

DIRECTORATE GENERAL FOR INTERNAL POLICIES
POLICY DEPARTMENT A: ECONOMIC AND SCIENTIFIC POLICY

The strength of the euro: Does it matter and is it really that strong?

IN-DEPTH ANALYSIS

Abstract

The exchange rate can have a very significant influence on the euro area, which is a rather open economy. Indeed the share of exports amounts to about 27% of GDP, much higher than for other economies of similar size (US or even Japan). However, the impact of exchange rates on exports is usually limited in the short run.

Nevertheless there is some evidence that the euro is losing market shares compared to the US and this is sometimes put in relation to the euro appreciation. At the same time, the euro area has become the largest source of global current account imbalances despite the strength of its currency.

Whether the exchange rate is determined by the current account or whether the exchange rate determines the current account, it seems impossible to explain the present strength of the euro in terms of today's fundamentals. The exchange rate is determined in very liquid asset markets, which discount future fundamentals, not only those of the euro area itself, but in relation to fundamentals in the rest of world. What is surprising about the present situation is the low level of volatility of the exchange rate, rather than its level, which is close to its long run average.

This paper is one in a series of nine documents prepared by Policy Department A for the Monetary Dialogue discussions in the Economic and Monetary Affairs Committee (ECON).

This document was requested by the European Parliament's Committee on Economic and Monetary Affairs.

AUTHORS

Daniel GROS, with Cinzia ALCIDI and Alessandro GIOVANNINI, CEPS, Brussels

RESPONSIBLE ADMINISTRATOR

Dario PATERNOSTER
Policy Department A: Economic and Scientific Policy
European Parliament
B-1047 Brussels
E-mail: Poldep-Economy-Science@ep.europa.eu

LINGUISTIC VERSIONS

Original: EN

ABOUT THE EDITOR

To contact the Policy Department or to subscribe to its newsletter please write to:
Poldep-Economy-Science@ep.europa.eu

Manuscript completed in June 2014
@ European Union, 2014

This document is available on the Internet at:
<http://www.europarl.europa.eu/studies>

DISCLAIMER

The opinions expressed in this document are the sole responsibility of the author and do not necessarily represent the official position of the European Parliament.

Reproduction and translation for non-commercial purposes are authorised, provided the source is acknowledged and the publisher is given prior notice and sent a copy.

CONTENTS

LIST OF ABBREVIATIONS	4
EXECUTIVE SUMMARY	5
1. INTRODUCTION	6
2. OPENNESS AND CURRENT ACCOUNTS: A COMPARISON AMONG THE MAJOR ECONOMIES	8
3. EQUILIBRIUM EXCHANGE RATE AND EXPORTS	11
4. EXCHANGE RATE MOVEMENTS: DO FUNDAMENTALS MATTER?	15
4.1. Exchange rate and fundamentals: a simplified test	15
4.2. Asset pricing theory, fundamentals and the exchange rate	17
5. CONCLUDING REMARKS	20
REFERENCES	21

LIST OF ABBREVIATIONS

ECB European Central Bank

EMU Economic and Monetary Union

FFER Fundamental Equilibrium Exchange Rate

DRAFT

EXECUTIVE SUMMARY

Soon after the outbreak of the euro debt crisis a debate started on the exchange rate. While at first, expectations were dominated by the fear of a long period of a weak euro, soon many commentators pointed to the problem of a too strong currency not reflecting the fundamentals of the area.

Although the exchange rate is not part of the ECB mandate, the preoccupation that a further appreciation of the euro could put at risk an already weak recovery is creating an increasing demand for the ECB to act.

What this paper acknowledges is that the exchange rate and external demand are very important for the euro area, almost twice as important as for the US. When comparing the largest world economies in terms of openness, the euro area emerges strikingly as a very open region.

Recent empirical estimates suggest that the current real exchange rate is in line with the equilibrium level and with its long run average. This would lead to the conclusion that if there is overvaluation this is unlikely to be large.

There is some evidence that the euro is losing some market shares compared to other major economies. Interestingly, Japan has been in a similar situation (a loss of more than 10%) as euro area, but its exchange rate depreciated while the euro was appreciating.

Data suggest that the effect of the exchange rate on the export performances of the various euro area economies is not necessarily the same. The divergent trend of export performances indicates differences in the ability of euro area economies to respond to changes in the global market, but also to the different elasticity of exports to the level of the exchange rate.

This leads to the conclusion that when considering the performance of the external sector the focus should not be on the exchange rate but on the ability the economy to respond to changes in global demand, which is the variable that explains best export performance.

That said it is clear that a weaker euro could have a positive effect on exports, in some specific euro area Members States, but it seems difficult to justify a policy intervention, which would anyway be outside the ECB mandate.

1. INTRODUCTION

Soon after the outbreak of the euro debt crisis a heated debate started on the exchange rate. While at first, expectations were dominated by the fear that the crisis could start a long period of depreciation, soon many commentators pointed to the opposite problem, i.e. a currency so strong that the recovery would be hampered.

As it will be shown later, after a high volatility during the first phase of the crisis linked to the high uncertainty on financial markets, the euro stabilized at a level close to before the crisis. This has been widely seen as not in line with the fundamentals of the euro area, which have much deteriorated after 2010 pointing to the fact that the euro exchange rate is overvalued. Along this idea, some commentators and policy makers have called for interventions by the European Central Bank (ECB) in the foreign exchange market to induce depreciation of the currency.

