Currency Board as an Exchange Rate Arrangement: The Bulgarian Experience

MASTER THESIS

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ABSTRACT

A currency board is a specific long-term form of a monetary regime based on full convertibility of local currency to a reserve one by fixed exchange rate and 100 % coverage of the monetary supply with foreign currency reserves. Such a form of exchange rate arrangement has been introduced in Bulgaria in July 1997 after a period of deep economic and political crisis. The Bulgarian currency board differs from the orthodox form so as to address the particularities of Bulgarian economy. Its merits have been questioned many times and analysts have pondered upon different scenarios of what and when could happen to it, and what the consequences would be.

This paper examines the characteristic features of the currency board arrangement in Bulgaria and its effects on the country's economy. It also draws a comparison between the Bulgarian experience and those of other countries in an attempt to determine the factors underpinning success of this kind of system. Additionally, the future prospects for the Bulgarian currency board are examined in respect to the country's plans for eurozone accession.
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1. INTRODUCTION TO CURRENCY BOARDS

The recent world economic crisis unfolded in mindboggling scale. It left governments of the world with many unanswered questions as to how the economy should be stabilized, how international indebtedness is to be approached, what civil consequences it will have when it comes to inflation, unemployment rates etc. The Bulgarian government was no exception, especially in view of the fact that the country has been sustaining a currency board regime for the past 14 years. What the public was primarily interested in was how exactly the rule-bound monetary regime in Bulgaria would face the challenges of today, would it provide salvation or quite the opposite - help the country plunge into deep recession. Many local and foreign experts had their say on this matter. They were particularly interested to observe whether the board will hold or not especially in view of a possible collapse of the euro. Although this might seem as a rather pessimistic scenario, it must be taken into account because the firmly fixed exchange rate could leave the country severely exposed to external shocks.

The term “currency board” has not achieved great popularity worldwide which is understandable because currently there are few economies that resort to it. However, it has its merits when it comes to overcoming deep crises and recessions. In the past currency boards have existed in more than 70 countries including parts of such a huge economy as this of Russia. Currently there are 12 countries in the world that employ the currency board arrangement whereas the most quoted examples are Hong Kong SAR, Lithuania, Bulgaria and until recently Estonia. The rest of the countries with this form of monetary rule according to the International Monetary Fund (IMF) De Facto Classification of Exchange Rate Regimes and Monetary Policy Frameworks include Antigua and Barbuda, Djibouti, Dominica, Grenada, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Bosnia and Herzegovina, Brunei Darussalam. Most of the

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1 Estonia became the 17th eurozone state adopting the euro on 1 January 2011 and thus abandoning the board
2 The most recent available classification is from 2009 and includes Estonia. That is why there are 13 countries officially quoted in it.
last mentioned countries are small economies and have previously been colonies. Naturally they have been excessively dependent on the currency of the dominion. In this context the appearance of Bulgaria might seem odd but as we will explore further on there have been specific conditions in the economic development of Bulgaria that have made a currency board rule applicable.

In the available literature the currency board regime has had a controversial image. On one hand the notorious Argentinean experience from the not so distant past makes people use the term with negative connotation. On the other, the world has also witnessed very positive examples. Hong Kong has been operating a currency board for decades. It would not be an exaggeration to say that this regime is in the core of the economic success of the territory. The provided stability by the board coupled with liberal and well conducted reforms is what led to Hong Kong’s rise according to experts.

The two examples from above might be referred to as the two sides of the same coin. The purpose of this thesis is to try to disclose which side of the coin most accurately describes the Bulgarian experience and what the determinants behind its unfolding are.

In this paper we explore the many aspects of the currency board arrangement as a form of monetary policy. The next chapter discusses the characteristic features of currency board from a theoretical point of view as well as the historical development of this form of exchange rate arrangement. In chapter three we examine the conditions that led to currency board implementation in Bulgaria. In chapter four we set focus on the specific organizational design of the Bulgarian board system in particular. Chapter five draws comparison between the Bulgarian board and several other similar examples in order to better understand why boards with seemingly comparable features might lead to significantly different outcomes. Chapter six presents the effects of the board rule on Bulgarian economy. In chapter seven we share a view on the perspectives and challenges in front of the Bulgarian currency board in terms of eurozone accession process. Finally, chapter eight discloses our summarizing and conclusive thoughts.
2. THEORETICAL AND HISTORICAL OVERVIEW

2.1. Theoretical overview

In order to explain in detail the characteristic features of a currency board and how it differs from other regimes we must first define some basic terms. The monetary base in a country comprises the notes and coins in circulation plus reserves of commercial banks at the monetary institution (both in the cases of currency board or a central bank). On the other hand money supply in a country consists of deposits at commercial banks made by the public along with the notes and coins held by them. Cash is the term which stands for notes and coins in circulation, held both by the public and commercial banks.

From a more general perspective a central monetary institution is characterized with many different activities which stray from solely issuing and redeeming notes and coins in most countries around the world. It has the discretion to perform many other monetary tasks which can be interpreted in two ways: on one hand it provides multiple tools to regulate the value of currency, but on the other it creates ambiguity as to what its main objectives are. It is up to the authorities to decide whether discretion and great uncertainty should be preferred to basic monetary stability. Public interests vary to a great extend and the central bank cannot comply with all of them and the effects of the policies on the economy are often interpreted in various ways. This source of confusion combined with the time inconsistency implications of a regime with a typical central bank drives many analyzers to the conclusion that central bank objectives should be narrowed down and that the institution should for example focus on a predefined growth pattern, addressing inflation or money supply rate. One of the ways to decrease discretion is to delegate the right to expand or contract the monetary base to a separate body, which has often been referred to as an “independent currency authority”. In certain cases such and authority has the right to issue local currency which is fully convertible to a foreign currency by means of a fixed exchange rate. What this means is that the authority has stored reserves of the foreign currency which cover 100% of the domestic currency base. This kind of institution has become known as a
“currency board” and has been implemented on many occasions worldwide. The traditional form has undergone many transformations throughout the years in order to be suitable for the particular conditions. Scientists often refer to the traditional form as an “orthodox currency board arrangement”.

2.1.1. Characteristic features of currency boards in comparison to traditional central banking

Unlike central banking, currency board mechanisms are unfamiliar to most people due to their relatively scarce application in the contemporary economic world. In order to explore the merits of that form it is probably best to start explaining what the currency board regime is by comparing it with the more common central banking.

A currency board is by definition an institution which issues banknotes (or in some cases deposits) that are fully covered by foreign reserve currency. These banknotes are freely convertible in the reserve currency at a fixed exchange rate.

To elaborate on the definition we may conclude that this exchange rate arrangement combines three elements: an exchange rate that is fixed to an “anchor currency”, automatic convertibility (that is, the right to exchange domestic currency at this fixed rate whenever desired), and a long-term commitment to the system, which is often set out directly in the central bank law.

In a broad sense, the board represents a pattern by which the national economy functions. In a narrow sense, it is a form of exchange rate policy which is implemented when the country is in severe economic difficulties – high and continuous inflation, large deficit in the balance of payments, wide public mistrust in the national currency and banking system.

A typical central bank, unlike the currency board, is a monetary authority that has discretionary monopoly control of the supply of the reserves of commercial banks. Usually this implies a monopoly of the supply of notes (paper currency) and coins. Discretionary control means the ability to choose a
monetary policy at will, at least partly unconstrained by rules while reserves in this case means a medium in settlement of payments. This definition has been proposed by Steve Hanke and Kurt Schuler\(^3\) and is one of the most often quoted.

A currency board arrangement in the traditional sense has a limited possibility to increase government profit because the profit only ensures the maintenance of the reserves at the desired level and covers the expenses inherent to the board’s activity. The aforementioned profit comes from the margin between the interest on instruments and securities, which the board holds denominated in the anchor currency, and the amount that is needed to provide seamless circulation of the monetary base (the M0 aggregate). The local currency supply cannot be unrestrictedly modified by the board. Instead, what determines the quantity of the money in circulation is the market forces while the actual operation of the institution is governed by a set of principles, which are clearly defined by law. One of the differences between a currency board and a typical central bank in this respect is the features of money supply. While the currency board typically supplies only notes and coins, the central bank also provides deposits. If the board has the right to issue deposits (that is not among the features of the orthodox form), then they have to meet the reserve requirements in the same way narrow money has to.

When it comes to the exchange rate policy, a typical central bank differs from a currency board because it employs a floating or pegged rate instead of a firmly fixed one. To maintain a fixed exchange rate with an anchor currency, the board has to be able to sustain it at all times without making any changes and that has to be ingrained in the legal document constituting the implementation of the board. In extreme situations minor changes might be necessary but such an act can seriously undermine the commitment to the regime. In the case of a pegged or a floating rate there is no credible evidence that the exchange rate will remain at the desired level in the long run and that again raises concerns about the monetary stability in the economy. In a situation when the domestic currency is under severe pressure (speculative or political) to decrease in value, a typical central bank will have to proceed with the devaluation.

\(^3\) Hanke, S & Schuler, K 2000. ‘Currency Boards for Developing Countries: A Handbook’
The amount of foreign reserves a typical central bank holds does not necessarily depend on the extent to which the domestic monetary base changes. There is no requirement for a binding ratio which ensures that certain foreign assets should correspond to a certain size of the bank’s liabilities. This discretion also allows the central bank to hold assets denominated in the local currency which can have a positive effect should the local currency increase in value or favorable conditions on the domestic market unfold.

Unlike central banks, by definition an orthodox board has to completely back its liabilities (denominated in local currency) with reserves denominated in the anchor currency. The reserve assets of the institution are in the form of securities, debt instruments or bank deposits of issuers with impeccable reputation as well as notes in the foreign currency for exchange purposes. In the past there have been examples of modified boards which did not ensure a full 100% convertibility of local money. Such was the case of Argentina (discussed in greater detail further on) where the amount of foreign currency reserves could vary significantly below 100% coverage. In reality most board arrangements maintain reserves which exceed 100%. The excess amount is used to compensate for an eventual unfavorable change in value of anchor currency denominated securities due to market fluctuations or other type of buffers.

When discussing differences between central banks and currency boards we cannot fail to emphasize how important the total convertibility of the local currency is for ensuring the proper functioning of the board. A typical central bank does not ensure 100% convertibility of local currency. The national currencies of countries with traditional central banks are typically only partially convertible to a certain foreign currency. Fully convertible currencies under a discretionary monetary policy have only the most developed and some developing countries worldwide. As for countries with a board, any resident or non-resident of the country can change local money for reserve money at any time according to the predefined rate and vice versa because the board never runs out of reserve currency and is able to meet the demand. This rule however does not apply to convertibility of bank deposits into local currency because it is the commercial banks’ prerogative to hold large enough reserves to meet their
obligations. Under an orthodox board commercial banks are not required by law to comply with a predefined percentage of reserves relative to their liabilities. As a consequence a currency board does not ensure 100% coverage of the money aggregates M1, M2, M3 but of M0 exclusively.

Full currency convertibility is difficult to achieve. That is why seamless implementation of the currency board necessitates the fulfillment of several important steps. Choosing a reserve currency which is available in the right amount is one of them. In the case with Bulgaria the crisis in the 90s left the economy so considerably crippled that when the board was introduced in 1997 the foreign debt to GDP ratio had soared up to 160%. The heavy reserve insufficiency had to be addressed with excessive external borrowing from organizations like the International Monetary Fund, The World Bank as well as from several developed countries. As another example, Argentinean economy was of such a great scale when the board stepped in that the huge amount of domestic currency could not be backed 100% by foreign reserves which led authorities to the decision to use Argentinean government debt as an exchange standard. Once the domestic currency has been collateralized, the next step is to put the issued currency into circulation which is primarily an administrative concern and can be resolved with the use of a set of operations on an accounting and auditing level. Auditing can be optimized and more efficiently conducted if 100% of domestic currency is backed by foreign reserves. It is being alleged that under certain circumstances the board does not need to provide 100% cover of local money and that will not lead to speculative attacks depleting the reserves. There is the case when currency boards are implemented but the local currency of the country in question has not been backed up to that moment. Any newly issued money by the board from that point on will have to be 100% secured with foreign money which represents a long term commitment, while at the same time only part of the currently existing monetary base is collateralized. This approach might prove problematic however because of the ambiguity it creates for the wide public, especially if they are not familiar with the ways a board functions i.e. how the employed measures can bring about stability in the future and this can make them act irrationally and compromise the institution’s efforts.
As mentioned before a typical central bank has the freedom to exert monetary policy. That means for example that under a floating rate if the domestic currency appreciates in value against a particular foreign currency, the central bank has the discretion to issue more local money and earn the positive effects of that decision. The central bank can also change the regulation of commercial banks or the proportion of foreign reserves. In comparison, a traditional currency board cannot make changes in the exchange rate or the money supply (holding international reserves constant) at will even if that could turn out advantageous in the short term. The rule-bound regime implies that the monetary institution can expand local money supply with a certain percentage if and only if the amount of foreign reserve currency expands with the same rate.

