

Interpreting signals
from the global economy
and financial markets

Decoder



In Focus

- The term **currency risk** presumes we cannot predict what will happen to exchange rates. But like any market price, they respond to economic factors.
- What do those factors (relative prices, relative interest rates, relative safety, debt stocks and policy) say about the current value of EURUSD?
- We find that predictability is low but not zero, especially in the medium term. On balance, and in the medium term, it is more likely that the USD will devalue.

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Dollar forecasts

Pension funds with euro liabilities run a risk if they invest in other currencies: the exchange rate can move against them. The risk can be removed with currency hedging, though how much hedging is optimal is an empirical question – see our forthcoming companion Decoder ‘*The effects of FX*’. There is another way to look at currency exposure, however. Instead of treating it as an unknowable risk, we can try and assess whether currencies are likely to go up or down. In this Decoder we look at different methods for valuing the US dollar, and what they imply for the likely course of the exchange rate with the euro.

The result of many things

Exchange rates are determined, like most prices, by supply and demand. Parties supply and demand dollars and euros on the international currency market for many reasons. Thus, in order to assess likely changes in the exchange rate, we have to consider a number of different factors.

One reason to buy or sell foreign currency is trade. Trade in goods, like cars and phones, or trade in services like web hosting or tourism. In most cases, trade is a response to price differences. Thus if the price level in one country moves up faster than others, over time we can expect this country to export less and to buy more abroad. This increases the relative supply of its currency, making its exchange rate go down. The usual way to assess whether the exchange rate is consistent with relative price levels is to compute a purchasing power parity (PPP) rate. At this PPP-rate, comparative price levels are equalized.

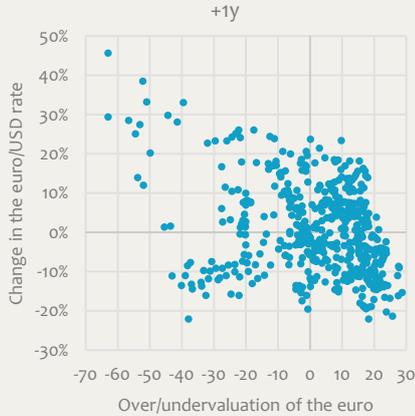
Using PPP to predict exchange rate movements works to a degree. As an investment strategy, the record is mixed. Bloomberg research summarizes it well: “the medium-term cycles within a long-term PPP path often take years to develop and complete, and [...] an exchange rate can take on an altogether counter-trend within those medium-term cycles.” The graphs on page 2 illustrate this.

Another reason to buy or sell foreign currency is investment. When the safe (cash) interest rate in a country goes up unexpectedly, the demand for its currency increases, causing the exchange rate to rise. Over time, it is expected that the



In Figures

PPP works a little for 1 year ahead, ...



If the euro is overvalued by PPP measures, we expect it to depreciate. On a 1-year horizon, this relationship is not very strong. (Monthly data since 1982.)

... but much better for 5 years ahead.



On a 5-year horizon however, the pattern is more in line with theory.

PPP says: USD 20% overvalued

euro PPP overvaluation vs USD



In the latest reading of the PPP measure, the USD is 20% overvalued versus the euro.

Data: Bloomberg, APG AM.

exchange rate will gradually return to its initial level, at a pace that precisely erodes the higher interest rate.

This is known as uncovered interest rate parity (UIRP). As a factor behind short-run exchange rate moves, it has a respectable record. However, because it deals in unexpected shocks and predicts both appreciation and depreciation over time, it is less useful as a long-term compass – see the graph on the next page.

The dollar is a special case

PPP and UIRP are pretty generic economic theories that can apply to any two countries or currency zones. They work best when markets are working quietly and rationally to digest the daily data. But if we concentrate on the euro-dollar exchange rate, we have to take account of the special status of the US in the world of finance, which tends to show itself especially in times of stress. Bad news makes investors buy dollars; USD is viewed as a safe haven to such a degree that even bad news that emanates from the USA will usually make investors buy its currency.

There is a weaker case that extremely good news is also dollar-positive, for the reason that most unexpected bouts of growth take place in the US, the world's most dynamic economy. Together, these two phenomena lead to a “dollar smile” in which the dollar declines when things are boring, but recovers when there is a period of (negative or positive) excitement.

The dollar smile is consistent with the economic theories above, in the sense that both PPP and UIRP currently point to an overvaluation of USD versus the euro. Thus when all is quiet and markets take their cues from economic parameters, the dollar declines. When something unexpected happens, economics is thrown in the wind and traders demand the safety of the dollar.

But even for the dollar, there are limits

When discussing supply and demand of a currency, macro-economists will point out that for the nation as a whole, much of the balance between the two will depend on whether savings and investment are in line. A country with government and private sector deficits will have to borrow the difference abroad, in effect supplying its currency to foreign investors. This naturally leads to other countries having to “absorb”, or be willing to hold it. Persistent trade deficits can exhaust even the most patient investor, unless the country offers extraordinary rates of return.

The story of the US for the last circa 40 years has been exactly that: the current account has been in deficit almost continuously, but foreign investors have been happy to hold dollar assets, which have indeed performed handsomely. Most other countries are not so lucky: persistent deficits tend to end in currency crises, during which the exchange rate takes a tumble and investors lose their shirt.

The data since 1969 illustrates (on the next page) that the general pattern does hold for the US as well. Deterioration of the current account balance (in the mid-80s and the mid-2000s) lead to declines in the dollar some 3½ years later. However, the decline in the dollar is not always the result of economic forces; the move in the eighties followed a concerted effort by policymakers, the Plaza-agreement.

