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Project funded under the Socio-economic Sciences and Humanities



European Commission

Working Paper D 5.3

## Costs and Benefits of Euro Adoption in Bulgaria

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*March 2010*

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## Abstract

This study presents a cost-benefit analysis of euro adoption for the case of Bulgaria. Based on a review of existing similar studies for other East European EU member states, it outlines the basic types of potential costs and benefits of euro adoption, and applies them to the specific Bulgarian economic and economic policy context. The most important relevant features of the Bulgarian economy with respect to the analysis are found to be the catching-up status of the country and the currency board arrangement. In this context the study finds that a net benefit of above 15 % of GDP in a 20 year horizon can be expected for Bulgaria due mainly to enhanced capital inflows and to a smaller extent to a boost in trade with the EU and to higher domestic saving in light of enhanced policy credibility. Along the way the study attempts to draw attention to important nuances which may be of relevance for the analysis of euro adoption in Eastern Europe in general.

Keywords: Bulgaria, euro area, euro adoption, cost-benefit analysis

JEL Classification: E52, F15, F33, F42

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<sup>1</sup> Financial support from the European Commission (7th Framework Programme, Grant Agreement No.217266) is gratefully acknowledged.

## 1. Introduction

The adoption of the euro as the final act of joining the economic and monetary union is a process facing all countries which have joined the EU since the Maastricht treaty of 1992. Six of them (Austria and Finland from the fourth enlargement, and Slovenia, Cyprus, Malta, and Slovakia from the fifth enlargement) have already completed this process. The underlying logic of the creation of the monetary union within the EU is that the benefits, especially in the long run, of such a development decisively outweigh the relevant costs not only for the union as a whole, but for individual participating countries as well. Empirical confirmation of this logic is still pending, as the history of the euro area unfolds, but the countries which are required by their treaty obligations to adopt the euro need to be able to assess specific areas of potential costs and risks, related to the change in monetary regime, so that they can devise policies for their management.

Such an assessment is crucially dependent on specific country context and it is hard to draw general conclusions. The present study concentrates on the context of one particular country – Bulgaria – with the goal to reach and answer to the question about the relevant costs and benefits of euro adoption and about the adequacy of the respective government strategy.

While doing this, the study will address a number of issues related to the topic of financial integration in the EU. More specifically, the case of Bulgaria can be useful in the acquisition of more contextual knowledge about the way the level of competition in the banking sector affects positively or negatively the economic processes in a small new member state, employing a peculiar monetary regime, on its way to the euro area. It is also useful in providing interesting insights about the role of foreign bank ownership, with the related nature of capital flows and currency structure of bank lending, in such a context.

## 2. Methodological approach to the case study: justification of the proposed structure of the paper

The main task of this study is to identify the potential costs and benefits for Bulgaria from joining the euro area and adopting the euro as a national currency. The starting point for approaching this task is the observation that the experience of joining the euro area is not uniquely Bulgarian, yet at the same time it is, in every single case, a once-in-a-country's-lifetime event.

Given this observation, the chosen method for arriving at an estimate of the potential costs and benefits for Bulgaria from euro adoption is one of analytical narrative. It applies the existing literature and knowledge about the structure of the Bulgarian economy to arrive at informed and internally consistent yet lacking formal statistical rigor and testability answer to the research question. The rest of this methodological section presents the chosen method, and then explains its choice over more formal statistical methods.

Due to the fact that the euro area itself exists for more than a decade, has been joined by a number of countries, and will be joined by more at some point in the future, there exists a body of relevant literature: on monetary unions and currency areas in general, on the euro area in particular, and even more specifically on the potential effects of EU countries which are to join the area in the future.

This body of literature has identified and described to a considerable degree the space of effects (both costs and benefits) from joining the euro area. This is where the evaluation of this event for the case of Bulgaria will begin. A short review of existing studies, concentrating mostly on the ones devoted to the effects of the euro area, and especially on evaluating costs and benefits for countries which are about to join in the future, defines this space and uses it to evaluate the effects on Bulgaria.

The space of potential effects of joining the euro has to be superimposed on the existing structure and peculiarities of the Bulgarian economy, as it is expected to evolve within the EU. Given the theoretical and empirical results reviewed in the literature, a complete and detailed description of the Bulgarian economy is not warranted. Rather, what is needed is the informed and limited by the insights from the literature description of those aspects of the Bulgarian economy, which are important in drawing conclusions about the potential effects of euro adoption. By far the most important and most highly relevant with respect to the euro specific feature of the Bulgarian economy is the combination of a currency board regime and structural budget surpluses, but other specific features relevant within the space of potential effects are also described and analyzed.

Given the matrix of potential effects, and the analytical description of the specifics of the Bulgarian economy, a straight forward evaluation, mostly qualitative, but wherever possible also quantitative, of the costs and benefits from Bulgaria's joining the euro area, is performed.

Finally, from the point of view of the already identified major relevant for Bulgaria costs (esp. risks) and benefits from joining the euro area, a general evaluation of the existing government strategy for the adoption of the euro is provided.

Other methods for reaching estimates of the potential costs and benefits for Bulgaria from euro adoption are also possible. Mostly, they involve formal modeling of the economy and use of statistical techniques for estimation of coefficients and effects between alternative scenarios. In the case of euro adoption, especially for Bulgaria, however, these rigorous techniques suffer from a serious and insurmountable deficiency. All such models need to be estimated based on existing data observations. In the case of euro adoption it is easily demonstrable that any combination of a given model and data used for its estimation does not and cannot cover the domain relevant for making inference about the case of euro adoption. Even if under a cross-section approach it may be claimed that some countries which have already adopted the euro are indicative for countries which will adopt it in the future, the number of observations is very small.

The use of formal models and statistical estimates runs the very serious risk of providing highly biased and highly uncertain estimates of coefficients and potential effects generated by models and data which are completely irrelevant for the realities which will actually happen in the countries which will adopt the euro in the future. Since neither the direction, nor the size of such biases, nor the degree of uncertainty or irrelevance of the estimates can be judged, formal statistical techniques cannot compensate in clarity and rigor what they inevitably in the case of euro adoption lose in terms of relevance and precision.

Thus the proposed here analytical narrative approach, even though it is naturally subject to personal opinion and biases of the researcher, is more clear about its deficiencies, and provides a more consistent framework for addressing the concrete question at hand, namely whether Bulgaria will benefit or not from euro adoption, and if yes to what extent.

### 3. Existing studies of costs and benefits of adopting the euro from a national perspective

The literature on optimal currency areas and their effects on the member economies is exceedingly rich, and it is far beyond the scope of this study to review it all. The theoretical basis is given by Mundell (1961), while there are several larger empirical studies, such as Rose (2000), Frankel and Rose (2002), and Rose and Stanley (2005).

For the case of the euro area, possibly the most relevant discussion can be found in the proceedings of the June 2005 ECB conference on the effects of the EMU (<http://www.ecb.eu/events/conferences/html/emu.en.html>), where all the major dimensions of the space of effects from euro area membership are identified and discussed.

More specifically targeting the effects of the euro on the new EU member states, the proceedings from a conference in Prague in 2004, published by the IMF in a volume edited by Schadler (2005) aim at identifying challenges and opportunities facing the countries in Eastern Europe with respect to the adoption of the euro. These proceedings step on the existing literature with the goal to outline the specifics of the eventual effects of euro adoption for this particular region of the EU.

Finally, the results of the 2005 ECB conference on the EMU and of Schadler (2005) have served as the basis for a number of evaluations of the potential effects of euro adoption for individual new EU member states. What follows is a short overview of several such studies, performed with the goal to clarify the space, or matrix, of expected effects.

It is probably appropriate to begin with the reports on the effects of the euro for an East European country which is already in the euro area, namely Slovakia. The broadest study is the National Bank of Slovakia report on euro adoption in Slovakia (NBS, 2006, ed. Martin Šuster; summarized very well in Šuster, BIATEC 2006, esp. the table on page 6), and it identifies a rich set of costs and benefits. It claims all firms and households will be affected, on net positively, by the adoption of the euro. Direct effects consist of elimination of transaction costs on currency exchange; elimination of exchange rate risk and increase in price transparency with related improvement in competition inside; lower interest rates and cost of capital.

The report seems to consider the indirect effects as much wider: growth in foreign trade (estimated based on Rose and Stanley 2005) and growth in foreign direct investment. Since this is generally the case with other East European focused studies, presented below, an important point with respect to the trade effect of euro adoption needs to be made here. While the Rose (2000) and Rose and Stanley (2005) studies find very large effects of currency unions on trade, this does not seem to hold when the euro area is studied in more detail. Baldwin (2006) and Baldwin et.al. (2008), which are among the more comprehensive studies on the trade effect of the euro in the euro area and in the EU in general, find significant, but not very large trade effect which can be attributed to the adoption of the same currency itself, rather than to other integration processes. Their estimate is that the boost in trade is in the range around 5 %. In such a case, the long term trade effect

from euro adoption may be still significant, but smaller than in the estimates in the reports reviewed here.

