



Horyzonty Polityki  
2013, Vol. 4, N° 7

**KAMIL JACH**

Cracow University of Economics

## **The Concept of Currency Wars in the Global Economy. Observations of the Renminbi, American Dollar and Euro**

### *Summary*

The following article analyses the factors that trigger a currency war and its impact on the economy. The situation on the United States – Chinese front is difficult since both countries are struggling to keep the exchange rate as low as possible. Decisions for maintaining these goals are not simple and often lead to a deterioration of the economy. The situation on the United States – Euro Area front is also dramatic as the euro is currently facing a large debt crisis. Furthermore, years of living beyond their means has led to the current situation. More and more countries are facing a fear of insolvency, scared investors are withdrawing their funds and putting them in better, much safer investments. Figures as well as detailed descriptions will give the reader a better understanding of the mechanisms and objectives behind the initiating of a currency war.

### **KEYWORDS**

Currency war, economy, China, United States, euro area, euro, renminbi, dollar

## KONCEPCJA WOJEN WALUTOWYCH W GLOBALNEJ GOSPODARCE. ANALIZA RENMINBI, AMERYKAŃSKIEGO DOLARA ORAZ EURO

### *Streszczenie*

Artykuł przedstawia mechanizmy działania wojny walutowej oraz analizuje konkurencyjną dewaluację dolara względem euro i juana. Dla lepszego zrozumienia owych mechanizmów, przedstawiona została podstawowa definicja oraz podział kursów walutowych na płynne i stałe. Zarówno model Mundella-Fleminga, jak i model AA-YY w warunkach płynnego kursu walutowego pokazują, jak kurs walutowy powinien się zachować podczas prowadzenia ekspansywnej polityki monetarnej, która jest jednym z narzędzi stosowanych podczas prowadzenia wojny walutowej. Część empiryczna artykułu ukazuje związki pomiędzy prowadzeniem polityki nastawionej na obniżenie kursu waluty krajowej a jej realnym wpływem na zwiększenie eksportu.

### **SŁOWA KLUCZOWE**

wojna walutowa, gospodarka, Chiny, Stany Zjednoczone, strefa euro, euro, renminbi, dolar

### INTRODUCTION

Wars have been with us from the beginning of the history. Millions of people around the world died during last global military conflict that had began in 1939. Despite the undisputed tragedy, it is worth mentioning that World War II caused a major financial collapse of the global economy and the rebuilding of the pre-war landscape lasted for many years. In Europe, where the conflict took a heavy toll, the Marshall Plan was introduced as a possible way of alleviating poverty and starvation in Europe. However, the probability of a global conflict of the same or similar scale in present day world is rather low. Due to the fact that physical conflict is costly, it is difficult to hide under the cover of politicians that try to convince their citizens of the rightness of the armed conflict. A war that broke out today would be much more sophisticated than those that occurred in the past. Now, the background of the conflict is the virtual world with

trillions of dollars tied to it<sup>1</sup> [Bech 2012, p. 33]. Not tanks, ships and atomic bombs but internal, political power, political stability and technological advantage are to be decisive factors.

Money plays a significant role in the economy of every country. A strong currency is a sign of a prosperous national economy, a kind of barometer. However, a currency might become a medium of a war on a large scale. Conducting a speculative attack by one person or a smaller group of traders is rare because the included capital exceeds the opportunity<sup>2</sup>. However, if the attack is conducted by a Central Bank (CB), then it can be considered as a sign of a currency war. The ideas that lie behind the currency are difficult to evaluate but the general approach to the presented issue would describe the possible way of moving the war in the nearest future, and also explains the underpinning of the history of currency wars.

The main aim of the article is to describe and analyze the impact of the monetary easing interventions undertaken by the CB in the environment of both a floating exchange rate (USD/EUR) and a fixed exchange rate (USD/CNY). More detailed operational purposes of this study are as follows:

- P1: to briefly explain the exchange rate mechanism,
- P2: to describe mechanism that is used for controlling both fixed and floating exchange rates in times of a currency war,
- P3: to assess the sensitiveness of the impact of mechanisms on exchange rates.

The aim is to present the impact of monetary interventions on the exchange rates; a quantitative research method will mainly be used for the evaluation. However, the exchange rate is determined by many factors, thus the article focuses only on the presented tools that affect the rate of a currency in order to gain more competitive advantage.