As an example, Arnaud Montebourg (the outspoken economy and industry French minister) recently affirmed: "We can make every effort to cut our costs of production, but if the 55 per cent of our exports sold outside the eurozone depend on a euro that is too strong, our efforts are greatly weakened¹".

Although the exchange rate is not part of the ECB mandate² - in order to keep policy focused on price stability - there is an increasing preoccupation that the growing surplus of the Eurozone could induce further appreciation of the euro, putting at risk an already weak recovery and boosting deflationary pressure, if the ECB does not act. Even recent statements of the ECB³ seem to go in this direction, by stressing that one of the drivers of the current low inflation is the exchange rate (together with the basically low growth rate of prices for food and energy and also, to some extent, the persistent weak demand).

Hence the natural questions are the following: how important is the overvaluation, if it exists? What are the reasons for it? What can be done?

Before trying to address these issues, it should be first observed that the debate about exchange rates is a global one and it does not only concern the euro. It has actually come to the fore in the context of the so-called *currency war*, and the harsh debate between emerging markets and the US after the waves of loose monetary policy of the Fed and the effects on currencies in Brazil and other emerging markets. The euro has remained out of this global debate, but some arguments have become valid in the domestic considerations.

In this respect it is worthwhile to recall that the exchange rate is a relative price, so if the currency of country A appreciates relative to B, then B depreciates relative to A. A corollary of this is that not all currencies can depreciate at the same time, likewise not all countries can have an export surplus. As relative price, the exchange rate, by its nature cannot only reflect the fundamentals of one country but, rather the relative fundamentals of the two regions/countries.

Moreover it should be noticed also that, in the economic literature it is impossible to find a robust relationship between exchange rates and (at least those present or past) fundamentals. Empirical evidence suggests that in reality the exchange rates tend to behave as an asset price which reflects future discounted fundamentals. This is a feature

¹ "France steps up campaign to weaken euro", Financial Times May 8, 2014

² The ECB's exchange rate policy is referred to in Articles 127 and 219 TFEU.

³ Speech by V. Constancio at the Athens symposium on Banking Union, Monetary Policy and Economic Growth, Athens 19 June 2014, <http://www.ecb.europa.eu/press/key/date/2014/html/sp140619.en.html>

specific of asset prices in general (like stock prices), which makes them highly volatile; so volatile that actual economic fundamentals cannot explain them. In this perspective, it is rather the relative stability of the euro during the last 2 years than its present level which require an explanation.

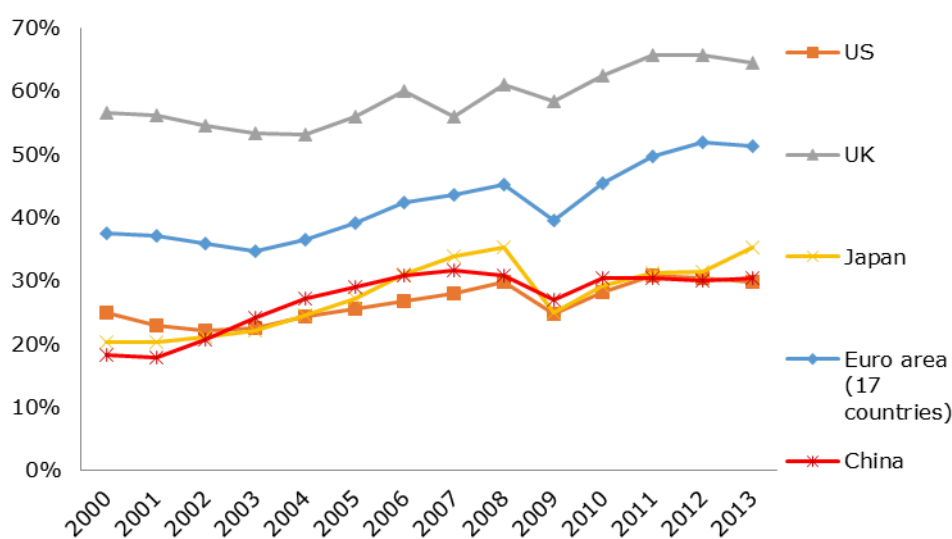
Last but not least, in order to assess if and how much the euro is overvalued, the equilibrium exchange rate should be calculated. Literature on the topic is as large as the different views on the topic. As most unobservable variables there is no agreement on how to calculate and even less on its value (See Durand and Lopez, 2013, for an overview) for this reason this paper does not aims at measuring analytical misalignments with respect to the equilibrium level.

Against this background, this paper is organized as follows: Section 2 highlights the macroeconomic features of the euro area which suggest that trade is very important for the area, also relative to other large world regions. Section 3 looks at the debate about the overvaluation and considers macroeconomic trends of the Euro area that may have influenced the appreciation of the euro, and how they can have impacted on the developments of the exchange rate. Section 4 addresses the issue of the exchange rate as an asset price and the degree of volatility of the euro. Conclusions are presented in the final section.

2. OPENNESS AND CURRENT ACCOUNTS: A COMPARISON AMONG THE MAJOR ECONOMIES

When comparing the most important regions globally in terms of openness, the euro area emerges strikingly as a very open region⁴. As shown in Figure 1, the most recent data suggest that the degree of trade openness in the euro is almost double that of the US, much higher than that of Japan and China. In other words, the exchange rate and external demand are almost twice as important for the euro area as for the US. This is one of the key reasons why US economic policy making generally ignores the exchange rate ('our dollar, your problem').