Continuing with the case of Slovakia, the major costs from euro adoption, identified in NBS 2006 are the changeover itself and the loss of some revenues for banks related to exchange transactions. The loss of independent monetary policy is dealt with carefully in the report, but is not considered to be large due to very limited effectiveness of monetary policy before euro adoption anyway –capital flows “several times exceed the possibility of monetary policy to influence them” (Šuster, BIATEC 2006, p.4).

Changeover itself may lead to a one-time more inflation, but also probably to faster price convergence to the euro area average than the country would have if not in euro area, and this may erode the rise in real purchasing power of savings and pensions – but especially with respect to pensions, higher nominal growth in the economy means no real threat to them. Then the report discusses the importance of free movement of labor in the euro area, and reforms leading to higher flexibility throughout the area.

The other Slovakia study is prepared in the OECD framework (Hüfner and Koske, 2006). They also mention the one-off changeover, and the minor but unevenly distributed cost of one-time price level increase. The authors argue that, after lower inflation in the beginning, in the long run Balassa-Samuelson will keep Slovak inflation rate above euro area average, but also that after minor effect on interest rates in the beginning, in the longer run Slovak interest rates will drop towards euro area levels leading to large benefits. According to them the risk for more volatile economy due to loss of own monetary policy requires enhancing competition and flexibility structural policies.

Petr Gocev (2006) concentrates on two areas of change related to the eventual adoption of the euro in the Czech Republic: in inflation, and in the monetary policy regime. On inflation, starting from the observed serious difference between measured and perceived inflation in the wake of euro adoption, he points that euro area membership may cause higher inflation to poorer households, because it affects their basket more negatively especially if euro adoption coincides with a period of stagnating nominal wages, and may lead to temporary decline in their living standard.

This issue is dealt with, theoretically and empirically, in a number of studies of the euro changeover in the countries which have already made the transition from national currencies to the euro – more comprehensive studies include Dzuida and Mastrobuoni (2009), and Ehrmann (2006). The theoretical reason for this one-time effect of euro changeover is the combination of complex conversion rates, which temporarily, but significantly decrease price transparency to consumers, and the large percentage effects of rounding up of relatively cheaper goods, esp. priced under 1 euro. Both papers find empirical confirmation of the theoretical insight, indicating that the relatively poorer households, which are prone to purchasing goods most vulnerable to such rounding price effects, may carry a disproportionate share of this, albeit one-time and relatively small, burden of euro adoption. While expecting such an effect is clearly realistic, it is very difficult to quantify it in both its parts – the cost of public perception of higher inflation due to the euro,

potentially damaging the acceptance and the confidence in the new currency itself, and the unequal distribution of the changeover burden.

After discussing the one-time price effect, Gocev (2006) looks at the effects of the impossibility to realize an independent monetary policy which is important if the different countries have different phasing of the business cycle relative to the euro area. He suggests that the loss of own monetary policy if business cycles are not aligned will have negative effect.

On Poland there are two materials of interest with respect to euro adoption. A speech by Rybiński (2007) outlines three traditional areas of interest in currency adoption: lower transaction costs, lower interest rates and trade creation. The costs are also identified: asymmetric shocks and arising micro- and macroeconomic imbalances. He points that in a monetary union the only tool for a country to react to asymmetric shocks is fiscal policy, and that in such conditions structurally flexibility is very important (specifically he mentions wage adjustments).

The imbalances are related to lending booms, current account deficits and rising inflation pressures: all of them due to the fact that the real interest rates will drop, as a result of currency union, but for the small country will go below the “optimal” (as can be identified in the analytical framework of Wicksell (1898) and Woodford (2003)).

The second material on Poland is a comprehensive National Bank of Poland report (NBP 2003, ed. Jakub Borowski). The authors start from the costs of euro adoption, esp. the loss of adjustment through independent interest rates and floating exchange rate. The claim is that the effectiveness of exchange rate depreciation is doubtful, while interest rate policy can be substituted by alternative shock-absorption mechanisms such as labor market flexibility (mobility of labor and downward flexibility of wages), and by fiscal policy soundness over the cycle, especially by having unrestrained automatic stabilizers and limited discretionary interventions. The estimated costs of asymmetric shocks also depends on the probability of it happening, which depends on the degree of business cycle synchronization and (intra-industry) trade integration. A third cost is the temporary necessity to achieve low inflation to fulfill the inflation criterion. The benefits discussed in NBP 2003 are the elimination of exchange rate risk, lower transaction costs, rise in domestic investment due to capital inflow, decrease in macroeconomic risks due to enhanced credibility of macroeconomic policy, also fostering longer term capital inflow. According to the report, better access of Polish enterprises to financing will lead to better allocation of resources.

The point in the NBP 2003 about decreased macroeconomic risks due to enhanced credibility of macroeconomic policies finds an interesting corroboration from a different angle in Beechey et. al. (2007), where it is reported that the euro area seems to be anchoring inflation expectations better than the United States. While this may be due more to the specific setup of monetary policy in the euro area with important features of inflation targeting embedded in the system, still for any East European country such credible and firm anchoring will be a significant change.

Another point, made in the NBP 2003 report about potential improvements in efficiency of enterprises, also finds corroboration in related research on the euro



area. Ottaviano et. al. (2009) finds significant enterprise-level efficiency effects of euro adoption by studying various manufacturing sectors across the first 12 euro area countries in years near the initiation of the euro area. The authors find that the introduction of the euro increased competitiveness (defined as the efficient use of inputs) in general, and in particular in smaller euro area economies such as Austria, Belgium and Finland.

A report evaluating the potential effects of euro adoption on Hungary is performed by the National Bank of Hungary (NBH 2002). This report explicitly discusses the issues of changes in seigniorage revenue and in the risk of financial contagion. The report estimates a significant overall net benefit through higher and more stable growth. It identifies three main benefits – lower transaction costs, expansion of foreign trade, lower interest rates. According to the authors, Hungary is expected to incur a seigniorage loss, which almost completely offsets the gain from lower transaction costs. However, given the rules for distributing seigniorage revenues in the euro area, it is to be expected that relatively poorer new member states will at least initially benefit in this respect from joining the euro area.

The report also discusses the other indirect costs, beginning with asymmetric shocks and claiming that they are no more likely for Hungary than for other less developed members of the euro area. This is true for both the structure of gross value added, and for the trade integration, there is some asymmetry within some manufacturing industries, but is also not much different from other euro area countries. Here they also mention the importance of flexibility and competition, and of fiscal soundness, for decreasing the potential costs from asymmetric shocks. But as opposed to Poland, the Hungarian report claims that automatic stabilizers will be very limited, and discretionary measures will be more important. They also make the important point that independent monetary policy also entails risks – of financial contagion, including large capital flow swings, and of currency crises.

As a last example of the burgeoning literature on the potential effects of euro adoption on new EU member states is the study of Bitāns and Kaužēns (2004) on Latvia. They split the impact in two groups. First, impact on the real sector, then impact on the financial sector.

They claim that in general the biggest benefits are elimination of exchange rate risk and related drop in interest rates, and the boost in trade, while the biggest cost is the loss of ability to tailor monetary policy to the national business cycle, which in the worst case scenario will mean actually amplified macroeconomic fluctuations after entering the euro area. They also make the point that it is not the geography of trade flows, but the invoicing which is more relevant when assessing possible effects of pegging irreversibly. They estimate relatively very high positive long term effects of joining the euro area on trade and on growth in Latvia. Also on the real side, in trying to anticipate asymmetric shocks, they compare Latvia's sectoral (by GVA) structure with that of the euro area, but also with other converging euro area members (southern Europe). Then they concentrate on industrial structure, because it is most tradable, but conclude that ultimately this boils down to the geographical/currency structure of exports. Here they argue that dynamically, (almost) all EU members will join the euro, and in assessing long term asymmetric impact it is necessary to look at the share in exports of all these countries.

As all other authors, Bitāns and Kaužēns (2004) emphasize the importance of cyclical convergence and labor market flexibility, but they also add the relevance of monetary policy transmission, by performing a VAR and indicating that Latvia is less responsive to interest rate shock than the EU. They also devote more attention to the effects of euro adoption on the financial sector, esp. the role, structure, and incomes of banks.

The brief overview of various studies, which have aimed at evaluating the potential effects of euro adoption on the economies in Eastern Europe is sufficient to outline a number of important dimensions, which can serve as the basis for a similar evaluation for the case of Bulgaria. Table 1 below presents in a concise way the potential areas of costs and benefits from adopting the euro, dividing them in two broad categories depending on whether they are expected to have level or growth effects over the economy.