A typical central bank can be a lender of last resort whereas an orthodox currency board does not have this function. Nevertheless, modified boards have the ability to partly exercise this right as in the case with the Bulgarian currency board. The funds a lender of last resort can operate with are only limited to the excessive amount of foreign reserves the board has gained over the ones needed to cover 100% of the domestic monetary base. It is important to note that fulfillment of full convertibility in the financial system can be viewed upon from two angles – convertibility of the board’s liabilities into the anchor currency and convertibility of commercial banks’ liabilities into the monetary institution’s liabilities. While the first part of the equation is ensured by law, the second is highly dependent on the flexibility of the financial system itself. Therefore the lender of last resort function maintains its influence in the economy because of the fact that it is commercial banks’ own concern to ensure the convertibility of their liabilities into the reserve currency.

Another major difference between currency boards and central banks is the degree of transparency of operations. Whereas a central bank is often subject to political pressure, a currency board can effectively dodge it because of the simplicity of its operating principles. The clear message it sends to parties within an economy makes it a very reliable and credible medium. Apart from

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4 Zarazaga, Carlos E 1995. ‘Argentina, Mexico, and Currency Boards: Another Case of Rules versus Discretion’
several exceptions from developed economies, most central bank based regimes cannot be characterized with very high credibility.

Inflation is one of the main sources of profit based on seigniorage for a monetary regime with a central bank since induced inflation might be considered a form of tax to the public. That is not the case with a traditional currency board. Monetary base depends on foreign currency availability which is not under the direct control of the local monetary power. That is why creating inflation is not intrinsic for this kind of system. Naturally, a currency board can predispose inflation because of the fixed exchange rate which leaves the local economy vulnerable to effects imported from the anchor currency country. Spending by the local government or the companies in the country cannot be financed by a typical currency board for that is an initial requirement at the establishment of the regime. So a hypothetical government debt or fiscal insufficiency cannot be resolved using tools characteristic of a central bank (such as inflation tax) when the country is under a currency board arrangement.

2.1.2. Implications of a currency board regime for the fiscal policy

As we have mentioned, a currency board rule cannot be used as a tool to obtain inflation tax in an economy. It does not allow printing of currency at will, with which fiscal obligations are to be covered, because every unit of reserve currency is being demanded in relation to every issued unit of domestic currency. If a large budget deficit is present, it would have to be addressed with increased government borrowing and that on its own would create huge pressure within the economy which cannot be alleviated through monetary expansion because of the board. Usually in such a situation governments resort to borrowing funds externally which effectively results in large external debt, the servicing of which would lead to foreign capital outflows and undermine commitment to a fixed exchange rate. That is why the government cannot afford to conduct lax fiscal policy if a fixed exchange rate is to be sustained and why

\[5\] Hanke, S et.al. 1993. ‘Russian Currency and Finance. A currency board approach to reform’
the board is widely perceived as a medium which effectively hinders frivolous manipulative actions towards the budget. The concept that tight monetary regimes have a disciplinary effect on fiscal policy has been subject to extensive research by many analysts. A study performed by Antonio Fatas and Andrew Rose\(^6\) indicates that there is a connection between the type of monetary regime and fiscal policy in a country. Moreover, their findings confirm that authorities tend to apply “conservative fiscal policies” under currency boards as opposed to countries within international common currency areas where fiscal policy is rather expansionary. It also appears that with tight monetary regimes fiscal revenue is formed predominantly by direct taxes whereas expenditures are biased towards social spending and transfers – components that are generally deemed “automatic stabilizers” by the authors. The dominance of these components implies that policymakers’ decisions are more focused on mediating effects on the economy than on fully utilizing fiscal instruments. Another research conducted by Alberola and Molina\(^7\) draws a line between fixed exchange rate regimes in general and currency boards in particular because of the principally different observable effects on the domestic economy when it comes to monetary and fiscal seigniorage\(^8\). While fixed rate regimes reduce monetary seigniorage but do not affect fiscal seigniorage, currency boards strictly limit fiscal seigniorage and that establishes them as “strong disciplinary devices for fiscal policy”.

### 2.1.3. Advantages and Disadvantages of Currency Boards

Before deciding on whether a currency board should be implemented or not in a given country, there should be full awareness of the advantages and disadvantages of that kind of system. In order to maintain the desired positive effects on the economy, once implemented the currency board should be


\(^8\) Monetary seigniorage is being defined in the paper as the effect of monetary base increase, whereas fiscal seigniorage denotes the effect of increased public debt holdings by the central monetary institution.
sustained at least until the economy is stable enough and ready for a transition to a more liberal monetary policy.

One of the most important advantages of the currency board is that it creates macroeconomic discipline. As opposed to the central bank the board (at least in its orthodox variant) is not allowed to hold domestic bonds or finance the government in any way. In case of an excessive deficit the government needs to tighten its spending or find other sources of financing. Of course, one can argue that such a restriction might have a negative effect on the economy but one should also keep in mind that history shows there are too many cases when deficit financing has been abused instead of used in a constructive way. So it might actually be a wise idea if there are strong regulations on the means of financing. However, there is in fact no guarantee that the government will be willing to sustain a situation in which it takes a subordinate role in its fiscal policy. Before implementing a currency board it needs to be certain that the government is ready to conform to the strict rules and not eventually suspend the board. Otherwise, a government might resort to extremely high debt which might lead the economy to a bankruptcy followed by an abandonment of the currency board and spending the reserves in an unwise manner. After all, it makes absolutely no sense to implement a currency board that will be prematurely canceled.

Currency boards also tend to have a disciplinary effect over the inflation. Usually, the reserve currency is chosen so that the reserve currency country has a significantly lower and stable rate of inflation than the currency board country. The fixed exchange rate would in theory drag the inflation to a level close to the one of the peg currency country. If the exchange rate is fixed the prices cannot deviate too much from the levels of the reserve center because there are increasingly powerful forces that pull the prices back\footnote{Williamson, J 1995. ‘A consideration of the Pros and Cons’, What Role for Currency Boards?}. However, in reality the inflation of the currency board country has some momentum and it takes time before it levels down. It should also be noted that if initially the exchange rate was fixed to an undervalued level the internal prices will increase in the beginning. That is because the prices in the currency board country would
be very competitive which means an increase of the export. The higher demand of domestic goods would push the prices up. Nevertheless, the inflation rates in the country in question would level out in time approaching the levels in the anchor currency country. Also, if the reserve currency depreciates in relation to the currencies of other major trade partners, then the balancing effect would be diminished. Therefore, it is crucial that the peg currency is chosen so that it is the one of the main trade partners or at least there is also a fixed rate between the peg currency and the currency of the most important trade partners. The productivity bias also influences the difference between levels of inflation of the two countries. The larger the productivity differential between two countries, the larger the deviation of the purchasing power parity-based exchange rate from the equilibrium rate.\textsuperscript{10} It would mean that in case of a fixed exchange rate the country with lower productivity would have higher rate of inflation.

Another benefit of the implementation of currency board is the convertibility it assures. The 100% reserve coverage makes it possible for the institution to satisfy all the demand of the reserve currency in exchange of the local one. Contrary, in the case of a central bank there is a risk that if the reserves of foreign currency are spent the demand of that currency might not be satisfied.

Currency board also creates a payment adjustment mechanism for the economy. If there is a payment deficit in the balance of payments foreign reserves would decrease which leads to a shrinking of money supply. As a result interest rates increase causing contraction of the economy. Then prices would fall stimulating the export and output would decrease suppressing the import. At the same time high interest rates would attract capital inflow. All these processes lead to equilibrium of the balance of payments. If there is a high surplus the opposite processes ensure the achievement of equilibrium. Nevertheless, in order for the adjustment mechanism to work in that way there must be a tight link between foreign exchange reserves and monetary base. As it will be described further that is not really the case in the Bulgarian instance.

\textsuperscript{10}Bahmani-Oskooee, et.al. Nasir, Abm, 2001. ‘Panel Data and Productivity Bias Hypothesis’, University of Wisconsin – Milwaukee
The so far stated advantages of the currency board also enable it to increase the trust of the public and the financial markets. Normally there is no concern that the local currency might depreciate and the investors are more willing to transfer their capital to the country. Currency boards have certain immunity against speculative attacks although sometimes if the pressure is too strong it might encounter difficulties to sustain the fixed exchange rate. The risk of such a speculative pressure mainly depends on speculators’ observations and forecasts on the currency board. If they believe that their attack might turn out to be successful then they would exert a strong pressure. If not, they would assume that it makes no sense to try. It means that it is very important that the board acts in a way that makes the public believe in its commitment to sustain the status quo. Of course, it also depends on the government’s actions. As mentioned before, it is crucial that the government also fully supports the board.

There are also several disadvantages associated with currency boards. First one to be discussed relates to the fact that it is not allowed for the board to hold domestic assets. In cases when domestic assets offer higher return than the foreign ones this situation can be treated as giving up seignorage. However, if foreign assets offer better conditions, the seignorage might turn out to be even higher.

There might also be a certain difficulty to collect sufficient reserves when setting up the currency board. It might turn out to be very costly to collect such a great amount of foreign currency, so the feasibility of transition to such a policy should be carefully examined. In some cases it had not been a problem at all – for example, before some British colonies implemented it, they were operating with pounds, so they had all the necessary amount in their economy. However, that would not be the case if a big country with its own currency tries to establish a currency board. In that case the procurement of the initial reserves might be quite a problematic task. That is one of the reasons why currency boards are mostly established in small countries.

Another major problem that occurs in the initial phase of the implementation is what prof. John Williamson refers to as the transition problem. According to the author since inflation has certain momentum,
currency board implementation would not stop it immediately. There is some period in which prices continue increasing which might soon lead to an overvaluation of the local currency. One of the solutions in that situation is setting the exchange rate at an undervalued level and thus there would be space to accommodate the continuing inflation. That was what happened when currency board was established in Bulgaria. Initially Bulgarian lev was undervalued against German mark. There was an inflationary momentum but it did not last long. For the second half of 1997 it was 16%, only 1% for 1998 and in the beginning of 1999 the prices decreased slightly.\textsuperscript{11} However, such a strategy might as well not have the desired effect because undervalued currency would cause an increase of the external demand for local goods which brings prices up – the inflation rises with even higher temps.

A disadvantage that arises from the fixed exchange rate is the adjustment problem. If at some point there is a high deficit in the current account of the Balance of Payments exchange rate cannot be used as a means of counteraction. Normally when the deficit of the current account needs to be decreased currency is being undervalued in order to increase the competitiveness of the economy but under currency board exchange rate is static. The deficit leads to shrinking of the monetary base and decrease of the aggregate demand.

One of the most significant weaknesses of the currency board system is the inability of the country to have its own monetary policy. Of course, in many cases it can be considered rather as a plus since if not applied wisely, monetary interventions of the central bank can have disastrous effect on the economy. Anyway, a currency board would leave almost no room for reaction against cyclical changes in the world economy and especially in the country of the reserve currency and it definitely makes the economy vulnerable.

Another problem that needs to be noted is linked to the absence or at least the severe restriction of the lender of last resort function of currency boards. A currency board issues local money only in exchange of foreign

\textsuperscript{11} Miller, Jeffrey B 1999. ‘The Currency Board in Bulgaria: The First Two Years’, Bulgarian National Bank Discussion Papers
currency and not in exchange of domestic assets. So, in case a local bank experiences difficulties with its payment the central bank (currency board) is not able to help and it might be the beginning of a banking crisis since the bankruptcy of one bank might cause a chain effect for other banks. It turns out that the price that is paid for the stability against currency crisis is the increased risk of banking crisis. Therefore, it is argued that it is a good idea if currency boards leave some options for exercising the lender of last resort function provided that it is applied only for banks that are solvent but experience temporary liquidity problems. That significantly decreases the risk for banking crisis arising and at the same time does not encourage bailout actions for insolvent banks that would put an undesired burden on the whole economy. In fact, in most countries with currency boards the lender of last resort function is preserved at least to some extent for the sake of stability. That is also the case in Bulgaria and the mechanism and rules of the function shall be discussed later.

Last but not least, it is not completely certain that currency board would procure the fiscal discipline needed for the stability of the system. As mentioned before, in case the government is under severe pressure of its external and internal debt there is a chance that it might suspend the currency board. These actions would certainly lead to loss of trust in the political system in the country and perceived destabilization by foreign investors. The aftermath would be a large foreign direct investment outflow with all the negative effects that come as a result - decreasing economic growth, high unemployment, etc.

To sum up, the main advantages of currency board systems are:

- It creates macroeconomic discipline;
- Decreases inflation in the long-run;
- Assures full convertibility;
- Creates payment adjustment mechanism of the economy;
- Increases the trust of the public and financial markets;

There are also the following disadvantages associated with it:

- Seignorage problem
• Difficulties to provide the initial reserves needed to establish the board;
• Transition problem
• Adjustment problem
• Vulnerability against external shocks due to the lack of independent monetary policy
• Increased risk of banking crisis because of missing or restricted lender of last resort function
• Risk of sudden abandonment of the system leading to financial destabilization;

2.2. Historical Overview

In order to have detailed knowledge and understanding about currency boards one should examine the history of their origin. The reasons for their occurrence over time, the way they developed and the effects their introduction had on local economies are important for our further analysis.