---

1 Foreign currency daily volume.

2 Exception here is George Soros and speculative attack on GBP in 1992.

## THEORETICAL BACKGROUND OF THE EXCHANGE RATE

The definition of the nominal exchange rate is: “price of the foreign currency in terms of domestic currency” [Blanchard 2003, p. 377]. It can be stated that 1 euro (EUR) costs 1.30 of the American dollar (USD)<sup>3</sup> so it means that the exchange rate is expressed as a relation of euro to dollar. From the economic point of view the reverse can be also be stated as a relation of dollar to euro, which is in this case 0.7692. An exchange rate is usually presented as an abbreviation, sometimes using the sign of a given currency, so it will be presented as [Budnikowski 2006, p. 284-285]:

$$\frac{EUR}{USD} = 1,30$$

or,

$$\frac{EUR}{USD} = 1,30$$

The relationship between two currencies (exchange rate) is either fixed or floating. The watershed for the creation of exchange rate regimes occurred in 1944. At Bretton Woods, New Hampshire, the United States, 730 delegates from 44 countries gathered to discuss a new monetary and exchange rate system. The outcome of the negotiation was a resolution which stated that all member countries except the United States were obliged to peg their currency to the US dollar. Unfortunately, the Bretton Woods Agreement collapsed in 1973 when a global exchange rate crisis occurred. From that year many nations have adopted different exchange rate agreements. Some countries accepted the fixed exchange rate regime while others have opted for a floating one believing that it is able to manage the most optimal and healthy rates for the domestic currency [Blanchard 2003, p. 437]. However, the era of floating exchange rates, that had begun after 1973

---

<sup>3</sup> By using “dollar” in this article author always means USD.

finished the relation between dollar and gold. From that moment, only CB could influence the exchange rate, but interventions ought to be rare [Rickards 2011, p. 82-90].

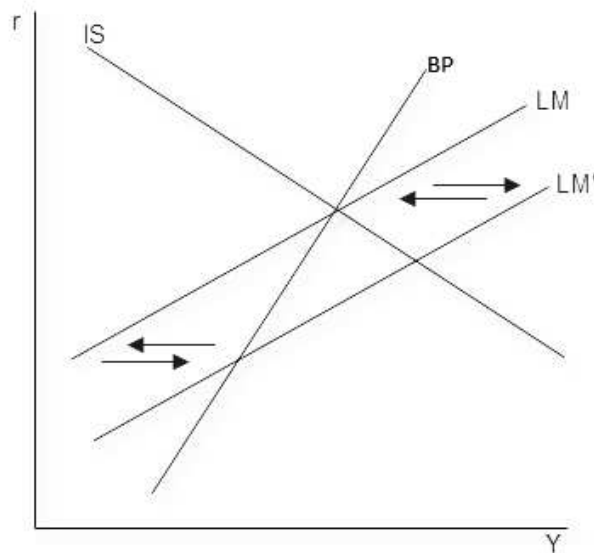
After the 1973 some countries chose to maintain a fixed exchange rate towards some other external currencies. The term 'fixed' is not totally precise, because the exchange rate can be changed, but it is rather rare. A country cannot just peg the currency to whatever level of the other currency. Rather there is some kind of measurement that underpins this decision. Olivier Blanchard [2003, p. 428] points out that what is essential for the currency that is to be pegged is the condition that the exchange rate and the interest rate must satisfy the interest rate parity.

The most important aspect of operating a fixed exchange rate is the impact of both fiscal and monetary policy, which can be used to prevent dramatic fluctuations of the business cycles. The effect of using fixed exchange rates is that it ties two economies, and two monetary policies of particular countries together. The undeniable fact is that the largest economies can decide whatever they wish in terms of monetary policy, and their smaller counterparts are externally forced to follow them [Dunn and Mutti 2004, p. 419-420]. Figure 1 shows the expansionary monetary policy shifts of the LM curve (Liquidity preference – Money supply) to the right. The result of this shift is a deficit in the area of the balance of payment (BP<sup>4</sup>) that leads to a loss of foreign exchange reserves and finally the reduction of the money supply that brings the LM curve back to the initial point [Dunn and Mutti 2004, p. 420].

---

4 The Mundell – Fleming model (the IS-LM-BP model) is an extension of the IS-LM model.

Figure 1. The effect of an expansionary monetary policy with fixed exchange rate



Source: Dunn and Mutti 2004, p. 420.