Figure 1: Trade openness, goods and services



Note: Openness is defined as the sum of imports and exports relative to GDP.

Source: Eurostat

Given the size of its economy, such degree of openness of the euro area is atypical. Large economies of the size of the euro area tend to be less open than small economies. China seemed to have constituted another exception, but the structure of its economy has changed rapidly, and the trend after 2009 seems to suggest that the degree of its openness has first stabilized and more recently has even declined slowly, while its size is increasing.

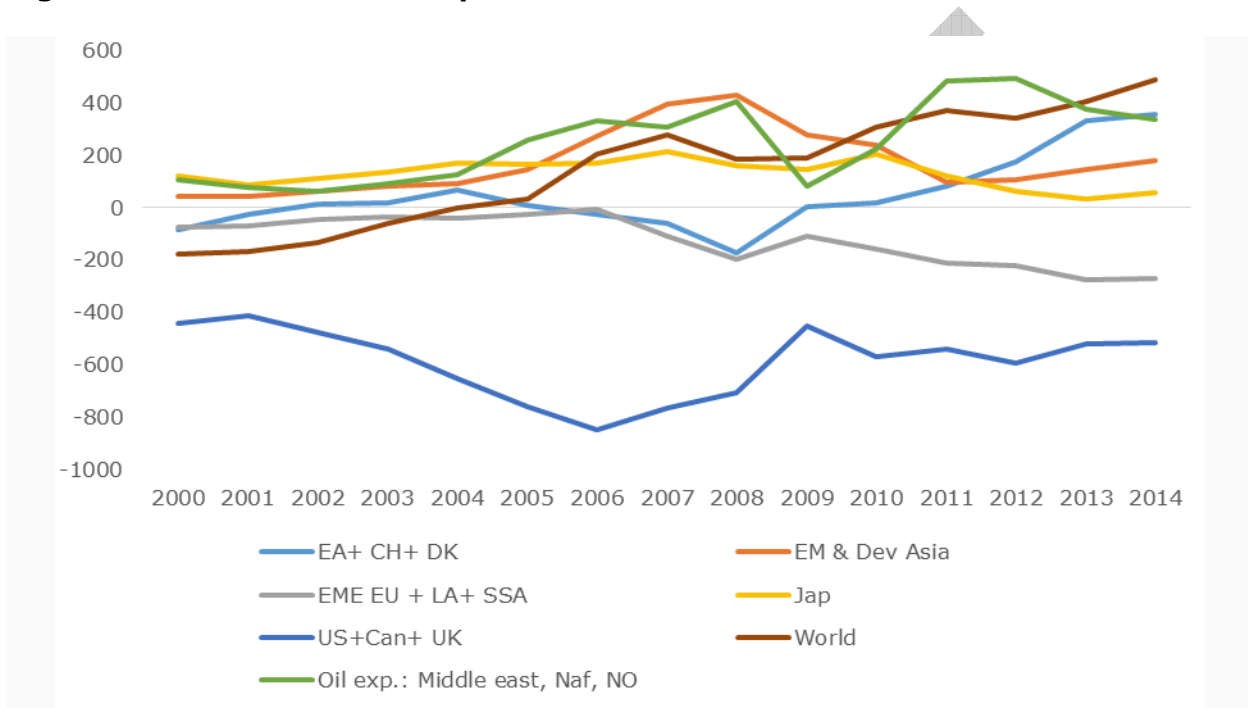
The euro area had displayed since its creation on average a balanced current account (and the sum of the current account balances of the major euro area members was usually close to zero even before 1999). Over the first 10 years the increasing German surplus was balanced by deficits elsewhere, especially in the periphery. However, once the euro crisis started and capital stopped flowing into the periphery these deficits declined rapidly and turned into today's surpluses. As the surplus of Germany (and other Northern European countries) did not diminish the result has been that the euro area has developed a very large current account surplus, larger than even that of China. Without this external 'safety valve' the euro crisis recession would have been even deeper and longer.

⁴ The UK does better but this is driven by the large amount of trade with other EU countries.

The overall result is that the euro area is now the largest contributor to global imbalances as shown in the Figure 2, which shows the evolution of the current account balances of the most important economies (or group of economies).