Currency boards were first used as monetary policy in some British colonies in the middle of the nineteenth century. A fact that deserves attention is that the initiative for introducing the first currency boards did not come from London but from the colonies themselves. It used to happen during periods of serious colonial monetary problems. The first generation of boards gradually developed into today's concept of the orthodox currency board.

The first currency board in history was established in Mauritius in 1849. It was a result of the severe drop in prices of sugar which was the main industry in the country. At the time there were two local banks issuing banknotes. One of them tried to look for additional capital from Britain but it didn't manage so it went bankrupt. The other bank was also threatened by the crisis. In order to stabilize the financial situation, Mauritian government introduced a currency board that was issuing 5 and 10 rupee notes redeemable in Indian silver coins. Banks were no longer allowed to issue banknotes and as compensation they received government loans. The notes of the board were 100% covered by
reserves although some declinations from that level were allowed. Those reserves, however, were not only in British pounds. Half of the amount was in pounds and the other was in securities. Initially those securities were loans to local investors in the sugar industry. Later the amount of local securities was restricted to no more than 25% of the reserves. The other 25% were required to be high-quality liquid securities. Also, it was subsequently decided that 1% of the profit of the board should be transferred to a Depreciation Fund in order to ensure resistance to shocks. Later on, British colonies adopting currency boards adhered to the rule of prohibition of holding domestic government obligations. That was first introduced in Ceylon’s currency board. Anyway it must be noted that holding treasury bonds of other British colonies was allowed. In that way the interdependency of the economies was even stronger. In the Beginning Britain was reluctant to accept the monopoly of the colonies over issuing money. The first currency board that was established by the British authority was the one in the Falkland Islands. Before that there was no institution issuing money on the islands so the idea of the metropolitan was to ensure the issuance of currency notes redeemable in British coins. The reserves consisted of two thirds of coins and one third of securities of any other part of the Empire except for the Falkland Islands themselves.

The basic idea for the functioning of currency board is considered to be influenced by the British Bank Act of 1844. The purpose of the act was to bind the money in circulation with the gold supplies. When money in circulation consisted only of coins then the link to gold inflows and outflows is clear. But it was not the case with paper money. If the state was not controlling the issue of paper money, then there would be a risk of cyclical tendencies in the economy – if there was too much money in circulation a high inflation would occur and in case of money deficiency deflation would be incurred. So, according to the British Bank Act the Bank of England was divided into two departments. One of them was called Issue Department and its responsibility was to issue money. Its assets were gold bullions and liabilities were the money in circulation. The other department, called Banking Department was operating as a profit-making institution and it was holding deposits as liabilities and loans, securities and reserves as assets. Also, the act was prohibiting for new banks to issue
banknotes and for the ones that were currently doing so, a ceiling was introduced. As it can be observed further in the text, the Bulgarian National Bank (BNB) has a similar structure and principle of operation as described.

From the beginning of the twentieth century many of the British colonies adopted currency boards as a form of monetary system organization. The West African currency Board established in November 1912 in Gambia, Gold Coast (today Ghana), Nigeria and Sierra Leone served as a model for the systems introduced in other developing countries. The reason behind the establishment of currency boards as an exchange rate agreement was the need of the colonies to have a stable currency without accruing high costs for that. If they were simply using the British pound it would have been costly to replace destroyed or lost coins and notes and also no interest would have been earned on that money. Holding their British pounds reserves in London enabled colonies to capitalize interest. Also, issuing their own money made it possible for countries to profit on seigniorage. If the colonies used the British pound then the seigniorage would have been gained by Britain. That is why currency board seemed as a suitable solution giving the newly established countries stability of the monetary system as well as the opportunity to capture the advantages of issuing their own money. Except for the coverage of the money supplies with British pounds, another common feature of the British currency boards is the division of reserves. One part of the reserves was kept in short maturities with high liquidity. It accounted for up to half of the money in circulation. The balance to 100% that was considered unlikely to be redeemed was invested in long term assets with high returns. The third part was formed from the reserve surplus above the 100% coverage. It was used to offset possible losses of the board.

An interesting historical example is the so called North Russian Currency Board. It was established during the Bolshevik Civil War and lasted from 1918 to 1920. The idea came from John Maynard Keynes who was at the time an official at the British Treasury. The anti-Bolshevik government in North Russia used the help of the British government to establish a currency board issuing rubles that were fully backed with British pounds. Those reserves were kept at the Bank of England. In fact, the reserves were donated by the British government. As a result the North Russian Currency Board was issuing a stable
currency at an exchange rate fixed to the British pound and soon it drove out of circulation the rubles issued by other issuers because they were inconvertible. However, the North Russian currency board was not an orthodox one. 25% of its assets were in North Russian bonds and that caused some problems. At a certain point it needed to be bailed out by the British Treasury, which would not have been necessary if there was a 100% coverage with reserve currency. Eventually, in 1920 when the Bolsheviks conquered North Russia, the currency board ceased existing. It is important to mention that even after the defeat of North Russia this currency board was able to service its liabilities\(^\text{12}\).

The greatest peak of the currency board popularity was reached in 1940’s when around 50 countries around the world used it. However, during the 1950’s and 60’s many countries abandoned it as a result of the widespread at the time perception that this system was a remaining from the colonial past and was not giving newly established countries the chance to take full advantage of controlling their own monetary policy. Thus most of the countries previously using currency board replaced it with central banks. As in 1974 Hong Kong switched to floating exchange rate, there were only several places with currency boards: Bermuda, Brunei, the Cayman Islands, Gibraltar, the Faroe Islands and the Falkland Islands. Those are small territories so the use of currency boards was really negligible at the time. The fierce criticism of currency board system was a result of the change of public beliefs at the time. The huge empires were losing their ideological support, people no longer accepted the right of the metropolitan to exercise its authority over colonies. Ideas of democracy and nationalism were influencing the changes taking place in newly formed countries. The wide-spread opinion was that colonial expansion was driven by the selfish interest of imperial powers. As they no longer had local investment opportunities with sufficient return they saw new profitable markets in the new lands. The obligatory investment of reserves in British securities was seen as a confirmation of this idea. Former colonies were also believed to be able to utilize their resources in a more productive manner once they were free from colonial dependence. They had plans for great economic development, for

\(^{12}\) Hanke, S 1998. ‘The Case for a Russian Currency Board System’
initiating high resource-demanding projects such as dams, factories, roads, etc. Currency board system with its restrictions did not fit those plans.

Currency boards were also criticized because of the deflationary effects deemed to occur when the outputs were constantly increasing. It was considered that under currency board only a surplus in the current account of the balance sheet would lead to an increase of the money supply. So, if output increased constantly without causing sufficient surplus in the current account the result would be a fall in prices. However, that dependency holds only if we do not consider the capital inflows that can also lead to an increase of the money in circulation.

The requirement for 100% coverage of the money supply kept as reserve was also an object of criticism. It was considered that this was a burden for colonies because it was unlikely that all the money in circulation would be redeemed. It means that part of the reserves was kept in vain and could be easily invested in real projects with higher return. Nevertheless, as stated above the reserves of British currency Boards were anyway divided into three parts invested into assets with different maturity and return, so it is questionable if much higher returns would have been incurred if 100% coverage was not mandatory.

Opponents of currency boards at the time also argued that the absence of discretionary monetary policy under such kind of system was not giving the chance for countercyclical operations that could keep the economy stable. In their opinion central banks would be able to act independently and avoid the shocks that a currency board would otherwise import from the reserve currency country. Later events showed that very often even central banks of developed and powerful countries find it difficult to take adequate actions in order to ensure protection against shocks. So it was rather brave to assume that new founded central banks of small poorly developed countries would be experienced enough to manage it.

The lender of last resort function of central banks was also highlighted as an advantage, as well as the possibility to finance the government deficit. However, for expatriate banks in colonies lenders of last resort could also be
the headquarters of the banks. And very often big banks operating in colonies would lend money to smaller local banks in case of difficulties in order to avoid liquidity crisis, so for colonies the lender of last resort feature was not such a crucial advantage. As for the deficit financing, it is not always beneficial because it usually encourages deficits and causes inflation. Also, it is not clear that funds received by the government would be invested in a profitable way so it might lead to even deeper destabilization of the economy.

显然是信心的新国家他们可以成功管理自己的货币政策是不完全合理的。不久之后回款货币板恢复了它的流行性，证明了它的优势已经不是过去的那样。1983年香港恢复了货币板，并选择了美元作为储备货币。这个决策发生在严重美元贬值后。汇率被固定在HK$7.80 = US$1。一个叫做交易所基金会的机构在出售所谓的债务证书，它以美元来出售给发钞银行。这些债务证书让银行可以发行一定数量的HK元。交易所基金会不发行钱。它的任务是确保美元储备与银行发行的货币之间的联系，以及管理这些储备。部分收到的美元被投资于美国政府的有息证券中。在接下来的几年里，它的权利被越来越多地授予，以至于它更像一个中央银行。1988年交易所基金会被允许在公开市场上运作，1990年它可以发行国债，1993年它被允许向商业银行贷款来解决短期流动性问题。这些变化都是逐步发生的，没有从货币板到中央银行的突然转变。这些措施的影响是香港经济在这个时期是稳定的，且通胀率低于浮动汇率时期。

在九十年代货币板也建立在阿根廷、立陶宛和爱沙尼亚。这些案例对我们的分析非常感兴趣，将被详细讨论的。

In the nineties currency boards were established also in Argentina, Lithuania and Estonia. These cases are of particular interest for our analysis and will be discussed in detail later on.
3. THE BULGARIAN ECONOMIC DEPRESSION

3.1. Macroeconomic and political preconditions

In the beginning of the 1990s Bulgaria started a long period of transition from a fully integrated into the socialist block economy to a capitalistic regime. The fall of the socialist system posed great difficulties and uncertainty for the periods to come. The demand for the traditional exports collapsed and terms of trade had to change dramatically to comply with the world market prices. What the country had as a legacy from the previous rule was specialization in heavy industrial production complementing production in this field in the other socialist countries as well as extensive agriculture. These branches had to undergo significant reforms in order to be competitive on the world markets because they were not ready to meet the new demand and cost structure. The low performance of Bulgaria’s economy was mainly due to lack of commitment in fulfilling stabilization policies and structural reforms. Fundamental changes in the organization of economy were initiated immediately after the fall of socialism but unlike in other Central and Eastern European countries they were further on hindered or slowed down because of many factors. Among the most important issues was the very slow process of privatisation in the country. By 1997, the proportion of the state’s assets, which were privatized, amounted to only 20 per cent while state-owned enterprises accumulated enormous losses. As a result, Bulgaria’s macroeconomic indicators were worse than most of the indicators in the transition countries during 1990-1997. Over the period real output in the economy cumulatively fell with roughly 37% which placed the country’s GDP per capita far behind the values of most of the other countries in the region. The crippled reforms were financed by the government which in combination with the lack of fiscal discipline led to very high levels of internal and external borrowing. Apart from the significant drop in real output, this tendency soon resulted in persistently high inflation as well. Although after the initial period (until 1994) the situation improved in terms of productivity, inflation levels still raised considerable concern. Investment took a particularly hard hit in relation to the contraction of aggregate demand. Industrial output fell sharply in the period
1995-1997 but that fact on its own does not reveal a very important change in its structure which took place at the time – there was a redistribution of output from the state-owned to the private enterprises.

Failure to ensure microeconomic discipline formed a so called rent-seeking culture which took advantage of public finances and brought about further destabilization. Externally a debt moratorium bought additional time while simultaneously the country’s capital stock was internally being depleted by criminal elements or interest groups closely related to people in power which took possession of the assets and profits of state-owned companies.

In the root of instability in the transition phase was the Bulgarian political situation. The Bulgarian communist party regime ended in 1989 but it was not until 1997 that a fundamental change in the most influential political powers commenced. Other post-communist countries removed the socialist successors to the former communist party from power promptly after the transition started but in Bulgaria they still had their say. If Bulgaria had followed the example of those countries, the determination to carry out drastic reforms might have been much greater and that, however costly, would have proven instrumental in building the foundations of a working market economy. That was not the case. Instead the Bulgarian Socialist Party continued to play a prominent role in government matters and future elections. There was little or almost no determination to carry out reforms from start to finish. Many of the previously formed structures remained in existence. Economy and politics remained closely intertwined partly due to the lack of strong commitment to the ongoing privatization of enterprises. The private interest combined with destabilizing political decisions fed corruption and in consequence the economic climate worsened, the public grew mistrustful to the government actions. What logically followed was a huge crisis in 1996-97.

One of the most serious factors for the economic freefall was the fact that until the end of the Zhivkov rule Bulgaria was completely dependent on the Soviet Union and the other COMECOM countries as trading partners. Transactions with the communist bloc amounted to about 80% of all external operations. In that respect the state was in a considerably worse situation than the other Central and Eastern European countries because after the change the
Bulgarian produce could not find realization and naturally the trade balance suffered greatly.