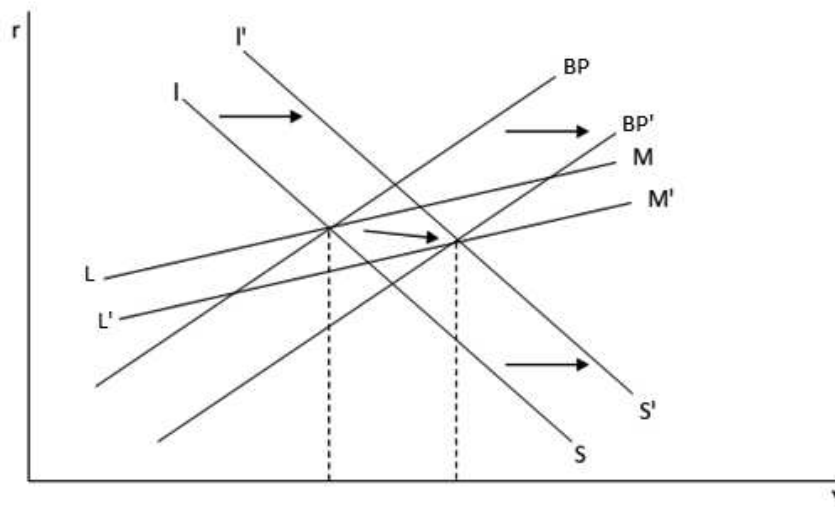
The equilibrium returned to the previous point which shows the ineffectiveness of the expansionary monetary policy in increasing income and domestic output.

Lutkowski [1996] describes the floating exchange rate very precisely. He manages to identify the advantages and drawbacks of this kind of exchange rate for the national economy. The most important factor is the fact that the floating exchange rate is clearly a market solution, where no governmental forces are involved. This allows the exchange rate to self-regulate to the existing market situation. It also exempts the CB from the intervening through the buying and selling of foreign currencies to maintain a certain level of the reserves and balance of payments, but it does not prohibit the intervention if they are necessary for the economy. The next point is that this kind of currency regime isolates the national economy from the importing of foreign inflation or deflation, through the mentioned self-regulating feature. Thanks to this, particular countries can focus mainly on realizing their own internal economic goals. On the other hand, the floating exchange rate can be also seen as a mechanism that strongly destabilizes the internal economy and the level of prices through its tendency to oscillate. Lutkowski also pays attention to the fact that

the change of the rate can under some circumstances be subject to expectations of further changes. It can especially be seen as having the speculative character of floating exchange rates. A greater degree of autonomy in the field of the monetary policy does not prevent the CB from providing a strict monetary stabilization policy [Lutkowski 1996, p. 50-56].

The effects of an expansionary monetary policy causes the national currency to depreciate which actually leads to the trade balance becoming more competitive. Because there are no foreign reserves, member bank reserves of the money supply result in a decline of GDP [Dunn and Mutti 2004, p. 435-436]. The effect of an expansionary monetary policy under a flexible exchange rate can be illustrated by the figure 2.

Figure 2. The effect of expansionary monetary policy with flexible exchange rate

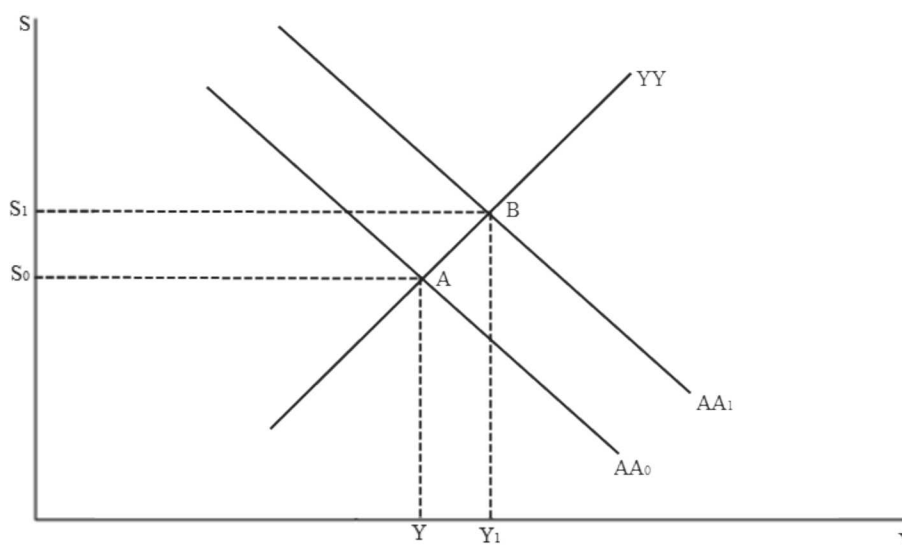


Source: Dunn and Mutti 2004, p. 440.

According to this situation, monetary policy remains much more powerful under a floating exchange rate. In the situation when the currency depreciates, the IS curve shifts to the right. As a result of that, the BP (balance of payment line) curve also shifts to the right stating a higher level of output (Y) and slightly lower interest rates (r) [MacDonald 2007, p. 113-114].

Another macroeconomic model was presented by Montiel [2012]. He operates with the model that indicates the equilibrium on the asset and goods market.

