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The euro in the 'currency war'

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All currencies cannot be weak at the same time – if one currency weakens, at least one other must strengthen. From this unpleasant arithmetic emerges the concept of 'currency wars', a mutual and vain race to the monetary bottom. The reality, however, is somewhat more complex.

For advanced economies, exchange rates are rarely economic policy objectives per se. Central banks of the main advanced economies are pursuing their own internal objectives. Exchange rates fluctuate freely on the market according to supply and demand, and this contributes to the transmission of monetary policy impulses to the economy. Instead of 'currency wars', we are in fact witnessing the confrontation between a number of monetary policies, whose objectives, strategies, and constraints vary widely from one country to the next.

- The ECB, for example, aims to ensure price stability in the Eurozone.
- The US Federal Reserve pursues a dual objective of price stability and full employment.
- The Bank of Japan is fighting against deflation.

Since autumn 2012, the ECB has set itself markedly apart from its counterparts by implementing a far less expansionary monetary policy. Given an economic environment marked by disinflation, a weak recovery, and continued fragmentation of credit markets, this Policy Insight argues that the ECB should pursue a more expansionary monetary policy, and outlines a number of proposals to implement it. Such renewed activism on the part of the ECB will be accompanied by a temporary weakening of the euro, which will support economic activity in France and the rest of the Eurozone.

Based on an original econometric study (Héricourt et al. 2014), we find that a 10% depreciation of the euro would increase the value of French exports outside the Eurozone by 7–8%. It would, however, increase the cost of manufactured imports by around 3.5%, with very little short-term decline in the volume of imports. Since changes in domestic prices have the same effect as changes in the exchange rate, we also recommend increased vigilance with regard to the effects of public policy (social contributions, energy costs, etc.) on French costs and prices. We believe a temporary depreciation of the euro resulting from a more expansionary monetary policy would help the Eurozone to pull through a weak economic situation. However, the effect of such a depreciation would only be temporary, since we find that the euro is not far from its long-term equilibrium value.

In order to limit the risks associated with the global credit cycle, we suggest transferring the main macroprudential policy tools to the Eurozone, even if policy implementation requires differentiation between countries. We also find that national policymakers' statements about the level of the exchange rate are largely ineffective. Lastly, we suggest that the concept of exchange-rate 'manipulation', which is currently not very operational, be re-examined at a multilateral level.

The term 'currency war' is used to refer to a situation in which countries or monetary zones attempt to weaken their currency in order to win market share from other countries or monetary zones. It is mathematically impossible for all of

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these attempts to be successful, since all exchange rates cannot depreciate simultaneously.[2]

The central banks of the main advanced economies – namely the US Federal Reserve, the ECB, the Bank of England, and the Bank of Japan – are all pursuing internal objectives, including price stability, full employment, or a combination of both. Since the central banks have no direct exchange-rate objective, their currencies are floating – the external values of the currencies are freely determined in the foreign exchange market. In this respect, the exchange rate contributes to the transmission of monetary policy, rather than being a direct central bank objective. An economy's currency tends to depreciate when the country's central bank eases or announces that it intends to ease its policy stance, and this depreciation simultaneously increases inflationary pressures and helps support demand. Rather than a 'currency war', we should think of currency values as resulting from the confrontation between independent monetary authorities pursuing different strategies, with different doctrines and constraints.

Given the low rate of inflation and the persistent weakness of economic activity in the Eurozone, we argue that the ECB's monetary policy became insufficiently expansionary in 2013. Although the euro does not appear overvalued with regard to the long-term fundamentals of the Eurozone's economy, a more aggressive monetary expansion, accompanied by a nominal depreciation of the euro, would be appropriate in light of the short-term situation. We do, however, have greater reservations when it comes to the effectiveness of interventions in the foreign exchange market and verbal statements made by governments, and about the possibility of effectively coordinating monetary policies with the G20.

'Currency war' or a clash of monetary policies?

Exchange-rate policy and monetary policy are intimately linked, since they both involve controlling the value of a currency. Exchange-rate policy aims to control the external value of the currency (in relation to other currencies), whilst monetary policy focuses on its internal value (its local purchasing power). Monetary policy and exchange-rate policy are particularly closely linked in a context of international capital mobility such as that of the Eurozone. Absent barriers to capital movements, the ECB cannot simultaneously control the consumer price index (its primary objective) and the exchange rate.[3] At given levels of US interest rates, a decrease in interest rates in the Eurozone results in the depreciation of the euro against the dollar, as investors reallocate their portfolios in favour of the dollar in order to earn a higher return. The exchange rate is therefore determined by the monetary policy observed and expected in both countries. This means there is no room for an independent exchange-rate policy.[4]

In principle, the adjustment of the exchange rate in response to relative developments in the monetary policies of two countries strengthens the impact of monetary policy. In the previous example, the decrease in the Eurozone interest rate triggers an increase in inflation both because it encourages domestic consumption and investment (internal channel) and because the euro depreciates (external channel). The depreciation of the euro boosts exports whilst also feeding inflation directly by increasing the cost of imported goods. The experience of Japan, whose currency greatly depreciated since late 2012 following the announcement of a massive expansionary monetary policy, illustrates the link between monetary policy and exchange rates.[5]

Between July 2012 and December 2013, the euro appreciated by more than 10% against the dollar, whilst the growth differential widened between the two areas, to the detriment of the Eurozone. We believe that this appreciation reflects the fact that monetary policy in the Eurozone has become too restrictive. We also highlight the risks of financial destabilisation associated with the planned 'tapering' of US unconventional monetary policy in 2014.

An overly restrictive monetary policy

In response to the 2008 financial crisis, the main monetary authorities (the ECB, the Fed, the Bank of Japan, and the Bank of England) reduced their

2 The concept originated in the 1930s – a period marked by a large number of competitive devaluations. It reappeared during the global financial crisis of 2008, when the highly expansionary monetary policy of the US Federal Reserve was blamed for destabilising a number of emerging economies.

3 This inability to combine independent monetary policy, exchange-rate policy, and international capital mobility is known as Mundell's impossible trinity, after Canadian economist and 1999 Nobel laureate Robert Mundell.