3.2. Banking crisis

At the beginning of the transition the banking sector was relatively stable. The banking system had a two-tiered structure which consisted of a central monetary institution and many other commercial banks with high concentration and relative specialization. In 1992 a holding company for the state-owned banks’ shares was established under the name “Bank Consolidation Company (BCC).” Its main purpose was to start the process of privatization of state-owned banks by several merger procedures. After the mergers commenced, the state-owned banks were reduced in number and one of them was the State Savings Bank (SSB) which inherited the savings bank from the previous communist regime. Apart from the state-owned banks there were more than 30 privately owned banks and 5 foreign banks and branches. Roughly 2/3 of the assets in the banking sector were held by state-owned banks. The 5 largest banks held 60% of total assets which accounted for the high concentration in the sector.

Although there were significant outflows of capital from accounts denominated in foreign currency (primarily US dollars), they were followed by moderate withdrawals and therefore the overall effect did not prove to misbalance the system. The outflow was gradually contained and the volume of foreign money deposits increased. In the period before the crisis the national bank was actually completely capable of providing financial injections to banks with liquidity problems with the help of rediscount mechanisms. There were however many crucial banking sector vulnerabilities which originated from improper licensing and loose standards and procedures. What followed from the liberal rules was the rapid increase in the number of privately owned banks. Banks with less than the minimum required capital were given green light and were allowed to pay out dividends of more than 50% even before supplying the required minimum capital. Moreover, the Bulgarian national bank was always willing to provide necessary bail-out funds to illiquid or insolvent banks even though there was no formal promise to provide the needed refinancing.
The foundations for destabilization had been laid and it was not long before distress signals were coming from all directions in the banking sector. Banks had accumulated a large amount of non-performing loans which they inherited from the centrally planned economy. Many loans, which were extended to state-owned companies, had been transformed into public debt in the beginning of the 1990s. The government was unwilling to shut down these entities because that would have resulted in excessive unemployment. The remainder of the non-performing loans with due repayments for more than 180 days were replaced with government securities. The banks’ shareholders and borrowers were predominantly private enterprises in very close relation to the banks’ management. That was in the root of the further accumulation of non-performing loans which did not only span across state-owned banks – it also affected the recently established private banks. In fact, the OECD survey of Bulgaria from 1997 testifies that by 1996 commercial credit to the non-financial sector in the country had reached unprecedented levels in comparison to the other European transition economies. It should be noted as well, that some of the loans were not at all collectible because they resulted from large scale fraud which took advantage of the loopholes in the banking system and legislation to benefit people of political and economic influence in Bulgaria at the time. By the beginning of 1996 the share of arrears on bank credit had reached 19% (as opposed to 13% in the beginning of 1995 for comparison). The unrecoverable loans amounted to nearly BGN 72 billion or 8% of the banks’ total assets. State-owned banks had a share of 73% in banks’ total assets and they also held 66% of the unrecoverable loans. These numbers clearly depict the extent of financial indiscipline in a banking sector on the verge of a crisis.

The net worth of the whole sector in 1996 was deemed negative due to the fact that just a fraction of the commercial banks in Bulgaria (4 out of 46) reported a positive operating result for the previous financial year. The total claims of the central monetary institution on commercial banks amounted to BGN 238,8 billion in end of 1996, which because of inflation turned out to be much lower in dollar terms than in the first half of 1996. Bulgarian government began to show signs of desperation in view of the foreign currency reserves insufficiency and the inability of the banking sector to cope with their obligations.
Expectations about blockage of deposits in foreign and domestic currency caused the strongest series of deposit withdrawals Bulgaria had ever experienced as the public grew aware that banking system was falling apart. It became very likely that many financial institutions would soon declare insolvency. By the second half of 1996 the first banks were already in a liquidity crisis and in the spring of 1997 more than 50% of all private sector deposits in foreign currency had been withdrawn from the system. The number of banks which were placed under conservatorship and eventually went bankrupt reached 18 out of 46. Foreign currency became the main source of confidence within the financial system, and as the collapse of the banking system and the exchange rate of the lev grew evident, the demand for US dollars boomed. This process could be observed in the change in money supply indicators – whereas currency in circulation increases greatly in volume in the period 1996-1997, the M2 to GDP ratio marked a sudden decrease and at the same time deposits denominated in foreign currency increased their share of total bank deposits. All monetary aggregates except for M0 registered negative real growth rates in 1996, which was one more indication of the depth of confidence crisis.

The liabilities of debtors depreciated in value due to the rapid rise of inflation rates which in general overburdened creditors. Because of hyperinflation the real interest rate on deposits turned negative (-150% in 1997). The overall lack of liquidity, financial discipline and certainty about the future developments destabilized the banking sector to unprecedented levels and that deeply affected confidence in the domestic currency leading it to the precipice of nearly complete devaluation.

3.3. Currency crisis

The previous regime left for the future government very high levels of foreign indebtedness which proved to be a nearly insurmountable task. During 1990-1997 the country’s status as a member of the World Bank and the International Monetary Fund was in question because it was not able to meet its financial obligations. In the eve of the collapse (end of 1996 – beginning of 1997) the amount of debt as a proportion of GDP moved within the boundaries
of 112 and 104 %. Total external debt service in 1996 was roughly 13 % as a proportion of GDP in comparison to 8% in 1995. Total external debt service as proportion of exports increased from 15,5 % in 1995 to 20 % in 1996 but these increases were insufficient to cover the outstanding debt.

High external debt service obligations along with short-term capital outflows reflected directly on the structure of payments of the state. Naturally, the capital account deficit in the balance of payments (about 9,4 % of GDP) contributed to a record high overall balance of payments deficit of 8,5 % of GDP.

Outflows of capital from the country, coupled with increasing public debt interest expenditures, predetermined the huge overall fiscal deficit which on the other hand contributed to loose monetary policies. Banks were holding substantial amounts of government securities in their portfolios and therefore the confidence in their financial position was shattered. The Bulgarian national bank resorted to increases in the monetary base as a measure to finance the government deficit and the deficit in the balance of public enterprises i.e. ones owned by the state. The cabinet could not afford to decrease expenditures but at the same time the influx of funds from tax was considerably hindered. During 1991-1996 budget deficits were on average nearly 7% of GDP, financed predominantly with direct central bank lending. The fiscal deficit went over 10% of GDP in the end of 1996 and the budget became untenable. The resulting inflationary effect was severe and seriously hindered the fulfillment of monetary policy goals\(^\text{13}\). The BNB decided to intervene but that was at the expense of an almost complete depletion of the foreign exchange assets (they amounted to less than $600 million) and the institution decided to discontinue the buyout of domestic currency. Foreign exchange reserves, excluding gold, continued their freefall to only 0,9 months of imports by the end of 1996 and the trend remained in the first part of 1997. The Bulgarian national currency became extremely vulnerable to serious speculative pressure on the money markets.

Inflation levels soared as they were greatly affected by the resulting devaluation of the Bulgarian lev. Traditional theory prescribes that in periods of devaluation of local money domestic goods and services, which are being sold

\(^{13}\text{Hristov, K & Zaimov, M 2003. ‘Shadowing the Euro: Bulgaria’s Monetary Policy Five Years On’}\)
abroad, become relatively less expensive to foreign customers and that boosts export and in effect drives the trade balance of a country into surplus. Indeed, such a trend could be observed in the Bulgarian case. But that effect could not compensate for the excessive outflow of funds from the state.

After inflation rates had dropped suddenly in the beginning of 1995, the central bank myopically proceeded with lowering the interest rate later that year (39% in August as opposed to 92% in March). This decision had its political grounds. It was the socialist government’s incentive to bring interest rates down because the cabinet was highly dependent on internal borrowing and lower rates meant that budget financing would be less costly. Had the base interest rate been increased, a significant increase in the servicing costs of domestic debt and fiscal expenditures would follow at a time when revenues were declining. At the same time Bulgaria failed to reach consensus with the IMF on the issue of external borrowing which made creditors doubtful about the country’s ability to repay the debt in due time (the foreign debt amounted to $1 billion and was scheduled for the following year). What that meant was that an external financing solution from international monetary organizations was hardly possible because of the bad reputation when it comes to managing foreign debt. But Bulgaria’s monetary body could not resort to financing from private creditors either. Therefore the only possible solution that the central bank could consider was to wait for the most favorable time to borrow funds from the official multilateral creditors. The international monetary fund was consistently refusing to sign an agreement with Bulgarian authorities throughout the first half of 1996. When that was finally overcome in mid-1996 (Bulgaria signed the Fourth Stand-by Arrangement with the IMF), external indebtedness could not be alleviated again – support financing was disbursed within only one tranche, after which IMF financing was interrupted. Circumstances appeared grim –Bulgaria was left without any external financial reimbursement while foreign currency reserves were being rapidly depleted. The country was about to default on its external debt.

The calm before the storm did not continue long and in 1996 a wave of speculation led banks and the payment system to an impasse. In an attempt to boost national currency, the central monetary institution abandoned its low interest rate approach and several raises in rates followed quickly one after
another. However, the collapse of money demand and the self-perpetuating capital flight could not be sustained through the undertaken increase in interest rates on domestic currency deposits. That decision was rather governed by panic stemming from the authorities’ monetary inaptitude than by reason. BNB’s foreign currency denominated assets had already shrunk to a dangerous level (below $600 million). The monetary institution could not reliably support the national currency and that predisposed its rapid devaluation. Inflation skyrocketed correspondingly although the base interest rate had previously risen substantially (in 1996 the central bank increased the base rate to 160% but that could not prevent the local currency from depreciating in value). Velocity of money increased dramatically whereas demand for real lev deposits and currency marked a 60% decline in the end of 1996 and beginning of 1997. At the same time money supply was growing because of the alarming borrowing needs of the government and commercial banks.

The situation went completely out of control in 1997 when “hyperinflation” set in. Bulgaria was on the verge of a civil war due to the government’s inability to tackle inflation. Unemployment soared while at the same time private enterprises could hardly stay operational. The discontinuation of this process which was detrimental to market economy became the top priority of authorities. Bulgaria was quickly turning into a country with dollarized economy. The depreciation of the lev was staggering – from roughly BGN/USD 500 in the autumn of 1996 to above BGN/USD 2000 in the beginning of 1997. The uncontrollable inflationary pressure reached its peak in February 1997 (243% monthly rate based on previous month) and the escalated public unrest gave rise to considerations that in order to break the deadlock changes had to be made both in financial and political terms. Excessive countrywide public protests forced the socialist government to resign. The main anti-communist political party won the premature elections in the spring of 1997 and that deed initiated the slow and painful but consistent turnaround in economic events.

3.4. A possible solution

The idea for an implementation of a currency board came as a natural consequence after the economic situation was reviewed and analyzed in the
The aftermath of the elections. A reliable domestic currency was needed in order to negate the growth in inflation rates and in order to be reliable it had to be characterized with stability, credibility and complete convertibility. If authorities managed to bring inflation down to single digits, then the first condition would be met. If the central monetary institution undertook measures, which gave out signals, that low rate of inflation could be sustained for longer periods of time, then the local currency would be credible. The first two criteria were dependent on the currency performance i.e. whether money could be used to purchase goods, services or foreign currencies internally and externally without limitations. If those conditions are met then the local currency is fully convertible which in combination with stability and credibility ensures market agent’s confidence. It was obvious that establishing the Bulgarian lev as the embodiment of these three functions under discretionary monetary policy was hardly achievable, after all the BNB attempts during 1990-1997 to do so turned out futile.

Ways of stabilizing the Bulgarian economy were discussed at length by state politicians and IMF officials. It became clear that in order to tackle the seemingly insurmountable obstacle radical changes in the country’s policies should be made. Of particular concern were the reigning financial indiscipline, the large foreign debt and the lack of confidence in the state currency. Overcoming those difficulties required strong commitment both from the governing authorities and the wide public.

A currency board arrangement appeared to possess the proper tools to address many of the issues. In fact, this type of regime had been discussed as a concept in Bulgaria prior to the unfolding of the crisis. In 1991 Steve Hanke (a professor of Applied Economics at the John Hopkins University, Baltimore and author of many publications in the field of monetary theory) proposed a currency board arrangement as a mechanism for coping with the problems which are inherent for a country undergoing monetary transformation. This idea however did not meet the government’s approval and only reverberated within small circles of influential people. Among the considerations against it was the fact that it had not been implemented by many countries and that the possible scenarios had not been thoroughly explored. It was not until the crisis unfolded
that the IMF decided to intervene in the proceedings by initiating a discussion with the government and other major constituencies (political parties, trade unions, journalists etc.) on the applicability of a currency board arrangement.

Most of the arguments in favor of the board revolved around its efficiency in lowering inflation, preventing excessive central bank lending to banks and high interest rates on government debt. Currency boards do not allow an autonomous monetary policy from the central bank which would point inflation and real interest rates toward the levels characteristic for the country with the anchor currency. If the process could be sustained, the political system would regain credibility and stability and enable eventual economic growth.

Opponents to the idea did not argue against the advantages of a currency board arrangement but rather against the ability of Bulgaria to fit the profile of a country that could profit from it. They emphasized on the fact that the banking sector in Bulgaria was bigger and in a worse state than the banking sectors of those countries which employed the board arrangement. They also argued that Bulgaria needed a central bank as a lender of last resort and a temporary source of funds in case of seasonal fluctuations in fiscal revenues. Another argument against the board was the fact that foreign currency reserves were low and a sizeable devaluation of the lev would be required which would have a negative effect on the economy.