Table 1. Areas of costs and benefits from euro adoption for an East European country

	Level effects	Growth effects
Costs	<ul style="list-style-type: none"> <li>- Changeover costs</li> <li>- Loss of business to banks</li> <li>- (Possible) one-time upward shock on price level hurting the poor</li> </ul>	<ul style="list-style-type: none"> <li>- Temporary loss of growth in order to fulfill inflation criterion</li> <li>- Medium-to-long-run higher inflation (catching up while pegged)</li> <li>- Loss of independent monetary policy</li> </ul>
Benefits	<ul style="list-style-type: none"> <li>- Reduction of transaction and administrative costs</li> <li>- Elimination of exchange rate risk and volatility</li> <li>- Reduced risk of financial contagion</li> <li>- Seigniorage gain</li> </ul>	<ul style="list-style-type: none"> <li>- Gains from trade</li> <li>- Gains from international capital flows: reduced cost of capital, increased capital inflows</li> <li>- Increased price transparency and degree of competition with permanent effect on allocative efficiency</li> <li>- Enhanced credibility of macroeconomic policy</li> </ul>

*Source: derived from the text*

Table 1 outlines the basic matrix of potential, derived from the theoretical and empirical literature, effects of euro adoption in an EU member state. It will be applied to the specific Bulgarian context to arrive at an evaluation of the particular effects of euro adoption in the case of Bulgaria. With this goal in mind, the specific features of the Bulgarian context, especially the features relevant to the effects of euro adoption, are described below.

## 4. Description of the Bulgarian context

Before the matrix of potential costs and benefits can be applied to Bulgaria, the basic indicators of the Bulgarian economy need to be described from the point of view of their relevance for the potential effects of euro adoption. In this respect, the indicators may be split in three groups: performance indicators, structural aspects, and institutional setup.

This section overviews the performance, the structure and the institutional setup of the Bulgarian economy over the recent years. The dynamics and structure of Bulgarian foreign trade, and the related developments in the balance of payments can provide an idea about the potential trade effects and about the possibility and severity of asymmetric shocks after euro adoption. Also, the development and structure of the financial system can provide a relevant background for the evaluation of the changeover costs, the effects on banking business and on transaction costs, and the extent to which euro adoption will actually affect interest rates in the country. The institutional setup provides insights on the potential consequences from losing the present monetary policy setting, and on the potential enhancement of policy credibility.

### 4.1. Bulgarian economy: performance indicators

Table 2 below presents the dynamics of the basic internal macroeconomic indicators for the most recent decade.

Table 2. Bulgaria, dynamic of major macroeconomic indicators, 1999-2008

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Real per capita GDP growth	2.9	5.9	7.5	5.1	5.6	7.2	6.8	6.9	6.7	6.5
GDP deflator	3.7	6.7	6.7	4.4	1.8	5.2	3.8	8.5	7.8	10.3
CPI inflation <sup>1</sup>	2.6	10.3	7.4	5.8	2.3	6.2	5.0	7.3	8.4	12.3
Unemployment rate <sup>1</sup>	13.8	18.2	18.1	17.7	14.3	12.7	11.5	9.6	7.7	6.3
Employment rate <sup>1</sup>					52.9	54.5	55.8	58.4	61.7	64.0

<sup>1</sup>Average annual values

Source: National Statistics Institute

Bulgaria is one the fastest growing economies among the EU-27 since the beginning of the 21<sup>st</sup> century. The growth rate of per capita real income for the decade 1998-2008 is 6.1 percent per year, and has been remarkably stable, especially over the latter five years. The process of high growth has been accompanied by relatively high inflation as well. On average consumer prices have almost doubled over the period.

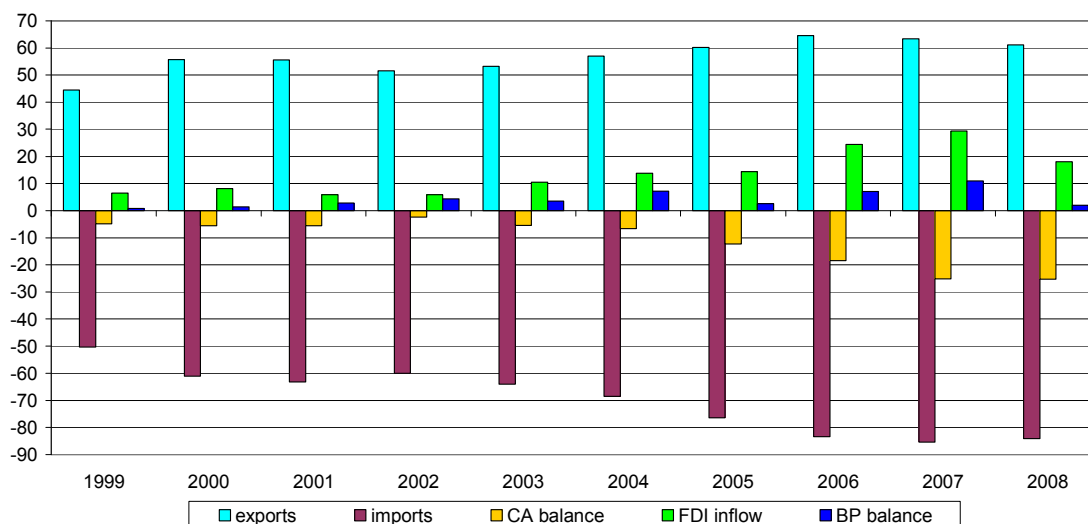
For approximately the same period the dynamic of another major indicator, unemployment, has been also remarkably unidirectional. After peaking (according to the labor survey) at above 20 % in early 2000 due to the implementation of structural reforms in the sector of state owned enterprises, it registered an

uninterrupted drop until the latest available data for the last quarter of 2008, when it is below 6 %. As a mirror image of this development, the number of employed people has risen by more than 20 percent for the same period. In some regions, and for some professions, employers began reporting shortages of labor in 2007.

A specific feature of the Bulgarian economy over the observed period is the sound budget balance, which has moved from small deficits at the end of the 20<sup>th</sup> century to surpluses after 2002. This has allowed the government do decrease its debt significantly and to become a major net creditor.

The first decade of the 21<sup>st</sup> century is a period of growing external imbalances, which is demonstrated on Figure 1.

Figure 1. Bulgarian external indicators, 1999-2008, in percent of GDP



Source: Bulgarian National Bank

Exports have grown very rapidly in nominal terms, in real terms, and as a share of GDP, but imports have grown even more rapidly. Related to this development, the current account balance has expanded to internationally record levels.

The other side of this process has been a very sharp increase of capital inflows through both the direct investment and credit channels. This has resulted in positive overall balance of payments throughout the period, and respective increases in the international reserves with the Bulgarian National Bank, which have grown from less than a quarter to more than one third of GDP.

Finally, an especially important indicator in the context of analyzing the potential effects of euro adoption is the performance of the financial sector. As demonstrated in Table 3, starting from a very low base, the Bulgarian financial system has grown considerably.

Table 3. Bulgarian financial sector indicators, 2000 and 2008, in percent of GDP

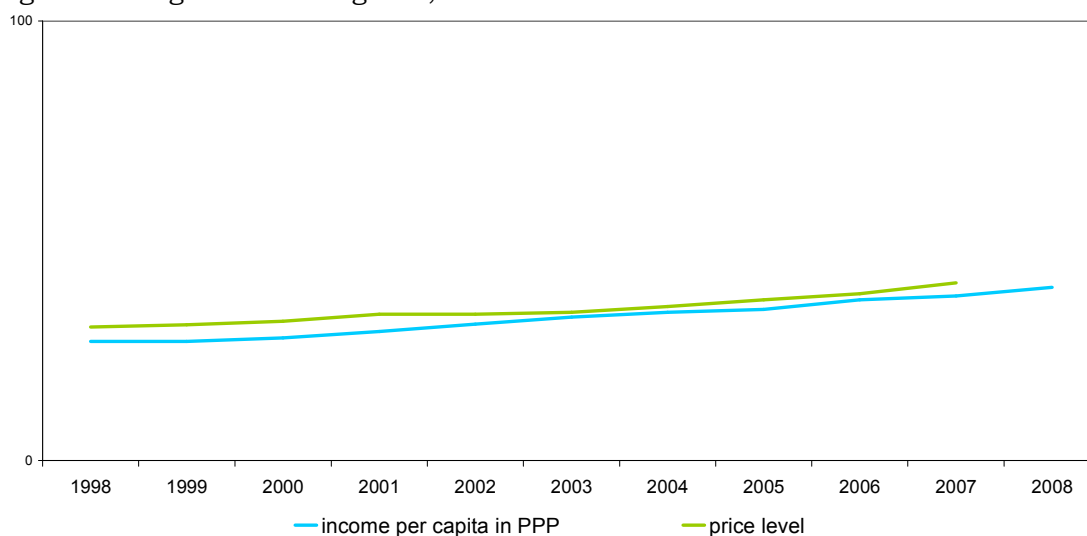
	2000	2008
Banking system total assets	36.5	104.2
Non-financial deposits	23.8	62.9
Domestic credit to non-government	11.7	71.4
Assets of non-bank financial intermediaries	2.7	30.6
Market capitalization of the Bulgarian Stock Exchange	4.8	18.3
Money supply	36.8	68.6

Source: Bulgarian National Bank, Financial Supervision Commission

All in all, the financial sector has more than tripled relative to the economy over the reviewed period. This is closely related to the process of privatization and related inflow of foreign capital (see below on the structural aspects of the banking sector), as well as to the process of establishment, regulation, and development of various previously non-existent financial services.

