

Petrit POLLOZHANI
State University of Tetova,
Faculty of Economy. Professor of Economics

Bardhyl DAUTI
State University of Tetova,
Faculty of Economy,
senior teaching assistant

Macroeconomic Challenges for Macedonia toward European Union and European Monetary Union membership – Copenhagen and Maastricht Criteria

Abstract

In this paper we have analyzed the major macroeconomic challenges that Macedonia might face for becoming part of European Union countries, which are related to the capacity of Macedonian economy for meeting the prerequisites specified by European Commission in Copenhagen and Maastricht. In the context of Copenhagen criteria, using data from European Bank for Reconstruction and Development, we have analyzed the ability of Macedonian economy to cope with competitive pressures within EU structure. For this purpose, the main challenges of Macedonia toward EU membership are: strengthening the competition, strengthening of suitable capacity of human capital in the country, strengthening of non – bank financial institutions, reduce the shadow economy and built up a better infrastructure. The challenges that Macedonia has to solve will certainly result in progress related to market economy functionality and better prerequisites for strengthening private sector competitiveness. In the context of Maastricht criteria, using data from International Financial Statistics (IFS), National Bank of the Republic of Macedonia (NBRM) and State Statistical Office of RM, the study is focused on the Treaty provisions with regard to development in prices, fiscal balances and debt ratio, exchange rates and long term interest rates. In this respect, economic developments in Macedonia are reviewed from a backward – looking perspective, covering in principle the past ten years. Economic convergence of Macedonia as a country under review in this paper is, also, examined in the context of the regular two – year cycle, which is in line with the requirements of article 122 (2), in conjunction with the article 121 (1) of the Treaty of the European Commission. In order to capture the convergence criteria, in the context of the influence of the real exchange rate, the study attempts to explore the pass through effect of exchange rate on inflation. We use quarterly data from 1998 to 2008 and employed Vector Autoregression and Granger Causality test of exchange rate on

inflation. The results show that changes in exchange rate 'are causing' changes in the producer prices and retail prices, thus confirming the high import dependability of the domestic production.

Key Words: Economic Convergence, Macedonia, European Union, European Monetary Union

Introduction

Enlargement is one of the most powerful policy tool of European Union. Its function is to provide stability and security for integrated nations. The present enlargement agenda covers Western Balkan Countries, such as FYR Macedonia, Bosnia and Herzegovina and Turkey. The integration motives of these countries are based on their willingness to participate in European financial resources, thus enabling these economies to provide financial recourses from integrated markets. In this paper we have analyzed the major economic challenges of Macedonian economy toward European Union (EU) and European Monetary Union (EMU) membership. These analyses are based on the capacity of Macedonian economy to meet the respective, Copenhagen and Maastricht membership criteria. Therefore, within the framework of EMU membership the analysis of economic performance of Macedonia are highly hypothetical, since the country is not a member of the European Union and it is far away from fulfilling all legal issues to join EU soon. However, in our paper, we offer the first preliminary assessment concerning monetary integration. The duration of Macedonian integration into EU structure, depends on the extent to which the country is capable to fulfill the economic criteria.

The paper is structured as follow. After the introduction, we analyze the economic criteria for EU and EMU membership. Within this part, a comparative analysis, in regards to Macedonian approximation toward European Union with other candidate countries is analyzed. For this purpose, using transition indices from European Bank of Reconstruction and Development (EBRD), we have examined the key economic criteria, which are in line with Copenhagen requirements. To examine the economic convergence between Macedonia and EMU" s Maastricht criteria, the study is focused on the analysis, based on the Treaty provisions with regard to development in prices, fiscal balances and debt ratio, exchange rates and long term interest rates. In the context of the methodology, the paper was prepared to a great extent in accordance with the Methodology of Regular Reports of the European Commission and Annual Convergence Reports of the European Central Bank (ECB). Additionally, in order to capture the convergence criteria, in the context of the influence of the real exchange rate, the study attempts to explore the pass through

effect of exchange rate on inflation, which is developed in section four. The last part of the paper encompasses conclusions, as well as the policy recommendations for Macedonia with the objective toward meeting the membership criteria, identified by the European Commission in Copenhagen and Maastricht.

2.1 European Union and the Copenhagen Criteria

The Enlargement of the European Union is a very significant mechanism in order to integrate the European Union. Therefore, there have been many enlargement events since 1970s until the latest in January 2007, where, Bulgaria and Romania joined the Union. However, after every enlargement occurred, the question of the possibility of other countries around the continent of Europe which have a good relationship with the EU to join the European Union has been raised up. .

For candidate countries, to become an EU member, they must complete the Copenhagen Criteria¹, which defines the rules for a country to be eligible for becoming EU member. These criteria imply the functioning of market economy, the existence of democratic institutions, able to preserve democratic governance and human rights, and that the state accept the obligations and intent with the EU. Because of these criteria, many candidate countries find difficulty to access the European Union. Therefore, to be more understandable, before one country could join the European Union, it has it has to meet the following criteria as fully stated, the Copenhagen Criteria²

As concern to economic criteria for membership into European Union and European Monetary Union, they are static and do not speak much of economic quality and there is a lack of academic explanation (Efendic A, 2005). These criteria, do not discuss the effect of fulfillment on different countries, having in mind the fact that no country has the same economic environment. Economic criteria defined in Copenhagen, can be viewed through the following sub criteria³

1. *Equilibrium between demand and supply is established by the free interplay of market forces; prices, as well as trade, are liberalized;*
2. *Significant barriers to market entry (establishment of new firms) and exit (bankruptcies) are absent;*

¹Pusca, Anga. European Union: Challenges and Promises of the new Enlargement. New York: IDEA and CEU press. 2004, pp.31-32

²Glenn, John K. EU Enlargement. In: Cini, Michelle (eds) European Union Politics. New York: Oxford University Press. 2003, pp. 216

Financial Affairs, Progress towards meeting economic criteria for accession: the assessment from the 2004 regular reports, November 2004, p. 6-7