The decision to implement the currency board arrangement was made after the election of the new cabinet in the spring of 1997. The preparation and design of the board took a lot of time and effort because of the many uncertainties related to deep changes which took place on the political scene. The banking sector had to be evaluated in greater detail so that no unexpected consequences could follow from an unforeseen worsening of the banking crisis. The central bank’s banking-supervision capabilities were also increased.

**3.5. Conclusive thoughts**

Bulgaria’s severe economic situation after the fall of the communist regime eventually culminated in a twin banking and currency crisis in the period 1996-1997.
Theory concurs that there is a causal link between banking and currency crises and it is related to the inaptness of a central bank to control the exchange rate when there is a run on its reserves. One might speculate that the unfolding of the currency crisis might have commenced independently from the banking crisis because of the fact that by the time the banking crisis began the domestic currency had already started to lose credibility. But in the case with Bulgaria, expansionary monetary policy was galvanized by the banking crisis in 1996 which eventually predisposed the collapse of the national currency in the beginning of 1997. The 1996 crunch in the banking system rendered the central bank unable to increase the basic interest rate to the extent that would have boosted demand for local currency. The monetary base grew sizably because of the great number of uncollateralized loans to commercial banks and private enterprises which experienced extreme difficulties.

What quite possibly caused that excessive lending, was not the presence of well-defined governmental guarantees but the undying belief from the previous regime that the BNB and the cabinet were bound to protect industrial companies and nearly insolvent banks.

The crisis came to show that monetary discipline could hardly be maintained in conditions of excessive public debt, poor banking management, slow structural reforms in the real sector and persistent lack of confidence in the local currency. Inflationary pressure on domestic money could not effectively be countered with interventions on the foreign currency markets when reserves, denominated in foreign currency, were low and declining. If a banking crisis of that magnitude was to be tackled, a radically new approach was needed. In order to achieve currency stabilization, the international reserves had to be raised to “safe” levels ensuring an appropriate and sustainable exchange rate. The central bank had to be better supervised and play a more restrictive role. Tight monetary policies could prevent destabilizing speculative attacks from market agents in a newly established open market economy such as the Bulgarian one during 1990-1997.

In view of these considerations, a possibility for implementation of a fundamentally different monetary regime was being widely discussed. The proposed currency board arrangement was viewed as a logical response to the experiences with a highly discretionary monetary strategy during 1991–1996. In
its essence was the concept of a permanently fixed exchange rate which was considered appropriate for a small open economy like Bulgaria’s despite the insufficient degree of price and capital account liberalization. The International Monetary Fund was supportive of that proposal because a board was believed to be the only framework which could provide a solution for the Bulgarian inflation and lack of financial discipline.
4. CURRENCY BOARD IN BULGARIA

As we have already discussed in the previous chapter the decision for the adoption of currency board in Bulgaria was a result of the deep economic crisis that took place in the nineties. The inflation was rocketing at the end of 1996 and the beginning of 1997 and the value of the Bulgarian lev was constantly decreasing. For that reason currency board was seen as a possible stabilization measure. After fierce discussions in the Parliament and in the public the Law on the Bulgarian National Bank was passed in June 1997. It constituted the rules by which the central bank of the country would operate. Some of the most prominent defenders of the idea of currency board adoption proposed that the currency board regime was inserted in the Constitution in order to ensure its stability. However, the Parliament decided that passing a law for it would be enough. The law does not provide any mechanism for transition from currency board to a central bank so it can be treated as reliable enough.

There was also a significant debate about the currency to be used as anchor. Many politicians and economists at the time insisted that the reserve currency to which the lev was to be tied should be US dollar. The reason for that was the preference of the public to hold their savings in dollars. Indeed, during the crisis of 1996-97 most of the people would exchange their money for US dollars. Usually when a currency board is established this preference is taken into account and the peg currency is the one that is normally used by people for their savings and by the business for international payments. However, it was decided that it would be better if lev was pegged to the German mark and eventually to euro. This choice was determined by the path Bulgaria was about to take. The intention to join the European Union (EU) suggested that Bulgarian economy is going to extend its economic relations to the EU countries. Fixed exchange rate would make it easier for agents of both sides to do their business. Exchange rate stability would create conditions for attracting direct investments mainly from other EU countries. At the time it was much more feasible than trying to attract US capital. Moreover, long-term plans of the government included also a future accession to the Eurozone. It was clear that

14 An extract from the Law can be found in the Appendix
the process of transition to the common currency would be significantly smoother if the exchange rate had been fixed for a long period. It should also be kept in mind that one of the conditions for joining the Eurozone is being a member of ERM for at least two years and not devaluing the national currency for that period. That would be hard to sustain if the lev was pegged to dollar as the exchange rate between dollar and euro is floating. In such a case, in order to comply with the requirements, when joining ERM Bulgaria would need to abandon the board which might cause a deep crisis making it impossible to join the zone in the next several years. So despite the strong public pressure the Parliament took a determinant step towards euro-integration. Another factor for that decision was the depreciation of the German mark against the US dollar. It that case using the mark as an anchor would make Bulgarian economy more competitive and thus at least to some extent compensate for the high inflation rate.

So, Bulgarian lev was pegged to German mark at a rate of BGN1000 = DM1. On 1st of July 1999 a denomination of the Bulgarian currency took place meaning that one new Bulgarian lev equaled 1000 old levs. So, after that date the lev was fixed at par to DM. When Germany switched to euro lev was automatically fixed to it by the official exchange rate between DM and euro. The fixing was EUR1 = BGN1,95583.

As noted before one of the key factors for the success of the currency boards is the trust that the economic agents have in it. In the case of Bulgaria the Law on the Bulgarian National Bank of 1997 that defines very strict rules about the foreign reserves and their management ensures this crucial stability of the system. Policy of the Bulgarian National Bank is less volatile and market participants can rely on their predictions. Also, this law decreases the probability of the currency board being suspended and thus speculators are not likely to attack it as it happened in other countries.

According to the law Bulgarian National Bank is divided into three departments. The actual function of currency board is held by the Issue Department. It is important to mention that the Issue Department does not have an independent legal personality - it is an integral part of BNB. Banking
Department is responsible for the banking functions of BNB such as account management of public sector budgets, implementation of international credit programs, etc. The third department is Banking Supervision Department. Its function is to license and control commercial banks operating in the country. BNB is headed by a Governor and the three departments are headed by Deputy Governors. All of them are selected by the Parliament for a six-year period and they are not allowed to engage in any other activity that would provide monetary remuneration for them. They are members of the BNB council together with three more officials that are appointed by the President. All the members of the council are fully independent from other government agencies.

Bulgarian currency board shares its main features with the orthodox model of currency board but has also some peculiarities. The first difference that can be noticed is the presence of a central bank as an institution. Normally, the currency board would replace the central bank, but in the Bulgarian example the bank continued existing with restricted functions. As stated above, the Issue Department of BNB is practically acting as currency board. Its main function was to “maintain full coverage of BNB monetary liabilities with foreign reserves and to manage these reserves effectively”\(^\text{15}\). The underlying law states that there must be at least 100% coverage of the Issue Department’s liabilities with the anchor currency. Here is another difference from the classical currency board to be noted – in addition to the banknotes and coins in the Bulgarian example the liabilities of the Currency Board (Issue Department) include also other balances such as government deposits. In a classical case liabilities would only consist of the monetary base. Interest rates on government deposits and bank reserves are determined by the Issue Department so that they are not higher than the interest received on the foreign reserve assets. The asset side is formed by the foreign currency reserves, monetary gold reserves and tradable foreign securities. The asset surplus against the liabilities is actually the Banking Department deposit. In that way the balance sheet of the Issue Department is strongly linked to the BNB balance sheet and although it is published separately it is a part of it. The following table illustrates a model of the Issue Department’s balance sheet:

\(^{15}\text{Manchev, T 2009. ‘International Foreign Exchange Reserves’ Bulgarian National Bank, pp.75}\)
Table 1: Structure of the BNB Issue Department Balance Sheet

<table>
<thead>
<tr>
<th>Assets</th>
<th>Liabilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash and claims on banks in foreign currency</td>
<td>Banknotes and coins in circulation</td>
</tr>
<tr>
<td>Monetary gold</td>
<td>Banking reserves</td>
</tr>
<tr>
<td>Tradable foreign securities</td>
<td>Government and public body deposits</td>
</tr>
<tr>
<td></td>
<td>Sundry clients’ accounts</td>
</tr>
<tr>
<td></td>
<td>Banking Department deposit</td>
</tr>
</tbody>
</table>

Source: BNB - International Foreign Exchange Reserves, 2009, page 76

This structure of the Balance Sheet of Issue Department has serious implications for the automatic adjustment mechanism discussed in chapter two. If the liability side consisted only of the monetary base, then money supply would be much more volatile because it is influenced by foreign reserve changes. However, in the described case changes in foreign reserves might not directly affect money supply preventing the processes of the automatic adjustment mechanism from happening. This alters the link between currency board and the balance of payments. In Bulgaria the reason for this decision was the ongoing IMF program and the enormous government debt in the initiation period. The idea was to prevent money supply from being excessively volatile since large IMF tranches and government debt payments would otherwise have extremely large effect on it. Government and other deposits as well as banking reserves could serve as a buffer for money supply. IMF tranches to the government pass through the Banking Department (BD) account. When they are received they are recorded as a liability of the BD to the IMF. At the same time they are also an asset of BD deposited at the Issue Department. When tranches are transferred to the government, BD deposit is decreased and government deposit is increased, so BD credits its account in Issue Department and debits central bank lending to the government item. If the IMF tranches are not transferred, then BNB is more capable to exercise its lender of last resort function as there is more money in BD account at Issue Department.
Issue Department is also obliged by law to publish weekly reports about the coverage of the foreign reserves. The purpose of those reports is to sustain the transparency of the currency board and keep public’s trust. That is also the reason why it is not allowed for the Issue Department to perform open market operations. Such operations are considered potentially dangerous for the reserve coverage. Also, all the overhead expenses of BNB are paid by the Banking Department account so the reserves are again safe.

The law doesn’t contain any upper limit for the currency reserves whereas an orthodox currency board is supposed to limit its reserves to no more than 110 - 115% of its liabilities. In fact when the adoption of currency board in Bulgaria was taken into consideration such an upper limit was discussed. Steve Hanke, one of the most famous experts in currency boards who was at the time an advisor of the Bulgarian President Petar Stoyanov insisted that the reserves have to be limited to 110%. The idea behind that proposal was to create a mechanism for automatic adjustment of the system and a tight link between the reserves and the liabilities. The lack of ceiling for the reserve gives BNB the opportunity to pursue a relatively active monetary policy as compared to other countries with currency board-like systems. It is possible for BNB to carry on actions such as neutralization.16

Another major difference between the Bulgarian case and the classical model of currency board is the principle of the classical board not playing the role of a lender of last resort. According to the Law on the Bulgarian National Bank “Upon emergence of a liquidity risk that may affect the stability of the banking system, the Bulgarian National Bank may extend to a solvent bank lev-denominated credits with maturity no longer than three months, provided they are fully collateralized by gold, foreign currency or other such high-liquid assets. The terms and procedure for extension of such credits, as well as the criteria establishing the occurrence of a liquidity risk, shall be determined by an ordinance of the Bulgarian National Bank.”17 It might seem that the Issue Department has too many rights for a currency board but as it is clear from the text the function of a lender of last resort can only be exercised in exceptional

16 Hanke, S & Sekerke, M 2003 ‘How Bulgaria Is Destroying its “Currency Board”’
17 Law on the Bulgarian National Bank, 1997, Article 33, Paragraph 2
circumstances and the credit can only be a short-term one. Moreover, there is one more important restriction. The amount of credits lent to solvent commercial banks may not exceed the “lev equivalent of the gross international reserves over the total amount of monetary liabilities of the Bulgarian National Bank.”

Obviously, in case of a liquidity crisis there is no risk that the Issue Department might be unable to service the demand of euro because even if it helps commercial banks to cope with their solvency problem the euro reserves will not drop below the obligatory 100% coverage of the liabilities. Although severely restricted the lender of last resort function of BNB has a definite positive effect on the banking sector. In case when a certain bank experiences liquidity problems help from BNB might prevent spreading of the crisis. Moreover, the presence of such a function makes the whole system less prone to panic. Even the certainty that in case of difficulties banks might rely on some help from the national bank increases public’s trust in the sector. At the same time the restrictions introduced by law impose discipline in the banking sector and decrease the moral hazard problem. Banks are no longer protected from bankruptcy by BNB in such a high extent as they were before and therefore they manage their operations more responsibly.

