68	0.72	2.28	3.16	1.94	0.85
USDJPY	109.6	-1.88	-2.86	-1.42	-0.78	-1.85	-2.91	-1.69	-1.00
GBPUSD	1.306	1.06	1.87	0.81	0.22	1.04	1.83	0.90	0.20
EURCHF	1.082	-0.25	-0.35	-0.46	-0.47	-0.17	-0.36	-0.43	-0.56
USDCHF	0.973	-2.51	-3.49	-2.15	-1.20	-2.45	-3.52	-2.37	-1.41
GBPCHF	1.271	-1.46	-1.62	-1.34	-0.98	-1.41	-1.69	-1.47	-1.21
CHFJPY	112.6	0.63	0.63	0.73	0.41	0.60	0.61	0.68	0.41
AUDUSD	0.691	1.18	1.30	-0.14	-1.67	1.42	1.57	0.34	-1.15
USDCAD	1.305	0.22	-0.49	-0.02	0.43	0.16	-0.49	-0.21	0.27
USDSEK	9.497	-1.67	-2.89	-1.77	-0.37	-1.70	-2.83	-1.92	-0.50
USDRUB	61.0	4.36	4.66	7.91	7.24	4.23	4.98	7.42	6.94
USDBRL	4.070	3.73	3.96	8.07	7.89	3.99	4.20	7.78	7.99
USDCNY	6.929	1.03	0.22	2.10	3.03	1.05	0.33	1.86	2.70
USDTRY	5.865	9.29	21.84	13.53	10.86	9.45	21.67	13.46	10.88
USDINR	70.94	3.91	4.80	5.70	7.06	3.72	3.82	5.02	5.99

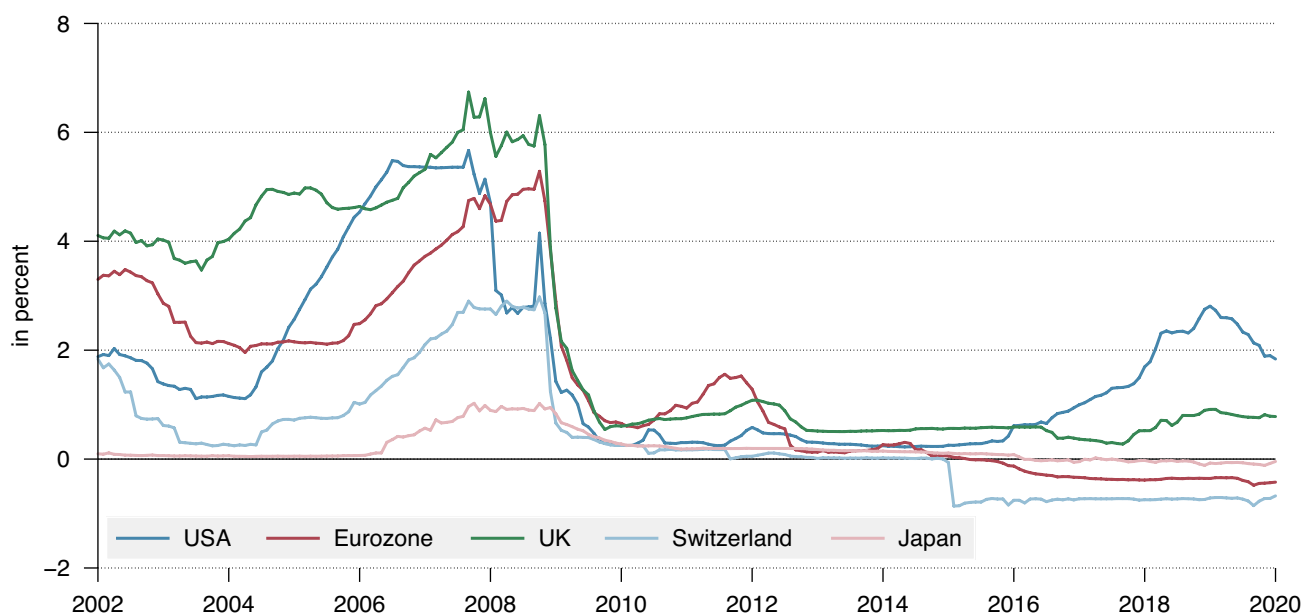
¹ The gap in interest rates between the second currency and the first one, in percentage points; e.g. US dollar minus euro for EURUSD.