4 Article 219.2 of the Treaty states that "the Council […] may formulate general orientations for exchange-rate policy in relation to these currencies. These general orientations shall be without prejudice to the primary objective of the ESCB to maintain price stability." This provision has not actually been used since the euro was created.

5 The policies of the Fed also appear to have resulted in a significant but moderate depreciation of the dollar (see Neely 2011).

policy rates to almost zero.[6] Beyond interest rates, they deployed three types of instrument in an attempt to further ease monetary policy and support economic activity:

- *Credit easing*, which involves extending commercial banks' refinancing schemes (extension of the list of eligible collateral, extension of the maturity of the loans, reduction in the haircuts applied to collateral, etc.). This easing does not necessarily involve changing the amount of money put into circulation by the central bank if it simultaneously releases other assets on its balance sheet to offset the volume of loans granted under these more flexible conditions (so-called 'sterilisation' operations).

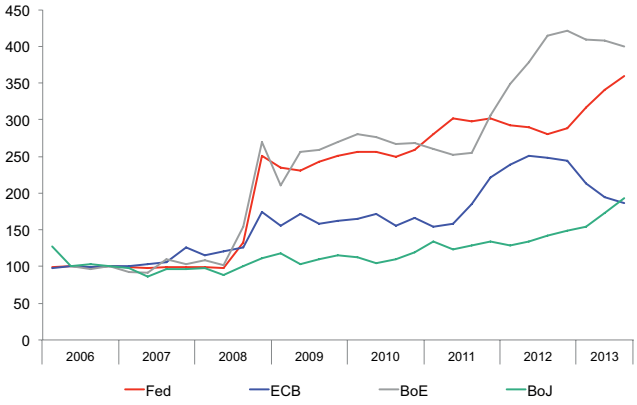
- An increase in the size of the central bank's balance sheet by means of direct purchases of assets (*quantitative easing*) or by means of non-'sterilised' credit easing;

- *Forward guidance*, in which the central bank commits to implementing a series of expansionary policies over a relatively long period of time, which may or may not refer to explicit employment or inflation thresholds.

The Fed, the ECB, and the Bank of England have implemented a variety of credit easing policies since 2008. They have also all considerably increased the size of their balance sheets, although the ECB began at a later stage than the others (see Figure 1). Starting in 2012, however, the ECB set itself apart from the Fed, the Bank of England, and the Bank of Japan with a significant reduction in the size of its overall balance sheet.

Observation 1. The ECB has implemented a number of different credit easing policies since 2008. It has also considerably increased the size of its balance sheet. Starting in autumn 2012, however, the ECB set itself apart from the Fed and the Bank of England with a significant reduction in the size of its balance sheet.

Figure 1 Total assets of four central banks in % of GDP, base 100 in 2006Q2



Source: Central banks.

This recent divergence reflects a major difference between the steps taken by the Fed, on the one hand, and the ECB, on the other, to increase their balance sheets. The Fed primarily engaged in direct purchasing of US Treasury bonds and mortgage-backed securities via quantitative easing operations.[7] The ECB, for its part, primarily increased its balance sheet as a result of very long-term refinancing operations (VLTROs) which provided commercial banks with cheap three-year liquidity. Two VLTROs carried out in 2011 and 2012 allocated around €1 trillion euros to banks in the Eurozone. The reduction in the size of the ECB's balance sheet observed in 2013 stems primarily from the early repayment by the most stable European banks of loans obtained as part of these two VLTROs, since such loans became less appealing to them as the repayment deadline approached.

Hence, while the Fed directly and durably injected liquidity into both public and private bond markets (and primarily mortgage markets) through the direct purchasing of assets, the ECB instead made abundant liquidity temporarily available to banks in the Eurozone. This difference in approach relates to the specific constraints of the ECB (mostly the absence of federal sovereign debt, and a ban on monetising government deficits), but primarily to the role of bank loans in financing businesses in the Eurozone – by offering more liquidity to banks, the ECB hoped to boost bank credit to the economy. In practice, however, the Eurozone's banking system has made only partial and insufficient use of the available liquidity, as demonstrated by the significant amounts received in early repayments of VLTRO loans. Moreover, the available liquidity has mostly been used to invest in local sovereign

6 Although the ECB certainly kept its main refinancing rate at a higher level than that of the Fed over the same period (falling to 0.25% on 7 November 2013), its marginal deposit facility rate, which enables banks to deposit their excess liquidity with the ECB, fell to 0%. Thanks to its various credit easing measures, the ECB has provided the banks with ample liquidity, which triggered a convergence of the very short-term interbank rate (the Euro OverNight Interest Average, or EONIA) to this lower bound of 0%. With this in mind, short-term market rates have become almost identical on either side of the Atlantic, and close to their lower bound of zero. Setting a negative nominal key rate is, in principle, possible, but remains largely untested in practice owing to difficulties relating to its implementation. We will, however, note that the tolerated margin and volatility between the ECB main refinancing rate and the market rate (EONIA) may have blurred the monetary policy signal.

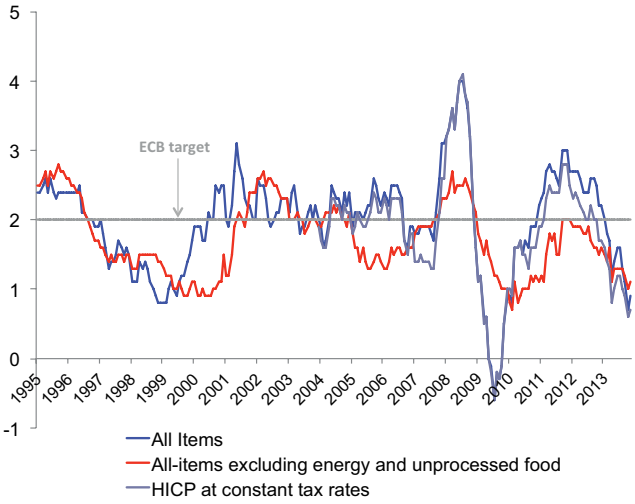
7 Three successive operations resulted in a total purchase of some $2 trillion in Treasury bonds and $1.6 trillion in mortgage-backed securities or securities issued by the federal agencies. The ECB has also purchased covered bonds issued by the banks and sovereign debt on the secondary market. These transactions were far less substantial (around €300 billion) and were also largely sterilised, meaning that they did not increase the size of the ECB's balance sheet.