Figure 3. The effects of expansionary monetary policy



Source: Montiel 2012, p. 325.

Figure 3 presents monetary expansion and its consequences with model represented as relationship between domestic currency exchange rate ( $S$ ) and domestic output ( $Y$ ). Changes in money supply affect only the asset market equilibrium curve ( $AA$ ) while the goods market equilibrium curve ( $YY$ ) does not change its position. Increasing of money supply shifts  $AA$  to the right (from  $AA_0$  to  $AA_1$ ). New equilibrium point is stated in point  $B$ . As a result of increasing the level of money in the economy, the domestic currency depreciates ( $S$  goes up from  $S_0$  to  $S_1$ ) and domestic output raises. According to Montiel, expansionary monetary policy lead to money supply surplus which results in the decrease in domestic interest rates. Lower domestic interest lead to capital outflow from domestic market which lead to the depreciation of domestic currency. Currency depreciation encourages buying domestically produced goods [Montiel 2012, p. 324-326].



## THEORETICAL BACKGROUND OF THE CURRENCY WAR

The term currency war has been initially used by Guido Mantega, the Brazilian minister of finance [Cline and Williamson 2010, p. 1] in 2010. Graham Bird and Thomas D. Willett in their work *Currency Wars: Rhetoric and Reality*, summarized currency wars as those that

involve using a series of policy weapons in an aggressive or defensive and retaliatory way to gain or retain a competitive advantage aimed at keeping imports lower and export higher than they would otherwise be [Bird and Willett 2011, p. 123].

According to the citation, the term currency war points out the unusual activities a CB undertakes and that are not always cohesive with the main CB goal – the prevention of inflation. A CB supports low inflation but not at the cost of growth of the economy [Karwowski 2009]. This specific managing of the CB leads to the targeting of a short term goal – currency weakening. It is worth mentioning that a currency war leads to political and military consequences. Due to the potential conflict that may arise in the background of a competitive devaluation, manipulating the currency exchange rate is forbidden by the IMF's *Articles of Agreement*. Article IV (Obligations Regarding Exchange Arrangements), section 1 and subsection iii clarifies that:

avoid manipulating exchange rates or the international monetary system in order to prevent effective balance of payments adjustment to gain an unfair competitive advantage over other member [IMF 2011, p. 5]

In this sense, politicians, through the use of tools for manipulating the exchange rate are breaking the peace treaty that has been adopted at the United Nations Monetary and Financial Conference in Bretton Woods in July 1944. Breaking up the peace treaty inevitably leads to a further escalation of economic violence. Bird and Willett [2011] pointed out political weapons that ought to be used for manipulating the exchange rate. The first tool that has been described by them is connected with intervening in the forex market. The typical strategy is to buy a foreign currency and sell the domestic one. The effect is

that the foreign currency appreciates, while the domestic depreciates as a result of the higher supply of money. However, this tool is not free from defects. Selling domestic currency causes inflationary pressure that forces the currency to appreciate against the real exchange rate. The authors indicate that in the short-term the government may sterilize the inflation effect by issuing bonds, but if the bond market appears to be less liquid, then issuing additional bonds will result in increasing interest rates. Another tool for manipulating the exchange rate is associated with capital controls. Based on Bird and Willett, it is highly complicated to evaluate

how effective they are in influencing international capital movements and whether their costs exceed their benefits [Bird and Willett 2011, p. 126-127].

However, using capital controls are not being perceived as being a good long-term option. A third tool is an expansionary monetary policy. The quantitative easing (QE), is a type of monetary policy whose main goal is to stimulate domestic demand. To be more precise, quantitative easing is a tool that leads to lower short-term interest rates. When rates are on a level near to zero, then the CB starts to buy domestic bonds [G.I., 2013].

## THE EMPIRICAL ANALYSIS OF CURRENCY COMPETITIVE DEVALUATION

The analysis starts by examining the QE initiated by the Federal Reserve (FED) and the response of euro (EUR) and renminbi (CNY) to that unconventional monetary policy. The discussion paper, *The threat of 'currency wars': A European perspective* analyses the effects of QE 2, arguing that it