In summary, over the decade preceding the global financial and economic crisis of 2008, the Bulgarian economy exhibits a dynamic typical for a catching-up country with relatively high nominal and real growth and deepening external imbalances. The real (income per capita) and nominal (price level) convergence of Bulgaria towards the EU-27 averages is demonstrated in Figure 2.

Figure 2. Bulgaria's convergence, EU-27 = 100



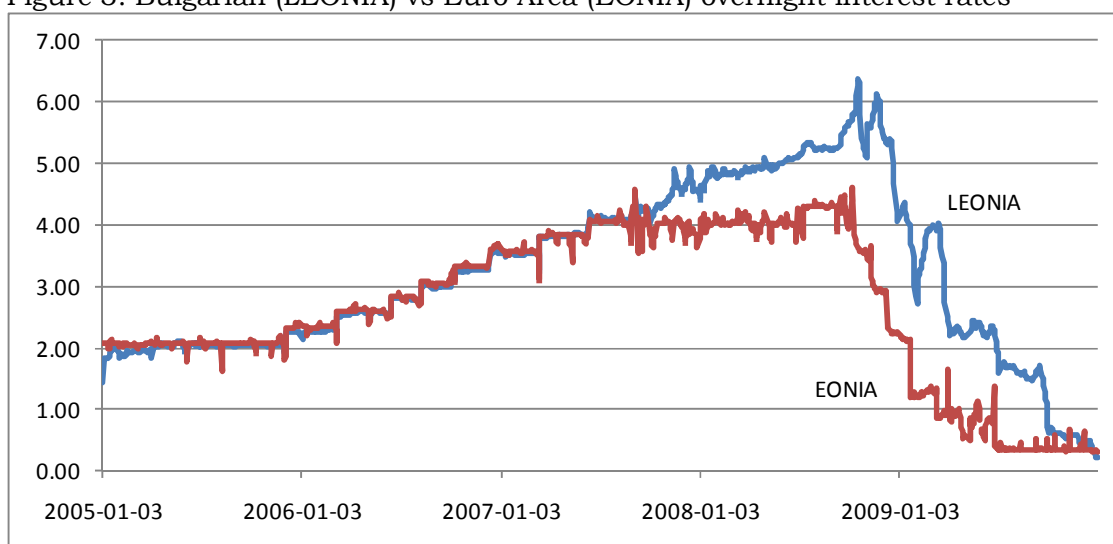
Source: Eurostat

It is obvious from Figure 2 that while the country is converging, this process has a very low start, and will most probably take a very long time. This means that for any reasonable analytical or policy time horizon, the performance of the country is likely to be dominated by the characteristic dynamics of convergence.

It is important to mention that within the overarching context of convergence, the performance of the Bulgarian economy will be subject to significant shorter term fluctuations. In a clear reaction to the global financial and economic downturn in 2008 almost all of these processes have reversed over the last months of 2008 and the first months of 2009. GDP growth has visibly slowed down, with a distinct possibility of becoming negative in 2009; inflation is dropping precipitously after recording very high levels between mid-2007 and mid-2008; the number of registered unemployed is showing signs of increasing for the first time in more than 6 years; budget revenues are dropping; foreign trade turnover is decreasing fast, with imports dropping faster than exports and the current account deficit decreasing; capital inflows are decreasing even faster, and the overall balance of payments is turning negative; the money supply is contracting, albeit slowly, and bank credit is virtually stagnating.

An important aspect of the performance of the Bulgarian economy, especially relevant for judging the effects of euro adoption, is the nominal convergence, especially with respect to business cycle and interest rates, to the Euro Area. The second of these indicators is shown on Figure 3, where the overnight interbank interest rates in Bulgaria and in the Euro Area are compared. Given the specific Bulgarian monetary regime (currency board), there is a very strong degree of convergence, which was evidently seriously disrupted by the global financial and later economic crisis beginning in the summer of 2007. By the end of 2009 the convergence of the two indicators has returned.

Figure 3. Bulgarian (LEONIA) vs Euro Area (EONIA) overnight interest rates



Source: Bulgarian National Bank and [http://www.euribor.org/html/content/eonia\\_data.html](http://www.euribor.org/html/content/eonia_data.html)

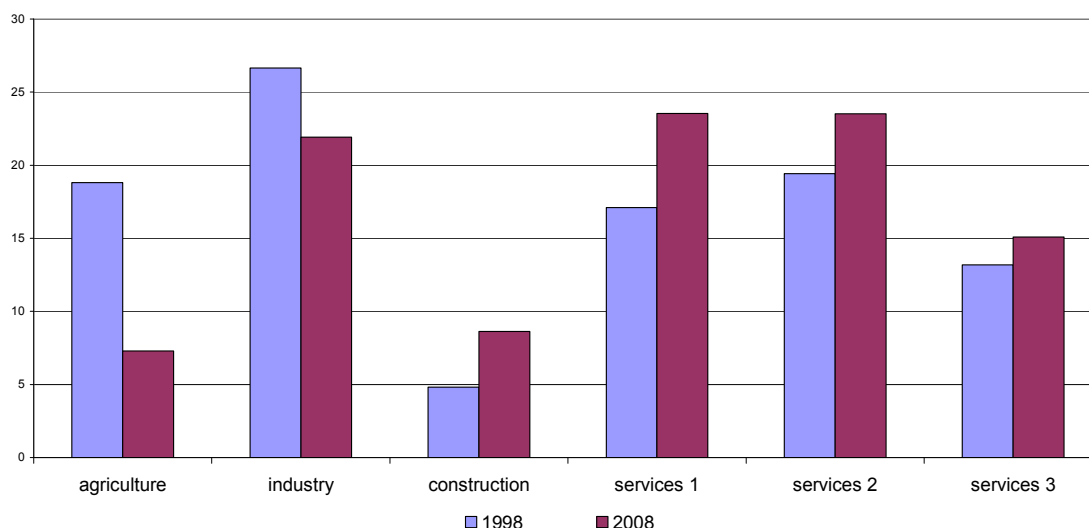
With respect to business cycle convergence, the present state of business cycle analysis in both the Euro Area, where only three cycles have been recorded<sup>1</sup>, while the Bulgarian economy in its present structure (EU integration under currency board) has not yet completed even one full cycle and lacks official dating. This makes a forma analysis of business cycles synchronization between Bulgaria and the Euro Area impossible at this moment.

#### 4.2. Bulgarian economy: structural aspects

The performance of the Bulgarian economy reflects its underlying structure. In terms of the growth process, it is structured mostly around a sharp increase in the share of investment (gross fixed capital formation) in GDP, which has grown from less than 11 % in 1997 to more than 33 % in 2008. This investment boom has been driven mainly by the increased capital inflows, with the national savings rate remaining relatively stable at relatively low (about 15 %) levels. Major portions of the external trade developments have also been related to this process, with the share of investment goods almost doubling in the quickly growing Bulgarian imports over 1997-2008. On the other side, exports have also contributed considerably to the growth of the Bulgarian economy. The shares of household and government consumption have remained relatively stable, with these two components growing approximately with the speed of the overall economy.

The structure of the country's gross value added (GVA) by sector has also changed considerably over the analyzed period. This is illustrated in Figure 4, which compares 2008 with 1998.

Figure 4. Share (in %) in GVA in Bulgaria by sector, 1998 and 2008.



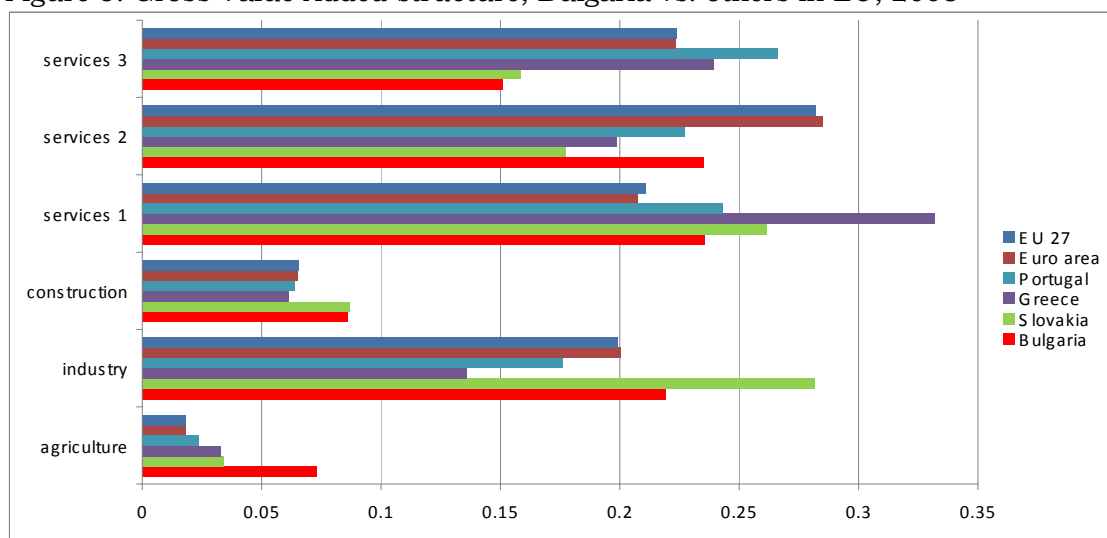
Source: National Statistical Institute

<sup>1</sup> This work is performed by the CEPR Euro Area business cycle dating committee: <http://www.cepr.org/data/Dating/>

Figure 4 captures the latest period in a process of transition of the structure of the Bulgarian economy from socialist (with remaining high share of agriculture, emphasis on industry and neglect of services), to a structure more comparable to modern developed economies dominated by services. In particular, the drop in the shares of agriculture and industry has been taken to some extent by construction, but mostly by services 1 (domestic trade, repairs, hotels and restaurants, transport, storage and communication), to a lesser extent by services 2, reflecting the financial, real estate and business sector, and least by services 3, reflecting mostly the public and social sector.