Analyzing the relations between BNB and the commercial banks operating in the country shows that also unlike an orthodox currency board the Issue Department is allowed to set a minimum reserve requirement for commercial banks. As it was stated in the theoretical section, an orthodox currency board does not regulate the activity of commercial banks. However, in the Bulgarian case the Issue Department not only sets the amount of reserves, but also the interest that it pays on them. If a given bank uses part of that reserve, it has to pay a penalty interest on the deficiency until it manages to replenish the reserve. The rate of the penalty interest may be up to double the official interest rate. Initially the minimum reserves were set to 11% of the deposit base of commercial banks but in 2000 they were decreased to 8%. The purpose of that change was not as usual an increase of the money supply. It was rather a first step towards the gradual equalization of BNB minimum reserve requirements with those in the Eurozone which are 2%. However, in

18 Law on the Bulgarian National Bank, 1997, Article 33, Paragraph 3
July 2007 it was raised to 12% in order to slow down the credit boom at the time. Later, in November 2008 when the financial crisis struck the minimum reserves were decreased to 10% in order to stimulate the business activity in the country.

BNB is obliged by the Law to pursue high liquidity and marketability of its assets. All the cash, debt instruments and deposit accounts need to be denominated in foreign currency and must be issued by other central banks, governments and financial institutions with very high credit rating. Moreover, the Issue Department is obliged to keep the assets/liabilities mismatch for all currencies other than euro, Bulgarian lev, Special Drawing Rights and gold at less than 2%. In other words if BNB decides to hold reserves in a foreign currency different than euro, it should also make sure that there are also liabilities denominated in the same currency and they do not deviate more than 2% from the amount of the assets acquired. Reserves may only be invested in the most developed financial markets in Europe and the USA therefore the main currencies in which the foreign assets are denominated are euro and US dollar.

The national bank continues to publish the base interest rate but it is no longer autonomously determined. It is required to be based on the return gained by short-term government securities on primary market.

When it comes to the management of the foreign reserves the Law on BNB puts a priority on liquidity. The Issue Department is obliged to convert any amount of Bulgarian lev into euro at any time. Therefore the reserves must be invested in such a manner that a sufficient part of them can easily be turned into cash. The next most important objective is security. The law explicitly lists restrictions of the asset and institution types in which the Issuing Department can invest its reserves. There must be no risk whatsoever that the reserves drop below 100% of the liabilities. Achieving high returns is left behind as it should only be pursued after providing the required liquidity and security.

The Bulgarian National Bank can transfer money to the Ministry of Finance. There are very strict rules about that. When the income from the management of reserves is higher than the expenditures, the difference is divided into two parts. 25% of it is transferred into a special Reserve Fund that
is used for covering the Bank’s losses. The remaining 75% are transferred to the budget after deducting provisions for future losses. These provisions are part of the income of the Bank together with the Reserve Fund. Part of this income is also the unrealized profit from the changes in valuation of BNB’s assets and liabilities. Those profits are assigned to a Special Reserve Account which is used to cover possible losses from such a change in valuation. In case the Special Reserve account is insufficient to cover the losses, the Reserve Fund is used. The law obliges the Ministry of Finance to replenish those losses in an extreme case when even the Reserve Funds fails to compensate the losses.\textsuperscript{19} The described process can be seen on the following figure.

Figure 1: \textit{Mechanism of capital transfer from BNB to the Ministry of Finance}

\begin{figure}
\centering
\includegraphics[width=\textwidth]{figure1.png}
\caption{Mechanism of capital transfer from BNB to the Ministry of Finance}
\end{figure}

Source: BNB - International Foreign Exchange Reserves, 2009, page 100

\textsuperscript{19} \textit{Law on the Bulgarian National Bank, 1997, Article 9}
The links between BNB and Ministry of finance give additional certainty that the liquidity and security objectives of foreign reserve management will be fulfilled. At the same time there is a strict mechanism by which the budget takes advantage of BNB’s profitability.

Hanke also considers as a problem one of the previously discussed specifics of the Bulgarian system – the fact that the Issue Department liabilities include not only the banknotes and coins in circulation but also government deposits and obligatory banking reserves. They are also considered as being part of the monetary base. And the problem is not really in the fiscal reserve kept as deposits in the Issue Department. The real danger comes from the possibility of the government to transfer the fiscal reserves from BNB to commercial banks in the country. The motivation for such actions is clear – doing so government would supply more money to commercial banks and thus make it possible for them to give more credits. Such an initiative might be considered as being helpful for the development of private sector and creating conditions for economic growth. It would mean that fiscal deposits are excluded from the mandatory coverage base since they are no longer part of the Issue Department’s liabilities. In order to retire the claims of the government BNB would need to dispose of part of its foreign reserves. It seems that the foreign reserves that are covering government deposits would just be transferred from BNB to commercial banks and that it would make no difference. However, commercial banks, contrary to BNB are not obliged by law to keep those fiscal reserves in foreign currency. And most probably they would eventually turn those reserves into domestic assets. The incentive for doing so is the higher return that domestic assets give. The total money supply would remain unchanged but the foreign reserve component would decline as the domestic asset component increased. In Hanke’s words this way there would be an outflow of foreign reserves from the consolidated financial system translating into a deterioration of the balance of payments. Such a situation might cause a decline in the trust of the public in the lev. If that happens people would start transforming their lev deposits into euro deposits. Of course, BNB is obliged to satisfy those claims and thus there would be an additional foreign reserve outflow. This would impose high speculative pressure on the national currency.
In that situation BNB might try to offset the reserve outflow as it is allowed to do so by law. However, it would totally destroy the automatic adjustment of the system which is crucial for the trust it has earned. The result would be a decrease of the high credit ratings that were achieved due to the stable currency board.\textsuperscript{20}

Fortunately, such a scenario has not occurred so far. However, the fact that the government is in its full legal right to carry out such an operation makes it clear that it might easily occur in the future. Hanke and Sekerke propose a solution for that problem. They suggest that government withdraws its deposits from BNB but instead of transferring them to local commercial banks it invests them in foreign banks. The deposits should be used for retiring foreign debt. Then the Law on the Bulgarian National Bank should be amended so that the fiscal reserves are excluded from the monetary base. That way the government would no longer have the opportunity to interfere and eventually harm the system. Additionally, the authors propose that an upper limit for the foreign currency reserves is set at the level of 110%. Their argument for such a legal change is making the system fully automatic.\textsuperscript{21}

Obviously, the two authors share the opinion that Bulgaria needs to establish an orthodox currency board instead of its current modified version of the system. Probably that would increase foreign investors’ trust in the stability of Bulgarian economy but at the same time would remove all the possibilities of BNB to react to foreign shocks. In that aspect such a system might be quite vulnerable. As stated above, such a negative scenario as described by the authors has not occurred so far during the 14 year functioning of the system. That is why a change in the currency board legislation leading to a more orthodox form is not being considered by the Bulgarian politics and economists. Most probably the status quo will be sustained until the accession of the country in the Eurozone. It needs to be kept in mind that it is one of the major goals of all the Bulgarian governments during the last years. Understanding that their actions might put obstacles on the way to the Eurozone would make them

\textsuperscript{20} Hanke, S & Sekerke M, 2003 ‘How Bulgaria Is Destroying its “Currency Board”’

\textsuperscript{21} Hanke, S & Sekerke M, 2003 ‘How Bulgaria Is Destroying its “Currency Board”’
extremely cautious and thus they would not engage in irresponsible discretionary actions.

The Banking Supervision department also has important functions according to the Law on BNB. Its influence and control over the banking sector in the country have been strengthened as compared to the previous period. The reason for these changes is the bad experience gained from the serious problems in the banking sector in the past. The department is entitled to determine restrictions, requirements and financial standards for commercial banks and to impose penalties on those ones that did not conform without the approval of any other government institutions. Moreover, financial institutions violating the standards do not have the legal possibility to have their penalties annulled. BNB has also the right to refuse licensing of financial institution. It has certain influence on the appointment of banks’ managing bodies since nobody may be hired on a managerial position in a bank unless that person is certified by the Banking Supervision Department as being qualified enough for the position. Strict requirements have been imposed on banks’ credit relations with related parties and employees. Another measure helping for the controlling process was the introduction of internal audit departments that all banks are obliged to sustain. Those departments provide information to regulatory authorities about banks’ conditions and are independent from banks’ management. As a result of all that banks in Bulgaria are generally risk-averse and the whole banking sector has been stable after the law was passed. There is a tight link between bank supervision function and the already discussed lender of last resort function of BNB. For the latter to be carried out successfully it is necessary that strict compliance with standards by the commercial banks is ensured. Otherwise there is a high chance that violations of standards and rules might lead to an abuse of the lender of last resort function.

Summarizing all the information presented so far in this chapter it can be concluded that in the Bulgarian case there is a modified currency board system. By its main features it resembles an orthodox currency board:

- fixed exchange rate to an anchor currency;
- full coverage of money supply with the anchor currency reserves;
- obligation for the board to exchange Bulgarian currency for the reserve one on demand.

However, there are specific features that deviate from the classical model:

- Balance Sheet of the currency board institution (Issue Department of BNB) includes elements that are not typical for the classical model;
- there are specific financial relations between the board and the Ministry of Finance;
- lender of last resort function continues existing to a certain extent;
- there are minimum reserve requirements for commercial banks;
- there is no ceiling for currency reserves.

Those peculiarities of Bulgarian currency board are crucial for the internal stability of the system and represent the specific needs of the national economy on its way to accession to the Eurozone.
5. COMPARISON OF CURRENCY BOARD REGIMES IN BULGARIA, ESTONIA, LITHUANIA AND ARGENTINA

As it was stated before after a period of almost complete abandonment currency boards started regaining their popularity in the eighties and especially in the nineties. One of the main factors that contributed for this revival was the process of transition that happened in former socialist countries. Some of them like Estonia, Lithuania and Bulgaria resorted to currency board regime in order to stabilize their economies. We already discussed in detail the structure of the Bulgarian system as well as the reasons and process of its establishment. In the following chapter we are going to compare Bulgarian experience with those of Lithuania and Estonia because these three countries share somehow similar destinies in the past few decades. The case of Argentina seems to be quite different having in mind that its currency board regime broke down turning out to be rather unsuccessful and factors influencing its development were not the same. Nevertheless, Argentina, being the biggest country introducing that kind of system deserves thorough analysis of its experience. Moreover, we are going to try to find an explanation of the unsuccessful development of its currency board as compared to the ones of the three Eastern European countries. The four currency board regimes will be compared by the reasons and factors leading to their establishment, the process of their creation, the organizational design of the systems and the outcomes of their implementation.

5.1. Reasons and factors for establishment

One would suggest that in terms of the reasons for imposing a currency board regime the Bulgarian case would have greatest resemblance with the ones of Estonia and Lithuania because of the common historical past and transitional character of the economy at the time of the implementation. However, that is not exactly the case.

Estonia was the first of the three transitional countries in our discussion to adopt currency board regime in June 1992. The idea for this action was coming from Estonian politicians and found broad public support. Initially it did
not find support from the IMF which at the time was advocating for establishment of traditional central banks in transition countries. Currency board was established simultaneously with the national currency (the kroon) becoming legal tender. For Estonian politicians and society establishment of their own currency was important step of the process of gaining political and economic independence from the former USSR. There was no period of discretionary central banking before the currency board adoption.

In Lithuania the currency board idea originated from the positive outcomes of the Estonian experience and followed a period of central banking and existence of local currency. In that respect there is resemblance with Bulgarian currency board establishment. Introduction of a currency board in Lithuania got support from the IMF and local government but it was not that well accepted by the central bank, commercial banks and part of the business. According to the central bank, the monetary policy it was leading had positive effect on country’s economy. Business was preoccupied with the effect of the board on the competitiveness of Lithuanian export in case the exchange rate is fixed at an overvalued level. Commercial banks were gaining significant profits by foreign exchange and thus fixed rate would seriously harm their business.

The reasons why Bulgaria implemented currency board system share common features with those of Argentina. In both countries it was seen as a possible remedy for a deep financial crisis characterized with hyperinflation and extreme devaluation of national currency. Argentina had adopted several plans for coping with the continuous devaluation and inflation before the plan for currency board adoption. As all of them proved to be unsuccessful the decision for implementation of currency board was taken. In Bulgaria, as already stated, this form of exchange rate policy was rather imposed by the IMF and country’s creditors as a drastic measure for salvation from the disastrous crisis of 1996/97.
5.2. Process of creation

In the four described countries the currency board system was created by passing legal acts, but they establish different rate of political commitment. As it turns out, that is one of the major factors for the stability of the regime. It was stated in a previous chapter that Bulgarian currency board was established by The Law on BNB and this document imposes a high rate of commitment for preserving of the system. It can be argued that only in Estonia the robustness of the board is higher which was ensured by series of laws passed by its Parliament: Currency Law of the Republic of Estonia, the Law on the Security of the Estonian Kroon, the Foreign Currency Law, Law on the Central Bank and Law on the Security of the Estonian Kroon\textsuperscript{22}. These documents draw the legal framework of the system making it resistant to political pressure. It is not allowed for the central bank to devalue the kroon – it can only be done by the Parliament with qualified majority. On the contrary, in Lithuania currency board is not that stable. It was evident from its legal framework - the Litas Stability Law passed in March 1993, stated neither the anchor currency nor the exchange rate. They were negotiated with the IMF later. Moreover, exchange rate could be changed by the government. All that, added to the severe debates and resistance during the process of establishment, created a sense of insecurity when it comes to the commitment of the government to sustain the board. The case was similar in Argentina, where the Convertibility Plan of April 1991 failed to create a credible commitment that the exchange rate would be sustained. However, there were also other factors severely influencing Argentinian currency board and leading to its abandonment. They will be described in the following sections.