Interest rate differentials

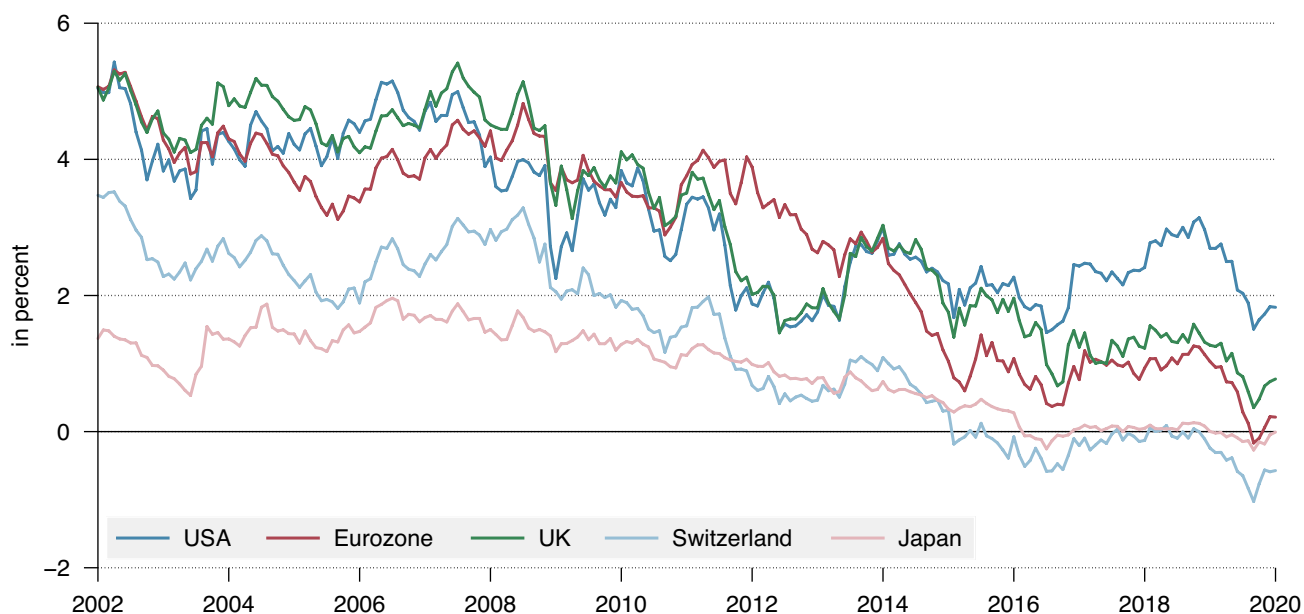


Source: Refinitiv, Wellershoff & Partners

3-month Libor



10-year government bond yields



Source: Refinitiv, Wellershoff & Partners

FX markets

Politically generated uncertainties were evident variously over the past month, for example, consider the British pound. If there were brief signs of recovery after the election of Boris Johnson, these soon evaporated in the course of December. This transpired when Johnson emphasized that he would continue to accept a hard Brexit after the transition agreement expired.

In response to heightened tensions between the US and Iran, the demand for traditional safe-haven currencies again increased. The already strong Swiss franc continued to appreciate. The Japanese yen was also able to gain, albeit to a lesser extent. Oil-depen-

dent currencies have also gained in recent weeks. In particular, the Norwegian krone and the Colombian peso strengthened.

Finally, the Chinese renminbi's appreciation is worth noting, as it can be seen as a sign of active de-escalation in the run-up to trade talks with the US in mid-January. The state of the negotiations could be monitored last year in the movements of the renminbi, which is closely controlled by the Chinese authorities.

