International Imbalances and International Adjustment during the Global Financial Crisis.

Author: Petra Klusakova

Supervisor: Eric Pentecost

Dissertation Work

University of Antwerp

2014

ACKNOWLEDGMENTS

I would like to express my sincerest thanks to Professor Eric J. Pentecost for his guidance, support, patience and valuable recommendations.

DECLARATION OF AUTHORSHIP

I, Petra Klusáková, hereby declare that the thesis "International Imbalances and International Adjustment during the Global Financial Crisis" was written by myself, and that all presented results are my own, unless stated otherwise. The literature sources are listed in the Literature Review section.

Prague, September 27th, 2014

……..

Signature

ABSTRACT

Despite the fact that international imbalances are not a new phenomenon, their development after the year 2000 has brought a new wave of debates addressing their role in the global economy and the recent financial crisis. After the year 2000 international imbalances started to rise dramatically. However, the situation changed with the arrival of the global financial crisis when the current account´s positions narrowed significantly. My aim is to asses if the pre-crisis imbalances reflected rational behaviour of countries or if their extent exceeded levels consistent with sustainable current account positions. If the latter is true, did the adjustment process correct these excesses? By creating a proxy for the excessive part of the current account I find that a significant part of the excesses closed during the crisis and that even nowadays current account imbalances do not reach pre-crisis peak´s values anymore. The results also reveal that the adjustment process was the most severe in the case of deficit and advanced countries. Next I analyse the channels through which this adjustment has taken place and I conclude that the contraction of current account imbalances was caused by a mixture of output, demand and income growth changes. In my sample, the adjustment of exchange rate seems to have no explanatory power as far as the current account contraction is concerned. Finally I focus on identifying the root causes of the global imbalances and the importance of adopting changes in the international monetary and financial system. I conclude that these reforms are crucial for preventing the global imbalances from re-accumulation.

LIST OF SHORTCUTS

ADV	*ADVANCED COUNTRIES*
CA	*CURRENT ACCOUNT*
DEF	*DEFICIT COUNTRIES*
ECB	*EUROPEAN CENTRAL BANK*
EM/DE	*EMERGING/DEVELOPING COUNTRIES*
EMU	*EUROPEAN MONETARY UNION*
EU	*EUROPEAN UNION*
G20	*PREMIER FORUM FOR 19 COUNTRIES + EUROPEAN UNION*
GDP	*GROSS DOMESTIC PRODUCT*
HLM	*HARBERGER-LAURSEN-METZLER*
IMF	*INTERNATIONAL MONETARY FUND*
NFA	*NET FORREIGN ASSETS*
OLS	*ORDINARY LEAST SQUARES*
SUR	*SURPLUS COUNTRIES*
UK	*UNITED KINGDOM*
UNCTAD	*UNITED NATIONS CONFERENCE ON TRADE AND DEVELOPMENT*
US	*UNITED STATES*
USA	*UNITED STATES OF AMERICA*
WEO	*WORLD ECONOMIC OUTLOOK*

TABLE OF CONTENT

ACKNOWLEDGMENTS **2**

ABSTRACT **3**

LIST OF SHORTCUTS **4**

TABLE OF CONTENT **5**

INTRODUCTION **6**

1. INTERNATIONAL IMBALANCES **9**

1.1. THEORETICAL BACKGROUND 9
1.2. DEVELOPMENT OF GLOBAL IMBALANCES BEFORE 2008 10
1.3. DEVELOPMENT OF GLOBAL IMBALANCES AFTER 2008 13

2. CURRENT ACCOUNT ADJUSTMENT DURING 2008-2010 ..... **15**

2.1. SUDDEN STOPS 15
2.2. EMPIRICAL MODEL 16
2.2.1. HYPOTHESIS AND RESEARCH QUESTIONS *16*
2.2.2. DATA AND METHODOLOGY *16*
2.2.3. MEDIUM-TERM CURRENT ACCOUNT DETERMINANTS *17*
2.2.4. CURRENT ACCOUNT GAP MEASURE *22*
2.2.5. MULTIVARIATE REGRESSION *23*
2.2.6. UNDERLYING MECHANISMS OF THE ADJUSTMENT *25*

3. ALTERNATIVE VIEWS AND POLICY RECOMMENDATIONS **28**

3.1. ALTERNATIVE APPROACHES 28
3.2. POLICY RECOMMENDATIONS 29
3.2.1. UNITED STATES *32*
3.2.2. CHINA *32*
3.2.3. EUROPE AND JAPAN *33*

CONCLUSION **34**

LITERATURE REVIEW **36**

APPENDIX **40**

LIST OF TABLES **41**

LIST OF FIGURES **41**

INTRODUCTION

Despite the fact that international imbalances are not a new phenomenon, its development after the year 2000 has brought a new wave of debates addressing its role in global economy and recent financial crisis. The need for an international adjustment has been discussed for a long period of time and even though there more or less exists an agreement on what major world economies should do to deal with these imbalances, unfortunately little progress had been made before the outbreak of the world financial crisis. On the other hand, global imbalances are generally considered to be one of the root causes of the financial crisis which started in 2007 in the US financial market. The crisis fully revealed a discrepancy between global savings and investment and an urgent need to reform the global financial system so that the imbalances should not reach its pre-crisis values anymore.

The dramatic development was fostered by world major economies´ functioning. Whereas the main creditor country China ran large current account surpluses in the pre-crisis years, the leading debtor country the USA faced due to rising current account deficits serious problems in the external balance. However, it was only after the year 2000 when the imbalances started to deteriorate at a dramatic pace. Flows of capital from surplus to debtor countries consequently pushed interest rates down and enabled advanced economies to borrow cheaply abroad and to finance the bubbles in housing and financial markets (Dunaway, 2009). Why it was possible for global imbalances to constantly worsen without any visible adjustment for such a long time remains a question.

After the year 2008 we could observe a sharp decline in asset and oil prices, tightening credit and limiting the possibility of external finance for several heavily indebted countries (Lane & Milesi-Ferretti, 2011). According to economic literature such a turn in global financial conditions should provoke a narrowing of the current account imbalances. As the data show the imbalances indeed considerably shrank after the outbreak of the crisis and even currently do not reach the pre-crisis peak anymore. Given its uniqueness this period provides economists with an extraordinary opportunity to study the current account imbalances and the global financial crisis together. Majority of papers are primarily related to policy recommendations and future predictions or a link between the crisis and global imbalances´ contribution to it, however, less attention was given to the adjustment process itself.

The main paper which inspired my intention to focus on the development of current account imbalances during the crisis is an article by Lane and Milesi-Ferretti (2011). Based on the model

of these authors I decided to test their hypothesis and research questions again, neverthless with a set of different countries and different time period. My aim is, similarly to their paper, to analyse whether pre-crisis current account positions were, based on its long-term development and underlying macroeonomic fundamentals, excessive and unsustainable in the long run. From the logic of the adjustment process countries experiencing the most excessive values of the current account in the pre-crisis period should consequently experience the most significant and probably the most painfull adjustment process. (Lane & Milesi-Ferretti, 2011) Is this statement consistent with my country sample? And how the international adjustment has taken place? Which channels were the most important in narrowing the imbalances? What was the contribution of exchange rate, domestic demand, output and income growth to the adjustment? Were there differences in the adjustment process between different groups of countries, primarily between deficit and surplus ones? And will the observed corrections endure or are policies leading to the improvement of international imbalances still a fundamental issue economists and politicians should address? These are only some of the questions I will try to reply to in the following pages.

The dissertation largely follows a number of studies which have already been made in the field of current account imbalances and its adjustment. Papers relating to the determinants of the medium-term indicators of current account imbalances represent a starting point for my work. The most important analysis has been made by Chinn and Prasad (2003) whose conclusions are used in many other papers following the same topic. Using a structural approach, that means using economic theories to model and analyse the results, authors reveal indicators of current accounts for a large sample of advanced and developing countries. Among other studies trying to enrich the analysis of underlying determinants of current account positions articles by Gagnon (2011), Gruber & Kamin (2005) and Chinn & Ito (2005) are the most important.

My work is also linked to the literature on sudden stops and consequent behaviour of current accounts which is a theoretical framework I conceptually build on (see Calvo, Izquierdo & Mejía (2008), Mendoza (2010), Calvo (1998), Montiel (2012) among others). Next I make use of a number of articles concerning the crisis and its link to the international imbalances (see Blanchard & Milesi-Ferretti (2009), Obstfeld & Rogoff (2009), Astley, Giese, Hume & Kubelec (2009), Dunaway (2009) and Cowling, Dunn, & Tomlinson (2011) as well as papers related to predictions of future development and a possibility of maintaing the present lower levels of imbalances in the long run (see Padoan (2010) and Sullivan (2012)).

The work is divided into 4 sections. The first chapter acquaints with a theoretical background concerning the development of international imbalances in case of a financial shock and naratively decribes what the underlying factors of the global imbalances were. This chapter covers also the development of the current accounts in the pre-crisis period and after its outbreak. The second chapter represents a core of this work as it empirically tests the fit of chosen regressors in explaining the current account positions, its excessiveness and the channels through which the adjustment has taken place with a special focus on the contribution of real exchange rate, domestic demand, output and income growth changes to current account corrections. In the third chapter my aim is to discuss alternative views on the adjustment process during the crisis and evaluate to which extent the imbalances are a matter of the past and to which extent this topic stays unsolved and hazardous for global economy functioning. Based on this analysis I will focus on policy recommendations which should be taken in order to mitigate the unpleasant consequences of the international imbalances. The final section concludes.

1. INTERNATIONAL IMBALANCES

The topic of international imbalances and its sustainibility represents one of the most complex macroeconomic issues that current economists and politicians need to address. Before the outbreak of the global financial crisis experts warned that "*current account imbalances of this magnitude and persistance indicate that the global economy is operating in a danger zone in which disruptive and volatile reactions in currency, bond and equity markets are likely to result*" (Clarida, Goretti & Taylor, 2007, Introduction). Unfortunately, these warnings have not been heard and the crisis scenario with painful adjustment of current accounts became a reality.

1.1. THEORETICAL BACKGROUND

Generally speaking, global imbalances occur in case of discrepancies between saving and investment and "*are surely not prima facie bad*"(Blanchard & Milesi-Ferretti, 2009, p. 3). Non-zero current account positions signal international movement of capital with surplus countries experiencing capital inflows and deficit countries facing outflows of capital from their country to the rest of the world and so logically "*in some cases it is unwise to want to reduce imbalances: They reflect the optimal allocation of capital across time and space"* (Blanchard & Milesi-Ferretti, 2009, p.4).