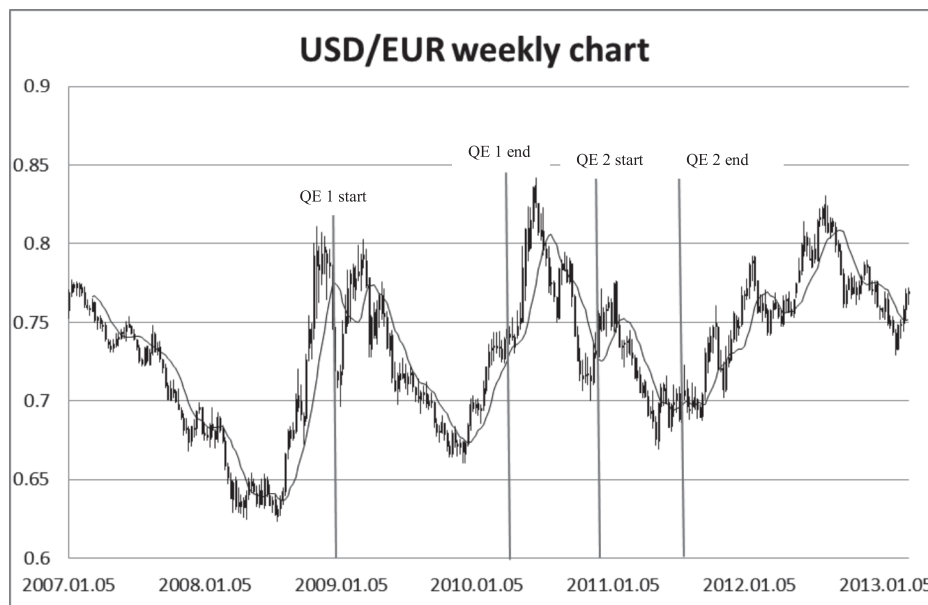
leads to the weakening of the dollar vis-a-vis floating exchange rate countries, and to capital outflows especially to the emerging countries" [Darvas and Pisani-Ferry 2011, p. 21].

The inflow of capital increases the emerging economies' exchange rates and if the CB intervenes in the forex market with currency

reserves without the ability to sterilize money creation, inflationary pressure will result in an increase of interest rates which provide further capital inflows [Darvas and Pisani-Ferry 2011, p. 21-22].

Figure 4 presents the USD/EUR weekly chart from 2007 to 2013. Price fluctuated in the narrow band from 0.85 to 0.63 euro per dollar. QE 1 had started in on November 25th [Board of Governors of the Federal Reserve System 2008] and ended on 31 March 2010.

Figure 4. USD/EUR weekly chart from January 2007 to March 2013



Source: Portal Stooq, <<http://www.stooq.pl>> (retrieved on May 10, 2013)

The reaction to the easing of policy was momentous and the dollar fell by about 0.10. After a quick recovery to 0.80 in February 2009, the rate fell noticeably to the level of 0.66 in December 2009. The end of the QE 1 operation took place in March 2010. QE 1 seemed to be an effective tool for providing a competitive devaluation for dollar. The reaction to the announcement of the introduction of an easing of monetary policy was immediate. QE 1 completed its mission in lowering the USD exchange rate<sup>5</sup>. The same conclusion can be made

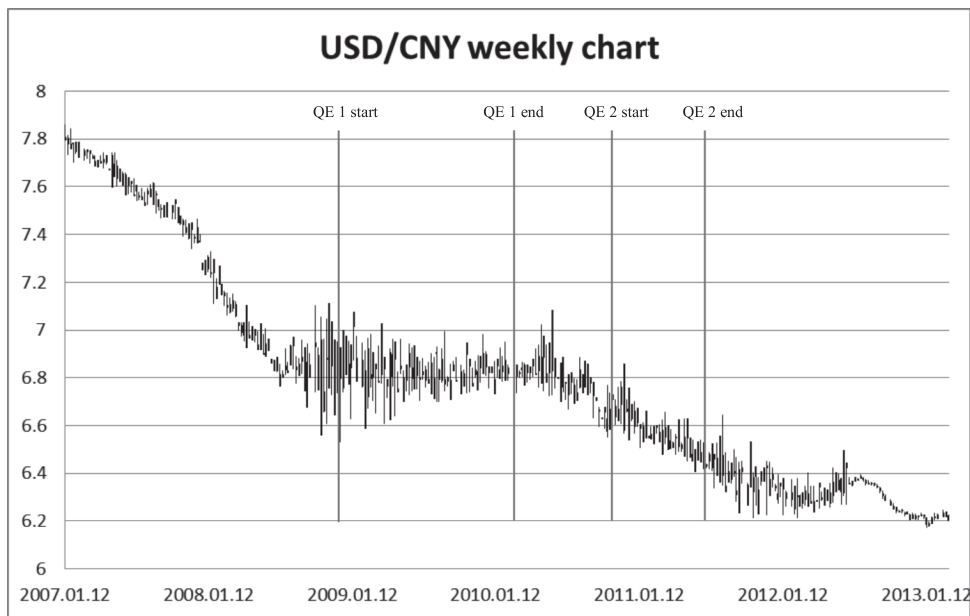
<sup>5</sup> As the article limitation states, other factors that may have influenced the exchange rate are ignored.

when analyzing the impact of the second turn of the QE. QE 2 was announced in November 2010 by the FOMC with statement:

The Committee will maintain its existing policy of reinvesting principal payments from its securities holdings. In addition, the Committee intends to purchase a further \$600 billion of longer-term Treasury securities by the end of the second quarter of 2011 [Board of Governors of the Federal Reserve System 2010].