3. *The legal system, including the regulation of property rights, is in place; laws and contracts can be enforced;*
4. *Macroeconomic stability has been achieved including adequate price stability and sustainable public finances and external accounts;*
5. *Broad consensus exists about the essentials of economic policy;*
6. *The financial sector is sufficiently well developed to channel savings towards productive investment.*
7. *The existence of a functioning market economy, with a sufficient degree of macroeconomic stability for economic agents to make decisions in a climate of stability and predictability;*
8. *A sufficient amount, at appropriate costs, of human and physical capital, including infrastructure, education and research, and future developments in this field;*
9. *The extent to which government policy and legislation affect competitiveness through trade policy, competition policy, state aids, support for SMEs;*
10. *The degree and the pace of trade integration a country achieved with the Union before enlargement. This applies both to the volume and the nature of goods already traded with Member States;*

In order to understand the economic criteria, we have to raise the question, whether these criteria are useful for national economies, or are they a wasted opportunity to implement their own national strategies. However, for a candidate countries, on their way to EU membership, one of the challenges, is the achievement of real convergence, which means that the income per capita and the living standard of the candidate country under observation, should come closer to the average of less developed EU members (Efendic, A, 2005), thus providing long run economic benefit for national economy, in a sense of providing long term sustainable and stable growth in the conditions of macroeconomic stability. On the other hand, non fulfillment of economic criteria for EU membership by candidate country is a wasted opportunity for the country on its way toward EU membership and is a sign of poor economic performance from national economy point of view.

2.2 Macedonia in the context of Copenhagen criteria for EU membership

The economic criteria for EU membership are related with the long run achievement of real convergence, which analyses the catch up process of candidate countries and integrated countries, with regard to income per capita and standard of living of the country under observation. Real convergence can only be achieved in conditions of macroeconomic stability. Achievement of economic criteria specified by the Treaty of

European Commission, represents support for transitional supports. For this purpose, the analysis of economic criteria for EU membership, in this paper, will be based on transition indices, using data from European Bank for Reconstruction and Development. The Copenhagen criteria are related to the ability of Macedonia to fulfill the conditions with regard to well functioning market economy. For this purpose, we have used the transition index for the period (1998 – 2008).

Within the framework of transition indices, price liberalization indices range from 1 to 4, with 0.3 decimal points added or subtracted for + and – rating representing the lowest and the highest degree of price liberalization for a country under review. As can be seen from the graph, Macedonia does fulfill the conditions of price liberalization and at the same time can be compared with other integrated countries, within EU structure

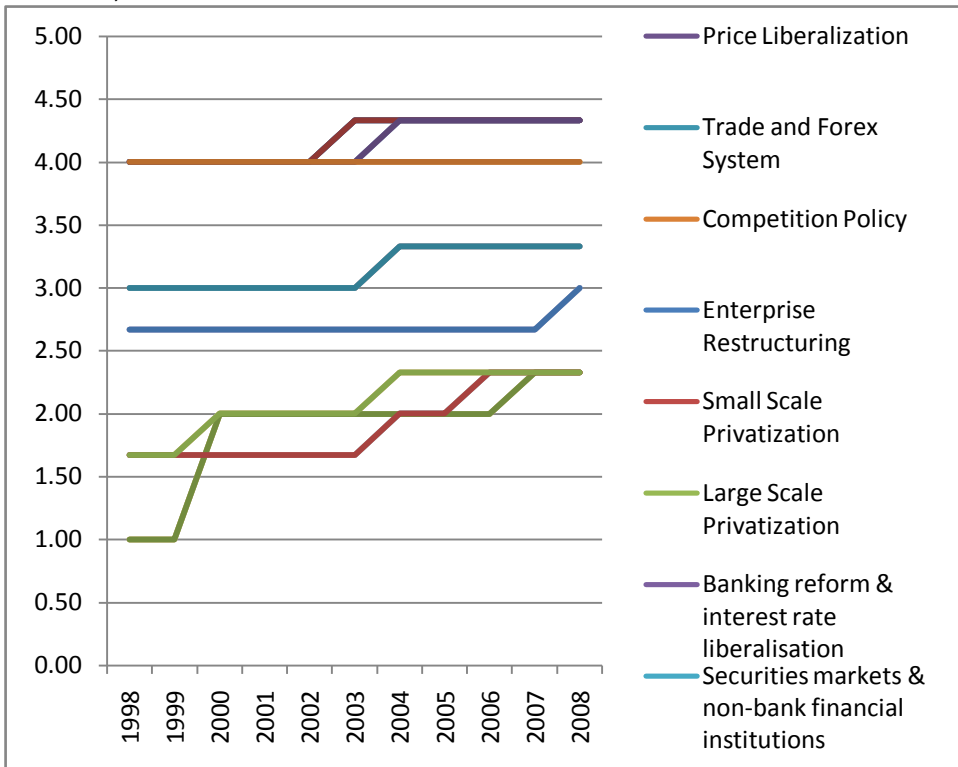


Chart 1: Transition Indices for Macedonia, 2008 (Source: EBRD, 2008)

Equilibrium between demand and supply is established by the free interplay of market forces; prices, as well as trade are liberalized. According to National Strategy of Macedonia for European Integration, with regard to price liberalization policy, Macedonians plan is to determine the futures price policy based on two elements 1)

The number of products and services whose prices are controlled should continue to fall and 2) future liberalization of currently controlled prices should be announced in advance, with detailed time schedule for their adjustment. This will increase the transparency level, with regard to prices, thus decreasing the imperfect information between economic agents. The expected result, to be achieved from this policy, is reduction of expected inflationary effects and increases the competitiveness in the real sector. This is especially true for energy prices.

With regard to foreign trade liberalization, according to transition indicators, Macedonia recorded excellent results, where the respective indexes, are both, 4.33, showing that Macedonian economy is being opened in the trade area, which has been achieved through establishing a free trade zone in the region in accordance with the Stability Pact. The favorable movement on the foreign exchange market, that led to increase of trade liberalization, during the year of 2006, was due to the gradual liberalization of the capital account, the admission to Central European Free Trade Agreement (CEFTA), the acquiring of the status of candidate country for joining EU and the higher credit rating, as well as the aggressive policy of the Government for attracting foreign capital in the country (tax reduction, international promotion of the country). These conditions improved the economic cooperation of Macedonia with the countries of EU structure, thus increasing the liberalization degree of foreign trade of Macedonia.