FX overview

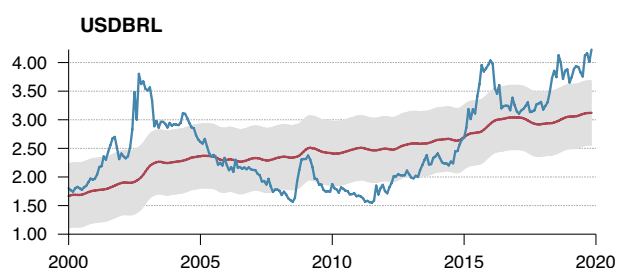
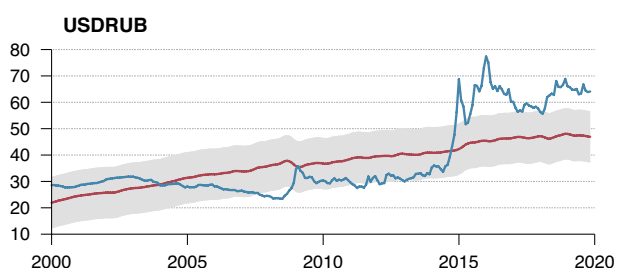
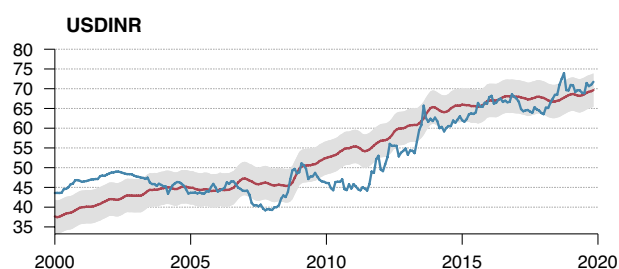
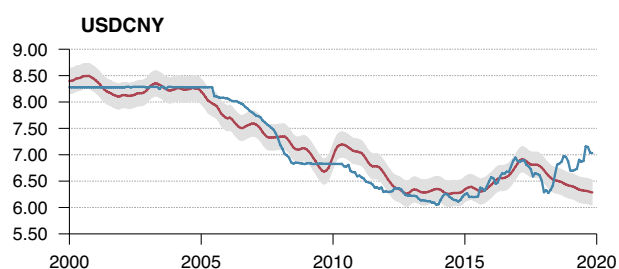
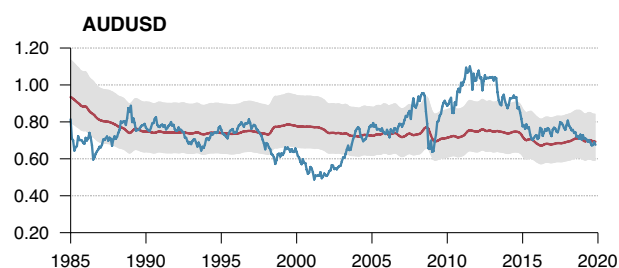
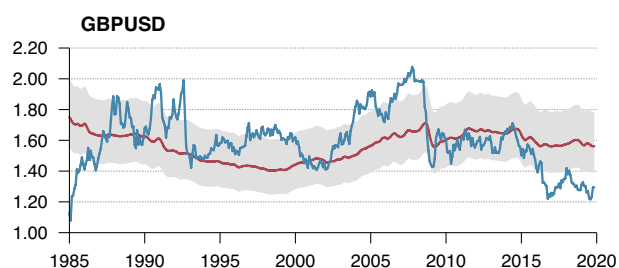
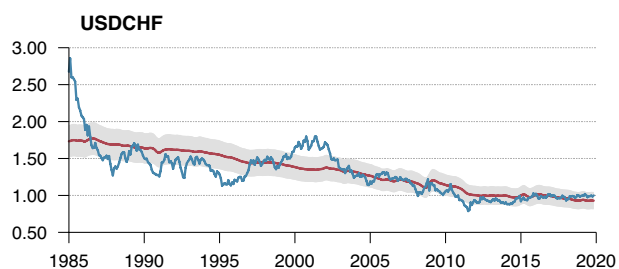
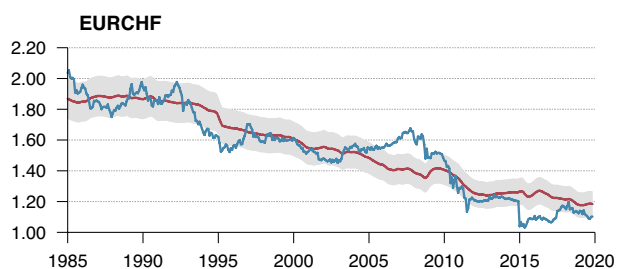
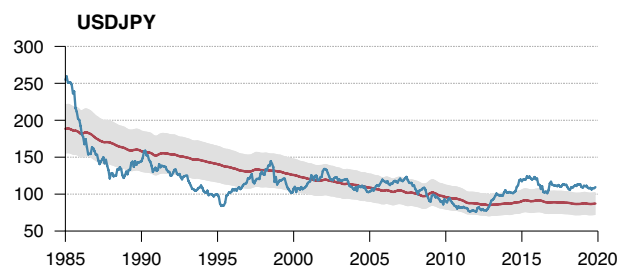
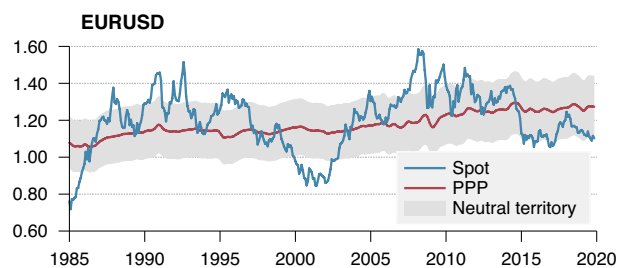
	Current exchange rate	Performance ¹				Purchasing Power Parity ²		
		YTD	3 months	1 year	5 years	PPP	Neutral territory	Deviation ³
EURUSD	1.111	-1.0	0.7	-3.5	-6.1	1.27	1.11 - 1.44	-12.6
USDJPY	109.6	0.8	0.9	1.2	-7.8	87.5	72.1 - 103	25.2