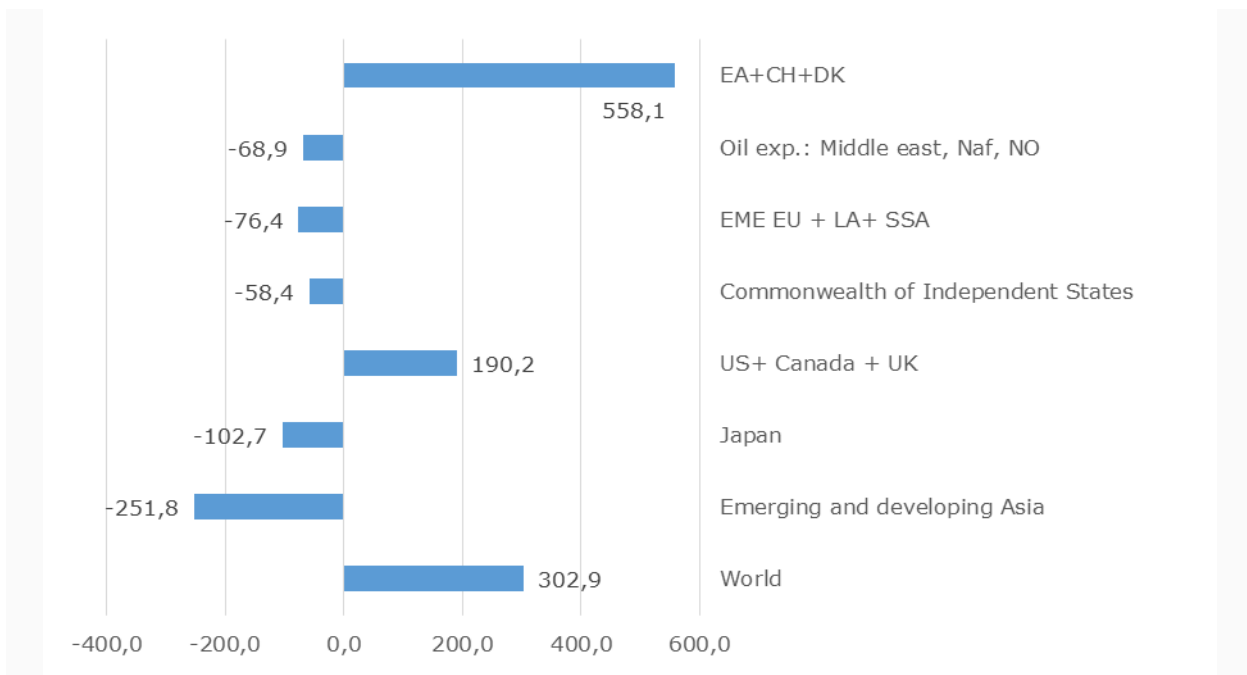
Switzerland and Denmark are added to the euro area aggregate, since their currencies are tied to the euro, which brings the total current account surplus of the euro area to 400 billion dollars, well above that of China and other emerging and developing Asian countries together and also larger than that of the Middle East and other oil exporters, including Norway.

Figure 2: Current account surpluses and deficits



Source: IMF, WEO data April 2014.

Figure 3 below shows the changes in the current account positions over the last five years. It is apparent that the euro area (plus its two satellites) had an enormous deflationary impact on the global economy given that its current account increased by about 560 billion USD, or almost 2% of global GDP. By contrast, emerging and developing Asia reduced its surplus by about 250 billion USD, more than offsetting the tightening of the US deficit by 190 billion.

Figure 3: Change in current accounts 2008-2013 (billion USD)

Source: IMF, WEO

In judging these figures one has to take into account the fact that the current account balances do not add up to zero if one sums all countries. The world is apparently running a current account surplus with the rest of the universe of about 400 billion USD, and this surplus has arisen to a large extent over the last five years. It is thus likely that today's level - as well as the increase of the euro area's surplus - is somewhat overestimated.

As far as the future is concerned - according to the IMF's economic scenario - and thanks to the continuous re-absorption of internal imbalances, the Eurozone is going to run a substantial current account surplus of around 3% GDP in the years ahead.

3. EQUILIBRIUM EXCHANGE RATE AND EXPORTS

As mentioned in the introduction, one important issue relates to whether the euro exchange rate is overvalued. In order to address this issue, Figure 4 below reports the real effective exchange rate since 1999 and its average (the red line) over the whole period. Despite the appreciation starting in early 2013, today's rate seems in line with the long-term average, which gives an idea of the equilibrium exchange rate.

Figure 4: Euro real exchange rate



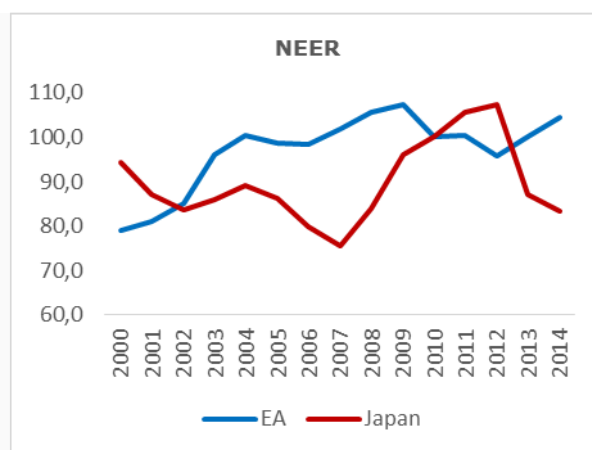
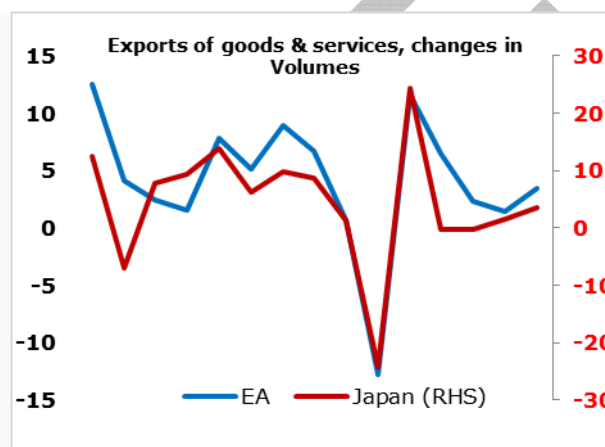
Source: ECB, statistical warehouse.

Note: ECB Real effective exch. rate CPI deflated, Euro area-18 countries vis-à-vis the 39 trading partners

Recent empirical estimates by Cline (2014), based on a different concept of an equilibrium exchange rate (fundamental equilibrium exchange rate, FEER) also suggest that the current rate is in line with the equilibrium level. This would lead to the conclusion that if there is overvaluation this is unlikely to be excessive.