The legal system, including the regulation of property rights, laws and contracts that can be enforced is the criterion that is certainly a huge challenge for Macedonia in the future regarding the implementation of necessary reforms in relation to improving the current situation in the country. "Being aware of the fact that appropriate legislation is a necessary condition for an efficient transition from a centrally-planned to a market economy, all countries in the region started at the very outset of transition with a comprehensive reform of their legal and regulatory systems. In this regard, Macedonia has adopted

Years	Large scale privatization	Small scale privatization	Enterprise restructuring	Price liberalization	Trade & Forex system	Competition Policy	Banking reform & interest rate liberalization	Securities markets & non-bank financial institutions	Overall Infrastructure Reform
1998	3,00	4,00	2,00	4,00	4,00	1,00	2,67	1,67	1,67

1999	3,00	4,00	2,00	4,00	4,00	1,00	2,67	1,67	1,67
2000	3,00	4,00	2,33	4,00	4,00	2,00	2,67	1,67	2,00
2001	3,00	4,00	2,33	4,00	4,00	2,00	2,67	1,67	2,00
2002	3,00	4,00	2,33	4,00	4,00	2,00	2,67	1,67	2,00
2003	3,00	4,00	2,33	4,00	4,33	2,00	2,67	1,67	2,00
2004	3,33	4,00	2,33	4,33	4,33	2,00	2,67	2,00	2,33
2005	3,33	4,00	2,33	4,33	4,33	2,00	2,67	2,00	2,33
2006	3,33	4,00	2,67	4,33	4,33	2,00	2,67	2,33	2,33
2007	3,33	4,00	2,67	4,33	4,33	2,33	2,67	2,33	2,33
Average	3,15	4,00	2,36	4,15	4,18	1,87	2,71	1,91	2,09

Table 1. EBRD Transition indices for Macedonia (Source: EBRD Transition Report, 2008)

We observe that Macedonia registers a relatively good index in the area of small scale privatization (4.00), while conditions on large scale privatization are much worse. The biggest problems, for Macedonia are in the competition policy area, where the average index for the period 1998 – 2008 is 1,87. Also the average indexes of overall infrastructure reform (2.09), securities markets and non bank financial institutions (1,91), and banking sector and interest rate liberalization (2,71) do not show good functionality indicator for Macedonian market economy.

2.3 Macedonia, candidate countries for EU membership and new integrated countries

For the period under review 1998 – 2008, Macedonia recorded the best results in terms of price liberalization, trade and forex liberalization, small scale privatization and to some extent in the area of large scale privatization. These results are showing that Macedonia intends to increase the openness degree, in order to benefit from the financial resources of integrated countries

Average 1998 – 2008

EBRD index (1- 4)	Mac edo nia	Bulgari a	Roma nia	Avera ge of new EU memb ers (B+R)	Albania	Bosnia and Herzeg ovina	Croatia	Avera ge of the candi date count ries (A + B + C)
Price liberalizati on	4,15	4,24	4,33	4,25	4,00	4,00	4,00	4,00
Trade and Forex System	4,18	4,33	4,33	4,33	4,27	3,39	4,27	3,97
Small – scale privatisatio n	4,00	3,66	3,63	3,64	4,00	2,72	4,33	3,68
Large – scale privatisatio n	3,15	3,69	3,33	3,51	2,90	2,42	3,18	2,83
Enterprise restructuri ng	2,36	2,51	2,21	2,36	2,09	1,85	2,82	2,25
Competitio n Policy	1,87	2,48	2,42	2,45	1,82	1,24	2,39	1,81
Overall Infrastruct ure reform	2,09	2,84	3,09	2,96	1,93	2,08	2,72	2,24
Banking reform and interest rate liberalizati on	2,71	3,30	2,89	3,09	2,45	2,51	3,60	2,85

Securities Markets and Non Bank Financial Institution	1,91	2,33	2,27	2,31	1,67	1,42	2,63	1,90
Average	2,40	2,67	2,59	2,62	2,28	1,96	2,72	2,32

Source: *Transition report 2008*, EBRD, London

Table 2: EBRD indices for Macedonia, candidate countries and new member

countries. Source: own calculation, using data from EBRD

According to transition indices, we observe that biggest problems, for Macedonia are in the competition policy area, where its average index for the period under review is 1,87. This index is also the smallest one in comparison to respective average individual indexes of candidate countries. Also the average indexes of overall infrastructure reform (2,09), securities markets and non bank financial institutions (1,91), and banking sector and interest rate liberalization (2,71) do not show good functionality indicator for Macedonian market economy. However, when considering the Macedonian capability to cope with competitive pressures, it is important for this analysis to compare the Macedonian indices with respective indices for both, transition countries that have become full members and candidate countries aiming to become members of EU.

1. The average value of Macedonian index of 2,40 is lower than the average value of new EU members index (2,62), and higher than the average value of candidate countries index (2,32), meaning that, the lag of Macedonian transition indices amounts to a total of 8.3%, in comparison to the average value of new EU members index. On the other hand, with respect to candidate countries, Macedonia has an advantage in terms of transition indices. Its average value is higher for 3.3%, than the average value of candidate countries indices.
2. In comparison to the average indices of the candidate countries, Macedonia has the best result in the area of price liberalization and trade and foreign exchange market, thus reaching the EU standard. Macedonia has also good results in the value of the index measuring small scale privatization. Macedonian results on small scale privatization (4.00), are somewhat better

than the average of new EU entrants (3.64), with the lag being the smallest compared to candidate countries, such as Croatia (4.33). As concern to the case of large scale privatization, Macedonia lags well behind new EU entrants, and has recorded positive advantage with respect to candidate countries.

Macedonia in the context of Maastricht Criteria

The framework for analysis of economic convergence between Macedonia and EMU Maastricht criteria is based on the Treaty provisions and their application by the European Central Bank (ECB) with regard to developments in prices, fiscal balances and debt ratios, exchange rate and long – term interest rates, together with other relevant factors. Second, it is also based on a range of additional backward and forward – looking economic indicators which remain useful for examining the sustainability of convergence in greater details. The analysis of economic convergence for Macedonia is built on principles set out in reports published by the European Central Bank (ECB).