On the other hand, these misalignments reflect "*distortions, externalities, and risks at the national and international level"*(Blanchard & Milesi-Ferretti, 2009, p.3). When assesing the hazards of global imbalances economist take a look at each country´s current account which equals a change in resident holdings of foreign assets minus a change in resident liabilities to non-residents and assess its sustainability and risks connected to it. (Borio & Disyatat, 2011, p. 9)

The sustainability of the current account imbalances is not precisely defined but research papers tend to conclude that a threshold for each country exists. The treshold might differ among countries, but generally the critical value for the current account imbalances seems to reach 5% of GDP. (Freund, 2000, p.2) Such excessive imbalances should consequently trigger an adjustment process keeping the imbalances at an acceptable level. The main channels through which the adjustment normally takes place is the revaluation of the domestic currency (upward pressure in case of a surplus and downward pressure in case of a debtor country), adjustment of domestic interest rates (lower interest rate in case of a surplus and higher interest rate in case of

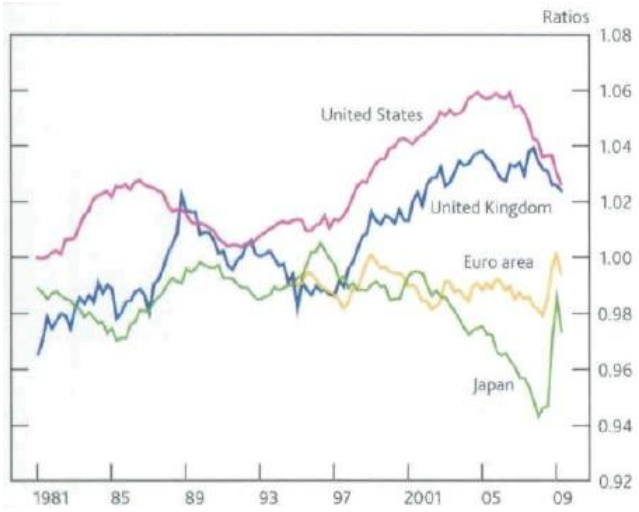
a debtor country) and adjustment of economic activity (debtor countries experiencing the economic slowdown and vice versa). (Dunaway, 2009)

It is important to point out that the speed of the adjustment might differ and "*is not a function of the size of the country, its degree of openness, its degree of industrialisation, or the region to which it belongs"*(Algieri & Bracke, 2007, p. 198). The adjustment pattern depends on the underlying macroeconomic fundamentals of a particular country. Moreover, the adjustment process is not the same for surplus and debtor countries. As J.M.Keynes noted:*"the social strain of an adjustment downwards (in deficit countries) is much greater than that of an adjustment upwards (in surplus countries)…The process of adjustment is compulsory for the debtor and voluntary of the creditor"*(1941, 1980, p. 28). It means that debtor countries are constrained as to the possibility to resist the downward pressure on their currency because of the limited avalaibility of official reserves which they might eventually run out of while defending their exchange rate. Therefore they are to some extent forced to undergo the adjustment process. On the other hand, surplus countries are not limited in such a way and they can partly postpone dealing with these inconsistencies. The rest of the world demands their currency but the country can resist the pressure to appreciate by carring out the market intervention in a form of selling its currency and at the same time sterilising this intervention in the domestic market. This mechanism fully allows the surplus country to avoid the inflation which would otherwise mean real appreciation. (Dunaway, 2009)

1.2. DEVELOPMENT OF GLOBAL IMBALANCES BEFORE 2008

The ongoing financial liberalisation which started in 70s has led to an increase in capital flows followed by a massive deterioration in global imbalances. The average rate at which the imbalances between 1970 and 2007 rose, was 11% per year (measured by the sum of the absolute values of real trade balances across countries)(Liang, 2012, p. 354). *"The dominant drivers of the 'uphill' capital flows have been the high and rising savings of the current account surplus countries and the lower and falling savings of the current account deficit economies"*(Astley, Giese, Hume & Kubelec, 2009, p. 181). The decline in saving rates in developed countries was caused primarily by an increasing domestic demand. As Figure 1 shows in case of the US and the UK it meant that the domestic demand started to grow even faster than the GDP. Together with an exchange rate appreciation and an entry of fast growing emerging countries this led to growing deficits. (Astley, Giese, Hume & Kubelec, 2009)

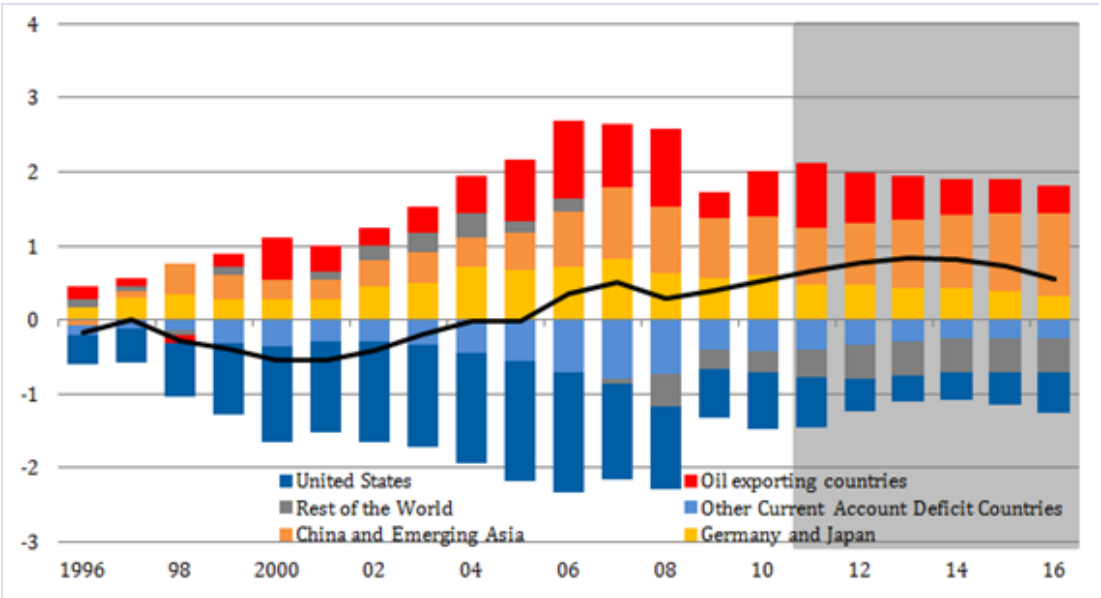
FIGURE 1- DOMESTIC DEMAND TO GDP RATIOS



SOURCE: ASTLEY, GIESE, HUME & KUBELEC, 2009, P. 182

A regional overview showing the composition of debtor and surplus countries is presented in Figure 2. Deficit countries are represented mainly by the United States, surplus countries are made up by China, Japan and other East Asian coutries as well as oil exporting countries. It is interesting to point out that today´s surpluses corresponding to the US deficits are spread between more countries than ever before. In 2005 surpluses of China, Japan, Germany, Saudi Arabia and Russia represented 50% of world surpluses, in 1985 it was only Japan, Germany and Netherlands accountable for the same ratio of world surpluses. (Bracke, Bussie`re, Fidora & Straub, 2008, p. 1146) So whereas in the case of surplus countries the risk is spread between more entities, deficits are increasingly concentrated in a few countries. (Bracke, Bussie`re, Fidora & Straub, 2008, p. 1146)

FIGURE 2 - GLOBAL IMBALANCES (PERCENT OF WORLD GDP)



SOURCE: WORLD ECONOMIC OUTLOOK, SEPTEMBER 2011, IMF

This division of countries into deficit and surplus ones fully corresponds to the development of the financial flows in the last decades. The capital was flowing primarily from emerging market economies to developed countries (UNCTAD, 2012). It means that countries with low saving rates were allowed to fund their rising current account deficits by means of financial flows from the countries with savings exceeding the level of investment (mainly China). Moreover, Martin Wolf (2008, p. 3) argues that emerging markets "*smoke, but do not inhale*"; which means that the capital inflows coming to these coutries are recycled and send back to the US financial markets which only contributes to the aggravation of the imbalances.

Given the current global system, the deficits run by the US have enabled the outside world to pile up dollar reserves and run a hedge position. "*In this sense, the United States is not only the consumer of last resort but the credit issuer (hence debtor) of the last resort"*(Liang, 2012a, p. 357). The proper functioning of such a system then depends on two aspects of the banking services in the US. This process may only work if the US is willing to supply liquidity and well-manage the liquidity created. Taking into account that the US is a long-term current account debtor with its currency relatively stable over the years, the first condition is satisfied. Neverthless the same cannot be stated as far as the management of the liquidity is concerned. (Liang, 2012a)

But it was only after the year 2000 when the imbalances started to deteriorate at a dramatic pace. "*Current account deficits may be unsustainable if they reflect excessive spending by either private or the public sector"*(Mongelli & Wyplosz, 2008, p. 20) and both things are believed to have happened in the USA. As a primary issuer of official reserves the US made use of it to finance the additional spendings which were translated into a growing deficit in the current account (Dunaway, 2009). On the other hand, East Asian countries, particularly China, kept resisting the upward pressure on their currencies leading to a sharp rise in current account surpluses. In fact, Chinese government made use of the sterilisation procedure depicted above to defend the renminbi which was believed to be undervalued by 15 to 40%. (Palmer, 2008, www.reuters.com, accessed on 25th July 2014) Finally, Japan and Europe relied too much on their (in that times) weak currencies and postponed crucial reforms in labour and product markets which was translated into slower economic growth in these countries.(Dunaway, 2009) The misfunctioning of the system was eventually fully revealed during the outbreak of the financial crisis in 2007.