debt, as in the cases of Italy and Spain, rather than to finance businesses. This outcome has made both banks and sovereigns more vulnerable to each other.[8] The banks' reluctance to extend loans to the private sector can be partly explained by the capital constraints they face as part of the current drive to reinforce prudential regulation.[9]

The other notable difference between the Fed and the ECB since the start of the crisis is in their communications about their planned future actions. On 26 July 2012, the President of the ECB announced that the Central Bank would do "whatever it takes" to save the Eurozone. On 6 September 2012, the ECB put in place a programme aimed at purchasing sovereign debt directly on the secondary market (known as Outright Monetary Transactions, or OMT) in the event of renewed tensions in sovereign debt markets. These announcements – accompanied by a statement on the weakness of the economic recovery, the absence of any inflationary pressure, and the intention of the ECB to keep key rates at a very low level for a long period of time – have helped relax medium- to long-term government debt interest rates, particularly for fragile economies. Small and Medium Enterprises (SMEs), however, have continued to borrow at far higher interest rates in peripheral countries than in Germany or France.[10] Furthermore, the ECB has remained less specific than the Fed with regard to forward guidance – specific time frames and specific unemployment and inflation thresholds.[11]

To summarise, our assessment is that the ECB became de facto more restrictive than the other major central banks in 2013. This contributed to the relative strength of the euro over that period. As of early 2014, deflationary pressures are tangible. Inflation at constant tax rates stood at an annual level of 1% between April and November 2013 – significantly below the ECB's medium-term target of 2% (see Figure 2).[12] The unemployment

Figure 2 Inflation rates, year-on-year change, in %



Source: ECB.

rate within the Eurozone is over 12%, the credit market continues its downwards trend, and the transmission of monetary policy to different member countries remains extremely fragmented (see above). Furthermore, the drop in German inflation makes the adjustment of relative prices and price competition benefits more difficult to achieve in peripheral countries where prices now need to fall, with all the risks associated with deflation when debt levels are elevated.

Observation 2. The appreciation of the euro in 2013 can be explained by market expectations of a tightening of the ECB's monetary policy.

Given the ECB's mandate and the tools it currently has at its disposal, a monetary expansion could take the following three forms:

- The direct purchase by the ECB of securitised small and medium enterprise (SME) loans would in our view be the most effective instrument to overcome the fragmentation of Eurozone financing conditions.[13] The direct purchase of securities by the central bank offers two advantages: on the one hand, it is aimed directly at SME credit, which is still very restricted in peripheral countries; and on the other hand, it eases not only the liquidity constraints of banks but also their equity constraints, by removing assets with high risk weights from their balance sheets. These equity capital constraints are the main obstacle to the transmission of monetary policy in peripheral countries.

8 See, for example, Acharya and Steffen (2013).

9 Unlike loans to the economy, sovereign bonds are not considered to be risky when it comes to calculating capital ratios. A bank can therefore improve its ratios by substituting public assets for private assets on the asset side of its balance sheet. Thus, the capital constraints of the banking system have largely prevented the transmission of monetary impetus to the economy.

10 Given their low levels of equity and their difficulty in attracting capital from other countries in the Eurozone, Italian and Spanish banks are reluctant to grant loans to SMEs.

11 On 12 December 2012, the Fed announced that it would maintain its key rate at between 0% and 0.25% for as long as the rate of unemployment remained above 6.5%, the expected inflation rate below 2.5%, and the expected long-term inflation rate 'well-anchored' (see http://www.federalreserve.gov/newsevents/press/monetary/20121212a.htm).

12 Over the same period, both total inflation and core inflation (which does not take into account the most volatile prices) stood at an annual level of 1.4% – again, a figure that fell below the target of 2%.

13 The European Investment Bank would guarantee credit granted to SMEs prior to securitisation. Securitised credit would then be sold on the market, and the ECB could acquire it without taking any risks. Alternatively, the ECB could refinance it without any haircut (whereas it currently only refinances the senior tranches of such securitised credit). In the latter case, however, the actions of the ECB would have a less direct impact on the rates applicable to loans to SMEs.

- In order to secure bank liquidity in the long term, the ECB could offer a new VLTRO-type refinancing scheme with a longer maturity, such as five years. A fixed rate over five years would offer maximum visibility for borrowing banks, but would significantly expose the ECB to the risk of a future rise in interest rates. The ECB could, however, limit this risk by reserving the right to review the rate, within certain limits, after three years. In order to limit the use of such funds for the purchase of government debt (which would once again reinforce the deleterious link between sovereign risk and banking risk), the eligible collateral for long-term refinancing could be limited to securities backed by credit to the private sector. Such an approach would likely lead to a significant increase in the ECB's balance sheet whilst respecting the economy's financing profile in the Eurozone, which remains bank credit.[14]

- Finally, with regard to forward guidance, the ECB could commit to implementing unconventional policies such as those outlined above – at least for as long as a given measure of inflation in the Eurozone remains below a given threshold.

Recommendation 1. The economic situation in the Eurozone justifies a more sustained monetary expansion, through direct interventions in the securitised corporate credit market or a new, VLTRO-type refinancing operation with longer maturities and with collateral restricted to private securities. Furthermore, the ECB could tie its hands by committing to maintain low interest rates and to pursue unconventional policies for as long as average inflation remains below an explicit threshold.

Beyond monetary policy

The heralded 'tapering' of US unconventional monetary policy represents an opportunity for the ECB to strengthen its expansionary policy by allowing the euro to depreciate. Yet it also represents a potential threat in that the reflux of foreign capital that would result from such a move is likely to affect the various economies in the Eurozone to varying degrees and to cause interest rates to increase in the long term. Indeed, recent work suggests that a flexible exchange rate does not fully protect a country from the global credit cycle, which originates in the US and is influenced by monetary conditions in the US.[15] In this respect, sovereign issuers in the Eurozone have undoubtedly benefited from the low interest rates prevailing in the US. A tightening of credit terms by the Fed over the coming months could lead to a global increase in long-term rates, with rapid repercussions on the refinancing conditions for states and financial institutions in the Eurozone. This tightening could, in particular, trigger a new vicious cycle between banking and sovereign crises in Spain and Italy.