The Convergence criteria have to be met on the basis of actual data. Moreover, it is emphasized that convergence must be achieved on a lasting basis and not just at given point in time. In this respect, economic developments in Macedonia are reviewed from a backward - looking perspective, covering, in principle, the past ten years. Economic convergence of Macedonia as a country under review in this paper is, also, examined in the context of the regular two – year cycle, which is in line with the requirements of article 122 (2), in conjunction with the article 121 (1) of the Treaty of the European Commission. This helps to better determine the extent to which current achievements are the result of genuine structural adjustment, which in turn should lead to a better assessment of the sustainability of economic convergence. The examination of economic convergence for Macedonia is assessed in line with the provisions of article 121 of the Treaty. The cut – off date for the statistics included in this convergence paper is 18 April 2008. The statistical data used in the application of convergence criteria have been provided by European Commission (see also the statistical annex and the tables and charts), National Bank of the Republic of Macedonia (NBRM), European Bank for Reconstruction and Development (EBRD) and International Financial Statistics (IFS). For monthly data on exchange rates, the period considered in this report ends in March 2008. Data for fiscal balances cover the period up to 2008.

In order to accede the European Monetary Union Macedonia has to proof nominal and real convergence, in line with the five convergence criteria. The nominal and real convergence criteria include.

1. The criterion on price stability – uniformly low and stable inflation is the fundamental criterion. Inflation rate must not exceed by more than 1.5 percentage points that of, at most, the three best performing Member States in terms of price stability.
2. Uniformly low and stable long-term interest rates is the second criteria. An inflation-prone country could possible squeeze down inflation temporarily, on the last year before admission – for example, freezing regulated prices – only to relax the effort afterwards. In order to weed out cheaters, a second criterion requires that the long term interest rates must not exceed the average rates observed in the three lowest inflation rate countries by more than 2 percentage points. The economic rational is: Long-term interest rates reflect markets' assessment of long-term inflation.
3. A stable exchange rate, derived from uniformly low and stable inflation rates is the third criteria. The examination of exchange rate stability against the euro focuses on the exchange rate being close to the ERM II central rate, while also taking into account factors that may have led to an appreciation, which is in line with the approach taken in the past.
4. The ratio of the planed or actual government deficit to GDP, or the annual flow of public sector debt must not exceed the reference value of 3% of GDP value.
5. The ratio of government debt to GDP, or the total stock of public sector debt, national debt, must not exceed the reference value of 60% of GDP value. Moreover there is an interesting link between the public finance criteria four and five regarding to real GDP growth. Hence, it connects both real and nominal convergence of the economy.

2.1 Descriptive Assessment: Examination of Economic Convergence

3.1.1 Price Developments

Regarding the price stability criteria, during the period April 2006 – May 2007, Macedonia had annual average inflation rate below the reference value (2.6%), whereas during the period April 2007 – May 2008, the country registered annual average inflation rate of 4.4\$ which was above the reference value of 3.2%.

HICP Inflation for Macedonia				
	September 2003 to August 2004	April 2005 to March 2006	April 2006 to March 2007	April 2007 to March 2008

HICP Inflation*	0,8	0,9	2,6	4,4
Reference Value**	2,4	2,6	3	3,2
Euro Area***	2,5	2,3	2,1	2,5
Source: State Statistical Office of Republic of Macedonia (SSO) and Eurostat				

Table 3: Inflation in Macedonia, during the reference periods, measured by Harmonized Index of Consumer Prices

Looking back over the last past ten years, inflation rate measured by consumer price index has been rather volatile, averaging 1.82 on an annual basis, over the period 1998 to 2008. Looking at recent developments, CPI inflation followed a downward trend from 2001 to 2004. The process of disinflation during the years of 2001 – 2004 reflected a number of important policy choices, most notably the orientation of monetary policy towards the achievement of price stability, which is the primary objective of monetary policy.

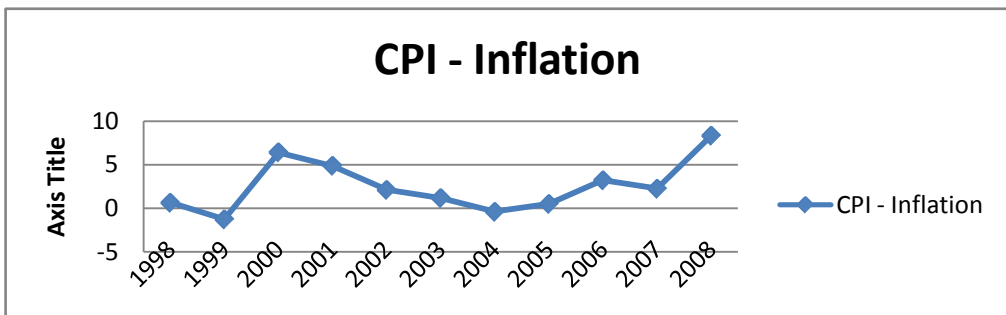


Chart 2 – CPI – Inflation for the Republic of Macedonia
Source: National Bank of the Republic of Macedonia. NBRM

During the period from 2004 to 2008, inflation rate in Macedonia, registered upward trend. In 2008 the CPI inflation rate was 8.3% which is above the convergence criteria. The main factors underlying behind this increase in inflation were higher food and energy prices, adjustments in excise duties and strong demand pressures, which, in turn, are generating price and wage pressures (NBRM Annual Report, 2008).

Looking ahead, the latest available inflation forecasts from major international institutions range from 2.7 to 5.2 for 2009. Risks to these inflation projections are on the upside and are associated with larger – than – expected increases in energy, food and administered prices.

Inflation Forecasts	
Average Annual Inflation Forecasts for 2009	
EBRD (Nov 2008)	3,5
European Union (April 2008)	2,7
IMF (October 2008)	3
United Nations (DESA)* (October 2008)	5
Economicst Intelegence Unit (August 2008)	5,2
Viena Institute (June 2008)	3
Department of Economics and Social Affairs (DESA)	
Source: EBRD - Transition Report 2008	

Table 4: Inflation forecasts

However, the catching – up process is also likely to have a bearing on inflation over the coming years, given that GDP per capita and price levels are still significantly lower in Macedonia than in the euro area. However, it is difficult to assess the exact size of this impact. The inflation stabilization shall be mainly expected in 2009.