1.3. DEVELOPMENT OF GLOBAL IMBALANCES AFTER 2008

The connection of the global imbalances with the financial crisis is reflected in the prominent "excess saving view" or as Bernanke calls it "global savings glut" (Bernanke, 2005) that states that "*an excess of saving over investment in emerging market countries,…, eased financial conditions in deficit countries and exerted significant downward pressure on world interest rates. In so doing, this flow of saving helped to fuel a credit boom and risk-taking in major advanced economies, particularly in the United States, thereby sowing the seeds of the global financial crisis"*(Borio & Disyatat, 2011, p. 1). The global financial crisis outbroke in the second half of 2007 in the US financial market resulting in a sharp output contraction, a fall in boomed asset prices and an attenuation of international flows. (Astley, Giese, Hume & Kubelec, 2009)

TABLE 1 - CURRENT ACCOUNT IMBALANCES 2006-2014

Country	2006	2007	2008	2009	2010	2011	2012	2013	2014
Argentina	3,4	2,6	1,8	2,5	0,3	-0,6	-0,1	-0,9	-0,5
Australia	-5,8	-6,7	-4,9	-4,6	-3,5	-2,8	-4,1	-2,9	-2,6
Brazil	1,3	0,1	-1,7	-1,5	-2,2	-2,1	-2,4	-3,6	-3,6
Canada	1,4	0,8	0,1	-2,9	-3,5	-2,8	-3,4	-3,2	-2,6
China	8,5	10,1	9,3	4,9	4,0	1,9	2,3	2,1	2,2
Germany	6,3	7,5	6,2	5,9	6,4	6,8	7,4	7,5	7,3
Euro Area	0,5	0,4	-0,7	0,3	0,6	0,8	2,0	2,9	3,1
France	-0,6	-1,0	-1,7	-1,3	-1,3	-1,8	-2,2	-1,6	-1,7
United Kingdom	-2,8	-2,2	-0,9	-1,4	-2,7	-1,5	-3,7	-3,3	-2,7
Indonesia	2,6	1,6	0,0	2,0	0,7	0,2	-2,8	-3,3	-3,0
India	-1,0	-1,3	-2,3	-2,8	-2,7	-4,2	-4,7	-2,0	-2,4
Italy	-1,5	-1,3	-2,9	-2,0	-3,5	-3,1	-0,4	0,8	1,1
Japan	3,9	4,9	3,3	2,9	3,7	2,0	1,0	0,7	1,2
Korea	1,5	2,1	0,3	3,9	2,9	2,3	4,3	5,8	4,4
Mexico	-0,8	-1,4	-1,8	-0,9	-0,3	-1,1	-1,2	-1,8	-1,9
Russia	9,3	5,5	6,3	4,1	4,4	5,1	3,6	1,6	2,1
Saudi Arabia	26,3	22,5	25,5	4,9	12,7	23,7	22,4	17,4	15,8
Turkey	-6,0	-5,8	-5,5	-2,0	-6,2	-9,7	-6,2	-7,9	-6,3
United States	-5,8	-4,9	-4,6	-2,6	-3,0	-2,9	-2,7	-2,3	-2,2
South Africa	-5,3	-7,0	-7,2	-4,0	-2,0	-2,3	-5,2	-5,8	-5,4

RESOURCE: INTERNATIONAL MONETARY FUND, WORLD ECONOMIC OUTLOOK DATABASE, APRIL 2014

The most recent data (Table 1) show that the US alarming deficit has dropped from -5.8 % in 2006 to -2.3 % of GDP in 2013 (WEO, 2014), "*a level that the US can easily finance from its royalty income and returns on prior foreign investments without incurring additional foreign debt"(*Eichengreen, 2014, www.project-syndicate.org, accessed on 18th May 2014*).* China has

shrunk its surpluses more than four times (from 8.5 % in 2006 to 2.1 % of GDP in 2013) and the same scenario happened in Japan where the surplus plummeted from 3.9 % in 2006 to 0.7 % of GDP in 2013 (WEO, 2014). Among the countries with substantially high surpluses/deficits Germany and Turkey stand out. But Germany´s surplus reaching 7.5 % of GDP does not threaten the global economy nor does Turkey´s deficit of -7.9 % of GDP (WEO, 2014). *"In other words, theirs are not global problems"*(Eichengreen, 2014, www.project-syndicate.org, accessed on 18th May 2014).

It is evident that the narrowing of the imbalances during the crisis was substantial. The channels through which this adjustment has taken place are discussed in the next section.

2. CURRENT ACCOUNT ADJUSTMENT DURING 2008-2010

This section presents an empirical analysis of the adjustment process during the global financial crisis and it tests the channels through which the adjustment has taken place. The aim is to find out *"whether the current account adjustment which occured during the crisis can be viewed as correcting excessive imbalances that may have emerged during the pre-crisis period"*(Lane & Milesi-Ferretti, 2011, p.7). To be capable of monitoring this process it is important to construct a model of medium-term current account determination, define drivers of the current account balance and only afterwards asses to which extent the pre-crisis current accounts were excessive and unsustainable. For my empirical research I need to construct a proxy for this excessive and unsustainable part of the current account balance. This proxy is represented by a current account gap measure and it allows me to test whether the difference between the current account value from 2010 and the 2004-2007 average corresponds to the excessive part of the current account balance. The last step is to test the contribution of changes in real exchange rate, domestic demand, output and income growth to the adjustment process. Were these variables the cause of the gap measure´s closure during the crisis? Or were there other factors at play?

2.1. SUDDEN STOPS

But before I start with the empirical analysis it is important to point out that I conceptually build on the "sudden stops theory". The sudden stops in capital flows represent "*large and largely unexpected capital account contractions that occur in periods of systemic turmoil"*(Calvo, Izquierdo & Mejía, 2008, Abstract) and often "*a simultaneous occurence of a currency/balance of payments crisis with a reversal in capital flows"*(Hutchinson & Noy, 2002, p. 2). The negative effects of the capital inflows contraction on economies are tremendous. "*Period of expansion and external deficits"* (Mendoza, 2010, p. 1964) is followed by a capital inflow freeze, a reversal in current accounts, a currency depreciation, a wave of bankruptcies and a significant output decline (Montiel, 2012, p. 268) (see Calvo & Reinhart (2000), Hutchison & Noy (2006), Calvo, Izquierdo & Mejía, 2008). From this perpective the development during the pre-crisis and crisis period fully corresponds to the sudden stops theory and is therefore beneficial for my research. Considering the crisis to be a global financial turn is especially convenient because "*such a perspective is capable of explaining the enormous decline in gross capital flows during the most accute phase of the crisis"*(Lane & Milesi-Ferretti, 2011, p. 5). To conclude, the most important predictions for my research are that sudden stops in capital flows should lead to current account

reversals, exchange rate depreciation and output contraction in deficit countries. Whether this development was also the case of recent global financial crisis is a matter of the following pages.

2.2. EMPIRICAL MODEL

2.2.1. HYPOTHESIS AND RESEARCH QUESTIONS

To test the hypothesis that the pre-crisis imbalances were excessive and unsustainable in the long term I will at first estimate equilibrium values of the current account balances and then use the gap between the actual value and the estimated equilibrium to test if the after-crisis external adjustment corresponds to the size of this gap. (Lane & Milesi-Ferretti, 2011) Next, I will study if the pre-crisis variables explain the change in the current account imbalances during the crisis. Finally, I will focus on the channels through which external adjustment has taken place taking into account possible differences between developed and developing countries as well as possible differences in the current account adjustment in deficit and surplus countries.

2.2.2. DATA AND METHODOLOGY

My country sample consists of 20 members of the G20 group including both developing/emerging and advanced economies in the period from 1984 to 2012. I decided to choose the G20 group because its members represent around 85 % of global gross domestic product, over 75 % of global trade, and two-thirds of the world´s population as the official webpage of this group indicates. The G20 coutries are therefore considered to be an important discussion platform as to the global economy and its reforms. The members of the G20 are (in alphabetic order): Argentina, Australia, Brazil, Canada, China, France, Germany, India, Indonesia, Italy, Japan, Republic of Korea, Mexico, Russia, Saudi Arabia, South Africa, Turkey, United Kingdom, United States and European Union. Nevertheless, I decided to exclude Saudi Arabia from my analysis as it is an oil exporter running huge current account surpluses extremely dependent on the development of the oil price. Being an outlier and not very important country for my research makes the exclusion reasonable.

Among the G20 countries I would like to highlight the adjustment process of the major economic actors – namely China, USA, Japan and EU. Based on the empirical results my aim is to evaluate if the observed corrections during the crisis can persist in the long term or if any additional changes are needed to be made and in this case propose policies that could in the long term lead to the improvement of the global imbalances. Based on the literature I decided to stick to a model which is closely related to the one used in Lane & Milesi-Ferretti paper (2011). Their

model summarises the theoretical and empirical results from the previous studies and applies it to explain the adjustment process during the crisis years.

2.2.3. MEDIUM-TERM CURRENT ACCOUNT DETERMINANTS

The first step in my analysis is to predict the values of the current accounts of particular countries in the period 2004-2007 based on the standard empirical model of medium-term current account determinants. Comparing these values with the actual current account values allows me to analyse if this difference corresponds to the development of current accounts during the crisis years. (Lane & Milesi-Ferretti, 2011) Using a pooled OLS estimator I run a regression over the period 1984-2007 in the following form:

$$(CA/GDP)_{it} = \alpha + \Sigma_j \beta_j X_{itj} + \varepsilon_{it},$$

where CA/GDP is a dependent variable of current account balance measured as a ratio to GDP (negative value of CA/GDP signals the current account deficit and vise versa), X_{itj} is a sum of explanatory variables and ε_{it} is an error term. (Lane & Milesi-Ferretti, 2011) Based on a set of different variables this equations serves as an indicator of the current account values that might be regarded as "normal" for a specific country. (Chinn & Prasad, 2003, p.1)

The explanatory variables chosen for my dissertation work largely follow the regressors used in the Lane and Milesi-Ferretti research paper with the difference that I add a variable of openess of trade and exclude an aging rate variable as well as some of the dummies which are not relevant for my country sample.

The explanatory variables are:

- **Government expenditure,** expressed as a ratio of GDP. The question to what extent government expenditure and fiscal balance impact the development of the current account has been discussed several times and the conclusions are that a strengthening in the fiscal balance should be associated with a current account improvement, but not in a relation 1:1. (Abbas, Bouhga-Hagbe, Fatás, Mauro & Velloso, 2011, p.3) Therefore, "*higher levels of public saving across countries tend to be associated with larger current account surpluses (or smaller current account deficits)*" (Chinn & Prasad, 2003, p. 5). In the view of government expenditure it means that the higher the public expenditure, the larger the current account deficit run by the country and thus negative expected correlation with the current account.