Besides measurement the fears about overvaluation are that the further appreciation of the exchange rate could hamper exports, which have so far been a significant driver of growth in this weak recovery. Hence the fundamental question - more than on the price - is on the export volumes. How does the exchange rate affect exports?

A first way to answer this question is by looking at Figure 5 which shows the nominal effective exchange rate of the euro and the yen, and Figure 6 where the changes in volumes of exports are presented. Besides showing a different degree of volatility, volumes exhibit a quite high degree of co-movement, regardless of different patterns characterizing the exchange rate. This suggests that it is impossible to find a general relationship between exchange rate and exports.

Figure 5: Exchange rates dynamics**Figure 6: Export volumes**

Source: BIS and Ameco

Another way to address the problem is by looking at market shares and their performance.

There is some evidence that the euro is losing some market shares compared to other major economies. As in the case of the US and Japan, the share of euro area exports in total world trade has been declining since the late 1990s, mainly due to the rapid integration of emerging economies into world trade. In the last years, euro area exports market shares have dropped from 29% in 2009 to 25% in 2013, while in the U.S. share has remained almost stable. Interestingly, Japan was in a similar situation as the euro area (a loss of more than 10%), but its exchange rate depreciated while the euro was appreciating.

Table 1: Exports market shares of the major world economies

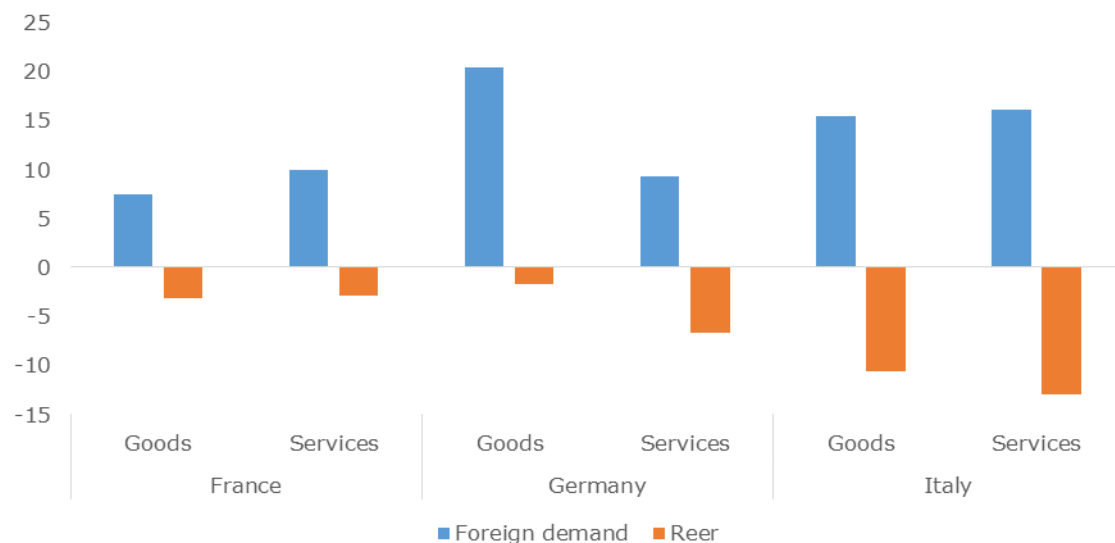
Countries	2000	2005	2007	2009	2011	2013	2014	2015
Japan	6.6	5.1	4.5	4.1	4.1	3.5	3.4	3.4
United States	14.0	10.3	9.7	10.1	9.5	9.9	9.7	9.5
China	3.6	6.6	7.8	8.5	9.5	10.6	10.7	10.8
Other BRI(C)	3.0	4.4	4.7	5.0	5.9	5.8	5.7	5.8
Euro area	29.3	30.1	30.0	29.1	26.2	25.5	26.0	25.6
-France	4.9	4.4	4.1	3.9	3.5	3.4	3.3	3.3
-Germany	8.0	8.9	9.2	8.9	8.4	8.3	8.1	8.3
-Italy	3.8	3.6	3.6	3.2	2.9	2.9	2.8	2.8

Source: Authors' authors' calculation on OECD data.

Table 1 shows export market shares in selected euro area Member States. While shares in world exports have declined by 12% in France and by around 10% in Italy between 2009 and 2013, they decreased only by about half (6%) in Germany in the same period.

These statistics demonstrate that the effect of the exchange rate on the export performances of the various euro area economies is not necessarily the same. This is the case today, as it was in the past. The divergent trend of export performances over the last decade indicates the differences in the ability of euro area economies to respond to changes in the global market, but also to the different elasticity of individual countries' exports to the level of the exchange rate.

According to the IMF (2005), the main explanation of inter-country differences in trade growth during 2001–04 was a different ability to capture growing foreign demand. Due to different geographic orientation and different demand elasticities, external demand contributed differently to Member States export growth, with France experiencing the weakest contribution (Figure 7).

Figure 7: Accounting for Country Differences in Trade Growth: Contribution to Export Growth (2001–04)

Source: Authors' elaboration on IMF, 2005

In 2001-2004, the real effective exchange rate appreciation is estimated to have adversely affected exports of goods and services especially in Italy, while Germany seems to have been relatively less hit (Figure 7). This reflects lower estimated exchange rate elasticities for goods for Germany (0.3) than for Italy (0.7), compounded by the lesser degree of Real Effective Exchange Rate appreciation in Germany.