3.1.2 Fiscal Developments

Macedonia is not subject to an EU council decision on the existence of an excessive deficit. With regard to the budgetary performance, Macedonia has a fiscal deficit to GDP ratio below the convergence criteria of 3% specified in the treaty. The amount in the reference year of 2007 was 0.6% to GDP, whereas in 2008 it declined further down to -1.5% to GDP.

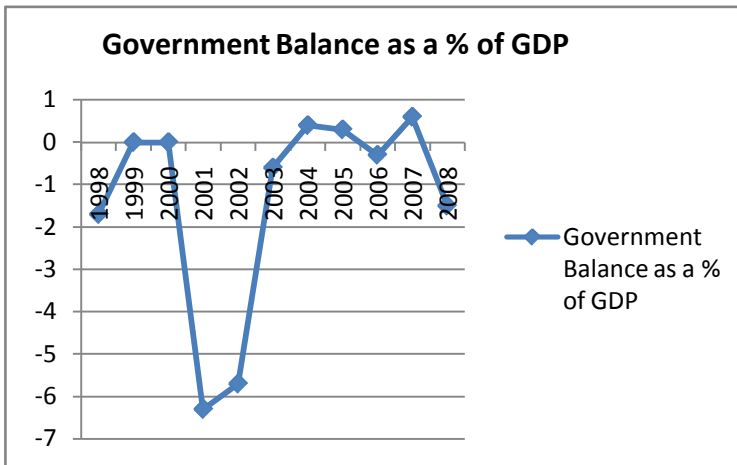


Chart 3: Government Balance as a % of GDP

Source: National Bank of Republic of Macedonia

General Government Fiscal Position (as a % of GDP)	200	200	200	200	200	200	200
	2	3	4	5	6	7	8
General Government surplus (+)/Deficit (-) (EBRD)	-5,7	-0,6	0,4	0,3	-0,3	0,6	-1,5
Reference value (Convergence Reports 2002 - 2007)	-3	-3	-3	-3	-3	-3	-3
General Government Gross Debt (EBRD)	42,9	39,0	36,6	39,5	32,9	25,5	25,6
Reference value (Convergence Reports 2002 - 2007)	60	60	60	60	60	60	60

Source: EBRD, Convergence Reports 2003,2004,2005,2006,2007

Table 5: Fiscal Developments over the reference periods

As concern to the Macedonian general government debt to GDP, the results are not so worrying. Macedonian government debt to GDP was above the reference value during the period from 1998 up to 2003, and this ratio has declined since 2004, up to 2008, registering amounts below the reference value. In 2007 this amount was 52% whereas in 2008 it increased slightly to 53%.

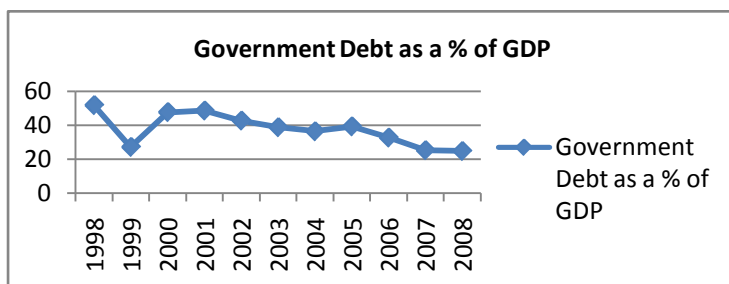


Chart 4: Government debt as a % of GDP for the period 1998 - 2008
 Source: National Bank of Republic of Macedonia (NBRM)

3.1.3 Exchange Rate Developments

Regarding the exchange rate criterion, Macedonian currency does not participate in ERM2, but trades under fixed exchange rate regime.

Exchange Rate Developments over the reference period	April 2006	April 2008
Membership of the Exchange Rate Mechanism (ERM II)	No	No
Average Exchange Rate, 2007, 2008, MKD / EUR	61,1625	61,3856
Source: NBRM		

Table 6: Exchange Rate over the reference period

Overall, in the two years reference period, from 19 April 2006 to 18 April 2008, the Macedonian denar was not subject to significant depreciation pressures, thus confirming the objective of NBRM to maintain price stability.

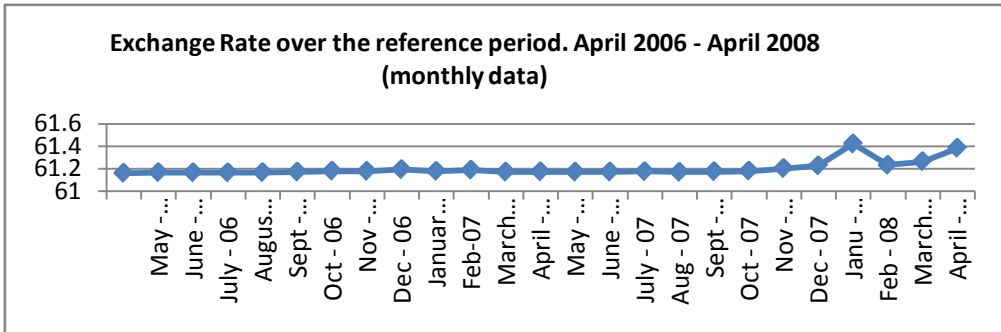


Chart 5: Exchange Rate over the reference period

Source: NBRM

The Macedonian exchange rate targeting strategy is considered as an effective instrument for maintaining price stability. In 2003 the exchange rate regime in Macedonia was managed float. According to Article 18 of the Foreign Exchange Act in Macedonia, the exchange rate of the Denar was established freely on the basis of demand and supply of foreign exchange at the foreign exchange market.

Years	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
DEN/EU	60,6	60,7	60,9	61,0	61,2	61,3	61,1	61,1	61,1	61,2
R	2	9	6	7	9	1	8	7	8	2

Source: NBRM

Table 7. Exchange Rate over the last ten years

Nevertheless, the Denar exchange rate against the Euro serves as the intermediate target of monetary policy, so money supply and interest rates are dictated by the exchange rate target, which since mid-1997 has been set at 61 Denars to one euro and more or less maintained at that level (Daviddi and Uvalic, 2003). Effectively, therefore, the central bank has been maintaining a stable Denar exchange rate against the euro (Bisev and Petkovski, 2003). Accordingly, to stable Denar exchange rate, the NBRM in 2004 maintained stable and low interest rates, thus enabling it to participate in the foreign exchange market through foreign exchange transactions of NBRM.