- **Average GDP growth rate.** Defining current account deficit as a difference between saving and investment means that "*the economic growth increases the confidence in economy by establishing higher expectations of profit and in this way the investment increases. On the other hand, it decreases savings because of demand rising and then it causes the deficit to increase*"(Lebe, Kayhan, Adigüzel & Yiğit, 2009, p. 70). Consequently, the expected sign of the GDP growth rate on the current account is negative.

- **Relative income,** measured as a GDP per capita serves as "*a proxy for capturing the stage of development effect"*(Lane & Milesi-Ferretti, 2011, p. 8). This variable is expected to be negatively correlated because according to the "stage of development" hypothesis low-developed countries catching up with a more developed group tend to import capital and report current account deficits. However, in the moment when they reach the level of developed countries they are forced to run surpluses in the current account to pay off the accumulated debt. (Chinn &Prasad, 2003)

- **Old-age dependency ratio**, is the ratio of economically inactive people aged 65 and more over the working-age population from 15 to 64. "*Countries with relative young or old population are more likely to run current account deficits"* (Graff, Tang & Zhang, 2012, p. 1) because based on the life cycle hypothesis young and old-aged households do not save as young people borrow money and retired people spent what they have saved in the productive age. Accordingly, the expected sign of this regressor is negative.

- **Population growth rate**, is expected to be also an important determinant of the current account and its sign is thought to be negative. "*The population growth and fertility have a negative effect on current account if it is correlated with the share of young inactive people in the population"(*Jaffri, Tanveer, Asjed, Rooma & Khatoon, 2012, p. 178).

- **Net export position in fuel,** expressed as a percentage of GDP. The rationale of including this regressor is to incorporate the development of the fuel prices which might be a very important determinant of current account balance, especially in case of oil exporting countries that tend to record large current account improvements if the price of oil considerably increases. (Allegret, Couharde, Coulibaly & Mignon, 2013)

- **Net foreign assets position**, expressed as a ratio of GDP. This regressor is incorporated "*since the steady-state current account balance should be proportional to the equilibrium net foreign asset position in a growing economy"*(Lane. & Milesi-Ferretti, 2011, p. 9). It

means that in the case of a current account deficit, the country should either strive for a reduction of a country´s international asset postion or an increase in its liability position or both to improve the current account position. (Chinn & Prasad, 2003, p.6) Thus, the net foreign asset position should exhibit a positive correlation with the current account.

- **Terms of trade.** The Harberger-Laursen-Metzler (HLM) effect predicts a positive relationship between changes in the terms of trade and national saving and therefore deterioration in the terms of trade should result in a current account worsening. (Kent & Cashin, 2003, p.3) However the cross-country results of Chinn and Prasad show this pattern to be valid only for developing countries excluding Africa. Developed countries´ terms of trade, on the contrary, tend to show a negative correlation with current account development. (Chinn & Prasad, 2003, p.10)

- **Openess of trade,** measured as a ratio of exports and imports to GDP. Empirical studies show that in the case of developing countries the degree of openess is negatively correlated with current account balance. (Ivanova, 2012, p. 6).

- **Dummy variable for major economic crisis,** is expected to be positively correlated with the current account balance and is included to monitor the "*discruption in access to capital markets for countries undergoing a financial crisis*"(Lane & Milesi-Ferretti, 2011, p. 10).

- **Dummy for international financial trade center**, is included to capture the "*possible measurement errors in tracking net capital flows for centers of international wholesale asset trade"*(Lane & Milesi-Ferretti, 2011, p. 10).

As Chinn & Prasad (2003) mention there is a high possibility of measurement error. To prevent any biases, I constructed similarly to their model a panel that contains 4-year averages of the data for each country. This should moderate the influence of the business cycle fluctuations as well. (Chinn & Prasad, 2003, p. 11) In the end I am not interested in the short-time development of the current account but my aim it to get as much precise estimation of the fitted values of this medium-term model as possible. With the period from 1984 to 2007 I therefore obtain 6 observations for each country in 6 different time periods.

Table 2 shows the results of my OLS regression. I ran the regression with the whole sample of the countries and then I separated developed and emerging/developing countries (columns 2

and 3) and debtor and creditor ones (columns 4 and 5) and ran the regressions again to see the differences between the particular groups of countries and the ability of this model to explain the fit of chosen regressors.

The full-sample results reveal that chosen regressors explain 65.9% of the variation in the current account balances. As far as the individual variables in the whole sample are concerned all the variables exhibit the same correlation as expected. In the case of the relative income my results confirm the validity of the "stages of development hypothesis" as opposed to numerous papers where a positive correlation was revealed. Accordingly, an increase in relative income leads to a deterioration in the current account balance. An increase in the population growth is significantly associated with a worsening position in the external balance. In terms of the net foreign assets position and terms of trade there seems to be a significant positive correlation with the current account. A significantly positive correlation is reported also in the case of the financial center dummy variable.

TABLE 2 - DETERMINANTS OF CURRENT ACCOUNT, 1984-2007

	ALL		ADV		EM/DE		DEF		SUR	
GDP growth rate	**-0.04234**		**0.21931**	*	**0.01446**		**-0.42961**	***	**0.07584**	
	0.06604		0.14623		0.10538		0.11274		0.09990	
Relative income	**-0.00004**	*	**-0.00001**		**-0.00005**	***	**-0.00009**	***	**-0.00003**	
	0.00003		0.00002		0.00016		0.00003		0.00005	
Old-age dependency ratio	**-0.06283**		**0.06827**		**0.13167**		**0.15187**	***	**0.00115**	
	0.06697		0.62644		0.21134		0.06184		0.10809	
Population growth	**-1.95515**	***	**-0.77066**	*	**-1.40058**		**0.43436**		**-4.02598**	***
	0.49624		0.56238		1.20332		0.48525		0.68059	
Government expenditure	**-0.04342**		**-0.00359**		**0.06854**		**-0.12631**	***	**-0.26763**	***
	0.04479		0.08313		0.07364		0.05256		0.09574	
Net export position in fuel	**0.02114**		**-0.27204**	***	**0.05731**		**-0.28914**	***	**0.15876**	**
	0.04895		0.10895		0.07821		0.07890		0.08326	
Net foreign assets	**0.09035**	***	**0.06635**	***	**0.04852**		**0.08652**	***	**0.04904**	**
	0.01739		0.01885		0.41156		0.01828		0.02821	
Terms of trade	**0.06704**	***	**0.13273**	***	**0.04804**	***	**0.08502**	***	**0.03648**	***
	0.00846		0.01658		0.01263		0.01115		0.01050	
Openess of trade	**-0.01682**		**-0.00121**		**0.02372**		**0.00856**		**0.03466**	
	0.02216		0.02121		0.05668		0.02452		0.03179	
Crisis dummy variable	**0.15113**		**-0.24064**		**-0.52258**		**-1.70212**	**	**0.38829**	
	0.69443		0.81187		1.03274		0.85063		0.83152	
Financial center dummy	**0.69859**	*	**0.76939**	**	**-0.55199**		**0.51994**		**2.05100**	**
	0.44630		0.34655		1.26442		0.44392		1.40703	
Constant	**-3.12319**	**	**-16.53757**	***	**-4.65108**		**-8.23275**	***	**1.62364**	
	1.73850		3.05405		4.26415		1.88110		2.27331	
Observations	**114**		**60**		**54**		**66**		**48**	
R-squared	**0.6591**		**0.8514**		**0.6706**		**0.7342**		**0.7914**	

POOLED OLS PANEL ESTIMATION. DATA TAKEN AS 4-YEAR AVERAGES. *, **, * REPRESENT THE SIGNIFICANCE LEVELS AT 10, 5 AND 1 %.**

Interpreting the results for developed and emerging/developing countries separately brings numerous differences. For example in the case of the GDP growth the whole sample regression shows lack of a significant relationship between the GDP growth and the current account. This matches the Chinn´s and Prasad´s assumption that effect of the GDP growth rate on the saving behaviour is not clear cut and that it depends on numerous aspects. (Chinn & Prasad, 2003, p. 10) However, my results show that in the case of advanced economies there is a significant positive correlation. The net foreign assets position coefficient reveals a strong positive correlation in the case of advanced countries as opposed to developing countries where the variable does not seem to play significant role in determining the current account balance. A positive relationship in the case of advanced countries confirms the hypothesis of Chinn and Prasad who assume that even though the net foreign assets should be negatively correlated with the current account, in the long run there is a high chance that this effect would be overshadowed by other factors (Chinn & Prasad, 2003, p. 6)

In relation to the net export position in fuel I got interesting results in the case of advanced countries which are significantly negatively correlated. These results are in contradiction with what the standard theory predicts, but I assume I got this result because a higher price of fuel would in the case of advanced countries lead to a worsening of the current account as these countries are in general net importers of the fuel. It is also worth noting that the overall explanatory power for advanced countries is with 85% much higher than in the group of developing/emerging countries where selected variables explain 67% of the variation in the current account.

The last two columns represent the results of the OLS regression for deficit and surplus countries (you can see the divison in the appendix). The regression explains 73.4 % and 79.1 % for the deficit and the surplus countries respectively. Whereas in the case of the deficit country group I got a significant negative relation between the GDP growth rate and the current account, surplus countries tend to be positively correlated. In terms of the government expenditure both groups exhibit a significant negative correlation. For the deficit countries, the crisis dummy variable influences the current account significantly but in an opposite direction than I have assumed. Interpretating this result would mean that in the case of a crisis the debtor countries´ current account position may even more deteriorate which is in contradiction with the sudden stops theory as well as with the actual development during the crisis. Finally, the financial center dummy has a significant influence on surplus countries as opposed to the deficit ones.

2.2.4. CURRENT ACCOUNT GAP MEASURE

The second step in my analysis is to get a measure of the current account gap by subtracting the value which the medium-term model predicts from the value that has been recorded in reality in the pre-crisis 2004-2007 period.
This relation can be written as:

$$CAGAP_{i0407} = CA_{i0407} - CA'_{i0407,}$$

where $CAGAP_{i0407}$ represents the gap measure, CA_{i0407} the actual value of the current account and CA'_{i0407} the estimated regression´s fitted value for a particular country. (Lane & Milesi-Ferretti, 2011) This step is important as the dependent variable can be used as a proxy for the extent of excess imbalances and "*reflects CA positions that cannot be linked in a systematic fashion to the fundamentals included in the benchmark specification"(*Lane & Milesi-Ferretti, 2011, p.13).