GBPUSD	1.306	-1.4	3.0	2.2	-13.8	1.56	1.39 - 1.79	-16.5
EURCHF	1.082	-0.5	-1.8	-4.2	-9.9	1.18	1.1 - 1.26	-8.4
USDCHE	0.973	0.5	-2.5	-0.7	-4.1	0.93	0.81 - 1.04	4.8
GBPCHF	1.271	-0.9	0.4	1.5	-17.3	1.45	1.25 - 1.65	-12.5
CHFJPY	112.6	0.3	3.5	2.0	-3.9	94.3	79.8 - 108.8	19.4
AUDUSD	0.691	-1.8	1.6	-4.0	-15.7	0.69	0.59 - 0.84	-0.3
USDCAD	1.305	0.6	-1.1	-1.3	10.1	1.21	1.1 - 1.31	8.2
USDSEK	9.497	1.4	-3.2	6.9	18.3	7.68	6.6 - 8.75	23.7
USDRUB	61.0	-1.9	-4.9	-9.1	-0.5	46.8	37 - 56.5	30.4
USDBRL	4.070	1.2	-0.9	10.5	54.0	3.12	2.56 - 3.69	30.3
USDCNY	6.929	-0.5	-2.4	2.2	11.6	6.28	6.04 - 6.53	10.3
USDTRY	5.865	-1.4	-0.2	8.6	156.0	4.25	3.82 - 4.68	38.0
USDINR	70.94	-0.6	-0.1	0.7	13.7	69.8	65.6 - 74	1.6