In light of this risk, the ECB will need to clearly announce a monetary policy that differs from that of the Fed and, if need be, to activate its OMT programme. In the longer term, it will be important to put in place a comprehensive and highly operational and coordinated variety of macroprudential instruments, in other words, instruments designed to improve the stability of the financial system as a whole over the course of the cycle. Macroprudential tools are intended to control aggregate private-sector debt, either by imposing limits on the amounts that can be borrowed against a particular type of asset (by requiring greater personal investment for property loans during a credit boom and relaxing this constraint in a downturn, for example), or by imposing capital ratios on banks that vary over the credit cycle.

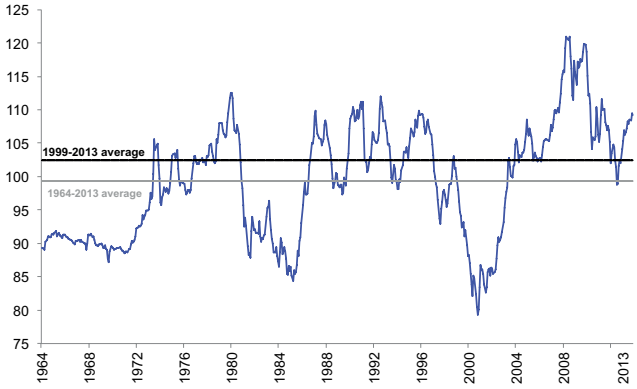
In order to be effective, of course, macroprudential policy must be coordinated with monetary policy.[16] We believe it to be crucial that the main macroprudential instruments be deployed by the European banking supervisory body (the Single Supervisory Mechanism, or SSM), in close coordination with monetary policy. An intimate knowledge of the situation faced by individual financial institutions is a prerequisite to an effective macroprudential policy, and only a supranational regulator will be in a position to identify the overall risks presented by a reversal in capital flows. The banking union project provides the SSM (directly for larger banks, indirectly for others) with a number of microprudential monitoring instruments (capital and liquidity ratios, dynamic provisioning for banks, treatment of systemic banks, etc.). It also entrusts them with managing countercyclical capital buffers for those banks considered to be 'systemic'. Member States, however, maintain responsibility for managing these buffers in the case of smaller banks (although the SSM can decide to increase capital requirements). Furthermore, in the current

14 The decision taken on 7 November to continue with unlimited allocations at fixed rates as part of normal refinancing operations "until July 2015 at the earliest" and to also continue with medium-term (three-month) refinancing operations will help secure bank liquidity. The interest rate on this liquidity, however, will be that in force at the time of the operation, which limits the impact of this announcement on the rates at which banks can lend to the economy.

15 See, for example, Bruno and Shin (2013) and Rey (2013).

16 In the absence of coordination, we might, for example, find ourselves in a position in which monetary policy becomes excessively expansionary during times of recession because macroprudential policy is excessively restrictive (the macroprudential regulator fearing excessive risk-taking on the part of the banks when faced with easy credit). See, for example, Blanchard et al. (2013).

Figure 3 Real effective exchange rate of the euro base 100 in January 1999



Interpretation: The real effective exchange rate is the average exchange rate across a number of partners, corrected for relative consumption prices. An increase points to an appreciation of the euro.
Source: BIS, narrow index (27 partners).

system, national regulators maintain responsibility for other important macroprudential instruments, such as restrictions on property loans. With this in mind, a situation in which, owing to a credit boom, the single supervisor increases capital requirements for banks whilst the national regulator relaxes the constraints governing property loans – two contradictory measures – cannot be ruled out. We believe that macroprudential instruments should be more widely transferred to the single supervisor, even where this would require member States to be treated differently.[17]

Recommendation 2. It seems appropriate to enlarge the prerogatives of the single bank supervisor by entrusting it with the main macroprudential regulation tools, in order to protect the Eurozone from the excessive credit ebbs and flows triggered by US monetary policy decisions.

The euro – victim of the 'currency war'?

A very French debate

The issue of the strong euro is a recurrent theme in the French economic debate. The expression '*euro fort*' ('strong euro') returns 6.5 million Google hits, as opposed to only 145,000 for the expression '*euro faible*' ('weak euro'). The contrast with the debate in Germany – where the strong euro is far from a leitmotiv – is striking, with the expression '*stark euro*' returning only 1.4 million hits (as opposed to 764,000 for '*schwach euro*').[18] Where does this difference in perception stem from?

One explanation for the differences in sensitivity to the exchange rate on either side of the Rhine relates to the performance levels achieved by both countries in the export sector – with France's global market share slipping by 44% between 1999 and 2013, as opposed to the mere 18% drop experienced in Germany.[19] According to Artus and Fontagné (2006), however, the difference in performance recorded between the two countries does not relate primarily to differing levels of sensitivity to the euro exchange rate (and to its underlying appreciation over the course of the 2000s – see Figure 3) but rather to a reduced responsiveness on the part of French exports to international demand.

Differences in perception between the two countries with regard to the issue of the exchange rate might also be linked to monetary culture and the more significant preference for low inflation in Germany than in France. The strong euro is perceived there as representing a shield against inflation, and in any case, the exchange rate is the result of a monetary policy implemented by an independent central bank whose primary mandate is price stability.

What would be the benefits of a weaker euro?

The nominal exchange rate of a currency determines the relative price of goods and services produced in the country at a given time, as well as the relative value of the wealth accumulated in different currencies. A nominal depreciation of the currency temporarily improves the competitiveness of exporters, who can increase their margins or reap market shares to varying extents, depending on the sector.[20] However, French exports to countries outside of the Eurozone – the only kind directly affected by a depreciation of the euro – account for only 11% of French GDP, meaning that the decline in the euro cannot be the sole response to the French lack of competitiveness.[21]

At the same time, it is important not to underestimate the impact – this time negative – of a currency depreciation on the purchasing power of households, and therefore on their ability to

17 Another significant risk relates to the access of European banks to refinancing in dollars. It is important here to praise the perpetuation, since 31 October 2013, of the swap lines put in place in late 2007 between the ECB and the Fed. These lines will automatically enable the ECB to provide liquidity in dollars when such a move proves necessary – a particularly significant guarantee with regard to the 'tapering' of the US monetary policy.