There is something peculiar about the Estonian and the Lithuanian currency boards that needs to be mentioned. Both countries had gold reserves in Bank of England, Bank for International Settlements and some other European banks which were “frozen” during the World War II. After gaining their independence they received those reserves which helped to start their currency boards. In fact, both of them started it without 100% reserve coverage, so the

\textsuperscript{22} Nenovsky, N et.al., ‘Comparing the Institutional and Organizational Design of Currency Boards in Transition Countries’
Capital articles in the Balance Sheets of the two boards were initially negative. The full reserve coverage was reached later. In Lithuania it happened after receiving a tranche from the IMF.

Another important step in the process of establishing a currency board is the choice of peg currency. As it was already discussed Bulgaria chose the German Mark mainly due to its orientation towards accession to the European Union. The same choice and reasoning was made by Estonia but not by Lithuania. Initially, Lithuanian currency was pegged to US dollar, but it was later changed to euro. In Argentina the choice of anchor currency has contributed to the premature abandonment of the board. Argentinian peso was pegged at par (1 to 1) to the US dollar. However, the main trade partner of Argentina was Brazil, whose currency rate was floating. And when the Brazilian real depreciated against dollar it made the Argentinean export uncompetitive resulting in a high current account deficit.

From the very beginning of the currency board period, Argentinean case differs from those of the three transitional countries. In Argentina the strict rules were perceived as a drastic measure for salvation from hyperinflation and devaluation and there were no plans for changing it in the foreseeable future due to fears of bringing back the inflation. In Bulgaria, Estonia and Lithuania, on the other hand, currency board was from the very beginning seen as a temporary stabilization measure on the way to EMU accession so it was clear that it would be sustained by the governments until the long-term plans were fulfilled. The unclear time horizon of the Argentinean board added more uncertainty among the whole society about credibility of government’s commitment to sustain it. It might at first sound illogical, but the lack of plans for removal of the board at some future point made people expect its abandonment at any moment especially when problems occurred.

5.3. Organizational design

In all of the four described countries central banks preserved at least to some extent their lender of last resort function. While in the three Eastern
European countries this function was severely restricted by the fact that it could be applied in exceptional cases and only up to the reserve cover surplus, in Argentina there were more possibilities for it. It stems from the rule that the foreign currency reserves did not necessarily have to cover the monetary base completely. In the beginning it was allowed that reserves drop down to 80% of the liabilities of the board and in 1995 when the banking panic arose the percentage was lowered to 66%. It made it possible for the central bank to lend more money to commercial banks in case it was necessary. Also, there was room for discretionary monetary policy. However, this deviation from the orthodox currency board is seen as one of the main reasons for the instability of Argentinean system that eventually lead to its failure. When reserves dropped drastically economic agents were no longer sure that currency board could be sustained so there was huge pressure on the peso. Actually, the higher capability of the central bank to serve as a lender of last resort created a kind of vicious circle. Knowing that they could be bailed out in case of problems increased the moral hazard and bank managers were not that cautious and risk averse as they would otherwise have been. That led to the need of the central bank interventions to occur more often. Another major deviation of the Argentinean currency board from the orthodox one is that it was allowed for the central bank to hold domestic assets – up to one third of the reserves could be in government bonds denominated in foreign currency and valued at market prices. The yearly increase of the domestic government bonds could not be more than 10%. Crediting government was generally forbidden in the three transitional countries, but in Lithuania it happened in an indirect way. In 1994 Lithuanian government used the foreign reserves of the board as collateral in order to receive a loan from a private German bank.23

An interesting feature of the Lithuanian currency board that differs from the Bulgarian and Estonian examples is that there were no changes in the structure of the central bank. No special department was established to play the role of a currency board, hence there was also no separation of the currency

23 Nenovsky, N et.al., ‘Comparing the Institutional and Organizational Design of Currency Boards in Transition Countries’
board balance sheet from the one of the central bank as a whole. The result was lower transparency of the activity of the board.

One of the distinctive features of the Estonian currency board as compared to those of the other described countries is that the Issue Department of the Bank of Estonia (BOE) did not hold government deposits. This allowed for higher influence of the automatic adjustment mechanism on the Balance of Payments. Also, BOE issued certificates of deposits. These certificates could be used by commercial banks as collateral and for interbank settlements. The idea was to improve the development of interbank sector in the country.

Each of the four countries regulated their banking sector and imposed minimum reserve requirements. However, Estonia, Lithuania and Argentina used much more actively the minimum reserves as means of monetary policy. As it was mentioned in a previous chapter in Bulgaria they were changed only three times, while in Estonia and Lithuania changes occurred many times. Argentina even replaced minimum reserve requirements with liquidity requirement system in 1995 which was constantly changing and that way the liquidity requirements were used as a means of monetary policy.

The most important features of the currency boards in Bulgaria, Estonia, Lithuania and Argentina are presented in the following table:

Table 2: Comparison of the main characteristics of currency boards in Bulgaria, Estonia, Lithuania and Argentina

<table>
<thead>
<tr>
<th></th>
<th>Bulgaria</th>
<th>Estonia</th>
<th>Lithuania</th>
<th>Argentina</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peg currency</td>
<td>German Mark, later Euro</td>
<td>German Mark, later Euro</td>
<td>US Dollar, later Euro</td>
<td>US Dollar</td>
</tr>
</tbody>
</table>
### Outcomes of currency board implementation

The implementation of currency boards in Estonia and Lithuania had similar effects as those in Bulgaria – they are generally considered to be successful\(^2\). Due to the fact that in these two countries the systems were adopted at an early stage, soon after they gained their independence, they did not have such deep crises as Bulgaria did in 1996/97. The efficiency of the regime for keeping the economic stability in Estonia was proven during the Asian and the Russian crises of 1997/98 when the automatic adjustment mechanism enabled the interest rates to respond adequately to the new conditions and the economy resisted the external shocks. The overall economic

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24 The influence of the board on Bulgarian economy will be discussed in detail in the next chapter.
stability in Lithuania and Estonia enabled the GDP to grow sustainably during the currency board period and it was beneficial to their accession to ERM II. Since January 2011 Estonia has become a member of the Euro zone.

In Argentina, however, currency board implementation failed to lead to the desired long-term effects. After its adoption in 1991 there was a period of stabilization and inflation was decreased. Unfortunately, in 1995 a banking crisis struck and afterwards the trust in currency board’s sustainability was undermined until its abandonment in early 2002. The banking crisis of 1995 started when on 20 December 1994 Mexico devalued its peso. Some of the Argentinean banks were heavily exposed to Mexican bonds and after the significant drop in their value they experienced severe financial problems. That was the beginning of a banking panic among investors who started withdrawing their deposits from commercial banks. As the central bank was trying to bail out distressed banks, foreign reserves started melting down. This was possible because, as mentioned before, central bank was allowed to lower the reserves to 66% of the monetary base. In that situation government’s commitment to sustain currency board was no longer credible and the runs against commercial banks turned into attacks against local currency. In the following years there was constant fear that the board would be abandoned, so one of the main advantages of the currency board system – trust of economic agents – was no longer present. All the efforts of the government to stabilize the economy and to revive currency board credibility turned out to be futile and finally the system collapsed on January 6 2002 followed by a 40% devaluation of the peso. After that it was considered that this devaluation was not sufficient so it was decided that peso would switch to free floating exchange rate.

Several reasons can be pointed out explaining why currency board regime that had a positive effect on the economies of Bulgaria, Estonia and Lithuania did not work for Argentina:

- Lowering foreign currency reserves to 66% of the monetary base signaled to investors that the board in Argentina was under threat, so they were reluctant to invest in the country. Also, as already discussed, government had no clear vision about the period for
which the board would be maintained. It led to the fear that it could be abandoned any time. On the contrary, in Bulgaria, Estonia and Lithuania the 100% reserve currency coverage and the idea of the currency board being a necessary arrangement on the way to EMU integration made governments’ commitment to maintain it credible enough. That is why in these countries the regime was not subjected to attacks.

- The choice of anchor currency was made wisely in the three Eastern European countries representing their economic orientation towards EU (as stated before, Lithuania initially pegged its currency to US dollar but since 2002 switched to euro). It contributed to the development of their economic relations with the EU. Argentina pegged its peso to US dollar although its main trade partner was Brazil. That made Argentina’s international trade balance extremely dependent on real’s fluctuations against US dollar.

- The effects of the external shocks should not be neglected as well. Probably if devaluation of the Mexican peso at the end of 1994 had not happened a banking crisis would not have occurred in Argentina. In that case foreign reserves wouldn’t have decreased so drastically and the credibility of the board wouldn’t have been damaged. On the other hand, the high extent to which central bank maintained its lender of last resort function predisposed banking sector to moral hazard behavior, hence Argentina created conditions for the occurrence of a banking crisis. In the three Eastern European countries the strict rules for central bank interventions in commercial banking sector and the effective banking supervision drastically decreased moral hazard problem.
6. ANALYSIS OF CURRENCY BOARD IMPLICATIONS FOR BULGARIAN ECONOMY

An event as big as a monetary regime change undoubtedly has its overall effect on the economy of a country, especially when it is introduced as a measure after an economic collapse. In the case of Bulgaria as with most countries many of the observable effects cannot be directly attributed to the implementation of a board arrangement. Nevertheless, in this chapter we set out to explore those economic determinants that are most immediately linked to how the currency board arrangement works.

6.1. Inflation

In the time after 1990 the central bank in Bulgaria tried to exert control over the inflationary processes by using discretionary monetary policy in circumstances that predisposed sudden and unexpected reactions from the wide public. Lack of consistent reforms, uncertainty and the fact, that Bulgaria had just opened its economy to the global markets, lead to unpredictability of market agents' reactions, banking sector vulnerabilities, uncompetitive industries, etc. In such a situation the central monetary authority found itself unable to achieve balance between keeping the exchange rate stable while at the same time refinancing failing enterprises (both public and private). Attempts to bring inflation down turned out futile; in fact Bulgaria had the most extreme inflation record among all countries in transition during 1991-1997:

<table>
<thead>
<tr>
<th>Inflation ('91-'97)</th>
<th>Bulgaria</th>
<th>Czech Rep.</th>
<th>Estonia</th>
<th>Hungary</th>
<th>Latvia</th>
<th>Lithuania</th>
<th>Poland</th>
<th>Romania</th>
<th>Slovakia</th>
<th>Slovenia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average %</td>
<td>237,4</td>
<td>17,0</td>
<td>26,7</td>
<td>23,2</td>
<td>20,9</td>
<td>58,2</td>
<td>32,2</td>
<td>145,0</td>
<td>17,6</td>
<td>66,0</td>
</tr>
<tr>
<td>Volatility %</td>
<td>219,1</td>
<td>15,8</td>
<td>12,7</td>
<td>5,0</td>
<td>11,0</td>
<td>74,5</td>
<td>16,5</td>
<td>100,1</td>
<td>19,2</td>
<td>94,0</td>
</tr>
</tbody>
</table>

Source: IMF International Financial Statistics

Naturally, tension escalated and eventually culminated in a twin banking and currency crisis with a rapidly depreciating lev, hyperinflation and havoc in
the financial sector. This was the setting immediately before the introduction of the currency board arrangement.

In the following period it became clear that Bulgaria's strategic plan would be to ensure the well functioning of the monetary regime because the predictability, clarity and consistency of this form would create the long pursued nominal anchor in the economy. The reliable commitment to fix the exchange rate of the lev to the Deutsche mark and afterwards to the euro while collateralizing 100% of the monetary base would prevent the central bank from expanding the money base at will and thus creating intrinsic inflationary pressure. An autoregression analysis conducted by Steven Kyle and Tzvetan Tsalinski\textsuperscript{25} explores the determinants of the inflationary process during 1991-2000 under a classic central bank and a currency board in Bulgaria. Results from the analysis indicate that there is indeed a strong connection between money supply in the domestic economy and inflation which emphasizes the importance of a monetary regime in formation of prices. Moreover, the authors observe that mechanisms underpinning inflation formation in the two periods are radically different. Under discretionary monetary policy inflation develops explosively and the process is characterized with instability and high degree of inertia. Test results show that money growth during 1990-1997 was responsible for the bigger part of price growth variance. On the contrary, in the years after 1997 inflation seemed to exhibit a swift response to past shocks (inertia) in the short run, but eventually returned to the trend - evidence that it is not self-perpetuating. Overall increase in prices after 1997 is deemed to a much lesser extent a product of monetary growth.