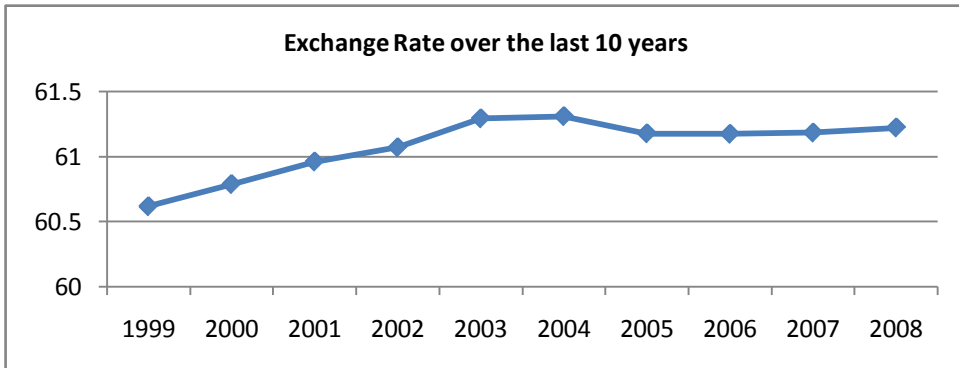


Chart 6 Exchange Rate over the last ten years

Source: NBRM

In 2008, the world financial turmoil that damaged the global market reflected also on the domestic economy causing macroeconomic disturbances in the state. Therefore, the strategy of monetary policy, due to these circumstances, was carried out to enhanced inflation pressures and constant deepening of external misbalance. In the first months of 2008, due to the increase on general price level, i.e increase of world price of food and oil, created pressures on the foreign exchange market. (NBRM, Annual Report, 2008)

In 2009, the strategy of de facto fixed exchange rate will continue to apply for the purpose of maintaining the price stability as final monetary objective. Having in mind the expected reduction of domestic demand, due to lower domestic investment, and lower inflows of private transfers in the economy in view of the global economic crisis, the stabilization of the foreign exchange rate market is expected to be the biggest and the most serious challenge in the 2009 monetary policy.

3.1.4 Interest rate developments

As concern the convergence of long term interest rate, Macedonia is below the reference value, starting from the April 2007 up to March 2008.

	April 2006 to March 2007	April 2007 to March 2008
Long Term Interest Rate		
Three months government securities in %, three months	6,25833	5,3
Reference Value (Convergence Reports), April 2007, April 2008)	6,4	6,5

Euro Area (Convergence Reports), April 2007, April 2008)	4	4,3
Source: NBRM, Convergence Reports, own calculation		

Table 8: Interest Rate developments over the reference period

However, to achieve a high degree of convergence, Macedonia needs also to have good results in terms of GDP growth, substantial decrease of unemployment rates, low current account deficit and reasonable inward from FDI –, which points to the need to ensure the sustainability of external position.

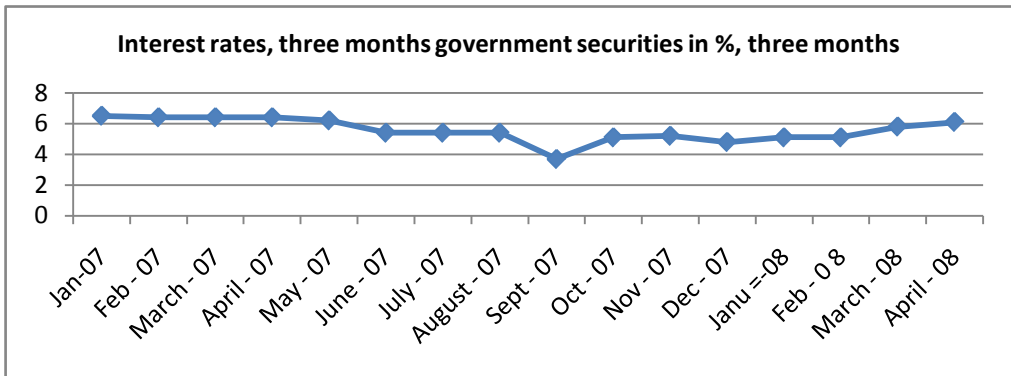


Chart 7 Interest Rate over the reference period

In 2007, the interest rate of NBRM was in the sign of monetary policy relaxation, in conditions of favorable movements on the foreign exchange market and constant increase in the liquidity on this basis, as well as prudent fiscal policy.

Long Term Interest Rate,	2004	2005	2006	2007	2008
Three months government securities in %, three months	8,491667	9,941667	6,4	5,757	6,725
Source: NBRM					

Table 9: Interest Rate developments over the last five years, Source: NBRM

Thus the reference interest rate of NBRM during the year was constantly decreasing, reflecting on the interest rates on the Money Market and the Treasury bills market. The decline was also registered with the banks' lending interest rate, with simultaneous increase in the deposit interest rate resulting in narrowing of the banks' interest rate spread.

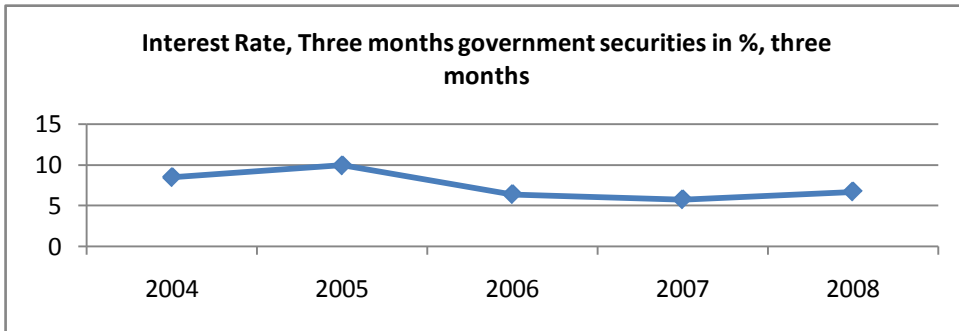


Chart 8 Interest Rate over the last 5 years

Source: NBRM

In 2008, the interest rates of the NBRM were market by the monetary policy tightening, while the interest rate policy of the banks was mainly focused towards savings stimulation (NBRM, Annual Report, 2008). Namely, in conditions of uncertain economic environment, increased inflation pressures, growing deficit on the current account, strong credit growth in the first several months of the year, as well as expectations for more relaxed fiscal policy (which were realized to great extent in the last quarter of the year), the NBRM carried out gradual increase in the reference interest rate in the first half of 2008 (NBRM, Annual Report, 2008).