During that time, the exchange rate declined from 0.76 to 0.70 euro per dollar which indicates that the operation weakened the dollar. The impact of the unconventional monetary policy on the free floating exchange rate has been notable, but does the QE have an impact on the USD/CNY? Figure 5 presents the impact of the QE 1 and QE 2 on the USD/CNY, which is a fixed exchange rate environment.

Figure 5. USD/CNY weekly chart from January 2007 to March 2013



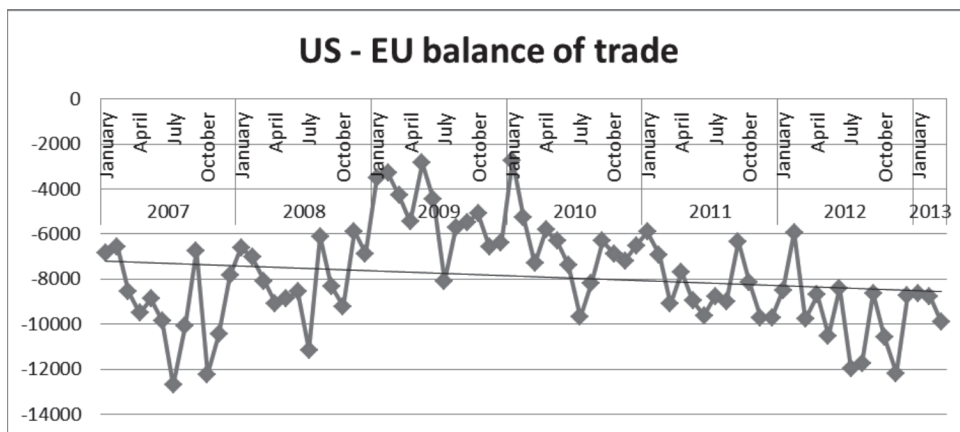
Source: Portal Stooq, <<http://www.stooq.pl>> (retrieved on May 10, 2013)

The renminbi did not respond to the first wave of the QE. The currency rate, from December 2008 to March 2010 has been fluctuating in very narrow bands, ranging from 6.60 to 7.10 USD/CNY. However, the effect of the QE 2 was robust and the dollar weakened from 6.81 to 6.40 within 8 months.

The QE policy undertaken by the FED weakens the price of the dollar. The impact on the floating exchange rate is more distinct, thus this type of exchange rate controlling is more powerful towards the euro than renminbi. Nevertheless, it is worth mentioning that after the ending of QE 2, the dollar swiftly gained in value towards the euro<sup>6</sup>, while towards the renminbi it continued to weaken.

How this untypical monetary policy affects the exchange rate has been explained, but the reason for the intervention was not directed towards weakening the currency itself. It is directed towards an improvement of the balance of trade. Figures 6 and 7 present the US balance of trade between both China and euro area.

Figure 6. US – EU balance of trade (in millions of dollars) from January 2007 to March 2013



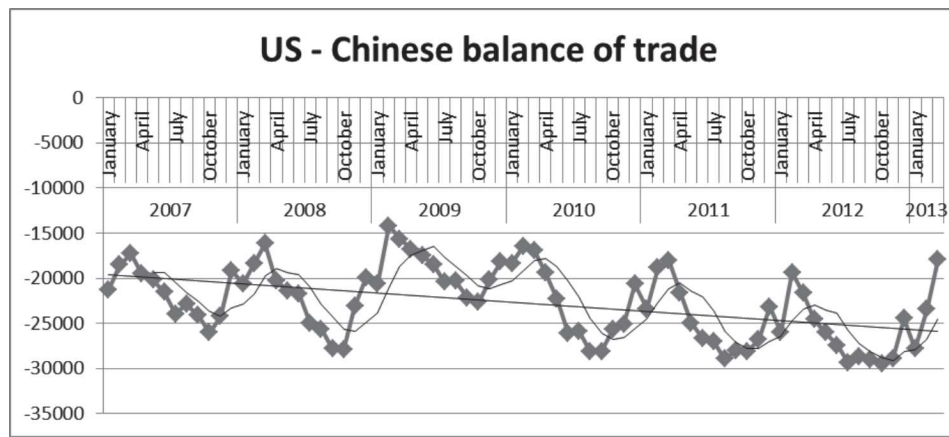
Source: United States Census Bureau, <<http://www.census.gov>> (retrieved on May 10, 2013)