18 Source: Googlefight, 22 October 2013.

19 Source: Ameco. European market shares are expected to decline over time as a result of the arrival of emerging economies, but the drop in the French market share is particularly significant.

20 In the long run, the effect of an exchange-rate depreciation is cancelled out by the increase in prices, unless the fundamentals (structural reforms, debt reduction, etc.) of the economy have changed in the meantime, or the exchange rate was overvalued to begin with (see below).

21 The corresponding ratio is 20% of GDP for the Eurozone as a whole.

consume goods and services. By increasing the cost of imported goods – particularly those of which households will find it difficult to reduce their short-term consumption (such as gasoline) – depreciation forces them to cut expenditure on local services such as leisure and personal care services. Depreciation therefore results in two types of transfer, namely from net importing companies (such as the telecommunications sector) to net exporting companies (such as the aeronautics industry), and from households to exporting companies.

Ultimately, an exchange-rate depreciation induces a revaluation of assets and liabilities in foreign currencies. France, on the whole, has more assets than liabilities in foreign currencies. Our calculations indicate a net position of approximately €306 billion invested in dollars and €247 billion in pounds sterling. Under these conditions, a 10% appreciation of the dollar against the euro would result in a capital gain of around 1.5% of GDP, whilst an equivalent appreciation of the pound sterling would result in a gain of around 1.2% of GDP.[22]

22 Approximate calculations performed by the authors based on the 2012 report by the Bank of France on the balance of payments.

The impact of the euro on exports

We present a new estimation of the effects of the euro on French exporters based on customs data for the period 1995 to 2010, the method and results of which are summarised in Box 1.[23] The estimations suggest that, all other things being equal, a 10% depreciation of the euro in relation to a partner country outside the Eurozone increases the value of the average exporter's sales to that country by around 5–6%. This increase – the major part of which comes into effect in the same year as the depreciation is observed – stems primarily from an increase in the volumes exported (4–5%), with the remainder (0.5–1%) resulting from an increase in the markup on each unit sold (by means of a slight rise in euro prices). A 10% appreciation of the euro has a symmetrical impact, with the value of exports reduced by an average of 5–6% for an exporting company.

In aggregate terms, the impact of a 10% depreciation of the euro on the value of exports is more significant, at around 7–8%, since the depreciation not only improves the situation of

23 The data lists exports by country and by product, within the SH6 classification (around 5,000 products), for each French exporter achieving a certain level of annual sales. Unfortunately, we do not have any similar data for other countries in the Eurozone.

Box 1 Determining the sensitivity of French exports to countries outside the Eurozone to the exchange rate

We observe the value of goods exports to all markets outside the Eurozone by around 100,000 French exporters every year between 1995 and 2010 (over 4 million observations). This data is recorded by the customs authorities, and combines the sales of each exporter over the course of a year for a particular product category and destination. Service exports are not available. We explain variations in sales from one year to another based on a series of control variables that are specific to the destination or year in question, as well as variations in the exchange rate.

The findings outlined below correspond to the specification used to quantify the impact of a depreciation of the euro.[a] The value of exports (in logarithm) of firm f in sector s to country i over the course of year t, ln X_{fsit}, is regressed on the real exchange rate of the euro against country f (in logarithm), ln $EURO_{it}$, on the destination GDP (in logarithm), ln GDP_{it}, on price levels in the destination country (in logarithm), ln P_{ft}, and against a series of fixed effects (firm-sector-destination and year) that make it possible to take the specific characteristics of the exporter into account for each sector and destination:

$$\ln X_{fsit} = \underset{(0.04)}{-0.61}\ln EURO_{it} + \underset{(0.08)}{0.66}\ln GDP_{it} + \underset{(0.02)}{0.10}\ln P_{ft} + \text{fixed effects}$$

The estimated coefficients are indicated before each explanatory variable and their standard deviations are given in brackets. The three coefficients are significant at the 1% confidence level. A 10% depreciation of the euro increases the value of firm-level French exports by around 6%. When the estimation is made by regressing the export growth rate from one year to the next on the variation in the exchange rate, we find a slightly smaller effect (5%). In aggregate terms, this results in an elasticity of 0.76. This elasticity is slightly higher than that estimated based on aggregate data for Germany, for example, which stands at 0.6 (see Thorbecke and Kato 2012).

a For a more detailed technical analysis see Héricourt et al. (2014).

existing exporters but also paves the way for new firms in export markets.[24]

These effects are indeed significant – with French exports outside of the Eurozone accounting for 11% of GDP, a 10% depreciation of the euro against the currencies of all non-Eurozone trade partners would have a positive impact on demand of around 0.7% of GDP. This does not mean that GDP would increase by 0.7%, since we are not taking into account here the effects of the depreciation on imports (and imports of energy and raw materials, which account for around 1.5% of GDP, in particular), purchasing power, consumption, employment, wages, etc. According to the Mésange macroeconometric model, a 10% depreciation of the euro would result in a 0.6% increase in French GDP after one year, and a 1% increase after two years.[25]

Upon closer inspection, there is no significant difference in terms of sensitivity from one major manufacturing sector to another. The main export industries (chemical, automotive, food processing, aeronautics, etc.) in particular are very close to the French average. French exports to OECD countries, on the other hand, are more sensitive to exchange-rate variations than those to emerging countries. Exports to the US, for example, increase in value by 9% if the euro depreciates by 10% against the dollar, as is the case for exports to the UK. This can be explained by the fact that products exported to OECD countries are more similar to – and therefore substitutable with – locally produced goods (and therefore more sensitive to price differences) than exports to emerging countries.

The most productive firms (which are also the largest exporters) are less responsive than average to exchange-rate variations.[26] Indeed, they are better able to absorb exchange-rate variations into their margins, increasing their markups when the euro depreciates and reducing them when the euro appreciates. Likewise, exporting firms that import a large proportion of their intermediate goods are less responsive than average to exchange-rate variations. For these firms, the increased competitiveness that results from a depreciation of the euro is limited by the increased cost of imported inputs. Those companies that perform the best in terms of exports are also those that import the most intermediate goods. Internationalisation of supply chains tends to reduce firms' vulnerability to exchange-rate movements. Indeed, reducing vulnerability to exchange-rate instability is one major reason for diversifying production sites.