Another recent study of Breuer and Klose (2013) confirms this view. By decomposing the change in the real effective exchange rate into a nominal exchange rate component and a relative price component, they show how France tends to have the highest elasticities followed by Germany and Italy. Interestingly, the authors also document how (similarly to IMF estimates) Germany seems to gain more from an increase in world demand than France and Italy and France would do.

It emerges, therefore, that countries would benefit from euro depreciation and would be hit by an appreciation in a different fashion. If, under such circumstances, the strength of the euro may have affected the performance of European exports (although this does not prevent to run a current account surplus and is valid especially only for some countries), it is worth wondering about what are the elements that influence the evolution of the exchange rate.

4. EXCHANGE RATE MOVEMENTS: DO FUNDAMENTALS MATTER?

The foreign exchange market is influenced by several factors, and its unpredictability has given rise to a large part of the economic literature, which tends to explain its movements. Especially in recent decades, under the flexible exchange rate systems developed after the collapse of Bretton Woods, these theories have increased their levels of complexity and accuracy, both from the theoretical and empirical point of view.

A strand of this literature is developed by economics scholars who theorize that the value of the exchange rate is based on solid economic fundamentals, such as the current state of the economy, the level of interest rates, the profitability of financial assets, etc.

For example, in the Mundell-Fleming model, the exchange rate is a mere factor that contributes to the balance of the entire system, and therefore it is only influenced by the variables that compose the system itself. For instance, an increase of production (and hence a rise in GDP) will increase prices and this will result in a depreciation of the exchange rate, because of the balance of payments movements. In fact, both of these changes will lead to a deterioration in the balance, and would thus require a depreciation shift to rebalance the system. On the contrary, an increase in the domestic interest rate (relative to foreign rates) will cause a rise in capital inflows (due to higher profit perspectives) in the country and consequently an appreciation of the currency.

According to other models, such as those of the monetarists, the exchange rate depends on the relationship between the amounts of money present in two different countries. Therefore, imbalances in the external accounts are often caused by imbalances between demand/supply of monetary assets. Under flexible exchange rates systems, the exchange rate and prices are the key factors to restore external real balances.

Although it has been a long-standing challenge to tie exchange rates to economic fundamentals, this link has not been proven to be solid. As Richard Meese and Kenneth Rogoff (1983) already showed 30 years ago, a “random walk” model is often proved to be just as good as predictor of exchange rate movements as models based on the economic fundamentals, such as the money supply, trade balance and national income.

4.1. Exchange rate and fundamentals: a simplified test

Since Meese and Rogoffs’ paper, many other economists have tried to defend the fundamental-based exchange rate models. They usually define the relationship between economic fundamentals and exchange rate (current and future) levels as follows:

$$s_t = f_t + z_t + E_t[s_{t+1}]$$

Where s_t is the current exchange rate (defined as the home currency prices of foreign currency) and f_t and z_t are, respectively, observable and unobservable economic current (and/or past) fundamentals that could drive the exchange rate, such as money supplies, money demand shock, productivity shocks, etc.

Similarly, here we test whether some of these fundamentals are able to explain the euro bilateral exchange rate vis-à-vis the US Dollar, the Japanese yen, the UK pound sterling and the Canadian dollar. Similarly to Engel and West (2003), we consider a set of fundamental variables such as relative money supplies, outputs, inflation rates and interest rates.

Table 2 shows the results of the granger causality test for the bilateral exchange rate (see box 1 for the explanation). In 2000-2007, the results are not entirely robust, although they suggest how differentials in the volume of monetary aggregates and in the rate of growth of the economy could have a partial role in explaining the euro exchange rate movements, or at least that a link (albeit weak, and not for all countries) exists between these elements.

Table 2: The role of fundamentals in explaining euro movements before/after the crisis

FUNDAMENTALS	US DOLLAR		JAPANESE YEN		UK POUND STERLING		CANADIAN DOLLAR	
	PRE 2007	POST 2007	PRE 2007	POST 2007	PRE 2007	POST 2007	PRE 2007	POST 2007
Interest rate differentials				**			***	
Real GDP growth Differentials	*				*		**	
Prices differentials			**					
Money Supply Differentials	**		*		**		**	

Note: Relationship significant at (*) 10% level (**) 5% level, (***) 1% level. See box 1 for the explanation.

Source: authors' authors' calculation on ECB and OECD data.

Box 1: Assessing the causality relationship between exchange rate movements and economic fundamentals using the Granger-Wald Causality Test

To determine the causality relationship between exchange rate movements and economic fundamentals we use quarterly data, 2001:1-2014:1. With one observation lost to differencing, the sample size is T 56. We study bilateral euro exchange rates versus the other major economies members of the G7: United States, Canada, Japan and the United Kingdom. The ECB statistical Data Warehouse is the source for the end of quarter exchange rate (s_t), while the OECD is the source for consumer prices (p_t), seasonally adjusted money supply (m_t), real seasonally adjusted GDP (y_t) and interest rates (i_t). We compute the bilateral differences of these fundamentals (f_t) between the Euro area and the other economies, i.e.: $(p_t - p_t^*)$, $(m_t - m_t^*)$, $(y_t - y_t^*)$ and $(i_t - i_t^*)$ where the superscript * stands for the foreign country.