The most recent reading of the current account is about as low as the worst reading in the mid-80s: -3.4 percent of GDP. The 5-year average is not much better at -3.2 percent.

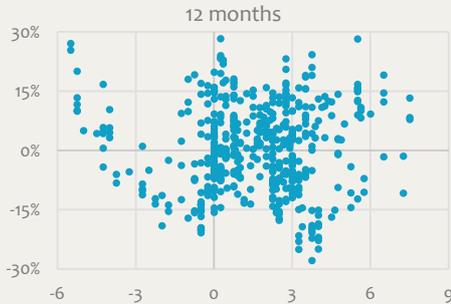
And then: political risk

The Presidential election this November adds another factor to the USD question, as the different candidates (uncharacteristically) have strong opinions on international trade or indeed, the value of the USD. This has not been the case since the demise of the Bretton Woods system, as American governments have had a policy of “benign neglect” – also known as “our currency, your problem”.



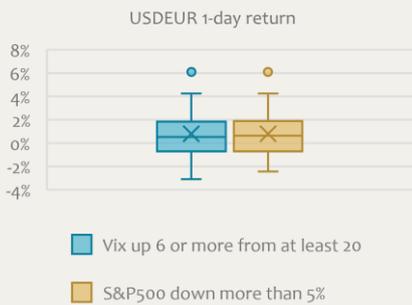
More Figures

Interest differentials: a bit of a jumble



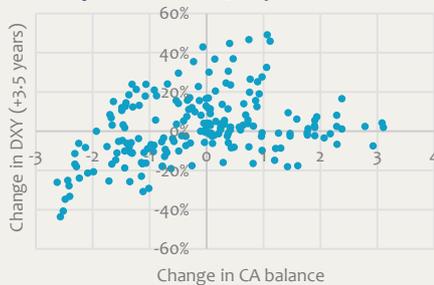
For every month since 1982, this graph plots the interest differential (US-EZ, cash rate) and the return to EURUSD over the next 12 months. Barring rate shocks, the relation should be negative. There is some evidence of this on the left side (low rates in the US) but on the whole the UIRP theory suffers from predicting opposite effects over time from interest rate moves.

In bad weeks, buy USD



In the more than 1,800 weeks since 1990, we select the approximately 30 in which the equity market goes down more than 5% (left) or in which VIX goes up at least 6 (right, from a level above 20). Mean (X in the box-whisker graph) and median USDEUR returns in those weeks are positive. The dots are positive outliers.

USD responds to CA 3,5 years later



This graph observes the 3-year change in the current account (horizontal, percentage points of GDP) and plots the 3-year change in the dollar index DXY with a lag of 3,5 years. If deficits lead to depreciation (in time), the relation should be positive.

Data: Bloomberg, APG AM.

Donald Trump however is on record as worrying about the current account deficit and has promised to raise tariffs on Chinese imports in an effort to do something about it. Even though it is not clear this would work, tariffs do tend to weaken the currency. Indeed, the American current account deficit increased during his first term, but the dollar index declined.

Another way to make the dollar go down is to reduce the quality of institutions and erode the American “exorbitant privilege” of issuing a currency that most foreign parties are happy to hold. As a policy, this does not seem in the interest of the United States, and it would be a very surprising turn of events.

Likewise taxing foreign holdings of US assets can drive dollar demand down, but could easily backfire. It would probably not be very popular with US business interests. Concerted intervention as in the Plaza accord of the 1980s would definitely work but needs the help of allies, which may not be interested in helping.

The effects of all these policies can be brought forward without implementation, just by having policymakers talk about them. When Treasury Secretary Mnuchin spoke appreciative about the declining USD in January 2018, investors assumed he would find a way to make it continue and the decline sped up.

Exchange rates are better behaved than they used to be

The track record of economic models explaining exchange rates used to be quite poor, but has improved with the advent of independent central banks. Economists Charles Engel and Steve Wu [argue in a recent paper](#) that the 20th century monetary regime allowed for self-fulfilling expectations around inflation, which wreaked havoc with exchange rate models. They show that since 2000, exchange rates are better behaved. This does not mean that *forecasting* exchange rates has become much easier; most of the model power comes from unexpected changes in the explanatory variables, such as real interest rates and inflation.

Adding it all up

While acknowledging the difficulty of forecasting unexpected changes, we end with what we know of the likely influence of five forces discussed above on USDEUR. Our horizon is at least a couple of years.

1. **PPP:** data indicates that USD is overvalued by more than 20 percent and will likely decline by that much in the next 5 years
2. **Rates:** most forecasts have US rates permanently above euro rates. If nothing unexpected happens, USD will decline gently with the difference. But shocks in expectations are more important, and unpredictable.
3. **Panic:** in case of panic, the USD appreciates. This has implications for strategic hedging policy but not so much for exchange rate forecasts, as panic is likewise unpredictable.
4. **The current account deficit** needs to be funded; if the deficit increases, the dollar usually drops to achieve this. This takes about 3½ years. Coincidentally, it has been about 3½ years since the CA deficit started increasing markedly.
5. **Policy:** possibly a new Trump administration will desire a cheaper USD *per se*. The means to achieve this are pretty drastic and dangerous, including just talking about them. Barring extreme policy, the role of the USD as the reserve currency seems pretty robust.

Items 1 and 4 argue for a dollar devaluation of tens of percentage points somewhere in the coming years, going by historical analogues. They are the mechanisms with the largest time lags and the biggest uncertainty about timing.

The other reasons are less useful for forecasting future USD moves. Rates mostly operate through unexpected shocks; panic is unpredictable by nature; and the future acts of politicians also seem hard to predict.

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