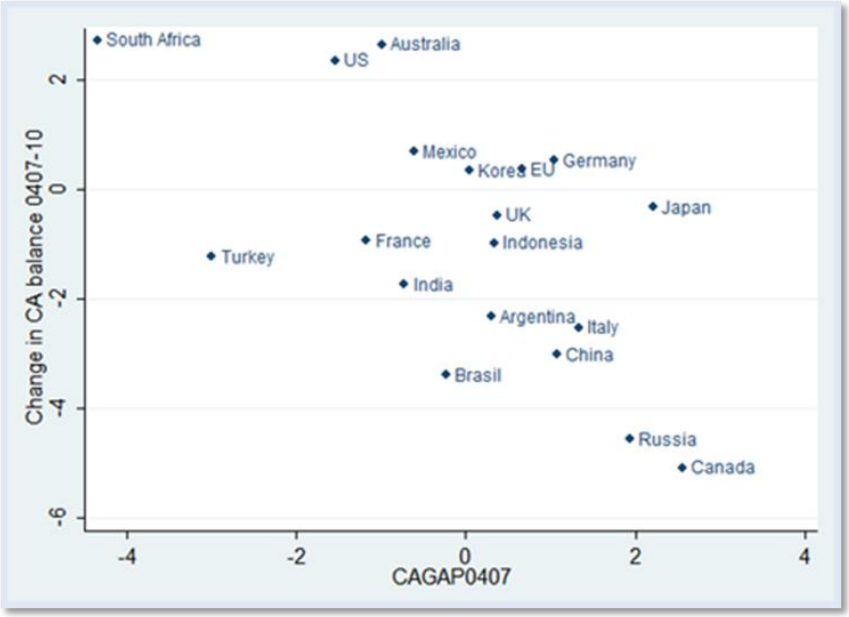
In terms of results for each country, I would like to highlight the results of the most important actors in the global economy. The $CAGAP_{0407}$ of China says that the actual current account surplus was 1.072 % higher than what the model predicts, in the case of Japan the measured surplus is 2.208% higher than the prediction, EU reports a 0.66% positive difference between the actual and the fitted value and finally, the US´ actual value was 1.54% more negative in comparison with the model´s prediction. These results are very interesting as to intepretation. My regression shows that extreme values of surpluses and deficits (especially in case of China and the USA) are not that surprising and that the model to some extent predicts these values – the difference between the predicted and the actual value moves in the absolute value of only 2% (in case of China only 1.072 %). Therefore, the pre-crisis values of current account might be unsustainable but given the development in the last 30 years, they should not surprise that much. What we can interpret from these results is probably the fact that even though the surpluses and deficits sank during the crisis to lower magnitudes, the problem has not been removed and persists. How important the changes in the macroeconomic fundamentals are will be discussed in the third section.

The next step is to take a look at the relation between the change in the current account balance during the crisis and the gap measure which we got from subtracting the fitted values from the OLS regression from the actual current account values. (Lane & Milesi-Ferretti, 2011) Plotting these values in a scatter plot reveals a strong negative correlation. It means that the larger the actual value in comparison with the fitted values was, the more significant the adjustment was. It therefore confirms the hypothesis that countries with the largest gap measures report the

largest current account improvement during 2008-2010. The more positive the gap, the more negative the change in the current account and the more negative the gap measure, the more positive adjustment observed during the crisis.

From the scatter plot it can also be seen that the estimated regression was in the majority of the cases capable of predicting pretty much the same values as we could have observed in reality. Thus, the medium-term determinant equation does a good job in capturing the real values. Again, it seems that the extreme values of some countries should not be surprising and that they are a result of long-term current account balance development.

FIGURE. N.3



RELATION BETWEEN CHANGE IN CURRENT ACCOUNT BALANCE BETWEEN 2004-07 AVERAGE AND 2010 AND CAGAP0407, OWN CALCULATIONS.

2.2.5. MULTIVARIATE REGRESSION

The last step to see what fraction of the measured current account gap was closed during the crisis years 2008-2010 is to run a multivariate regression in the form:

$$\Delta CA_{i04O7\text{-}10} = \alpha + \beta\, CAGAP_{i0407} + \gamma NFA_{i0407} + \varepsilon_{i,}$$

where $\Delta CA_{i04O7\text{-}10}$ is the change in the actual value of the current account between the year 2010 and the average value of 2004-2007 period, $CAGAP_{i0407}$ is the gap measure I obtained in previous steps and NFA_{i0407} is the net foreign assets position expressed as a ratio of GDP in the period 2004-2007. (Lane & Milesi-Ferretti, 2011) As I have written in the first chapter, the biggest

pressure on the current account adjustment should be put on deficit countries and according to the scatter plot described above also on the countries with largest negative current account gaps. Countries with the positive $CAGAP_{0407}$ should experience an improvement in their position in a sense that the reported surplus should relatively sink. (Lane & Milesi-Ferretti, 2011) However, the pressure on surplus countries is much lower than on the deficit ones.

I ran this regression at first on the whole sample of countries and then I divided them again into the same categories as in the case of the OLS regression to see possible differences between these groups. Especially, I am interested if there was a different pattern in the adjustment process between advanced and emerging/developing countries and if the pressure on deficit countries led to a higher fraction of the gap closure.

TABLE 3 - CURRENT ACCOUNT ADJUSTMENT DURING CRISIS PERIOD

	ALL	ADV	EM/DE	DEF	SUR
CA GAP 2004-2007	**-0.75863** ***	**-1.14625** ***	**-0.92319** ***	**-1.16877** *	**-0.73969** **
	0.26289	0.42686	0.31142	0.83552	0.35653
Net foreign assets 2004-2007	**-0.01658**	**-0.00583**	**0.00755**	**0.02968**	**-0.06245** *
	0.02674	0.02921	0.04825	0.04832	0.03940
Constant	**-0.71522** *	**0.26727**	**-2.18086** **	**-1.16219**	**-0.47391**
	0.54226	0.65140	0.96385	1.70102	0.64673
Observations	**19**	**10**	**9**	**8**	**11**
R-squared	**0.3737**	**0.5127**	**0.6414**	**0.3505**	**0.4164**

MULTIVARIATE REGRESSION. *, **, * REPRESENT THE SIGNIFICANCE LEVELS AT 10, 5 AND 1 %.**

The results are presented in Table 3. The first column reports coefficient values for the whole sample, the second and third column is dedicated to developed and emerging/developing countries and the last two colums present results of deficit and surplus countries separately. The CAGAP 2004-2007 coefficient is significant at 1% level in the case of the whole sample, in the group of advanced as well as developing countries, whereas in the case of deficit countries the coefficient is significant at 10% level and surplus countries at 5% level. What the coefficient of the whole sample says is that a typical country in the sample reported more than 75 % of the measured gap disappeared during the crisis years. In the case of advanced and deficit countries the closure of the gap was with more than 100% even more significant. So whereas the gap in the case of deficit countries was negative in the pre-crisis years, the development during the crisis revails that the gap closed so dramatically that these countries reported positive values of the gap in the end. The size of the current account adjustment was therefore larger in the case of advanced and deficit countries. This confirms my assumption that the higher pressure should be put on deficit countries and that these countries should experience more significant current

account improvement. Why advanced countries reported the same development as well is according to me fueled by the development of the major advanced economy – the USA – which is the most important debtor and significantly influences the overall outcomes. From these results we can see that an important fraction of the current account gap measure was closed during the crisis years and that the biggest current account improvement was reported by deficit countries.

In this moment I find important to highlight that even though there might be global factors determining the current account balance, "*country- or region-specific characteristics driving its economic performance could deliver some non negligible insights as well*" (Gehringer, 2012, p. 6). So although the OLS regression of the medium-term determination seems to be quite exact as to the prediction of the actual current account development, I should ask what the role of the specific country factors is as well. I will address this problem in the next chapter when discussing alternative views.

2.2.6. UNDERLYING MECHANISMS OF THE ADJUSTMENT

Nevertheless, the last step in my empirical work is to analyse the underlying mechanisms through which this adjustment has taken place. In industralised countries the predicted decline in the income growth, the real exchange rate depreciation and the decrease in the output and the domestic demand imply "*that current account reversals are largely a function of the business cycle"*(Freund, 2000, p. 3). Ollivaud & Schwellnus (2013) suggest that business and housing cycles accounted for half of the current account contraction during the crisis.

The adjustment mechanisms can be divided into three sub-cathegories of an internal, external and mixed adjustment. (Algieri & Bracke, 2007) By tracking the past current account adjustments in different countries these authors concluded that the majority of the current account adjustments happens internally, it means due to economic slowdown (decline of GDP, income growth and domestic demand) and without any significant movement in the exchange rate. The second case of the external adjustment happens when the exchange rate depreciation without any economic slowdown is reported. The last, and from the past experience the least numerous, group is a mixed adjustment group which combines both the economic slowdown and the exchange rate depreciation. This group has a crisis-like character and therefore I assume that given my crisis time period of 2008-2010 the results should belong to this category.

In the following lines I test whether the real exchange rate movement, the domestic demand and the output and the income growth changes can be linked to the 2004-2007 CA gap measure. I run regressions in the form:

$$\Delta RER_{0407\text{-}10} = \alpha^{RER} + \beta^{RER} CAGAP_{i0407} + \gamma^{RER} NFA_{i0407} + \varepsilon_i^{RER}$$

$$\Delta DD_{0407\text{-}10} = \alpha^{DD} + \beta^{DD} CAGAP_{i0407} + \gamma^{DD} NFA_{i0407} + \varepsilon_i^{DD}$$

$$\Delta Y_{0407\text{-}10} = \alpha^{Y} + \beta^{Y} CAGAP_{i0407} + \gamma^{Y} NFA_{i0407} + \varepsilon_i^{Y}$$

$$\Delta X_{0407\text{-}10} = \alpha^{X} + \beta^{X} CAGAP_{i0407} + \gamma^{X} NFA_{i0407} + \varepsilon_i^{X}$$

$$\Delta I_{0407\text{-}10} = \alpha^{I} + \beta^{I} CAGAP_{i0407} + \gamma^{I} NFA_{i0407} + \varepsilon_i^{I},$$

where $\Delta RER_{0407\text{-}10}$ is the real exchange rate between the average of 2004-07 and 2010. It is important to point out that for this regression I excluded the European Union as this group of countries has different currencies with different currency regimes and it is therefore impossible to monitor the overall development. $\Delta DD_{0407\text{-}10}$ represents the log change in domestic demand between 2004-2007 average and 2010, $\Delta Y_{0407\text{-}10}$ is the log output change between 2004-2007 average and 2010 and $\Delta X_{0407\text{-}10}$ and $\Delta I_{0407\text{-}10}$ represent the log change of export and income growth between the 2004-07 average and 2010. NFA_{i0407} represents the initial net foreign asset position. (Lane & Milesi-Ferretti, 2011)

Running these regressions I expect to obtain a positive correlation between the dependent and the independent variables meaning that countries with larger current account gap measures should experince a higher pressure to depreciate its currency and/or decrease the domestic demand, output and income growth. (Lane & Milesi-Ferretti, 2011)

The results obtained can be seen in Table 4. Among the G20 countries the adjustment through the real exchange rate movement seems to have no explanatory power and is insignificant in the adjustment process during the 2008-2010. As far as the change in output and the change in the domestic demand are concerned, I obtained pretty much the same results in both categories with both variables being significant at 10 % level. Both coefficients are positive which means that deficit countries experienced the more severe decline in output and domestic demand, the more negative the current account gap measure was. The last column indicates results for the change in income growth which seemed to play the most significant role in the adjustment process from all the chosen regressors.