Similarly to the approach used in the literature, we run a multivariate Vector Autoregression (VAR) model in which changes in bilateral exchange rate (Δs_t) are function of changes in the relative fundamentals (Δf_t) between the Euro area and the other

economies on bilateral , i.e. $\Delta (p_t - p_t^*)$, $\Delta (m_t - m_t^*)$, $\Delta (y_t - y_t^*)$ and $\Delta (i_t - i_t^*)$. We then test the causality relationship between these elements running Granger-Wald Causality Test, considering two periods: before and after the crisis. Essentially this econometric technique tests whether changes in (Δs_t) could be not only explained by past values of (Δs_t) , but also by past realizations of the fundamentals (Δf_t) . That is, as long as Δf_t embodies some information on Δs_t in addition to that included in its past values of (Δs_t) , then Δf_t is said to Granger cause Δs_t .

In the Granger-Causality Test, the null-hypothesis (H_0) is that endogenous variables do not Granger cause the dependent variable. In this case (reported in Table 1), consider the four tests for each bilateral equation we have, the null hypothesis cannot be rejected for interest rate ($\Delta (i_t - i_t^*)$) and prices differentials ($\Delta (p_t - p_t^*)$) in the cases of the US, UK in the pre-2007 period and for all the bilateral exchange rates in the period after 2007. Therefore, we cannot reject the hypothesis that interest rate and prices differentials do not Granger cause changes in the exchange rate (Δs_t). On the contrary, we reject the null hypothesis that Money Supply ($\Delta (m_t - m_t^*)$) and Real GDP growth ($\Delta (y_t - y_t^*)$) differentials do not Granger cause bilateral EUR/US Dollar/Pound Sterling/Canadian Dollar for the period before 2007.

It is important to note that the Granger Wald test does not provide clear cut results, since the "Granger causality" should not be entirely interpreted according to the normal meaning of "causality". In other words, Granger causality does not imply real causality. I would say that Granger causality measures if statistically "A happens before B" rather than "A is the cause of B".

4.2. Asset pricing theory, fundamentals and the exchange rate

Several theories have been offered to explain the disconnect between the two. Some recent research supports the idea that exchange rates behave like prices of financial assets, whose movements are primarily driven by changes in expectations about future economic fundamentals, rather than by changes in current fundamentals. As clearly recognized by Obstfeld and Rogoff (1996): "One very important and quite robust insight is that the nominal exchange rate must be viewed as an asset price. Like other assets, the exchange rate depends on expectations of future variables".

Many researchers have followed this approach, by developing models in which nominal exchange rates are asset prices influenced by expectations about the future. According to this approach, exchange rates are prices of assets driven by a present discounted sum of expected future fundamentals, combined with market's expectations concerning present economic conditions.

This approach has allowed partially reconciling the puzzling conflict between the theoretical/empirical analyses on the relationship between economic fundamentals and exchange rates. For instance, Engel and West (2005) re-write existing exchange rate models in a form of a present-value asset-pricing format. In this approach, current fundamentals receive very little weight in determining the exchange rate, while

expectations of what the fundamentals will be in the future are more relevant and very useful in explaining its evolution. In this case, fundamentals-based models - such as exchange rate and trade policy analysis - are still appropriate for economic analysis, but they are just useless in forecasting. This approach has found empirical support, including in the works of Chen, Rogoff, and Rossi (2008) (at least for the exchange rates of Australia, Canada, Chile, New Zealand, and South Africa, in which commodities account for a large portion of exports) and in Engel, Mark, and West (2007).

However, Table 1 seems to suggest that is no longer the case for the euro exchange rate after 2007, at least vis-à-vis the major G7 economies. It shows that the feeble link between exchange rate movements and economic fundamentals (found for the pre-2007 period) is even more attenuated after the crisis. Almost no fundamental significance is detectable after the financial crisis and the turmoil in the financial markets (and foreign exchange market) that followed and yet still takes place. This suggests, therefore, that looking at the fundamentals of the economy and the macroeconomic variables in order to understand the evolution of the foreign exchange markets (and especially the performance of the euro exchange rate) is of little relevance.

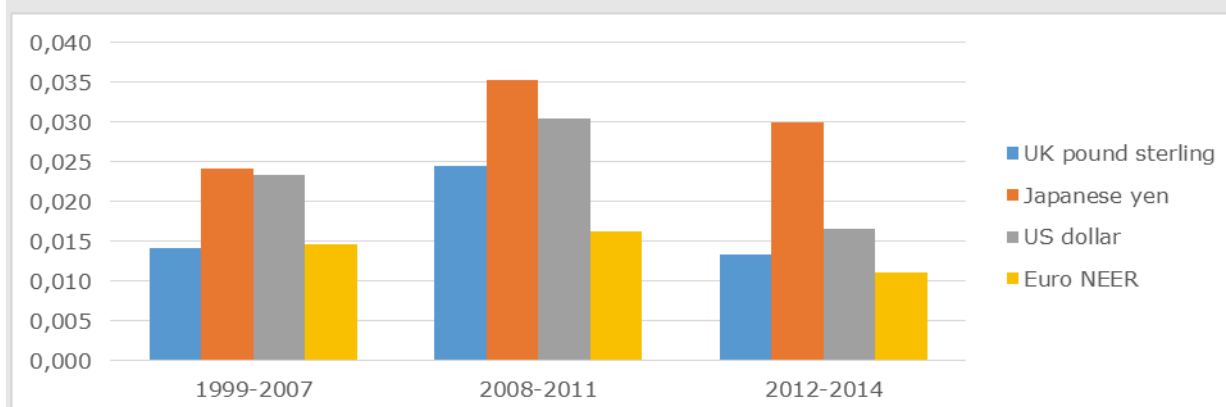
Box 2: Exchange rate volatility

Another consistent result of the empirical literature is that exchange rates tend to be more volatile than what could be justified by the limited changes in their fundamentals. Moreover, many studies have shown that a high volatility of exchange rate tends to deter trade.