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: Refinitiv, Wellershoff & Partners



Source: Refinitiv, Wellershoff & Partners

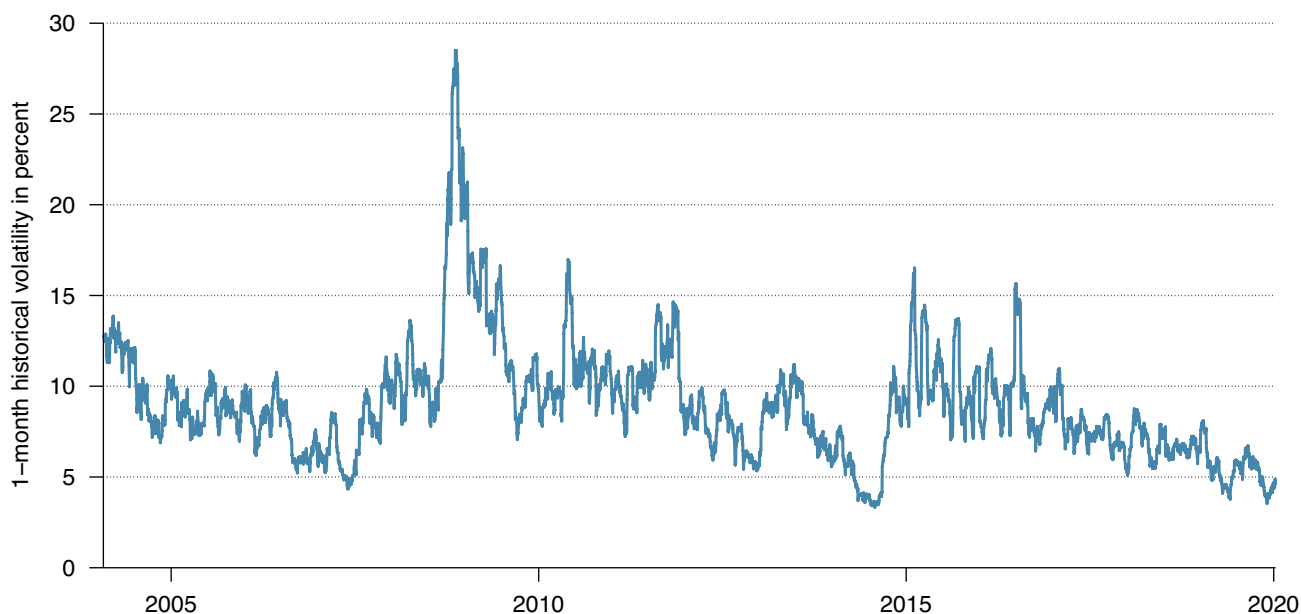
FX volatility

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	1.111	4.3	4.5	8.2	9.1	5.0	5.4	8.4	9.7
USDJPY	109.6	4.3	5.2	8.8	9.5	5.5	6.3	9.2	10.3
GBPUSD	1.306	9.5	6.6	9.5	9.1	8.4	7.1	9.6	9.6
EURCHF	1.082	4.4	4.1	6.2	6.2	4.4	4.6	6.7	6.9
USDCHF	0.973	4.7	4.7	8.0	9.2	5.5	5.7	8.5	9.8
GBPCHF	1.271	9.8	6.6	9.5	9.3	8.6	7.0	9.6	9.8
CHFJPY	112.6	4.5	4.6	8.6	10.1	5.3	5.4	9.2	10.9
AUDUSD	0.691	6.0	6.3	9.5	10.5	6.9	7.1	10.1	11.3
USDCAD	1.305	4.1	4.3	7.7	8.1	5.0	4.8	8.0	8.7
USDSEK	9.497	7.2	6.9	9.6	10.8	7.7	7.6	9.9	11.4
USDRUB	61.0	6.8	8.4	15.7	13.9	8.1	9.7	16.4	14.7
USDBRL	4.070	10.6	10.3	15.6	14.4	12.1	11.0	15.8	15.1
USDCNY	6.929	3.2	4.4	4.8	3.6	3.7	4.7	5.6	4.4
USDTRY	5.865	8.0	11.0	15.3	13.4	16.5	14.9	16.5	14.7
USDINR	70.94	4.0	5.4	6.5	8.3	5.2	5.9	7.6	9.3