It is often said that beyond a certain threshold, an appreciation of the euro would be particularly harmful to exports. This suggests that exchange-rate variations have a non-linear effect – small when the euro is close to its equilibrium level, and large when it significantly deviates from this level. In the case of French exporters, we were unable to identify such threshold effects, with a 10% appreciation of the euro reducing the average company's exports by 5–6% irrespective of the initial exchange-rate level.

Another argument commonly put forward is that the increase in the variety and quality of French products might insulate exports against exchange-rate variations by making them less price-sensitive. There is no doubt that improved quality makes it easier to sell more, at a given price, but it is not clear whether quality helps reduce the sensitivity of exports to exchange-rate variations. In order to establish this, we have isolated those firms with the highest average export unit value, product by product. The idea is that these companies exporting more expensive goods specialise in 'high-end' products. Preliminary results do not suggest that those firms exporting 'high-end' products are less sensitive to exchange-rate variations, although our measure of quality is too crude to enable us to reach a definitive conclusion.

A depreciation of the euro helps reduce the prices charged by French exporters in foreign currencies. In theory, the same effect can be achieved by means of a fall in euro prices, with no exchange-rate variation. Our results confirm that a nominal depreciation of the euro has the same effect on the value of exports as a fall in prices in France relative to foreign prices. This is significant, since whilst the nominal exchange rate is no longer an instrument in the French government's economic policy, the government can, nevertheless, influence the prices charged by exporters by means of its arsenal of economic policies that have a direct impact on business costs (social contributions, taxation, energy costs, etc.).[27] French companies can also improve their competitiveness by improving the quality of their products. In this respect, too, economic policy has a significant impact in terms of support for both innovation and research, and of education. Whilst a nominal depreciation has only a short- to medium-term effect on competitiveness, the structural reforms that make it possible to reduce costs, together with an improvement in the quality of the goods produced, has a permanent effect on competitiveness. The advantage of a

24 New companies are rapidly emerging in foreign markets in the year of depreciation, accounting for around 20% of the growth in total exports (see Berman et al. 2012).

25 See French Treasury (2013: 54). The price elasticity of exports obtained in this model is close to what we have found with firm-level data.

26 See Berman et al. (2012).

27 In a recent Note, the Conseil d'Analyse Économique estimated that a 10% increase in electricity prices in France would reduce the value of exports by an average 1.9% (Bureau et al. 2013).

nominal depreciation is that it has a rapid effect on competitiveness, but it does nothing to reduce the need for reforms that improve the structural competitiveness of the French economy, and that encourage all exports and not just those destined for countries outside of the Eurozone.

The impact of the euro on imports

Finally, we have estimated the impact of a euro depreciation on the manufacturing imports of French companies coming from outside of the Eurozone. France's total imports from countries outside the Eurozone account for 13% of French GDP. We estimate the average impact of a depreciation of the euro against each supplier country's currency on manufacturing imports from the country in question. Our estimations are a little less accurate than they are for exports. A depreciation of the euro results in a drop in the volumes imported, but increases the cost of each unit imported – two contradictory effects in terms of import value. The findings would suggest that a 10% depreciation of the euro increases the prices of imported manufactured goods by around 2% for the average importer. Demand for imported goods decreases by around 0–2% according to estimations. In the short term, therefore, the price effect appears to outweigh the volume effect, with import value increasing by 0–3%. Only after two years does the volume effect start to outweigh the value effect. In aggregate terms, import value increases by around 3.5%. This finding is significant, since it shows that depreciation raises the costs incurred by French importing companies.

Observation 3. A 10% depreciation of the euro raises export value (to countries outside the Eurozone) by around 7–8%, but also increases the cost of imports (from countries outside the Eurozone) by around 3.5%, with no short-term drop in the volumes imported. A 10% fall in prices in France in relation to those of its partners has the same effect on exports as a 10% depreciation of the euro.

Recommendation 3. With relative prices having just as significant an impact on exports as the exchange rate, there is a need for increased vigilance with regard to the effects of public policy (social contributions on wages, taxation, energy costs, etc.) on French costs and prices.

How does one assess the value of the euro?

Is the euro currently too strong, and if so, based on what criterion? Box 2 summarises the different possible approaches.

One approach is to examine the historical evolution of the real effective exchange rate. Figure 3 shows (by reconstructing the euro using the currencies of the Member States prior to 1999) no evidence of a particular trend for the euro exchange rate since 1964. Between January 2012 and November 2013, the euro stood an average 2% above its average value since 1999, and 5% above its long-term average value. Taking into account margins of error on price measurement, the euro may be considered in line with its long-term level.

A second approach involves questioning whether the euro should not have appreciated in the long term (as a result of accumulated external surpluses) or on the contrary depreciated (as a result of the trend for lower growth in the Eurozone compared to the rest of the world). These two contradictory effects are difficult to quantify. Existing estimations are tarnished by a significant margin of error, and do not inherently change the diagnosis regarding the euro.[28]

A third approach focuses on the short term, questioning whether, independently of the long-term considerations, the euro might be too strong in light of the difficulty the Eurozone has been experiencing in pulling through the crisis. In order to answer this question, we might look at how the real effective exchange rate of the euro has varied in relation with the output gap observed in the Eurozone (the difference between actual production and potential production) and compare this with what has happened in the US. In order to have a stabilising effect, the real exchange rate (nominal exchange rate adjusted by price differentials) must vary in the same direction as the output gap, appreciating when activity is relatively high and depreciating in the opposite case. Figure 4 shows that this was the case between 1995 and 2013 in the US, but not in the Eurozone. Whilst the euro did indeed depreciate in 2012, in line with the decline in activity, this is the exception rather than the rule. In 2009, whilst activity in the Eurozone was plummeting, the euro remained stable in real terms. In 2013, the euro appreciated relative to 2012 whilst the GDP of the Eurozone continued to decline. Conversely, in 2000, the peak in activity in the Eurozone coincided with a particularly weak euro.

With this in mind, and in accordance with our diagnosis regarding monetary policy (see above), it can be said (Box 2) that the adoption of a more expansionary monetary policy, accompanied by a nominal depreciation of around 10% in the euro, would both help the ECB achieve its inflation objective and alleviate the lack of demand in the Eurozone. Since the euro is not overvalued with regard to the various long-term standards (see above), it is also important not to expect a sustained depreciation.