The change in the income growth is significant at 5% level and a positive coefficient can be interpreted so that the more negative the current account gap, the slower the growth of the income during the crisis period. To sum it up, the results show that the adjustment process was a combination of output, demand and income growth changes and that the real exchange rate development was not crucial and played a minor role. From the classification mentioned above,

this kind of adjustment would belong to the first and the most numerous group of the internal adjustment. The insignificance of the role of the real exchange rate may be to some extent explained by the absence of pegged-currency regimes (apart from a few EU countries which were nevertheless as a part of the EU excluded from the regression) because Lane and Milesi-Ferretti obtained significant results as to the real exchange rates only in the case of pegged countries. The internal adjustment is typical for countries indicating an overheating of the economy which was indeed the case of the majority of the G20 countries in the pre-crisis 2004-2007 period. (Algieri & Bracke, 2007)

TABLE 4 - CURRENT ACCOUNT ADJUSTMENT, 2004-2007 TO 2010

	Δ in RER	**Δ in demand**	**Δ in output**	**Δ in income**
CAGAP0407	**0.0023558**	**0.072646 ***	**0.0870196 ***	**0.0964246 ****
	0.0205917	0.0568191	0.0674141	0.0564676
NFA/GDP 2004-07	**0.0008881**	**0.0030119**	**0.0015106**	**-0.004931**
	0.0021159	0.0057788	0.0068563	0.005743
Constant	**0.0652385 ***	**11.59557 *****	**12.1611 *****	**0.2319651 ****
	0.0441183	0.1171974	0.139051	0.1164725
N	**18**	**19**	**19**	**19**
R-squared	**0.0141**	**0.1199**	**0.104**	**0.1694**

THE DEPENDENT VARIABLE IS IN THE CASE OF THE FIRST COLUMN CHANGE IN THE REAL EXCHANGE RATE BETWEEN 2004-07 AVERAGE AND 2010, CHANGE IN DOMESTIC DEMAND AND CHANGE IN OUTPUT BETWEEN THE 2004-07 AVERAGE AND 2010 IN THE CASE OF 2ND AND 3RD COLUMN AND THE LAST COLUMN´S DEPENDENT VARIABLE IS THE CHANGE IN THE INCOME GROWTH IN THE SAME PERIOD. CAGAP0407 IS THE DIFFERENCE BETWEEN ACTUAL AND FITTED MODEL VALUE, NFA/GDP REPRESENTS THE NET FOREIGN ASSETS AS A RATIO OF GDP OVER THE 2004-07 PERIOD. *, **, * SIGNIFICANCE AT 10, 5 AND 1 PERCENT LEVELS. OLS REGRESSION.**

Apart from the demand, output, exchange rate and income growth rate changes, there is also a possibility that the adjustment has taken place because of the structural changes in underlying macroeconomic fundamentals of an economy. I will address this possibility in the next chapter.

To conclude the empirical analysis I can say that my medium-term model of determining the current account positions was pretty much precise and that the chosen regressors explain a significant part of the current account variance. Next, creating a measure for the current account gap and using it in the multivariate regression shows that during the crisis years there has been a significant closure of the current account gaps. These gaps were closed mainly thanks to the adjustment in the domestic demand, output and income growth and the highest pressure was observed in the case of negative current account position countries whose declines in domestic demand and output as well as decline in income growth were the most substantial.

3. ALTERNATIVE VIEWS AND POLICY RECOMMENDATIONS

3.1. ALTERNATIVE APPROACHES

In the previous section I came to the conclusion that the contraction of the current account imbalances was caused by a mixture of output, demand and income growth adjustment. Nevertheless, the possibility of omitting an important determinant of the current account in the medium-term current account regression would cause misleading results. The possible omitted variable could have changed during the crisis which might explain the narrowing of the imbalances as well. Among these possible factors, Lane & Milesi-Ferretti (2011) mention the scale of pre-crisis fiscal imbalances and growth expectations. Fiscal imbalances might have caused serious austerity measures during the crisis leading to an increase in a domestic risk premia discouraging the capital inflows. Even though in the case of some countries (e.g. Greece and Island), the concerns about the fiscal situation undoubtedly contributed to the evolution of the current account imbalances, Lane & Milesi-Ferretti did not find a significant relationship between the pre-crisis fiscal situation and the current account development. The same is true for the growth expectations´ variable. Another factor ommited from my analysis with a potential impact on the adjustment process might be a drop in interest rates. Ollivaud & Schwellnus (2013) assume its contribution to be 20% of the overall contraction.

Discussing about alternative factors contributing to the international adjustment country specific characteristics should not be forgotten. My regression analysis was not capable of including these effects and therefore leaves room for further investigation. From the avalaible literature it seems that in the case of the EU the creation of EMU has led to a longer adjustment process firstly because of the impossibility to adjust the exchange rate as countries share the same currency and secondly because of the deeper financial integration leading to larger financial flows that limit the home bias and allow broader external financing. (Brissimis, Hondroyiannis, Papazoglou, Tsaveas, & Vasardani, 2011) The longer adjustment period makes the adjustment in EU more problematic.

By using variables reflecting to a sectoral composition of the EU Gehringer (2013) found out that "*economic predominance of the construction sector might have played an important role in aggravating current account positions in the European economies as well"*(Gehringer, 2013, p. 1). Nevertheless, research on drivers of the Chinese and the US current account adjustment would deserve further attention.

The last thing I will mention as a possible factor contributing to the current account narrowing is a drop in availability of external finance (most probably as a result of investor panic). This development would not imply that the adjustment has taken place because of the excessivness and unsustainability of the current account balances which is the opposite of what I have found out (Lane & Milesi-Ferretti, 2011).

3.2. POLICY RECOMMENDATIONS

As I have described and empirically tested in the previous parts, the global economic crisis led to a significant narrowing of the current account imbalances. The predictions of the IMF seem optimistic and forecast this moderate development to continue in the next 5 years. Does it mean that the period of the global imbalances is finally over?

Unfortunately, the vast majority of economists agree that the problem is far from being over. Even though the prospects for current account imbalances might seem optimistic and deficits and surpluses may not reach pre-crisis levels in the upcoming years, global imbalances are not a matter of the past unless the underlying mechanisms driving the imbalances are eliminated. There is an "*urgent need to implement policy changes to address the remaining domestic and international distortions that are a key cause of imbalances. Failure to do so could result in the world economy being stuck in "midstream" threatening the sustainability of the recovery"*(Blanchard & Milesi-Ferretti, 2009, p. 5). Current account imbalances are structural problems which require complex solutions and actions targeted at saving and investment patterns. Being a complex problem it is not surprising that the authorities and the economists consider different factors to be the root cause of the current account imbalances. Therefore they come up with different ways how to tackle the issue.

In general the problem lies in the fact that "*the world is missing an international monetary order allowing for both reasonable exchange rate stability as well as symmetric adjustment pressures on creditor and debtor countries alike"*(UNCTAD, 2012, p. 46). Together with an ongoing financial deregulation and unlimited global financial flows it contributes to an unstable and risky global economic environment which is prone to bursting into a crisis. (UNCTAD, 2012) This general definition sets a framework in which particular policies and saving and investment patterns nourishing the global imbalances can be identified. There are three crucial distortions – a low level of savings in USA, high savings in China and other East-Asian countries and a large US current account deficit. (Dunaway, 2009)

Households in China and other Asian countries save more they need to. But why do they do so? The answer is not totally clear and leaves a room for discussion. The high saving rate might reflect cultural factors, another explanation supplied by economists is the underdeveloped system of social services and third group considers the intentional undervaluation of renminbi to be the cause. (Blanchard & Milesi-Ferretti, 2009) But history reveals that savings in China have never been so high. The average ratio equaled to 5 % between 1950s and 1970s which is much lower than nowadays. (Cowling, Dunn, & Tomlinson, 2011, p.586) So the prevailing view is that the high saving ratio is caused by demografic changes and a greater income uncertainty. (Cowling, Dunn, & Tomlinson, 2011) The caution is not surprising given the low quality of public services provided by the state with unreliable healthcare, an insufficient net of unemployment benefits and an underdevelopped system of pensions at front. The government save too much as well and is driven by the same reason. A cautious formation of large international reserves allows Chinese to "*create a large cushion against possible international shocks"*(Padoan, 2010, p. 1). In comparison with the USA China saves ten times more (Cowling, Dunn & Tomlinson, 2011, p. 585).

The reason of the huge current account deficits and the low level of savings in the USA is an over-consumption. Households as well as the government spend more than their income allows them which leads to a growing indebtness of the whole economy. Cowling, Dunn & Tomlinson (2011) assume that the corporate sector in USA, "*being instrumental in creating unsustainable consumptionist tendencies through the use of excessive advertising strategies",* is the first element to blame (2011, p. 585). Their conclusion is that the much higher level of advertising in comparison with other developed countries "*gives rise to the inordinate pressure to consume and delay saving in these economies which in turn gives rise to the external and internal imbalances observed"*(Cowling, Dunn, & Tomlinson, 2011, p. 585). Whether the reason of the over-consumption is primarily excessive advertisement, low interest rates or cultural patterns is questionable. However, the combination of all these factors contributes to the indebtness of the economy and forms a dangerous mix with vast consequences on the global economy.