Given these patterns, it is both surprising and encouraging that the exchange rate of the euro has been relatively stable recently. Figure 8 below allows for a comparison of exchange rate volatility (measured by the standard deviation of their percentage changes) both across countries and over time.

Two results stand out: the (average effective) exchange rate of the euro is much more stable than that of the other major currencies, especially than that of the US dollar. Moreover, exchange rate volatility has declined over time and is now at an historically low level.

Figure 8: Comparing exchange rate volatility across currencies and over time



Source: Authors' elaboration on BIS data, 2014

This result is even more puzzling in the current economic situation, which is still characterized by a significant uncertainty about future growth and inflation. Theoretical and empirical models of news and uncertainty have argued that market participants may react more strongly to news in periods when they are uncertain about the state and direction of the economy (e.g. Veronesi 1999)

How can these additional conflicting results be reconciled? A possible approach is to consider that exchange rate movements may be driven by both a permanent long-term trend and some transitory noise, as suggested by Engel, Wang and Wu (2008). Under this approach, some stationary fundamentals exist that are able to explain the long-horizon predictability of exchange rates, but in the short-run noisy terms can drive them away from their long-run levels. The short-term noise is related to a fundamental that is not observable, but can be linked to the risk premium for holding a currency. For instance, if a country's real interest rate rises, its currency appreciates not only because its assets pay a higher interest rate but also because they are less risky. This relationship, however, is hard to assess, as the securities of the high-interest rate country could be relatively riskier in the short-run, but could be expected to be less risky than the other country's securities in the more distant future (Engel, 2011).

5. CONCLUDING REMARKS

The euro area is a rather open economy for its size. Exports amount to about 27% of GDP, much higher than other economies of a similar size (US or even Japan). The - admittedly weak - recovery of the last two years would not have been possible without a substantial external impulse. It is thus not surprising that there is widespread perception that the exchange rate is a key variable for the euro area's economy and therefore that any further appreciation would constitute a threat to the recovery.

We show that the linkages between the exchange rate and the real economy are more complex than widely perceived. As the experience of Japan suggests, depreciation does not necessarily translate into large market shares nor does it always give way to a current account surplus. The euro has somewhat appreciated over the last year, but remains today close to its longer term average. It is thus difficult to ascribe the (small) loss of market share, at least if compared to the US, to unfavourable exchange rate movements.

Due to weak domestic demand, the euro area has become the largest source of global current account imbalances – despite the relative strength of its currency.

Overall, it seems very difficult to explain the present strength of the euro in terms of today's economic fundamentals. The exchange rate is determined in very liquid asset markets, which discount future fundamentals, not only those of the euro area per se, but in relation to fundamentals in the rest of world and affected by financial conditions which are not directly related to fundamentals.

This leads to the conclusion that - when considering the performance of the external sector - the focus should not be on the exchange rate but on the ability the economy to respond to changes in global demand, as this is the variable that best explains export performance.

That said, it is clear that a weaker euro could have a positive effect on the export performance of some individual euro area Members States, while it seems difficult to justify a policy intervention at a euro area wide level, which -, moreover - would not be covered by the present ECB mandate.

REFERENCES

- Alcidi C. and D. Gros (2010) "Dollar versus Euro? Reserve Currency Diversification" in *Shoulder to Shoulder: Forging and EU-US Strategic Partnership*, Edited by D. Hamilton
- Bénassy-Quéré A., P-O. Gourinchas, P. Martin and G. Plantin (2014) "The euro in the currency war", CEPR Policy Insight No. 70, February 2014
- ECB (2013), "The International role of the euro"
- Engel, C. M. and West, K. D. (2003). Exchange Rates and Fundamentals. ECB Working Paper No. 248. August 2003
- C. Engel and West, K. D. (2005). Exchange Rates and Fundamentals. Journal of Political Economy, University of Chicago Press, vol. 113(3), pages 485-517, June.
- Engel, C., Mark, N. C. and West, K. D. (2007). Exchange Rate Models Are Not as Bad as You Think. NBER Working Papers 13318, National Bureau of Economic Research, Inc.
- Engel, C. (2011). The Real Exchange Rate, Real Interest Rates, and the Risk Premium, NBER Working Papers 17116, National Bureau of Economic Research, Inc.
- Obstfeld, M. and Rogoff, K. (1995). Exchange Rate Dynamics Redux. Journal of Political Economy, University of Chicago Press, vol. 103(3), pages 624-60, June.
- Chen, Y., Rogoff, K. and Rossi, B. (2010). Can Exchange Rates Forecast Commodity Prices?. The Quarterly Journal of Economics, MIT Press, vol. 125(3), pages 1145-1194, August.
- Meese, R. and Rogoff, K. (1983). Empirical Exchange Rate Models of the Seventies: Do They Fit Out of Sample? Journal of International Economics 14: 3-24.
- Wang, J., Wu, J. and Engel, C. (2008). Can Long Horizon Data Beat Random Walk under Engel-West Explanation?. 2008 Meeting Papers 294, Society for Economic Dynamics.
- Wigglesworth R. (2014) Indonesia joints EM in a rush to issue euro debt, Financial times, 13 June 2014