As of 2008 the sectoral structure of GVA in Bulgaria is not dramatically different from the one in other EU countries, including countries already in the euro area(Figure 5).

Figure 5. Gross Value Added structure, Bulgaria vs. others in EU, 2008



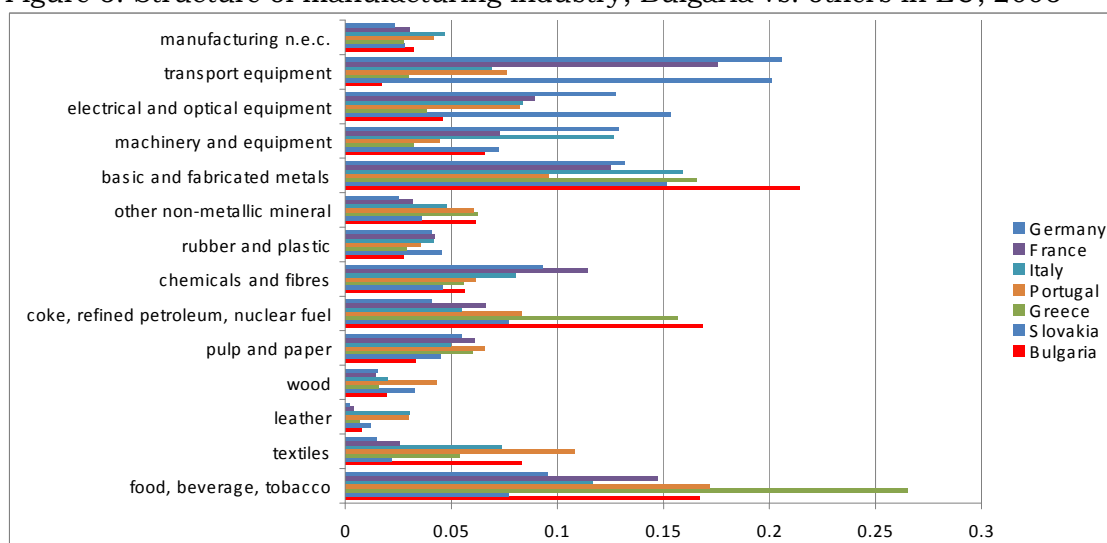
Source: National Statistical Institute and Eurostat

If, as in Fagan and Gaspar (2007 and 2008) the countries in the EU are split into more developed and converging, with the structure of the EU and the euro area as a whole being dominated by the developed large countries, then it can be seen in Figure 5 that Bulgaria’s GVA structure, with the exception of agriculture, is not more different from the “core” than are some countries which are already in the euro area, such as the Southern European Portugal and Greece, and the ex-socialist Slovakia.

A similar observation can be made if the focus is changed to the more disaggregated level of structure of the manufacturing industry, shown in Figure 6.



Figure 6. Structure of manufacturing industry, Bulgaria vs. others in EU, 2006



Source: National Statistical Institute and Eurostat

Again, with the exception of transport equipment, basic metals, and coke and refined petroleum, the structure of industry in Bulgaria is not dramatically different either from the “core” European countries, or from other converging countries in the euro area of similar size. This means that when the economic environment and business climate change with their natural cycle, the economic policy needs of Bulgaria will not be dramatically different from these countries, at least from the point of view of industry.

A third observation of this type is the structure of Bulgarian trade with the EU. Bulgaria is consistently running deficits with the EU, and this is true for all four of the broad foreign trade categories (consumer goods, raw materials, investment goods, and energy products). For the case of Bulgaria, however, a specific feature is that the overall deficit is dominated by the deficit in investment goods – for the other three groups the deficit constitutes less than 5 % of total turnover in the respective group. This is largely related to the fact that Bulgaria is catching up, has a fast growing investment, which is to a very high degree financed by foreign capital inflows originating predominantly from the EU.

As a broad measure of the structure of trade between Bulgaria and the rest of the EU, the Gruber-Lloyd index (introduced in Gruber and Lloyd, 1975) can be used. Its basic intuition is to receive a measure of the “symmetry” of trade between two partners by looking at the ratio of trade balance to total turnover for specific goods groups, and then to sum these ratios over all groups weighing them by their share in total turnover. The index is constructed so that 0 means very asymmetric trade, and 1 means completely symmetric trade in all goods groups. Applied at the level of 10 basic goods groups under the SITC, rev. 3, classification, this index for the trade between Bulgaria and the EU countries in 2008 is 0.71 and can be interpreted as a relatively high level of symmetry.<sup>2</sup>

<sup>2</sup> This value has been relatively stable for the 2000-2008 period, fluctuating between 0.66 and 0.71.

Finally, a look at the financial structure of the Bulgarian economy is relevant for the analysis of potential effects of euro adoption. The financial sector in Bulgaria is relatively new, emerging from an almost complete meltdown during a crisis in 1996-1997 which wiped out more than a third of the Bulgarian banks and brought most of the rest on the verge of bankruptcy. Since then the sector was privatized, and financial deepening took place, yet as of 2008 it is still at a level much lower than the one characteristic for the EU countries, especially for the EU-15.

At present, the financial sector in Bulgaria is dominated by commercial banks. As of the end of 2008, banking system assets are larger than GDP and comprise approximately 80 % of total assets of all financial intermediaries in the country. There are 30 banking institutions – separate banks and branches of foreign banks – operating in the country. Of them 2, with a 3 % share in total assets, have government ownership (one is owned by the state, another has municipal participation). The rest are mostly foreign owned – publicly or privately owned by Bulgarians banks comprise about 16 % of total assets. Banks owned by non-EU owners, or their branches, comprise less than 3 % of total assets, with EU-owned local affiliates or branches dominating with a share of more than 81 %.

The level of rivalry and competition in the banking sector in Bulgaria is high. In total assets, credits, and deposits the Herfindahl-Hirschman index is between 0.08 and 0.086, which means that in all important aspects the banking sector in Bulgaria can be qualified as a highly contested and competitive market.

At the same time, the non-bank financial sector in the country is not very developed. Leasing companies, other lenders, investment funds, insurance companies and pension funds hold about 20 % of total assets, but it needs to be recognized that more than a third of them are held by leasing companies, which are mostly owned by banks.

Thus the financial sector in Bulgaria can be qualified as relatively small in international comparison, but visibly deepening, dominated by commercial banks, with the banking industry being owned mostly by EU organizations and characterized by relatively high level of competition.

#### 4.3. *Bulgarian economy: macro-institutional setup*

The general institutional framework of the Bulgarian economy is defined by its membership in the European Union and the related adoption of the body of law known as *acquis communautaire*. Its aspects most pertinent to the issue of the effects of euro adoption are the four freedoms, promotion of competition, and economic and monetary union.

The body of law of the EU imposes freedom of movement of goods, services, labor and capital so that no member country can impose unilateral restrictions in any of these areas with respect to other member countries. These freedoms in the areas of goods and capital movement seem to have been achieved in full, there are some purely temporary restrictions in freedom of movement of labor for new member states, and the freedom of movement of services in reality exists only partially, but importantly does hold for movement of financial services. The promotion of competition rules of the EU prevent member states from providing state aid to firms

and from limiting the access of EU firms to their domestic markets, including in matters of national public procurement. The economic and monetary union regulations, especially through the excessive deficit procedure, limits member states in their ability to follow expansionary fiscal policy through large (more than 3 % of GDP) budget deficits, and aim at preventing pro-cyclical policies, thus significantly decreasing the available options for discretionary economic policies.

The EU framework leaves the choice of monetary regime to the member states, provided some requirements for the level of independence of the monetary authority and for banking capital adequacy and supervision are followed. This is where the main differentiating feature of the Bulgarian monetary environment is to be found. Bulgaria has chosen to operate a currency board regime, which has been in place since mid-1997.