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

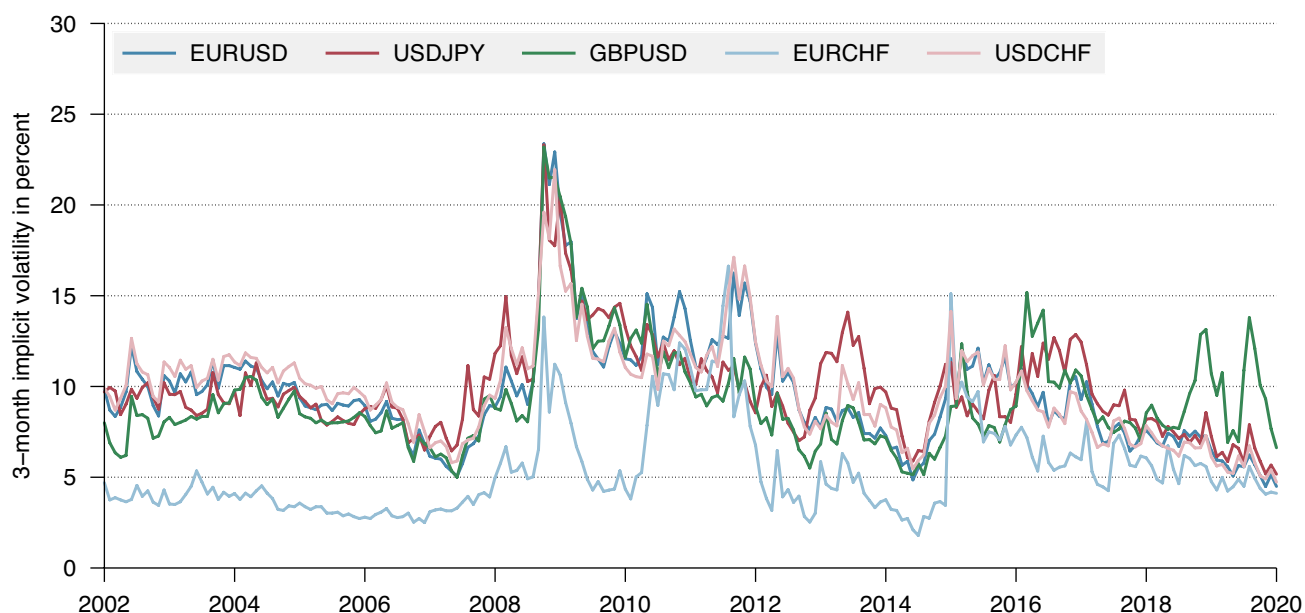
QCAM volatility indicator³



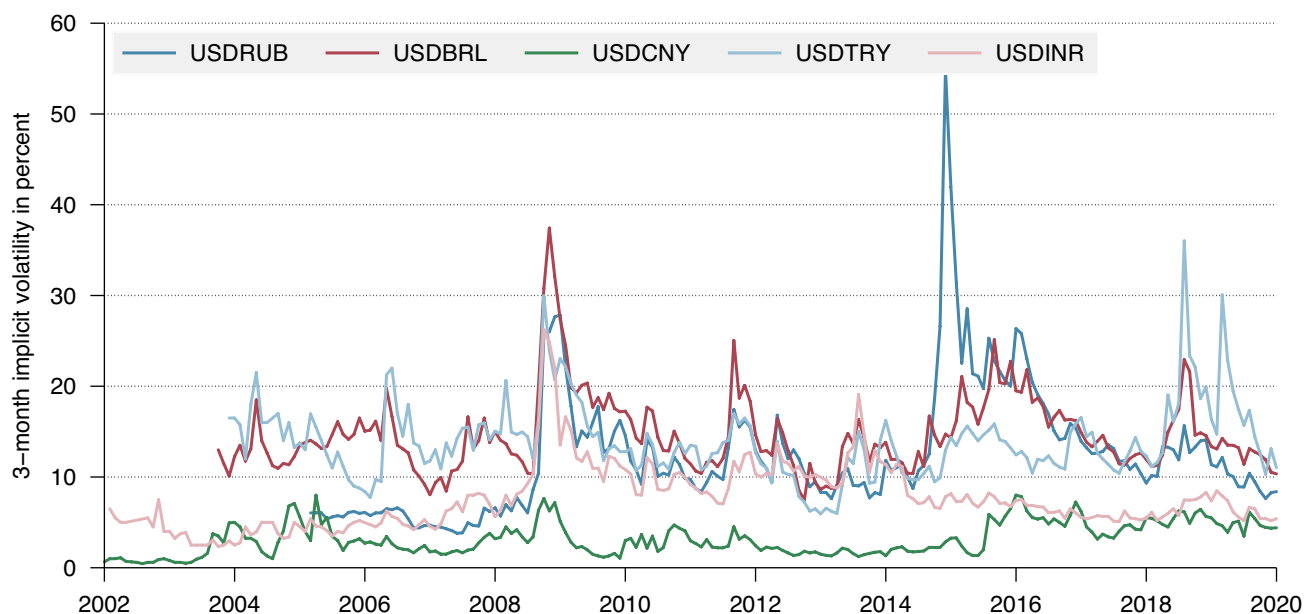
³ The QCAM volatility indicator measures general volatility in global FX markets; the indicator is based on historical volatility of the main exchange rates, which are weighted by trading volume.