Before QE 1, in December 2008, the value of trade balance was – 6869 mln dollars. After applying the easing tool, the value increased, reaching its zenith at – 2833 mln dollars in May 2009. This is an increase in exports (together with a decrease in the importing of foreign goods) by around 4036 mln dollars in 5 months. After this slump, a – 8091 mln dollars decrease followed, which eventually reached a level of – 7307 mln dollars in March 2010, which was when QE1 ended. Initially,

6 It is debatable whether the raising of the exchange rate is the result of QE ending, or is a consequence of the debt crisis in the euro area. It is highly probable that the uptrend is a result of mixing those both factors.

QE 1 had a good effect on the balance of trade, but the final remark is negative. As indicated in figure 6, QE 2 also did not influence trade balance both in short and medium term. The trend line ( $y = -18.499x - 7160.5$ ) indicates that the general tendency for the US – euro area balance of trade is negative from the US point of view.

Figure 7. US Chinese balance of trade (in millions of dollars) from January 2007 to March 2013



Source: United States Census Bureau, <http://www.census.gov/> (retrieved on May 10, 2013)

A moving average<sup>7</sup> is sinusoidal and is within a range of between – 30 000 mln dollars and – 15 000 mln dollars. The United States has better trade balance at the beginning of every year, while around Christmas time shows a rise in the power of the import side. The effects of the QE 1 and QE 2 are hardly visible, or even going further, the trend of the trade balance is getting more negative over the presented period of time, as the trend line ( $y = -84.624x - 19532$ ) on figure 7 indicates.

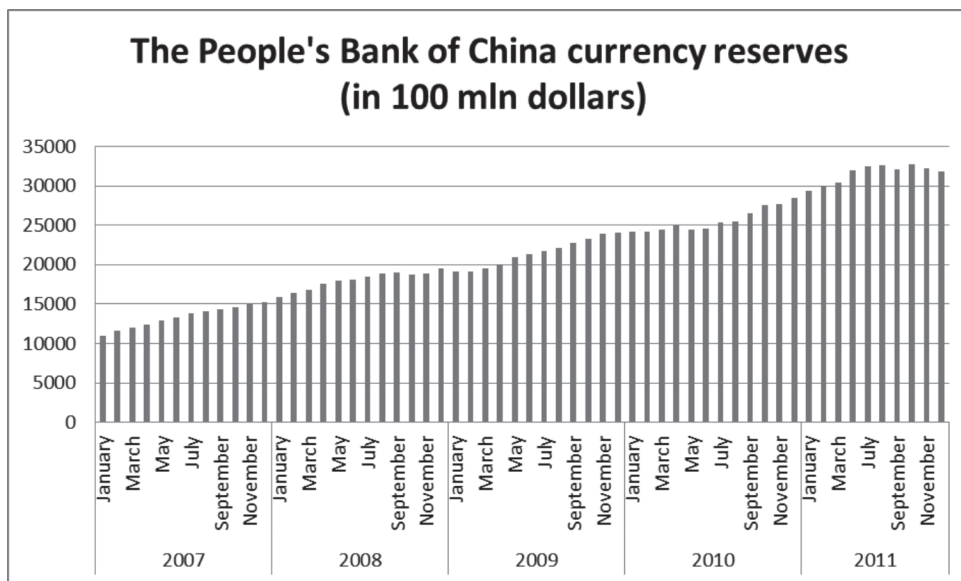
The currency pegged to the dollar is itself a tool for driving a currency devaluation. First and foremost, the economy that uses this tool is China. China has pegged its currency to the dollar<sup>8</sup> in order

<sup>7</sup> Moving average period equals to 7. It has been used to show regular character of US – Chinese balance of trade fluctuations that are sinusoidal and repeatable.

<sup>8</sup> An exception was from 2005 to 2008 when China adjusted and let renminbi to raise by about 17 percent.

to stimulate the export sector which is considered to be the most important for their economy. China has accumulated large dollar-based reserves, which suggested that the renminbi is undervalued [Darvas and Pisani-Ferry 2011, p. 6-7].

Figure 8. Chinese currency reserves from January 2007 to December 2011



Source: The People’s Bank of China (retrieved on May 10, 2013)

As the People’s Bank of China (PBC) controls the renminbi exchange rate, to stabilize the effect of QE, it buys more dollars, increasing the foreign currency reserves (figure 8). Currency reserves enlarged from 11 046 mln dollars to 31 811 mln dollars in five years; that is, by almost 200%! In order to sell domestic currency, the PBC tries to buy dollars (inducing private investors to sell dollar) in the forex market. If the market is liquid, then the effect of selling domestic currency and buying a foreign one is relatively small when compared to the size of the funds that have been used for the intervention. But, if that side of the transaction is the PBC and its renminbi, the depreciation of the currency is large as foreigners need permission in order to buy Chinese currency [Gagnon 2013].