28 See, for example, Bénassy-Quéré et al. (2009).

Box 2 The notion of an equilibrium exchange rate

The notion of an equilibrium exchange rate is not straightforward, insofar as when a currency floats freely, its exchange rate at any given time is determined by a market equilibrium. Use of the expression 'equilibrium exchange rate', however, is reserved for various medium- to long-term standards. In the case of an advanced country, the following three standards can be used:

- *Purchasing power parity*: In the very long term, real exchange rates between key currencies do not indicate any particular trends. According to this first criterion, the euro is close to its very long-term value (Figure 3).

- Net external position: In the long term, a country whose net external position (assets minus liabilities) is deteriorating will generally see its real exchange rate depreciate. This second criterion does not fundamentally change the diagnosis regarding the euro since, on the whole, the Eurozone has accumulated limited imbalances over time.a

- The internal balance and the link to monetary policy: If, as we recommend above, the monetary policy of the Eurozone needs to become more expansionary, it is logical that the euro will depreciate in the short term. The extent of the depreciation is extremely difficult to calculate since it is based on a number of uncertain assumptions. Let us, however, attempt to put a figure on it, albeit with a number of 'ifs' thrown into the equation. The ECB's objective is to achieve a rate of inflation of around 2%, whereas inflation currently stands at around 1%, with a recognised danger of deflation. A 10% depreciation of the euro would put the ECB's inflation target back within reach by increasing, by means of an increase in the prices of imported goods, prices in the Eurozone by around 0.8%.[b] This depreciation, which would accompany a more expansionary monetary policy, would also help to partially reduce the distance that has developed in the Eurozone between potential output and actual output – currently estimated at 2.7% of GDP by the IMF and 4.2% of GDP by the OECD (see Figure 4).

a In this respect, the IMF has highlighted for 2013 an undervaluation of around 5–10% in Germany and an equivalent overvaluation in France (IMF 2013). Since both countries have the same currency, this means that the misalignment is primarily internal – price levels are believed to be around 10% too high in France relative to Germany. The euro, for its part, is considered to be close to its equilibrium value.

b See Landau and Skudelny (2009). In other words, a more expansionary monetary policy would mean that the deficit in demand for goods and services in the Eurozone could be absorbed by a weaker exchange rate rather than by a drop in prices, the macroeconomic consequences of which could be disastrous, particularly as a result of high levels of debt.

Observation 4. The short-term situation in the Eurozone in early 2014 would call for a temporarily weaker euro, consistent with a more expansionary monetary policy. However, since the euro is not overvalued with regard to the various long-term standards, we cannot expect a sustained weakening of the euro.

Foreign exchange interventions and international coordination

Interventions in the foreign exchange market

Besides monetary policy, a central bank theoretically has two tools at its disposal to influence the exchange rate. First, it can intervene in the foreign exchange market, for example by buying dollars when it wants to weaken its own currency. Second, it can issue statements on the exchange rate in the hope of coordinating market expectations.

Empirical research has highlighted a number of conditions that have to be met in order for intervention to be effective. The intervention should, where possible, be coordinated between several central banks, be declared to the market (rather than kept 'secret'), involve substantial amounts, not be too frequent, and not be 'sterilised'.[29] Furthermore, 'oral' interventions – communications issued by central banks regarding exchange rates – can prove effective if they are credible, particularly if they do not contradict declarations relating to monetary policy (Fratzscher 2008). However, it would undoubtedly be illusory to base an exchange-rate strategy exclusively on oral interventions, the credibility of which ultimately depends on the implementation of effective initiatives relating to monetary policy or on effective intervention in the market.

Given that the ECB's mandate focuses on an internal objective, namely price stability, it is to be expected that its intervention policy (both effective and oral) be covered by this internal objective, meaning that the ECB would only intervene when the euro is strong *and* the risk of deflation is very

29 See Lecourt and Raymond (2008). Sterilising a foreign exchange intervention involves neutralising its impact on the monetary base by performing a reverse operation in the domestic money market (by buying national assets to offset the sale of reserves in foreign currencies, for example).

real, or when the euro is weak *and* the inflationary risk is imminent.

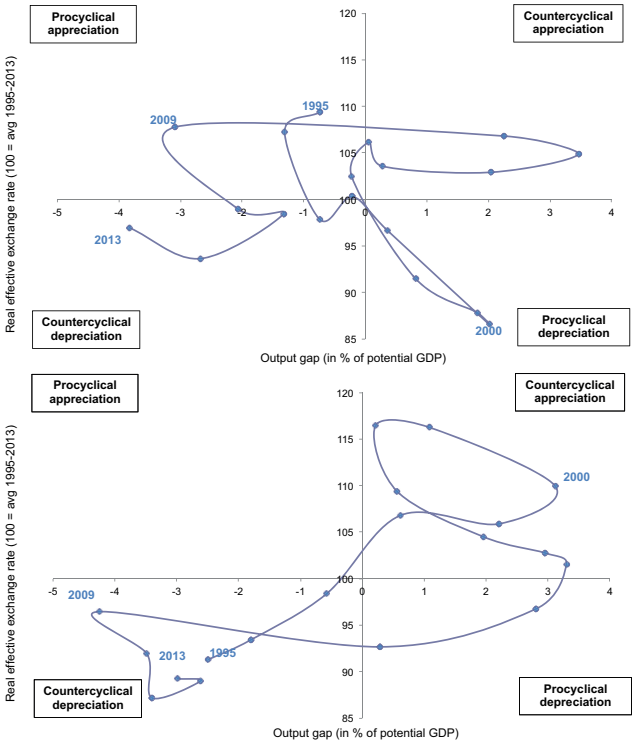
There is therefore a great temptation for governments in the Eurozone to intervene by means of statements regarding the exchange rate in the hope of coordinating expectations on a different equilibrium. We have analysed this possibility by studying the impact of eleven statements made by senior French and German policymakers between 2006 and 2013 (Box 3). The findings are incontrovertible – oral interventions on the part of policymakers have no effect on the exchange rate.

Observation 5. Statements made by political leaders in an attempt to curb the exchange rate are generally ineffective.

What can international coordination achieve?