Source: Refinitiv, QCAM Currency Asset Management, Wellershoff & Partners

Implicit volatility



Implicit volatility



Source: Refinitiv, Wellershoff & Partners

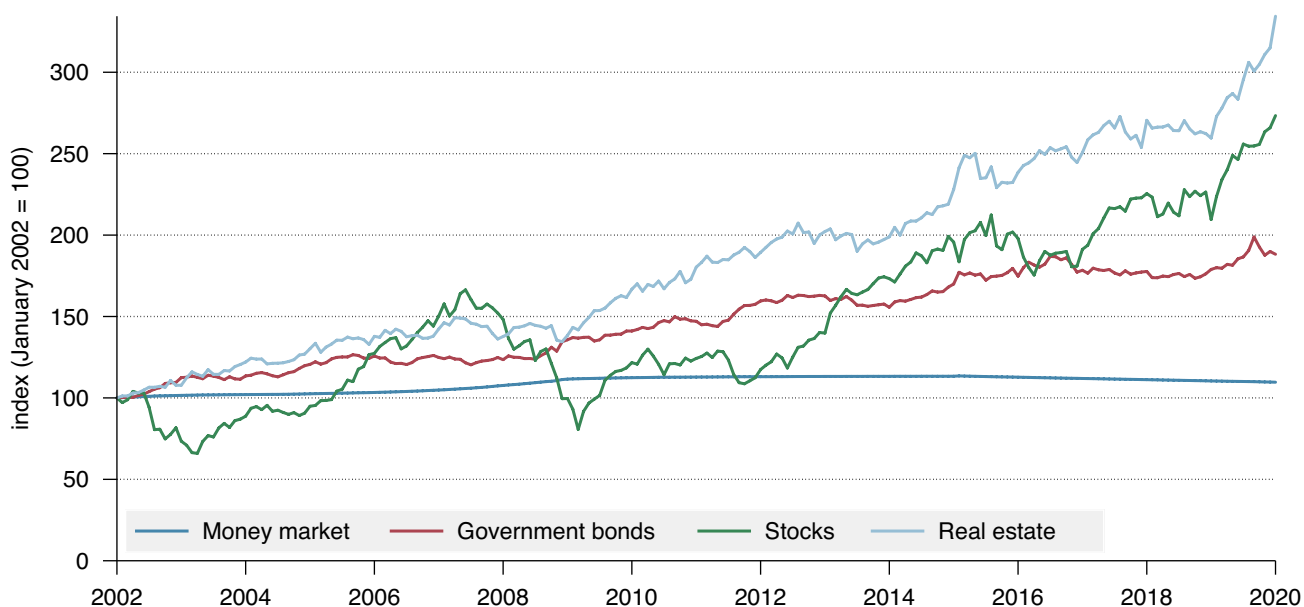
Financial markets

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	-3.2	0.0	-0.2	-0.7	-3.2
Swiss government bonds	0.7	-1.2	5.5	9.4	0.7	-1.2	5.5	9.4
Swiss corporate bonds	0.3	-0.4	3.4	6.1	0.3	-0.4	3.4	6.1
Swiss equities (SMI)	0.2	6.2	24.9	37.8	0.2	6.2	24.9	37.8
European equities (Stoxx600)	0.8	7.4	24.5	46.9	0.3	5.4	19.2	32.3
UK equities (Ftse100)	0.6	5.4	14.4	43.1	-0.3	5.8	16.1	18.3
Japanese equities (Topix)	0.8	8.9	16.9	40.1	0.5	5.3	14.6	45.8
US equities (S&P 500)	1.1	10.5	28.3	76.9	0.6	13.3	29.2	84.5
Emerging markets equities	1.7	12.6	16.9	35.4	1.2	15.5	17.8	41.2
Global equities (MSCI World)	0.9	9.6	24.6	60.1	0.4	12.4	25.5	66.9
Swiss real estate	5.6	8.2	26.1	44.4	5.6	8.2	26.1	44.4
Global real estate	-0.5	0.1	17.6	32.1	-1.0	2.7	18.4	37.8
Commodities	-0.2	2.4	1.5	-22.1	-0.7	5.0	2.3	-18.8
Brent oil	-1.1	8.4	6.7	34.3	-1.6	11.2	7.5	40.0
Gold	2.6	5.2	21.0	28.0	2.1	7.9	21.8	33.4

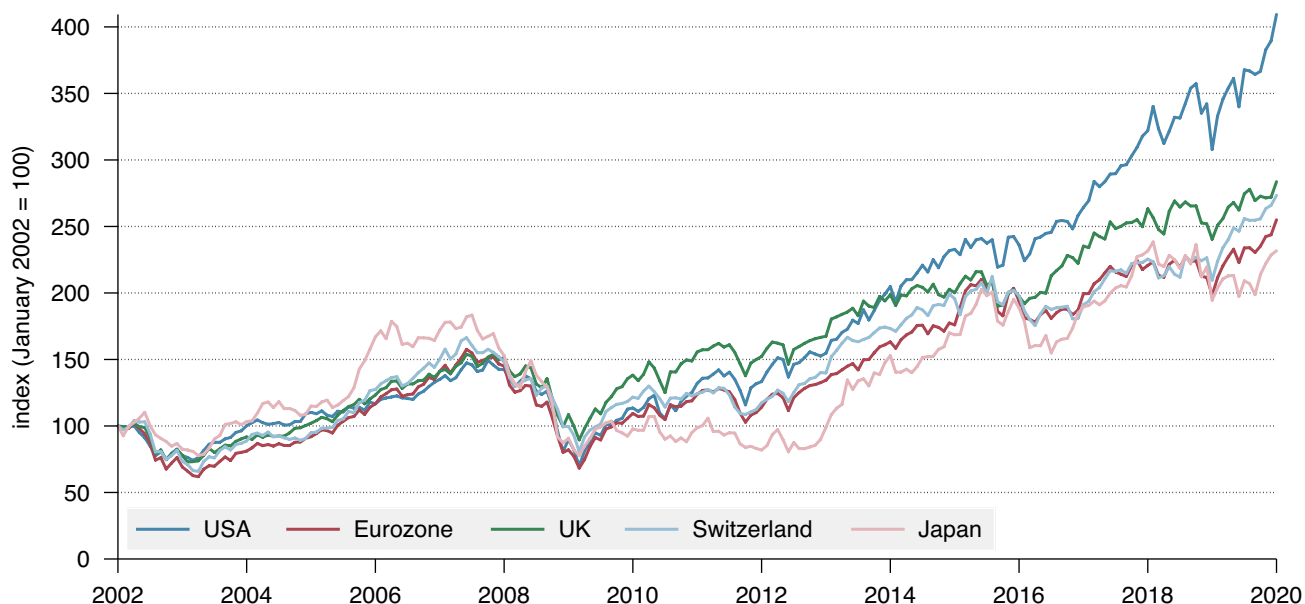
¹ Performance over the respective period of time, in percent.