Under such a regime the central bank is limited in its monetary policy discretion only to reserve requirements, and cannot purchase government paper or lend to domestic banks, thus having no discretion over the monetary base. This is achieved through a highly institutionalized (defined by an act of Parliament) fixed peg of the currency to the euro at EUR 1 = BGN 1.95583, and through a legislative obligation for the central bank to buy and sell unlimited quantities at this rate. Thus the monetary base is entirely a one-to-one function of the net capital flow to and from Bulgaria, and the limited influence of reserve requirements on the money multiplier is the only instrument the central bank has to affect the monetary environment.

In effect the currency board regime means that Bulgaria fully imports the monetary policy of the European Central Bank, and the Bulgarian National Bank has a very limited capacity to take action to balance the developments in the euro area when they overflow into Bulgaria. Through the fixed exchange rate the currency board regime thus makes the catching-up process of Bulgaria easily visible in the already mentioned performance indicators – high economic growth, high capital inflows, high money supply growth, respectively relatively high inflation and appreciating real exchange rate.

Institutionally, besides affecting monetary policy the execution of a currency board regime imposes specific boundaries on fiscal policy as well. Due to the fact that the central bank is forbidden by law to hold government debt paper and that monetary policy cannot accommodate fiscal deficits, if currency board countries want to maintain a sustainable overall economic policy mix they have to preserve an overall balance of the budget, or to record surpluses.

The last pertinent to the potential effects of euro adoption institutional feature of the Bulgarian economy, which is reviewed here, is the flexibility of the labor market. This issue is discussed in Tzanov, 2007, where the conclusion is that the overall level of flexibility of the Bulgarian labor market is moderate with relatively high intersectoral mobility but limited institutionalization of flexible forms of employment. The most important aspect of labor market flexibility with respect to the issue of euro adoption is wage flexibility, especially downward flexibility, because all adjustments to negative external shocks under the fixed exchange rate have to happen through downward price changes. Downward price and especially wage rigidity means decreased ability to adjust, longer adjustment periods with depressed economic activity, and ultimately higher cost of negative shocks. At

present the collective bargaining in Bulgaria exists, with the Bulgarian employers' bargaining position estimated as relatively stronger than the position of trade unions, with the time horizon of collective labor agreements relatively short, indicating that potentially the Bulgarian labor market is flexible, especially in comparison with the EU and the euro area, in this very important dimension.

The general conclusion, which can be drawn after the focused look at the specific national context presented in this section, is that Bulgaria is a catching-up economy, closely tied to the EU and the euro area, experiencing related to the process external imbalances. Its financial intermediation, starting from very low levels, is still relatively low, but growing very fast, and highly internally competitive. The structure of production is not dramatically different from that in other countries already in the euro area, and its trade with the EU-27 is relatively symmetric. In terms of the potency of economic policies, Bulgaria is bound by the requirements of EU membership, and by its choice of a currency board as a monetary regime. It also has a labor market, which is potentially flexible in comparison with the EU and the euro area. In light of the outline in Table 1, these features of the Bulgarian economy help shape the evaluation of costs and benefits for the country from euro adoption, which is performed in the following section.

## 5. Expected costs and benefits from euro adoption for Bulgaria

The matrix of expected costs and benefits from euro adoption, extracted from the analysis of the existing literature on currency areas, European monetary integration, and on new member states, can be applied to the relevant aspects of the Bulgarian economy to obtain an idea about the potential effects for the case of Bulgaria. This is performed here in the order of presenting the various expected costs and benefits in Table 1.

### 5.1. *Expected costs of euro adoption for Bulgaria*

The first cost of euro adoption is the cost of monetary changeover. In Bulgaria such a changeover has been already performed in the recent past, with the redenomination of the Bulgarian lev in July 1999. Three major types of costs were incurred: printing and minting of new notes and coins with the related substitution logistics; changing in accounting and banking software; the legal costs of reregistering all companies with their redenominated capital, which was made unnecessarily expensive by the legislators by requiring all companies to go through the full court procedure of changing their registered capital rather than doing it *ex officio*. Even with this additional cost, which is easily avoidable in the changeover to the euro, and assuming that the banking and accounting costs are similar to the legal ones, the total cost amounted to approximately 0.15 % of the 1999 GDP. Even if the printing and minting costs have increased considerably due to quality requirements, given the existing experience with changeover and the probability of better legislative regulation of the process, it is most probable that the one-time changeover cost for Bulgaria will be between 0.2 and 0.3 % of GDP.

NBS 2006, p.32-33 makes the point that while having an overall beneficial effect on transactions, euro adoption may mean some loss of business revenues for banks from operations related to foreign exchange, supporting the claim with the evidence that the share of net revenue from foreign currency operations in total profit for Slovakian banks has fallen by some 8 percentage points. For Bulgarian banks, a rough estimate of this type of business can be given by the net result from foreign currency trade, which comprises about 8 % of pre-tax banking sector profit for 2008. If some fees and commissions are added to this estimate, and the fact that most of this business is in euro, then it is realistic to assume that banks may lose about 6 % of their profits due to loss of business, but that this will be to some extent indirectly compensated by the improved balances of their clients. If this indirect effect is ignored, the upper bound of the estimated cost is about 0.2 % of GDP.

The third expected cost from euro adoption affecting the level of economic activity is the probability of having a one-time rise in the price level due to rounding and to opportunistic behavior by sellers in the months immediately following the introduction of the euro. This issue has focused public interest and perceptions in every country where the euro has been introduced. Given such sensitive public perceptions, governments will feel obliged to address them and to spend resources for both managing the perceptions, and compensating the poor who are among the threatened groups due to the fact that they are more prone to buying lower price

goods at smaller quantities where rounding effects may be more significant. Given the existing experience with inflation acceleration episodes in Bulgaria, when no specific government expenditures and programs were necessary, this cost can be expected to be negligibly small, ranging between 0 and 0.1 % of GDP.

Going to the costs from euro adoption in terms of growth, the first one to consider is the temporary slowdown which may turn out to be necessary for compliance with the inflation criterion for membership in the euro area. This is even more of a problem for a currency board country, which cannot cool inflationary pressures with an appreciating nominal exchange rate. It is highly probable that for a catching-up member state with very low starting relative price level, inflation is naturally several percentage points higher than in the euro area, and it will have to disinflate to achieve the inflation criterion as it exists at present. If the necessary disinflation amounts to several percentage points, and if it has to happen through fiscal surpluses due to the limited monetary policy, this will mean higher taxation and a slowing down of economic activity. The relevant elasticity of economic activity with respect to disinflation is not known, but a look at previous disinflationary episodes (e.g. 2001-2002 by more than 10 percentage points, and 2006-2007q1 by more than 4 points) shows that economic growth has slowed very modestly if at all indicating a possibly low sacrifice ratio for Bulgaria. Thus if the country has to disinflate by 2 to 3 percentage points for one to two years, this will mean a loss of possibly less than 1 percentage point of GDP growth for about 2 years.

An important qualification needs to be made here, distinguishing between countries which use a fixed exchange rate monetary regime and countries which use inflation targeting and have nominal exchange rate flexibility in the run-up to the euro area. On the one side, all these countries are catching up, have structurally higher inflation than the “core” euro area members, and given the stringent inflation criterion will have to pay a temporary disinflationary cost for joining the euro area. On the other side, depending on the chosen monetary regime the timing of paying this cost will probably be different for the two types of East European EU members. While, as pointed in the previous paragraph, exchange rate fixers may have real problems to disinflate in the last several years before adopting the euro, inflation targeters may have real problems in the several years after euro adoption. This may happen if they have used nominal appreciation as a disinflationary tool and find themselves ultimately and irreversibly pegged at a real exchange rate, which is too high and damages the competitiveness of their firms. The second scenario is irrelevant for Bulgaria as a currency board country, but will have to be considered by the four countries with inflation targeting.

The last two of the expected costs from euro adoption listed in Table 1 do not seem to be highly relevant for the case of Bulgaria. The medium-to-long term higher inflation due to the catching-up process combined with no exchange rate flexibility is not an issue due to the fact that Bulgaria has a fixed exchange rate regime anyway, so that the higher inflation due to the catching up (demonstrated in Figure 2 above) is happening and will continue to happen regardless of whether the country is in the euro area or not.

The last cost, the risks related to the loss of independent monetary policy, deserves some special attention. The discussion of this potential cost related to long term inability of a country to smooth economic fluctuations through monetary policy

tailored for its specific dynamics and features is dominated by the assumption that the two possible counterfactuals are membership in a currency union and independent monetary policy.

Under this assumption, new entrants into the euro area may experience a boom-bust cycle led by credit dynamics, which in turn are caused by euro area monetary policy. In general, increased capital inflows (see below), continuing financial deepening from a relatively low base, coupled with monetary policy maintaining interest rates which are lower than the optimal for the given country mean an unavoidable credit boom, and also inevitable compounding of risks, eventually becoming unsustainable and leading to a financial bust. Analyzing this particular possibility for the case of Poland, Eichengreen and Steiner (2008) arrive at the conclusion that such a development is a definite possibility for Poland. At the same time, they identify some factors which may weaken this effect. These include some convergence in interest rates before euro adoption, rigorous prudential supervision on banks, and labor market flexibility.