## CONCLUSIONS

The analysis conducted in the article shows that leading currency war is not an easy task. FED by conducting both QE1 and QE2 shows that it has powerful tool for weakening its domestic currency. Both operations succeeded in lowering the USD/EUR (floating) exchange rate. The AA-YY model (presented by Montiel) for floating exchange rate confirmed that the increase in money supply results in depreciation of the domestic currency. Unconventional monetary policy partially failed in increasing balance of trade between US and EU. Partially means that the initial response to both QEs was positive but the final remark was negative. The analysis of the USD/CNY exchange rate and its responses to the easing policy tools shows the inefficiency of monetary policy under fixed exchange rate. China uses its own methods: pegging the renminbi vis-a-vis to dollar and buying foreign currency on the forex market. The trade balance in the Chinese – US line during the 2008-2013 period of time is decreasing, however not in a manner that causes disquiet. Tools that were used for devaluation (and depreciation) of the currency succeeded, but net export did not raise for the US, so the outcome of the currency war is pending.

## REFERENCES

- Bech, M., 2012, *FX volume during the financial crisis and now*, "BIS Quarterly Review", March 2012, electronic version: <[http://www.bis.org/publ/qtrpdf/r\\_qt1203f.pdf](http://www.bis.org/publ/qtrpdf/r_qt1203f.pdf)> (access: 28.05.2013).
- Bird, G., Willett, T., 2011, *Currency Wars: Rhetoric and Reality*, "World Economics", Vol. 12, No. 4.
- Blanchard, O., 2003, *Macroeconomics*, Third Edition, Prentice-Hall, New York.
- Board of Governors of the Federal Reserve System, 2008, electronic version: <<http://www.federalreserve.gov/newsevents/press/monetary/20081125b.htm>> (access: 12.05.2013).
- Board of Governors of the Federal Reserve Systems, 2010, electronic version: <<http://www.federalreserve.gov/newsevents/press/monetary/20101103a.htm>> (access: 12.05.2013).
- Budnikowski, A., 2006, *Międzynarodowe stosunki gospodarcze*, 3rd edition, Polskie Towarzystwo Ekonomiczne, Warszawa.



## The Concept of Currency Wars in the Global Economy

---

- Central Intelligence Agency, *Country Comparison : GDP (purchasing power parity) – The World Factbook*, electronic version: <<https://www.cia.gov/library/publications/the-world-factbook/rankorder/2001rank.html?countryName=China&countryCode=ch&regionCode=eas&rank=3#ch>> (access: 29.03.2013).
- Cline, W.R., Williamson, J., 2010, *Currency wars?*, Peterson Institute for International Economics, Washington.
- Darvas, Z., Pisani-Ferry, J., 2011, *The threat of “currency wars”: A European perspective*, Institute of Economics, Hungarian Academy of Science, Budapest.
- Dunn, R., Mutti, J., 2004, *International Economics*, 6th edition, Routledge, New York-London.
- Gagnon, J., 2013, *Currency Wars*, Peterson Institute for International Economics, Washington.
- G.I., 2013, *Positive-sum currency wars*, “The Economist”, Feb 14<sup>th</sup> 2013, electronic version: <<http://www.economist.com/blogs/freeexchange/2013/02/what-qe-means-world>> (access 31.03.2013).
- IMF, 2011, *Articles of Agreement*, International Monetary Fund, Washington D.C.
- Karwowski, J., *Zadania banków centralnych we współczesnej gospodarce*, electronic version: <[http://www.karwowski.edu.pl/attachments/File/Zadania\\_bankow\\_centralnych.pdf](http://www.karwowski.edu.pl/attachments/File/Zadania_bankow_centralnych.pdf)> (access: 15.03.2013).
- Lutkowski, K., 1996, *Międzynarodowy system walutowy*, Poltex, Warszawa.
- MacDonald, R., 2007, *Exchange Rate Economics: Theories and Evidence*, Routledge, New York-London.
- Montiel, P., 2012, *Makroekonomia międzynarodowa*, przekł. M. Dąbrowski, P. Stanek, Wolters Kluwer, Warszawa (Montiel, P., 2009, *International Macroeconomics*, Willey-Blackwell, Chichester).
- Rickards, J., 2011, *Wojny walutowe: nadejście kolejnego globalnego kryzysu*, One Press, Gliwice.