Performance of selected Swiss asset classes

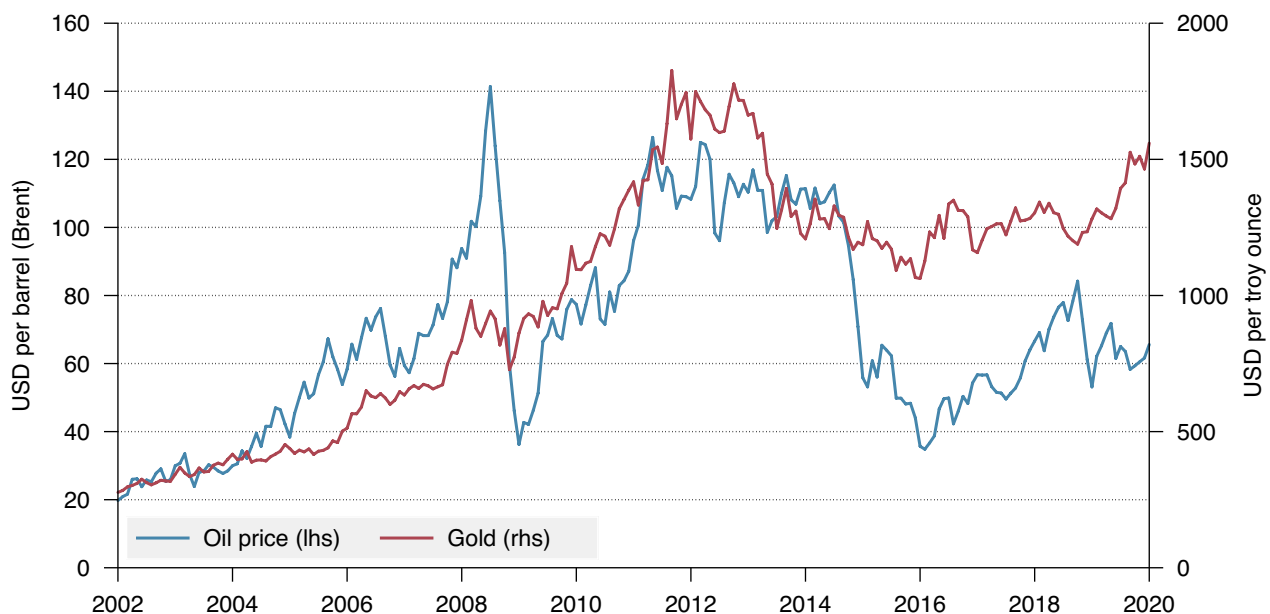


Source: Refinitiv, Wellershoff & Partners

Performance of selected equity markets (in local currency)



Performance of selected commodity prices

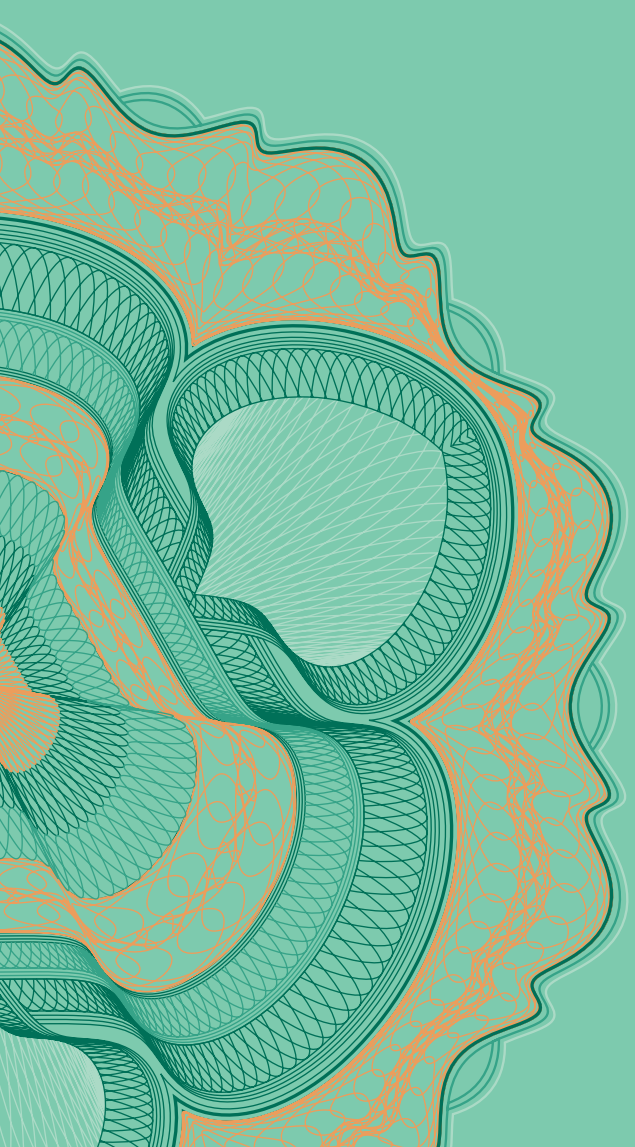


Source: Refinitiv, Wellershoff & Partners

Number of the month

USD 71.75: Brent crude

Brent crude jumped smartly to USD 71.75 a barrel in early January after a US drone strike killed Iran's General Qassim Suleimani in Iraq. However, the price spike did not last long and the situation on the oil market relaxed surprisingly quickly. But if tensions between the US and Iran were to flare up again in the coming weeks, last year's high of USD 75.60 could quickly be reached.



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