The assumption that the relevant dichotomy is “currency union or independent monetary policy”, which is crucial for the importance of euro adoption for the emergence of a boom-bust cycle, is however highly unrealistic in the case of the new member states of the EU, which acceded in the first decade of the 21<sup>st</sup> century.

All of these countries are very small relative to the euro area. The biggest economy in the region (Poland) has less than 4 % of euro area GDP, and all 8 countries from Eastern Europe which are not already in the euro area have a total GDP less than 10 % of the euro area for 2008. As members of the union they are subject to its institutional framework and cannot block trade flows, but even more importantly cannot prevent capital flows and financial services. For this reason foreign trade of all these countries is dominated by the EU, while at the same time they have no power to influence the size or, very importantly, the currency denomination of the capital flows and of the domestic credit. As a result the role of the euro in these countries' financial sectors is very important, and the central banks do not have a significant control over the domestic monetary environment, because they have no power over the currency in which a major portion of financial transactions take place. To talk of true independent monetary policy for any of these countries would be highly unrealistic. Thus the counterfactual to euro area membership is a situation of very limited monetary policy independence with a very high level of dependence on the monetary conditions in the euro area. A similar point is also made by Baldwin (2006).

In such a setting, discussions about structural symmetries and cyclical synchronizations are unimportant. Whether an East European member state has a symmetric economic structure and trade with the EU and highly synchronized business cycle with the euro area or not, it makes a very little difference between the scenarios of membership in the euro area versus the relevant counterfactual. This is probably why the estimate of the cost related to the loss of independent monetary policy for the case of Slovakia, provided in the Table on p. 6 in Šuster 2006, is a negligible 0.04 % of GDP growth.

This argument of the insignificance of the issue of losing an independent monetary policy in the case of euro area accession is even more pertinent in the case of

Bulgaria. The currency board arrangement is in effect a voluntary abandoning of independent monetary policy by the country. And as the only existing episode of attempted active intervention of the BNB to curb credit growth through tightening reserve requirements demonstrates (Vassilev and Dimitrova, forthcoming), the effectiveness of this sole remaining monetary policy instrument is very limited with the only effect of the measures being not to curb credit growth, but to take it off the balance sheets of banks. A major reason for this has been the combination of a highly contested market for banking services in Bulgaria with a predominant foreign, especially EU, ownership of different banks. The first means that banks cannot allow themselves to lose market share, even if some costs for complying with the new requirements are necessary. The second means they have a significant access to financing from outside and reserve requirements, or any other monetary policy instruments for that matter, are a relatively minor constraint.

In light of this finding, it can even be argued that once Bulgaria enters the euro area, meaning that BNB will be allowed to perform open market operations and to lend to banks, through its vote in the monetary policy setting body it will actually have more influence over the Bulgarian monetary environment than it has at present. In fact this argument may be extended to all East European EU member states: if they all enter the euro area and suffer from a similar boom-bust threat, they can form a voting block within the monetary policy setting body (ECB), which will be able to at least partially influence the overall euro area monetary conditions so that the boom-bust is milder.

The standard argument on the importance of independent monetary policy may run that a euro area country may suffer more adjustment costs as an euro area member than as having its own monetary policy if it is “surrounded” by non-euro countries able to depreciate. For Bulgaria such countries would be Macedonia, Serbia and especially Turkey – the relative size of trade with these countries is significant, and for Turkey size allows for relatively more independent Turkish monetary policy. While in general this is a very interesting consideration, the currency board and the fixed exchange rate in Bulgaria mean that the difference between euro area membership and preserving the present regime is insignificant in this respect.

The overall conclusion of this discussion is that by entering the euro area Bulgaria cannot suffer a cost due to loss of independent monetary policy because there is no independent monetary policy to lose. Then the expected costs from euro adoption for Bulgaria boils down to a less than 0.5 % of GDP level effects and possibly several years with about 1 percentage points lower growth due to the need to comply with the inflation criterion.

## *5.2. Expected benefits from euro adoption for Bulgaria*

Going to the side of the expected benefits, again the benefits affecting levels will be considered first, and then the benefits with respect to growth rates.

The first benefit will be lower transaction and administrative costs for the Bulgarian economic agents, who now have to pay for currency exchange services. Managing exchange rate risk is less of an issue given the fixed exchange rate. The overall



transaction cost benefit is expected to exceed the loss of similar business revenues to banks, discussed above, giving an estimate of about 0.2 % of GDP.

While in the case of Bulgaria the elimination of exchange rate risks and volatility in terms of level effects should be negligible, an important point about the indirect effect of such a change needs to be made. At present the exchange rate risk exists only as a potential threat, without requiring much current management. Politically, it is conceivable that at some point in the future the currency board regime may be abandoned and floating exchange rate introduced, and this potential development needs to be taken into consideration when longer term projects and decisions are considered. Sometimes this potentiality is used as an explanation of observed differences between Bulgaria and the other members of the euro area. Euro area membership will eliminate such an explanation, and if after joining the monetary union such differences persist, it will be obvious that they are a result not of exchange rate risk, but of other risks in the economy. This is likely to increase the political pressure to address them, because it will be politically impossible to hide behind the exchange rate risk. Due to the fact that in the case of Bulgaria euro adoption will eliminate only a potential eventuality of exchange rate risk, the benefit is relatively small, between 0 and 0.1 % of GDP.

Another benefit from joining the euro area is the drop in the susceptibility of a smaller country to financial contagion. While this benefit is easy to accept as a potentiality, it is very difficult to estimate quantitatively, because no reasonable estimates can be made of either the costs of contagion, or the change in probabilities of contagion after euro adoption. This is all the more difficult after the events of the present global financial turmoil when the euro area is also clearly affected and has proven susceptible.

The last level benefit from euro adoption for Bulgaria, mentioned in Table 1 is seigniorage gain. At present the net interest income of the BNB is about 0.6 % of GDP, and Gros, 2004 estimates that under the rules of distributing seigniorage revenues in the euro area, which tend to favor poorer countries by giving some weight to population as well as to GDP, Bulgaria may gain another 0.7 to 0.8 % of GDP in its first year of adopting the euro. Gains are expected to last at least until its income level significantly converges towards the euro area levels, and the present value of this gain may reach at least several percentage points of GDP.

Even though the level benefits from euro adoption in the case of Bulgaria already outweigh the rough estimate of the expected costs, in reality the expectation is that the growth benefits from euro adoption will be significantly larger, although more difficult to estimate quantitatively.

The first growth effect is related to the trade creation for a country after its accession into a monetary union. While estimates of the currency union impact on mutual trade between its members vary by an order of magnitude (Rybiński, 2007), and estimates of this trade growth on real income growth are equally broad ranging, the estimated effects for different East European countries are very large, with long term effects on real GDP in the range of 5-20 %. These estimates, however, are likely dependent on the methodology in Rose, 2000, which has been criticized. For example, Baldwin et.al. (2008), stepping on other studies as well, find the trade effect for the case of the euro area to be in the range of 5 % boost to trade. In such

a case, the longer term effect may still be significant, but not as large – potentially in the range of several percentage points higher GDP in a horizon of several decades.

However, Baldwin et. al. (2008) makes another important and relevant for the Bulgarian context point. As can be seen in Table 2 and Figure 2, Bulgaria has been very attractive for FDI, which has been greater than 10 % of GDP for the 2004-2008, yet this has had a very moderate effect on growth, if any. The standard explanation for such a development is that this investment has gone not so much into export-boosting capacity, but rather in less export-productive spheres such as services and especially construction and real estate. Yet Baldwin et. al. (2008) find that euro adoption has a very strong FDI effect precisely in the manufacturing sector, which has a very strong export potential. In the Bulgarian context this finding would mean that the trade effect through increased FDI in manufacturing will be relatively large for Bulgaria. For this reason, accepting the lower trade effect estimates of Baldwin et. al. (2008), but also recognizing the potential FDI effect on future export growth for Bulgaria, a reasonable estimate in a 20 year horizon may be a boost to GDP by about 5 %.

The second growth effect is related to the fact that monetary union membership increases capital flows. In the case of a small, catching-up country this means a considerable period of large net capital inflows due to elimination of risks of balance of payments crises. The increased net capital inflow reduces the cost of capital in the country and contributes to growth in investment and, with a lag, to increased export competitiveness. These effects are highly dependent on the specific country context, and for this reason rigorous estimates are difficult to produce. However, recently Bulgaria has experienced a wave of increased capital inflow related to the country joining NATO and the EU. With the sharp rise in foreign direct investment and in foreign lending to Bulgarian banks and firms, interest rates on short-term and long-term loans to firms and households decreased by 2 to 3 percentage points, and real GDP growth increased by about 2 percentage points on average. Even if the effect of joining the euro area is smaller, and the effect of the increased capital inflow on interest rates decreases with time, the cumulative effect of increased growth over a period of several decades, at least while the catching-up process lasts, will be measured by tens of percentage points of GDP. For the sake of arriving at a number for this potential benefit for the case of Bulgaria, 10 % of GDP can be taken as a lower bound of the interest rate effect over a 20 year horizon.