3.1.5 Other relevant factors

With regard to real GDP growth rate (table 15), Macedonia registered upward trend of this indicator, especially starting from the year of 2003 up to 2008, where its amount was 5.3%. Before this period, the highest level of Macedonian real GDP growth rate was registered in the year 2000, at about 4.5%. This result was attributed mainly to privatization of state owned companies and a good position of international community investments, into the country's banking system and insurance companies.

Regarding the data on GDP per capita (Table 15), one can conclude that Macedonian GDP per capita has registered a constant increase, representing a relatively good indicator of the level of Macedonian standards of living. However this indicator is significantly lower, compared to the average of EU 27, meaning that Macedonian standard of living is lower than the standard of living in the EU countries (Eurostat, 2008).

4 Empirical Assessment: The Pass through Effect of Exchange Rate on producer prices and retail prices.

4.1 Definition of Exchange Rate Pass Through

The pass through effect of the exchange rate on inflation considers the influence of the changes in the nominal exchange rate of the inflation through import prices. The changes of the exchange rate have a direct influence on the import prices, thus influencing afterwards the general inflation level (Besimi, 2004). Changes in import prices are, nevertheless, to some extent passed on to producer and consumer prices. We are, therefore, in this paper using a broader definition of exchange rate pass-through, which is seen as the change in domestic prices that can be attributed to a prior change in the nominal exchange rate.

4.2 Econometric Modeling of Exchange Rate Pass Through Effect on domestic prices for the period for the period January 1998 – December 2008

In order to define the influence of the exchange rate on the prices, i.e. inflation, an empiric analysis is required. Having in mind the lack of longer time series and given the period of transition characterized by larger structural changes, and also the impossibility for preparing more complex analysis containing structural models, or co-integration models, for the needs the following analysis will be provided: Vector Auto regression, correlation between the changes in the exchange rate and the prices and granger causality of the variables.

This part presents econometric analysis of the pass through effect of exchange rate on Inflation in Macedonia, for the period January 1998 – December 2008. We use the EU/DEN rate of exchange to represent the exchange rate. We, furthermore, include all stages of the distribution chain, i.e. retail prices and producer prices. All the prices are in the form of price indices. The data source is International Financial Statistics and National Bank of the Republic of Macedonia. All the data, apart from the exchange rate data, is, furthermore, seasonally adjusted, and all the time series are in logarithmic form.

In order to make a more formal analysis of the pass through effect of exchange rate on inflation we apply the methodology of Vector Autoregression (VAR). This methodology enables us to analyze the movements of certain economic categories through time series, while at the same time avoids the problem of endogeneity of variables which is present at the structural econometric models. (Gujarati D, 2003). The analyzed period is January 1999 – December 2008.

OLS estimation of a single equation in the unrestricted VAR. Dependent variables are listed on the first row. 117 observations used for estimation from 1999M4 to 2008M12			
	DLNDENEU	DLNRP	DLNPPI
DLNDENEU(-1)	-.7228 (-8.0857)	.41896 (-3.12)	.4500E-4 (-2.034123)
DLNDENEU(-2)	-.32566 (-3.7097)	.33085 (2.12643)	-.6727E-3 (-3.51954)
DLNRP (-1)	-.0013872 (-.004)	-.67227 (-7.5306)	-.0019764 (-.44746)
DLNRP (-2)	.010192 (.033871)	-.33930 (-3.7824)	.0040175 (.90516)
DLNPPI (-1)	2,43 (.38058)	-1,2102 (-.63750)	-.66053 (-7.0320)
DLNPPI (-2)	-46520 (-.71151)	-12513 (-.64201)	-.34500 (-3.5774)
R-Squared	.38	.34	.33
R-Bar-Squared	.35	.31	.30
S.E. of Regression	.84	.25	.01
F-stat.F(5, 111)	13.8433[.000]	11.4046[.000]	11.1733[.000]
Mean of dep. Var.	.7861E-4	-.5998E-4	-.1034E-3
S.D. of Dep. Var	10472	.31	.014863
Residual Sum of Square	783578	69633	.01
Equation Log-likelihood	-1425638	-.95698	3507699
Akaike Info. Criterion	-1485638	-69570	3447699
Schwarz Bayesian Criterion	-1568503	-152435	3364834
DW-statistic	21716	21617	20218
System Log-likelihood	2081482	2081482	2081482

Table 10: Vector Auto regression (VAR). Prepared in software application: Microfit 4.0

In the specification of the model (table 10), we started with a period of 3 time lags (3 months), while the results showed that statistically significant are only the

changes in the first and the second time lag. Therefore, the VAR results are based on only two lags of each endogenous variable. The model set in this manner gives satisfied explanation for the relation between the inflation and the changes in the exchange rate, which is evident from the R square⁴. The pass through effect of the exchange rate is significant, with regard to the changes in the prices of the industrial producers and to the retail prices (which points to high import dependability of the domestic production). Thus, according to the model, it is assumed that 1% depreciation of the Denar against the Euro in the analyzed period, ceterus paribus, will on average act toward significant increase in the prices in the forthcoming month by 0,41 % and 0,45% respectively in the prices of the retail prices and prices of industrial producers, in the first lag. While in the second lag, the influence of 1% exchange rate depreciation will, on average, act toward the increase in the respective prices, in the forthcoming month, by 0,33 and 0,67%, respectively, in the prices of retail prices and the prices of industrial producers.

Granger Causality and Wald Test

In order to define the influence of the exchange rate on the prices, i.e. inflation, we employed a Granger causality analysis (table 12), which should point out which occurrence proceeds the other, and vice versa, i.e. whether the prices follow the changes of exchange rate, or vice versa, the exchange rate is stable because of price stability.