Apart from this mainstream view other opinions on global imbalances´ root causes occured as well. For example, Borio & Disyatat (2011) claim that the global imbalances should not be the priority in addressing the global financial stability and that the problem lies in the weakness of the international monetary and financial system which "*lacks sufficiently strong anchors to prevent the build-up of unsustainable booms in credit and asset prices"*(Borio & Disyatat, 2011, p. 27). As a consequence they call for a reassessment of the financial regulation and supervision of the whole economic system. But even though the call for the anchor is quite sound, there does

not exist an agreement on which country should take the lead. Some authorities argue for the USA, some are persuaded that China is the country to do the first step. The best optinion would be if both countries took the needed measures to address the issue of the current account imbalances but the current global economic system does not put pressure on deficit and surplus countries equally. Even though the Chinese lead could be benefitial in many respects, there is no way how to force China to undergo the adjustment process.

Identifying the root causes of the global imbalances makes policy recommendations easy to formulate, but challenging to implement. It is evident that the USA need to start saving more and spending less to lower the fiscal deficits and China should mitigate its current account surpluses, or in other words decrease the saving ratio. How to achieve this?

In general the policy recommendations should "*find ways to mitigate the potential effects of the features in the international financial system that can permit countries to delay adjustment to external imbalances"*(Dunaway, 2009, p. 24). In this process the G20 and the IMF should play a substantial role, neverthless, the importance of the national governments is crucial as well. The G20´s and the IMF´s task is to create a framework and agree on a strategy, but the implementation depends fully on particular governments and their wilingness to adopt sometimes unpopular steps. The strategy should include a greater coordination of and changes in the international monetary and financial system and a global governance reform. (UNCTAD, 2012, Dunaway, 2009)

The call for changes in the international system is nothing new. Several decades ago, Keynes was in favour of creating such an international system which would transform the burden of the adjustment to surplus countries. *"The object of the new system must be to require the chief initiative from the creditor countries, whilst maintaining enough discipline in the debtor countries to prevent them from exploiting the new ease allowed them in living profligately beyond their means*" (Keynes, 1980, p. 30). This requirement is very up to date as the current system´s biggest fault indeed seems to be the lack of instruments how to force surplus countries to undergo the adjustment process.

As far as the changes in the international monetary system are concerned, the monetary policies should be more related to the financial market development. In the case of deficit countries it means tightening of the monetary policy. (Obstfeld & Rogoff, 2009) In the case of international financial system, a better access to instruments with high rates of return should be enabled to households in emerging markets but the priority is a creation of a more effective scope for the

financial regulation and supervision of the international financial markets. (Obstfeld & Rogoff, 2009)

One of the very ambitious proposals how to tackle the global imbalances was presented by the UNCTAD (2012, p. 46) that suggested a "*multilateral agreement centred on a constant real exchange rate".* Having the ambition to become a dynamic version of the unsuccessful Bretton Woods system, this multilateral agreement would be based on "*symmetric obligations for currency market interventions by its members"*(UNCTAD, 2012, p. 46). Despite its possible advantages, the creation of such a system is very unlikely.

3.2.1. UNITED STATES

In the case of the USA the advice is very straigh-forward. Raise savings (particularly government savings) and reorient its economy away from the over-consumption and focus on the ways how to increase investment and production. (Cowling, Dunn & Tomlinson, 2011) Raising government savings does not mean anything else than undergoing a tax reform and increasing a tax burden of citizens. (Dunaway, 2009)

3.2.2. CHINA

As far as China is concerned, the priority is to reorient its economy away from a heavy dependence on exports and investment towards a domestic demand. In comparison with the USA the Chinese consumption is with less than 40 % of GDP only a half of the US consumption rate (Obstfeld & Rogoff, 2009, p.37). Rebalancing the economy depends on two important aspects – a better provision of social services and an elimination of inefficiencies. Improved health care, education and pension scheme would reduce the excessive savings of Chinese people as the uncertainty would considerably decline. This step is also crucial for reducing the poverty and allowing a greater number of people to benefit from the economy´s growth. Secondly, China needs to eliminate price distortions and limit investment incentives. (Dunaway, 2009) In doing so the appreciation of renminbi would help as well as stronger currency would decrease China´s exports. The pressure to appreciate the currency has been a topic for several years, yet China managed to resist this pressure. (Liang, 2012b)

The Chinese economy needs a fundamental reform of the financial market too. (Liang, 2012b) A low cost of capital, a bad access to credit, an insufficient range of assets to invest in and limited possibilities of financing are crucial problems of its current system. (Dunaway, 2009) "*Better credit access and higher-yielding assets to invest in would reduce household savings and raise household incomes over time, boosting consumption*"(Dunaway, 2009, p. 23). To sum it up, all

policy recommendations have one common feature – they should promote the domestic consumption.

3.2.3. EUROPE AND JAPAN

The crucial changes to be done in Europe and Japan comprise reforming labor and product markets. These structural reforms are needed in order to increase flexibility and competitivness and sustain balanced growth. (Dunaway, 2009) The situation is critical particularly in Europe which fights with stagnating competitivness and low levels of growth. To make the labour market more flexible several steps need to be taken. The mobility, the elimination of barriers to entry, flexible wages corresponding to the market situation and increasing the retirement age to compensate the effects of aging are only some of them. (Dunaway, 2009) These changes have been postponed for too long. The lack of political will to introduce this needed changes can be explained by obvious unpopularity and negative short-term effects on the employment. But continuation with putting off the reforms will have very unpleasant effects resulting in insufficient competitivness. Moreover, this approach is *"self-reinforcing and condemning Europe to slower and slower growth"*(Dunaway, 2009, p. 21).

The fundamental problem seems to be the assymetry between deficit and surplus countries in the current global system and the consequent inability of the system to force surplus countries to undergo the structural changes. Taking a more detailed look, three main adjustments are needed - an increase in the US saving rate, a decline in Chinese surpluses and lower US fiscal deficits. A crucial step is a reorientation of China towards the domestic consumption which would benefit the global economy as the associated interest rates would increase making the capital less cheap. This would partly limit the US consumption and lower its indebtness. However, the persisent economic uncertainty makes dealing with the global imbalances even more complicated as the reforms might in the short term harm the economy and have negative effects on the GDP and the unemployment rate. Given the unpopularity of such measures, there seems to be a lack of political will as this situation, despite being benefitial in the long run, would mean a political suicide.

CONCLUSION

Even though global imbalances are not a new phenomenon, the pre-crisis current account balances were unique in many respects and represent an excellent laboratory for studying the adjustment process. The imbalances reached unprecedented scale, occured during unique financial dimensions and stemmed largely from structural problems in surplus countries. (Algieri & Bracke, 2007) As I already mentioned international imbalances are not necessarily undesirable. The behaviour of oil exporters, Chinese and US households might reflect reasonably rational behaviour. For oil exporters it might be benefitial to invest abroad, the Chinese fear of uncertainty transmitted into higher savings might also reflect rationality and for households in the USA consuming more then they earn in times of low interest rates and cheap capital migh be reasonable as well.

On a sample of the G20 countries my aim was to assess whether the pre-crisis imbalances were a result of such a rational behaviour or if their extent exceeded levels consistent with sustainable current account positions. In my empirical analysis I consequently studied the contribution of the changes in real exchange rate, domestic demand, output and income growth to the narrowing of the imbalances capturing the possible differences between different groups of countries, mainly between the deficit and surplus ones. Consequently, I was interested in analysing whether the observed improvements in the current accounts can persist in the long run or if any additional changes in the global economic environment need to be made.

The results of my medium-term current account determination equation revealed a very good fit of chosen regressors in explaining the current account positions. The regressors accounted for 65.9 % of the total variance and in the case of advanced countries the fit was even higher. Next, for a typical country in the sample, the results reveal that more than 75% of the gap measure (being a proxy for the excessiveness of the current account) was closed during the crisis. The size of the adjustment was larger in the case of deficit and advanced countries that had the largest gap measures.

As far as the channels of the contraction are concerned, my results reveal that there has not been a significant change in the exchange rate. On the other hand changes in output and domestic demand are significant as far as the contraction of the current accounts is concerned. The positive coefficient implies that the contraction of output and domestic demand was stronger in the case of countries with more negative current account gaps. The negative current account gap was associated also with a slower pace of income growth which seems to be the most significant

channel contributing to the imbalances´ improvement. The most severe decline in output, demand and income growth was again observed in advanced and deficit country group. This corresponds to the assymetric position between deficit and surplus countries in the current global economic system as the adjustment burden is primarily put on the deficit countries.

To conclude, my research shows that the adjustment process took place internally – as a mixture of output, demand and income growth changes - which is a situation typical for overheated economies. The economic development in the pre-crisis years indeed suggests that the economies were overheated.

It may seem that the period of the global imbalances is over as the deficits and surpluses by far do not reach the pre-crisis values. But it is not wise to celebrate too early. Global economy is still recovering from the financial shock and is fragile. The topic of international imbalances is highly controversial so it is not surprising that economists and politicians disagree what the appropriate response should be. Nevertheless, the mainstream considers raising savings through lower consumption to be crucial in the United States, in the case of China the recommendations focus on increasing the domestic demand and related rebalancing of the economy from its over-dependence on export and investment. The provision of better social services, appreciating renminbi and reforming the financial market should all be helpful in this process. In the case of Europe and Japan reforming the labour market remains a priority.

If the G20 is to prevent similar crises in the future, it will have to deal with the international imbalances and identify and successfully tackle the root causes of this serious and complex issue. As I have noted several times, the imbalances are not necessarily bad, but the pre-crisis values of the current accounts clearly reached excessive levels and harmed the global economy. If no reforms are done, it is highly probable that the imbalances will pile up again making the possibility of other crisis non-excludable. However, the solution is even more difficult given the fact that the global economy is still recovering from the crisis and the memory of painfull austerity measures is still vivid. As a result, there seems to be a lack of political will to start undergoing sometimes unpleasant but extremely needed structural changes as doing so would probably mean commiting a political suicide. Nevertheless, *"if country authorities do not learn their lessons from the current economic and financial crisis, they will find themselves reliving it" (*Dunaway, 2009, p. 29).

LITERATURE REVIEW

Abbas A.S.M., Bouhga-Hagbe, J., Fatás, A.J., Mauro, P. & Velloso, R.C., 2011. Fiscal Policy and the Current Account , Washington DC. IMF Working Paper.