The observation that euro area membership increases monetary policy credibility thus decreasing various hedging costs and interest rates and profitability, only enhances the point made in the previous paragraph. It may also have a beneficial effect on the overall domestic saving rate with the ensuing long-term positive effects on growth. Such an effect may range between 0 and another 5 % to GDP in a 20 year horizon.

Finally, entering a monetary union will increase the transparency of prices. Consumers will be able to compare more easily relative prices in the context of a very large economic area, and will respectively apply some pressure to producers and suppliers to improve efficiency in order to provide competitive pricing. In the long run this will lead to efficiency and allocative gains with an additional positive growth effect. It is impossible to arrive at a quantitative estimate of this effect, but it

has the potential to be large for the case of Bulgaria, which is a relatively small country where internal competitive forces are relatively weak.

The overall estimate of the net benefit of euro adoption for Bulgaria in a 20 year horizon is summarized in Table 4.

Table 4. Summary of costs and benefits of euro adoption for Bulgaria in 20 year horizon

Costs:	% of GDP in 20 years
Changeover costs	-0.2 to -0.3
Loss of business to banks	-0.2
One-time upward shock on price level hurting the poor	0.0 to -0.1
Total level costs	-0.4 to -0.6
Temporary loss of growth to fulfill inflation criterion	-2.0
Medium-to-long-run higher inflation	-
Loss of independent monetary policy	-
Total growth costs	-2.0
<b>Total costs</b>	<b>-2.4 to -2.6</b>
<b>Benefits</b>	
Reduction of transaction and administrative costs	+0.2
Elimination of exchange rate risk and volatility	+0.0 to +0.1
Reduced risk of financial contagion	? +
Seigniorage gain	+3.0 to +5.0
Total level benefits	+3.2 to +5.3
Gains from trade	+5.0
Gains from capital flows	+10.0
Price transparency, competition, allocative efficiency	? + (potentially large)
Enhanced credibility of monetary policy	0.0 to +5.0
Total growth benefits	+15.0 to +20.0
<b>Total benefits</b>	<b>+18.2 to +25.3</b>
<b>Total net benefit at a 20 year horizon</b>	<b>+15.6 to +22.9</b>

*Source: derived from the text*

In conclusion, the rough estimates of level benefits from euro adoption for Bulgaria are enough to offset the total of expected costs. The major benefits, which are expected to result in higher growth rate of the Bulgarian economy over a considerable time period, are difficult to estimate, but a realistic gauge would put them in the range of above 10 percentage points of GDP in a 20 year horizon.

This rough estimate can be compared to other similar estimates for East European EU member states, the studies of which have already been discussed above. Table 5 presents such a comparison, using the adopted 20 year horizon, to which the level and growth effects are extrapolated. It is important to mention that these estimates should be viewed as close to the lower bound of the potential net benefit, because most of the costs have been accounted for, while important potential benefits, especially the ones related to the indirect effect on competition and efficiency, have not been quantified.

Table 5. Estimates of net benefit of euro adoption for East European countries.

Country (ordered by year of estimate)	Net benefit of euro adoption as % of GDP in 20 years
Hungary (2002)	+13.4 to +19.3
Poland (2004)	+4.0 to +10.2
Latvia (2004)	Up to +19.0
Slovakia (2006)	+7.6 to +21.4
Bulgaria	+15.6 to +22.9

*Source: derived from text; respective country references*

The comparison in Table 5 indicates that the lower bound of the estimate for Bulgaria is largest, and its upper bound, while still the largest, is not dramatically different from other estimates. In light of the discussion above, two main reasons for the relatively greater estimated net benefit for Bulgaria can be highlighted. First is the fact that it starts its catching-up from the lowest base, so that the trade and especially capital effects should be naturally larger. Second is the fact that, having a currency board regime as the alternative to membership in the euro area, Bulgaria has no independence of its monetary policy to lose by euro adoption and will consequently not incur any additional costs in this respect.

## 6. Review of the Bulgarian government strategy for euro adoption

The Bulgarian government, represented on the issue of euro adoption by the Council of Ministers and by the Bulgarian National Bank, has clearly indicated that it considers the potential benefits from membership in the euro area as significantly outweighing the costs in the case of Bulgaria. For this reason a strategic agreement was signed between them in 2004 (BNB-CoM, 2004) providing for the tasks of the two bodies in relation to the strategic goal for Bulgaria to adopt the euro as quickly as possible after accession to the EU. Under the agreement both sides undertake specific obligations.

The most important aspect of the adopted strategy in Bulgaria, from the point of view of the analysis of the costs and benefits of euro area membership for the country, is the decision to preserve the currency board regime with the present rate of fixing to the euro, until the moment of actual changeover to the euro. To achieve this it is necessary to take a unilateral commitment to this rate during the negotiations for entering the ERM II. Given the fact that any alternative strategy would involve a double regime shift – going out of the currency board into some other monetary regime, and then transiting from that regime into the euro area – in a relatively short time horizon, following the single regime shift is justified.

A second important element of the agreed strategy is the commitment by the government to maintain a balanced budget on a consolidated basis. Such a policy allows for the accumulation of fiscal reserves which can be used as a buffer against negative shocks. As discussed above in part 4 above, having a budget balance or surplus has been a feature of the Bulgarian economy. It is unclear to what extent the accumulated fiscal reserve of Bulgaria plays the role of a buffer to external shock. Since the beginning of the present crisis it has become obvious that if capital flows reverse, the fiscal reserve will not be able to substitute for them. However, the existence of the reserve itself has been a signal to economic agents which has helped to preserve to some degree their confidence in the economic environment in Bulgaria, helping prevent a sharp capital flow reversal. The effectiveness of this element of the strategy remains to be tested in the future.

The other commitments by the government and the central bank with respect to euro adoption relate to the fulfillment of the inflation criterion, which is considered as the only problematic one for Bulgaria, and the legislative changes necessary to achieve full compliance with the monetary policy and banking *acquis communautaire*.

The strategic agreement between the Bulgarian government and the National bank does not address the issues of economic reforms necessary for the country to avoid the major risk related to the integration of a large economic space. As discussed in parts 3 and 5.1, a small country with asymmetric structure and different business cycle will face the risks of having to adjust to negative external shocks in an environment where monetary policy is not tailored to its specific needs. While this risk is not an issue in Bulgaria's decision whether to join the euro, because under the currency board the risk is the same, it is still important for the long term development of the country.

Whether a country suffers negative consequences due to asymmetric shocks within a monetary union ultimately depends on the flexibility and adjustment capacity of its different markets. And this, in turn, depends on the policies pursued. Thus a major portion, if not all, of the potential for a small country in a large monetary union is conditional on government policies to be pursued in the future. These policies relate to the flexibility of labor and goods markets, to the smoothness of entry and exit procedures for firms, to the degree of competition in the domestic markets. The formulation of such policies is a crucial element in the ability of the Bulgarian economy to reap the full benefits from euro area membership while keeping the potential costs to a minimum. The Bulgarian government strategy with respect to the euro adoption, however, is silent on these policies.

## 7. Conclusion

This study has focused on the case of Bulgaria in an attempt to evaluate the potential costs and benefits of joining the euro area for the country. It has stepped on the existing literature, especially devoted to other new EU member states, to identify several groups of potential costs and benefits, and has applied them to the specific Bulgarian context to arrive at a general estimate.

The main conclusion is that the expected overall effect is strongly positive, especially for the case of Bulgaria. While it will benefit significantly through higher growth as a result of increased trade and capital flows, the country will not suffer from the most widely discussed risk – the disappearance of the ability to accommodate negative external shocks through domestic monetary policy – because it is already given up its domestic monetary policy through the currency board regime.

However, the more in-depth analysis of the case of Bulgaria suggests a broader conclusion. The cost of euro adoption caused by the loss of independent monetary policy does not seem to be a relevant issue not only for Bulgaria or other currency board countries, but for all East European EU members. This is due to the fact that these countries have an extremely limited capacity of monetary policy to affect domestic monetary conditions. This situation is a result of a combination of factors. First, EU membership means that countries are not isolated from pan-European goods, but more importantly capital and services (especially financial services) flows. Second, a very large proportion of the banking sectors in these countries is owned by other EU organizations, most often EU banks, which have access to financing in euro and can operate in euro. Third, the East European EU member states are very small compared to the euro area and to euro area banks, meaning that the flows originating from the euro area and its banks are large relative to the abilities of local monetary authorities to balance them. Fourth, competition among banks for market share, combined with their access to outside financing in euro, means local monetary policy instruments have a very limited capacity to influence their decisions.

East European EU member states are severely limited in their capacity to mitigate external shocks through domestic monetary policy due to their very status as EU members. Thus preserving a nominal independence of monetary policy for them is not a very potent alternative to euro adoption.

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