Equation	Excluded	chi2	df	Prob > chi2
DLNDENEU	LNPPPI	.1053	2	0.949
DLNDENEU	LNRP	2.4242	2	0.298
DLNDENEU	ALL	2.7582	4	0.599
DLNPPI	LNDENEU	2.4031	2	0.301
DLNPPI	LNRP	1.5648	2	0.457
DLNPPI	ALL	3.7379	4	0.443
DLNRP	LNDENEU	2.9255	2	0.232
DLNRP	LNPPPI	2.4281	2	0.297
DLNRP	ALL	5.2926	4	0.259

Table 11 Granger Causality Wald test. Prepared in software application. STATA 10.0

A Wald test is commonly used to test Granger Causality. Each row on the Wald table (Table 11), reports a Wald test that the coefficients on the lags of the

⁴ Actually, it is assumed that the model explains only 10% and 4% of the change in the prices of the producers of industrial products and of the retail prices, respectively

variable in the "excluded" column are zero for the variable in the "equation" column. For example, the large p – value of 0.949 in the first row is evidence that the coefficients on the lags of producer prices (LNPP) are jointly zero in the equation for exchange rate (LNDENEU), indicating that there is insufficient evidence to reject the null hypothesis of Granger Causality, that producer prices (LNPP) does not Granger causes exchange rate (LNDENEU). On the other hand, the small p value of 0.2948 in the second row favors the hypothesis that coefficients on the lags of retail prices (LNR) are not jointly zero in the equation for exchange rate (LNDENEU), meaning that, at 10% level of significance, there is sufficient evidence to reject the null hypothesis of Granger causality that retail prices LNR does not Granger causes exchange rate. (LNDENEU). The small p values in column 4 and 7, indicate that, at 5% level of significance, one can reject the null hypothesis that changes in exchange rate (LNDENEU) do not proceed (or "do not Granger cause") changes in producer prices (LNPP) and retail prices (LNR). In other words, the tests shows that changes in exchange rate "are causing" changes in the producer prices and retail prices.

5 Conclusion

With regard to Copenhagen criteria, Macedonia shows good result in terms of price liberalization and foreign trade liberalization. This makes Macedonian economy more functional and comparable with candidate countries and new candidate countries. The indices of Large Scale privatization and small scale privatization, are somewhat better than the average of new countries, within EU structure, with the lag being the smallest compared to candidate countries. This makes Macedonian economy capable for coping with competitive pressure, within EU structure.

With regard to Maastricht criteria, compared with the situation for all EU countries described in the official Convergence Reports by the ECB and EU-Commission published in 2008, we conclude our analysis for the situation in Macedonia as follows: Macedonia made some progress with economic convergence, but there remain important challenges, particularly in the form of rising inflation, long-term interest rates and exchange- rate stability and in particular lowering unemployment. In this paper, it should be kept in mind that many tests for Macedonia are highly hypothetical, because the country is not a member of the European Union and it is far away from fulfilling all legal issues to join the EU soon. However, we offer in our paper the first preliminary assessment concerning monetary integration. For the reader it is important to keep in mind that issue.

Appendix

Years	2000	2001	2002	2003	2004	200	200	200	20
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						5	6	7	08
Consumer Price, Annual Average (%) (EBRD)	5,8	5,5	1,8	1,2	-0,4	0,5	3,2	2,3	8,4
Producer Prices, Annual Average (EBRD)	8,9	2	-0,9	-0,3	0,9	3,2	4,5	2,5	na
GDP deflator (EBRD)	100	103,61		107,45	108,9	108	132,908	139,674	149,446
Related Indicators									
Real GDP growth rate (EUROSTAT)	4,5	-4,5	0,9	2,8	4,1	4,1	4	5,1	5,5
GDP per capita in Purchasing Power Standard (EU27 = 100) (EUROSTAT)	27	25,2	25	25,6	26,6	28,5	29,4	30,3	30,7
Unemployment rate % of labour force (IFS)	32,250	30,520	31,94	36,69	37,150	37,3	36,00	34,92	33,21
Labor productivity, whole economy (GDP/Total Employment) (IFS)	356,86	312,6	336,58	356,37	386,6	386	382,8	380,2	380,0
Nominal Effective Exchange Rate	99,99	103,34	105,59	110,33	113,41	114	114,8	116,3	117,7
Money Supply (M4) (in millions of national currency - denar) - (IFS)	na	na		81802					

Table 13: Measures of Inflation and related indicators

Literature

1. Baldwin, R. and Wyplosz, C. (2006), *The Economics of European Integration*, Mc Graw Hill Press.
2. Besimi, F (2004), *The Role of Exchange Rate Stability in a Small and Open Economy: The Case of the Republic of Macedonia*, *working paper n3 10*. Economic Research, National Bank of the Republic of Macedonia.
3. Bisev, G and Petkovski, M. (2003), "FYR Macedonia - Challenges for Economic Recovery", prepared for the Conference organised by the Peace and Crisis Management Foundation, Cavtat (Croatia)
4. Coricelli F, Jazbec B (2004), *Exchange Rate Arrangements in the Accession to the EMU*, *Comparative Economic Studies*, vol.46, pp. 4 – 22
5. Dauti, B. and Pollozhani P (2008), *Economic Challenges for Macedonian Economy toward European Union Integration*, *SEEU Review, Vol 4, nr 2, pp 141 – 164* ISSN- 1409-7001.
6. Daviddi, R. and Uvalic, M. (2003), *Exchange Rates Regimes in the Western Balkans and their evolution toward EMU*, *First Alumni Annual Conference on "Governing EMU" European University Institute, Florence*
7. Efendic A, (2005), *Bridging to the EU, Challenges for Bosnia and Herzegovina*,
8. Marczewski K.(2002), *Effekt Samuelsona – Balasy a sector realni w Polsce*, NBP, Warszawa
9. NBRM (2005), National Bank of the Republic of Macedonia, Annual Report 2005
10. NBRM (2007), National Bank of the Republic of Macedonia, Annual Report 2007
11. Gujarati, D (2003), *Basic Econometrics*, ISBN 0 – 07 – 233542 – 4. Mc Graw Hill Press.