Allegret, J.P, Couharde, C., Coulibaly, D. & Mignon V., 2013. Current Accounts and Oil Price Fluctuations in Oil-Exporting Countries: The Role of Financial Development. CEPII Working Paper, No. 2013-19, p.1-29.

Algieri, B. & Bracke, T., 2007. Patterns of Current Account Adjustment Insights from Past Experience, ECB Working Paper, No. 762.

Astley, M., Giese, J., Hume, M. & Kubelec, C., 2009. Global imbalances and the financial crisis, Bank Of England Quarterly Bulletin, Vol. 49, No. 3, p. 178-190.

Bernanke, B. S., 2005. Remarks by Governor Ben S. Bernanke: The Global Saving Glut and the U.S. Current Account Deficit, The Sandridge Lecture, Virginia Association of Economists, Richmond, VA (March 10).

Blanchard, O. & Milesi-Ferretti, G.M., 2009. Global Imbalances: In Midstream, in: Reconstructing the World Economy, edited by Il SaKong and Olivier Blanchard, Washington DC: International Monetary Fund.

Borio, C., & Disyatat, P., 2011. Global Imbalances And The Financial Crisis Link Or No Link?. BIS Working Papers, n.346.

Bracke, T., Bussie`re, M., Fidora, M. & Straub, R., 2008. A Framework for Assessing Global Imbalances. ECB Occasional Paper, No. 78.

Brissimis, S., Hondroyiannis, G., Papazoglou, C., Tsaveas, N., & Vasardani, M., 2013. The determinants of current account imbalances in the euro area: a panel estimation approach, Economic Change & Restructuring, 46, 3, p. 299-319.

Calvo, G.A., 1998. Capital Flows and Capital Market Crises: The Simple Economics of Sudden Stops. Journal of Applied Economics, Vol. 1, No. 1., p. 35-54.

Calvo, G.A., Izquierdo, A. & Mejía, L., 2008. Systemic Sudden Stops: The Relevance of Balance-Sheet Effects and Financial Integration. NBER Working Paper, No. 14026.

Calvo, G.A. & Reinhart, C., 2000. When Capital Inflows Come to a Sudden Stop: Consequences and Policy Options. In: Kenen, P. & Swoboda, A., Reforming the International Monetary and Financial System. International Monetary Fund. Washington DC.

Clarida, R.H., Goretti, M. & Taylor, M.P., 2007. Are There Thresholds of Current Account Adjustment in the G7? University of Chicago Press, National Bureau of Economic Research

Cowling, K., Dunn, S., & Tomlinson, P., 2011. Global imbalances and modern capitalism: a structural approach to understanding the present economic crisis, Journal Of Post Keynesian Economics, Vol. 33, No. 4, p. 575-596.

Debelle, G., & Faruqee, E., 1996. What determines the current account? A crosssectional and panel approach. IMF Working Paper, No. 58.

Dunaway, S.V., 2009. Global imbalances and the financial crisis. Washington, D.C.: Council on Foreign Relations, Center for Geoeconomic Studies.

Eichengreen, B., 2014. A Requiem for Global Imbalances, 2014, Project Syndicate. Online. Link: http://www.project-syndicate.org/commentary/barry-eichengreen-notes-that-a-decade-after-external-imbalances-emerged-as-a-supposed-threat-to-the-global-economy--the-problem-has-disappeared#YXh8z5ChWi5qfOzH.99, accessed on 18th May 2014.

Freund, C.L., 2000. Current Account Adjustment in Industrialized Countries. International Finance Discussion Papers, No. 692.

Gagnon, J., 2011. Current Accounts Imbalances Coming Back. PIIE Working Paper, No. 11-1.

Gehringer, A., 2013. Another Look at the Determinants of Current Account Imbalances in the European Union: An Empirical Assessment. FIW Working Paper, No. 105.

Graff, M., Tang K.K & Zhang J., 2012. Does Demographic Change Affect the Current Account? A Reconsideration. Global Economy Journal,Vol.12, No.4.

Gruber, J., & Kamin, S., 2007. Explaining the Global Pattern of Current Account Imbalances. Journal of International Money and Finance, Vol. 26, No. 4, p. 500-522.

Chinn, M., & Ito, H., 2007. Current Account Balances, Financial Development and Institutions: Assaying the World „Saving Glut". NBER Working Paper, No. 1176.1

Chinn, M., & Prasad, E., 2003. Medium-Term Determinants of Current Accounts in Industrial and Developing Countries: An Empirical Exploration. Journal of International Economics 59, pp. 47-76.

Hutchison, M.M. & Noy, I., 2002. Sudden Stops and the Mexican Wave: Currency Crises, Capital Flow Reversals and Output Loss in Emerging Markets. University of California. J Dev Econ 79, p. 225–248.

Ivanova A., 2012. Current Account Imbalances: Can Structural Policies Make a Difference? IMF Working Paper, No. 12/61., p.1-35.

Jaffri A.A., Tanveer, A.N., Asjed, Rooma & Khatoon I., 2012. Impact of Population Growth on Current Account Balance of Pakistan, Journal of Managerial Sciences, Vol.6, No.2., p.178-188.

Kent Ch. & Cashin, P., 2003. The Response of Current Account to Terms of Trade Shocks: Perstistence Matters. IMF Working Paper, No.03/143, p.1-48.

Keynes, J.M. The Collected Writings of John Maynard Keynes, Vol. 25. Activities 1940–1944: Shaping the Post-War World: The Clearing Union. London: Macmillan, 1980.

Keynes, J. M., 1933, 1941. National Self-Sufficiency. Yale Review 22, 4, pp. 755-769. Post-War Currency Policy. Reproduced in The Collected Writings of John Maynard Keynes: Volume XXV: Activities 1940-44, Shaping the Post-War World: The Clearing Union, edited by Donald Moggridge. London: Macmillan, 1980.

Lane, P.R. & Milesi-Ferretti G.M., 2011. External Adjustment and the Global Crisis. Washington DC: International Monetary Fund, Working Paper No. 11/197.

Lebe, F., Kayhan, S., Adigüzel, U. & Yiğit, B., 2009. The Empirical Analysis of the Growth and Exchange Rate on Current Account Deficit: Romania and Turkey Samples. Journal Of Applied Quantitative Methods., Vol. 4., p. 69-81.

Liang, Y., 2012a. Global Imbalances and Financial Crisis: Financial Globalization as a Common Cause, Journal Of Economic Issues (M.E. Sharpe Inc.), 46, 2, p. 353-362.

Liang, Y., 2012b. Global Imbalances as Root Cause of Global Financial Crisis? A Critical Analysis, Journal Of Economic Issues (M.E. Sharpe Inc.), Vol. 46, No. 1, p. 101-118.

Mendoza. E.G., 2010. Sudden Stops, Financial Crises, and Leverage. The American Economic Review, Vol.100, No.5, p.1941-1966.

Mongelli, F., Wyplosz, C., 2008. Unfulffiled Threats and Unexpected Challenges. In: The euro at ten – lessons and challenges. ECB.

Montiel., P.J., 2012. The Simple Analytics of Sudden Stops. Open Economy Review, No. 24., p. 267-281.

Obstfeld, M., & Rogoff, K., 2009. Global Imbalances and the Financial Crisis: Products of Common Causes, in: Asis and the Global Financial Crisis (Reuven Glick and Mark Spiegel, eds.), Federal Reserve Bank of San Francisco, p. 131-172.

OECD, 2010. Perspectives on Global Development 2010: Shifting Wealth. OECD

Ollivaud, P. & Schwellnus, C., 2013. The Post-crisis Narrowing of International Imbalances: Cyclical or Durable? OECD Economics Department Working Papers, No. 1062, OECD Publishing.

Padoan, P., 2010. How to correct global imbalances, OECD Observer, 279, p. 11-12.

Palmer, D. 2008. Obama Says China Must Stop Manipulating Currency. Reuters, U.S. Senators Push for China Currency Bill. Reuters. Online. Link: http://www.reuters.com/article/2008/10/29/us-usa-china-obama-currency-idUSTRE49S7FQ20081029, accessed on 25th July 2014

Phillips, N., 2005. Globalizing International Political Economy. Palgrave Macmillan, Houndmills.

Prati, A., et al., (2011). 'External performance in low income countries'. International Monetary Fund, Occasional Paper, No. 272.

UNCTAD, 2012. Development amd Globalisation: Facts and Figures. United Nations Publication.

Wolf, M., 2008. Fixing Global Finance. Baltimore: Johns Hopkins University Press.

APPENDIX

TABLE 5 - OVERVIEW OF ADVANCED/DEVELOPING/DEFICIT/SURPLUS/COUNTRIES

Country Name	Advanced	Emerging/Developing	Deficit	Surplus
Argentina		✓		✓
Australia	✓		✓	
Brazil		✓	✓	
Canada	✓			✓
China		✓		✓
Germany	✓			✓
European Union	✓		✓	
France	✓		✓	
United Kingdom	✓		✓	
Indonesia		✓		✓
India		✓	✓	
Italy	✓		✓	
Japan	✓			✓
Korea, Rep.	✓			✓
Mexico		✓	✓	
Russian Federation		✓		✓
Turkey		✓	✓	
United States	✓		✓	
South Africa		✓	✓	

SOURCE: ADVANCED, AMERGING/DEVELOPING COUNTRIES – WEO, APRIL 2014. DEFICIT AND SURPLUS COUNTRIES – OWN DIVISION – SURPLUS COUNTRY: CURRENT ACCOUNT SURPLUS IN THE MAJORITY OF THE YEARS BETWEEN 2000 AND 2008, DEFICIT COUNTRY: CURRENT ACCOUNT DEFICIT IN THE MAJORITY OF THE YEARS BETWEEN 2000 AND 2008, DATA WORLD BANK.

LIST OF TABLES

TABLE 1 - CURRENT ACCOUNT IMBALANCES 2006-2014 13
TABLE 2 - DETERMINANTS OF CURRENT ACCOUNT, 1984-2007 20
TABLE 3 - CURRENT ACCOUNT ADJUSTMENT DURING CRISIS PERIOD 24
TABLE 4 - CURRENT ACCOUNT ADJUSTMENT, 2004-2007 TO 2010 27
TABLE 5 - OVERVIEW OF ADVANCED/DEVELOPING/DEFICIT/SURPLUS/COUNTRIES 40

LIST OF FIGURES

FIGURE 1- DOMESTIC DEMAND TO GDP RATIOS 11
FIGURE 2 - GLOBAL IMBALANCES (PERCENT OF WORLD GDP) 11