Since the Plaza Agreement, which triggered (or accompanied) the turnaround in the dollar in September 1985, and the 1987 Louvre Agreement, which put an end to its depreciation, the G7 has kept reminding us of the benefits of flexible (and therefore unmanipulated) exchange rates – but with very limited success. The G20 later took over in the form of a number of carefully prepared statements that differed little from one summit to another. Both the G7 and the G20 have a mixed track record

Figure 4 Real effective exchange rate and business cycle



Interpretation: A positive output gap means that GDP exceeds its potential level; a real effective exchange rate of over 100 means that the real effective exchange rate is greater than its 1995-2013 average.

Box 3 Assessing the impact of statements by political leaders on the exchange rate

Do policymakers have the ability to revert the exchange rate by means of their oral interventions? A number of works, and Fratzscher (2008) in particular, have shown that statements made by central bankers on exchange rates do influence exchange rates in the desired direction, even in the absence of any changes in terms of monetary policy. Can the same be said of governments? Using the same method, we have estimated the impact on the euro-dollar exchange rate of eleven statements made by senior French policymakers (President of the Republic, Prime Minister, Minister for Finance, and Minister for Industry) between 1 January 2006 and 30 September 2013, and three statements in Germany (contradicting the French statements). We did not find these statements to have any significant effect, even in the short term (that is, the day on which the statement was issued). Of the eleven French statements considered, five were followed the very same day by a depreciation of the euro (the seemingly desired effect), but the other six were followed by an appreciation. If we analyse the changes in the exchange rate on the day following the statement, three were successful (depreciation of the euro) and eight failed (appreciation of the euro). An econometric estimation of the impact of the French and German statements confirms that they had no statistically detectable impact on the euro-dollar exchange rate.

In summary, the foreign exchange market does not appear to pay any attention to statements regarding the exchange rate made by political figures, whilst it does appear attentive to those made by monetary authorities.

when it comes to the international coordination of monetary policy and foreign exchange policy. On the one hand, this coordination is destined for failure as soon as central banks become independent with well-defined mandates in terms of internal objectives. On the other hand, coordination has proven invaluable in times of crisis, when swap agreements between central banks have made it possible to provide banks with liquidity in different currencies.

Above and beyond its practical feasibility, there is no consensus regarding the benefits of coordinating monetary policy at international level, in a world where governments have instruments for dealing with erratic movements of capital (adjustment of the exchange rate, macroprudential policies) and where it is important for each currency zone to maintain its monetary instrument for the purposes of pursuing a policy of non-inflationary growth.

With this in mind, the idea of a zero-sum game, or even negative-sum game, portrayed by the concept of a 'currency war', is controversial. It would appear that the G20 is more useful in dealing with financial regulation than when seeking to coordinate monetary policies.

The concept of 'exchange-rate manipulation', which is regularly highlighted by the American Congress with regard to the Chinese currency regime, is of little significance when it comes to monetary zones with a flexible exchange rate and perfect capital mobility, in which monetary policy is focused on achieving internal objectives. In fact, neither the US nor the UK have highlighted the depreciation of their currencies as a key objective of their quantitative easing policies (only Japan has done so, without fully acknowledging this before the G20). A parallel can, however, be drawn between trade protection and monetary protection when the central bank intervenes heavily in the foreign exchange market with the aim of preventing the appreciation of its currency.

Existing empirical work shows that customs duties have a far greater impact on trade than exchange rates, more than likely because, unlike exchange-rate fluctuations, they can be considered to be long-lasting (Fitzgerald and Haller 2012). The equivalent of a 10% exchange-rate undervaluation is not a 10% customs duty but rather a 1% customs duty. The parallel, here, is no less justified, which raises the question of possible claims before the WTO.

With regard to the issue of exchange-rate manipulation, Article XV of the WTO relies on the judgement of the IMF, whilst accepting the principle of foreign exchange controls. Article IV of the IMF, meanwhile, prohibits the manipulation of exchange rates in order to "prevent effective balance-of-payment adjustment or to gain unfair competitive advantage". However, no sanctions have been introduced. During the 2007 and 2012 reforms, it was stipulated that a country could intervene in the foreign exchange market in response to short-term movements in exchange rates that were deemed to be excessive. An exchange rate is considered to have been 'manipulated' if the country in question has staged foreign exchange interventions or implemented capital controls aimed at maintaining a long-term undervaluation of the exchange rate relative to its fundamental level, and if the aim of this undervaluation is to stimulate exports. These two conditions are indeed very restrictive, particularly since it is recommended that the Member State be given the benefit of the doubt. Furthermore, the IMF has no sanctioning power in the matter. Finally, no country has ever been sanctioned for manipulating its exchange rate, because coordination between the IMF and the WTO is limited, because it is difficult to obtain proof of manipulation, and because the IMF is reluctant to identify 'manipulating' countries, particularly when these are important members.[30]

In light of the hesitation on the part of international organisations, there is a danger that the concept of exchange-rate manipulation will be dealt with at the level of each individual monetary zone, with the potential to trigger trade wars. For this reason, we believe that it would be useful to re-examine the concept and its application at a multilateral level, based on greater transparency on the part of central banks with regard to foreign exchange interventions in particular.

Recommendation 4. International coordination should focus on financial regulation and crisis management. Accusations of exchange rate 'manipulation' should be re-examined at a multilateral level in order to prevent the situation degenerating into trade wars.

Conclusion

Monetary conflicts between major countries are bound to occur in an international monetary system in which not all countries can simultaneously depreciate (or appreciate) their currency. It is, however, possible to reduce the severity of the situation by developing active macroprudential policies, and by contemplating a high level of coordination between central banks in the event of a crisis. The Eurozone would, however, benefit from putting more weight on deflation risk in its monetary policy – a reorientation that would ordinarily be accompanied by a temporary weakening of the euro. We should not, however, expect the euro to weaken in the long term. For France, this reinforces the need to amplify its price and non-price competition policies.

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30 See Zimmermann (2011) and Mussa (2008). The same pattern is observed at European level – Article 142 of the Treaty stipulates that "Each Member State with a derogation [and the UK in particular] shall treat its exchange-rate policy as a matter of common interest", but the issue of 'common interest' is not one that is regularly discussed by the Ecofin Council.

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