Since the monetary authority can neither resort to monetary expansion/contraction at will, nor to changes in the exchange rate as instruments to tackle inflation, other determinants of domestic price levels have to be held accountable. The main factors which affect price levels in that case would be international price dynamics, administered price adjustments, internal demand and the particularities of the macroeconomic framework\textsuperscript{26}. Given the fixed exchange rate, international price volatility of certain goods (such as oil,

\textsuperscript{25} Kyle, S & Tsalinski, T 2000. 'A Vector Autoregression Analysis of Bulgarian Inflation'

\textsuperscript{26} Choukalev, G 2000. 'Inflation under a Currency Board Arrangement. Factor Analysis' p. 3-4
gas, tea, metals, etc.) plays a prominent role for two main reasons. On one side it directly influences local prices since these goods have a large share in the import structure. On the other it indirectly affects production costs, as these goods are often used as raw materials in many industries, or transportation costs for being used as fuel. Administered prices have been subject to frequent change since the launch of the board and the fact that they have had a substantial weight in the consumer basket throughout the years explains part of the inflation volatility under the board regime. Liberalization of foreign trade along with changes in taxation also reflected on the price levels of goods and services.

Average inflation in the pre-board period soared to three-digit numbers (233 % according to World Bank estimates) and quite understandably significant price reduction did not follow immediately after the monetary regime change because of shortage in supply of food and other consumer goods and services. Those proceedings reflected on the relatively “high” inflation rate in 1998 (nearly 19 %). Eventually inflation took a sharp downward trend after the introduction of ironclad rules and settled below the 10 % mark yoy for the bigger part of the period 1999-2010 (see Table 4). As a whole, monetary restrictions and political stability after the introduction of the board saw inflation rates in Bulgaria drop to their lowest post-transition level and they have remained firmly constrained since then (see Graph 1).

Graph 1: Inflation dynamics in Bulgaria during 1990-2010

* The scale on the y-axis is logarithmic for a better representation of the results

Sources: World Bank Official Statistical Data; IMF International Financial Statistics
Table 4: Inflation average values in Bulgaria during 1991-2010

<table>
<thead>
<tr>
<th></th>
<th>average (91-97)</th>
<th>1997 (alone)</th>
<th>1998</th>
<th>average (99-10)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inflation (CPI annual %)</td>
<td>233,4</td>
<td>1058,37</td>
<td>18,67</td>
<td>6,23</td>
</tr>
</tbody>
</table>

In general, the fact that under a board arrangement lev to euro exchange rate is firmly fixed exposes Bulgarian economy to the same effects that are characteristic for economies within the euro area. Inflation is no exception. Therefore the price level differential between Bulgaria and the euro area affects the Bulgarian economy in much the same way as the differential between individual member states and overall inflation in the euro area.

An empirical study on inflation persistence in Bulgaria during 1998-2008 conducted by BNB officials\(^27\) shows that inflation persistence\(^28\) among the new member states of the EU is higher than in the euro area countries. A possible interpretation of this would be that inflation in transition economies is more inclined to follow previously established patterns than inflation in euro area countries. The analyzers explain this observation with the fact that the European Central Bank functions as a mediator which balances out inflation expectations within the euro area and thus mitigates the dependence on past inflation dynamics. It is worthwhile noting that according to the result from the study inflation inertia in Bulgaria has the second lowest value among the new member states after Slovakia, which has already adopted the euro due to compliance with the inflation requirement for EU accession:

Table 5: Overview of inflation persistence indices of transition countries in the period 1998-2007

<table>
<thead>
<tr>
<th>Country</th>
<th>Bulgaria</th>
<th>Czech Rep.</th>
<th>Estonia</th>
<th>Hungary</th>
<th>Latvia</th>
<th>Lithuania</th>
<th>Poland</th>
<th>Romania</th>
<th>Slovakia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inflation Persistence Index</td>
<td>0,13</td>
<td>0,34</td>
<td>0,22</td>
<td>0,3</td>
<td>0,51</td>
<td>0,22</td>
<td>0,5</td>
<td>0,37</td>
<td>-0,03</td>
</tr>
</tbody>
</table>


\(^{28}\) Inflation persistence is being defined by the Inflation Persistence Network (IPN) as “the tendency of inflation to converge slowly (or sluggishly) towards its longrun value following a shock which has led inflation away from its long-run value”
What also attracts attention is that next in the list with the lowest values alongside Bulgaria are Estonia (part of the euro zone since January 2011) and Lithuania (part of ERM II) which are the other two EU member states that have employed a currency board arrangement. Romania, which does not conform to ironclad monetary rules, has a much higher index of inflation inertia in comparison to those countries. In view of the facts one might conclude that the type of monetary regime is indeed essential when it comes to the nature of inflation processes. Strong monetary and financial discipline can thus be viewed upon as an underlying factor behind keeping inflation non-systemic.

Although introduction of a currency board has had an ostensible effect on countering inflation inertia in Bulgaria, actual inflation has remained consistently higher than that within the countries that have adopted the euro (Graph 2):

**Graph 2: Inflation rate comparison between Bulgaria, Romania and the Euro area in the period 1998-2010 based on HICP (annual average values)**

![Graph showing inflation rates comparison between Bulgaria, Romania and the Euro area](image)

Source: Eurostat

Such differentials are not a result from monetary factors and they do form permanent inflation expectations as in pre-board years. They are to a great extent due to factors we have already discussed along with the fact that the economies in question are structurally different. There is however no certainty

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29 *Estonia had a currency board until it became a member of the eurozone*
that these differential would diminish with time until Bulgaria meets the Maastricht convergence criterion for euro adoption.

6.2. Fiscal Policy

Theory concurs that in principle fiscal policy and monetary policy are to a great extent independent from each other. But in practice although a central monetary institution usually functions as a separate non-government entity, political pressure often gives rise to monetary practices that aim at stabilization. Such is the case with excessive government spending, leading to a large budget deficit destabilizing the economy. Under that circumstance a central bank usually intervenes providing financing to the government. Introducing a currency board arrangement however puts paid to such processes and in effect gives out a clear message to the public that the government will not finance its expenditure by credit from the central bank. What can be inferred from this statement is that the government’s ability to control its deficit and debt is one of the cornerstones of the board regime’s well-being and stability. The issuance of debt from the central bank and using seigniorage instead of financing the deficit openly via the financial markets would certainly undermine the commitment to a firm monetary rule. As fiscal prudence is clearly one of the main goals in front of a currency board we find it necessary to explore the characteristics of fiscal policy in Bulgaria after the introduction of the board.

Although the board arrangement implies certain limitations to government spending and thus decreases its freedom, in the years after 1996 the disposable income of the Bulgarian government increased and allowed for the sustained redistribution of more funds to different economic programmes (Table 6):
On average the percentage of government revenue in GDP during 1997-2008 has increased slightly in comparison to the previous period (37,60 % versus 36 % during 1991-1996), which combined with the fact that GDP grew consistently during 1997-2008 contributes greatly to the overall increase in government disposable income since the introduction of the board. At the same time government spending as a proportion of GDP has been considerably lower under the currency board arrangement which is a testimony to conservative fiscal policy (36,9 % versus 42,94 % under a central bank rule). However, the substantial gradual decrease in interest payment expense in the periods after 1997 made it possible for the government to redistribute effectively more funds than before the regime change – on average the expenditures adjusted for interest payment went up to 32,78 % in comparison to the previous 30,79 %. The result from the trend was a steady improvement in the budget balance, which has shifted from an ostensible deficit to surplus and has kept the trend until right before the global financial crisis unfolded (Graph 3). From an average of -6,9 % of GDP prior to 1997, the general government balance slowly became positive and during 2004-2008, Bulgaria’s fiscal surplus reached a 2,7 % average, which was the highest among the new member states of EU according to the official IMF valuation and predisposed “the sharp decline in the public debt-to-GDP ratio (from 48 percent at end-2003 to 16 percent by end-2009)”31.

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Table 6: Bulgarian government finance statistics for the period 1991-2008

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Budget Balance (% of GDP)</td>
<td>-6,96</td>
<td>-15,83</td>
<td>0,37</td>
<td>1,50</td>
</tr>
<tr>
<td>Revenue (% of GDP)</td>
<td>35,98</td>
<td>35,93</td>
<td>32,37</td>
<td>37,60</td>
</tr>
<tr>
<td>Expense (% of GDP)</td>
<td>42,94</td>
<td>51,76</td>
<td>32,00</td>
<td>36,90</td>
</tr>
<tr>
<td>Interest payments (% of GDP)</td>
<td>12,14</td>
<td>22,34</td>
<td>8,51</td>
<td>3,31</td>
</tr>
<tr>
<td>Expense less interest payments</td>
<td>30,79</td>
<td>29,42</td>
<td>23,49</td>
<td>32,78</td>
</tr>
<tr>
<td>GDP growth (annual %)</td>
<td>-3,59</td>
<td>-9,03</td>
<td>-1,65</td>
<td>4,79</td>
</tr>
</tbody>
</table>


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30 Given as the difference between Government Revenue and Government expenditure
31 IMF Country report, no. 10/160, pp. 8
Naturally, thanks to the pursuit of budget surpluses the public sector managed to internally obtain significant fiscal reserves with time which were to be used as a buffer to mitigate the effects of shocks on the economy (especially after 2008 due to the financial crisis). The fiscal reserve of the government comprises the government deposit with the Issue Department of the BNB and foreign currency denominated reserve assets and in the course of 1997-2008 it contributed to the successful servicing of both internal and external debt obligations. What also aided the servicing of obligations was the volume of Bulgaria’s international reserves which have shown stable growth since the introduction of the currency board, reaching unprecedented levels for the Bulgarian economy (see Graph 4). It has been a subject of intensive debate whether the gains of piling up international reserves under the board overtop the possible advantages of investing in domestic assets instead. However, the credible commitment to the regime, maintaining high liquidity in foreign currency and the possibility to absorb both domestic and external shocks appear of paramount importance in view of the long term goals the authorities have set out to pursue.

As we have mentioned earlier, the Bulgarian currency board represents a modified version of an orthodox board and its mechanism enables greater
control over the volume of the monetary base as the foreign currency reserves change. Because of the fact that foreign reserves do not solely cover the monetary base but also the deposit of the government with the BNB’s Issue Department\textsuperscript{32}, an expansion / contraction of the foreign reserves should not necessarily correspond to a proportional increase or decrease in the monetary base - government’s deposit can be used as a tool to regulate the supply of money. In this way, alternations in the fiscal reserve could sterilize the inflow of capital denominated in foreign currency so as not to feed inflation by allowing for an uncontrollable increase in the monetary base. The application of this mechanism in practice is difficult to observe in the Bulgarian case due to specifics of the economic situation and government decisions. However if we compare the dynamics of BNB’s foreign assets to the growth in the M0 money aggregate we can see that such a process commences. Graph 4 demonstrates how the gradual increase of foreign reserves in the period 1997-2009 corresponds to a less pronounced monetary base increase in relative terms.

Graph 4: Monetary base volume fluctuations compared to changes in foreign reserves of the Bulgarian National Bank (1997-2008)

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{graph4.jpg}
\caption{Graph 4: Monetary base volume fluctuations compared to changes in foreign reserves of the Bulgarian National Bank (1997-2008)}
\end{figure}

In the beginning of the period the two trend lines exhibit the same behavior but as the volume of foreign reserves progressively increases, the

\textsuperscript{32} Foreign reserves also cover the deposit of BNB’s Banking department with the Issue Department
reaction of the monetary base curve becomes less sensitive. What also attracts attention is that the dynamics of money growth is characterized with lower volatility than the dynamics of foreign reserve change. If we take the developments during 2007-2008 as an example, we can observe that a 30% average annual increase in foreign assets corresponds to roughly 25% increase in the monetary base. What should also be noted is that there have been several readjustments in the minimum reserve requirement for commercial banks which has a direct impact on the monetary base volume and that makes it very difficult to objectively follow all developments and make the trend stand out. At the end of 2008 the total fiscal reserve stood at 8382,2 million BGN\textsuperscript{33} which represents a 12% increase yoy in comparison to 2007. The government deposit with BNB was at the same time roughly 7000 million which means that it had gone up with more than 13% which is in accordance with the principles of operation of the mechanism we have been discussing.

On the basis of these findings we can conclude that although the proposed effect is not as strong as expected, under the modified currency board rule in Bulgaria authorities have resorted to a conservative approach when it comes to fiscal policy and possess an instrument with which they can regulate the amount of money in circulation in order to counter rapid and uncontrollable development of inflation. As a result, with time the budget balance stabilized and the registered surpluses along with the simultaneous increase in government’s ability to redistribute funds proved to be among the great merits of the monetary regime.

6.3. Exchange Rate and Balance of Payments

6.3.1. Exchange rate implications

One of the most important implications of the currency board for the Bulgarian economy is related to the effect that a fixed exchange rate between Bulgarian lev and euro has on the country’s foreign trade balance. As it was mentioned before, pegging local currency to euro shaped the long term

\textsuperscript{33} The data has been obtained from the Official Records of the Ministry of Finance in Bulgaria
orientation of the whole economy, including foreign trade, towards the EU. Indeed, during the nineties foreign trade of the country gradually started to resort less to the former socialist countries. Initially foreign trade connections were inherited from the past era and time was necessary to reorient into the world market. That is why in the beginning of nineties the share of trade with countries outside the EU was still dominant in the Balance of Payments of Bulgaria. Although the tendency of reorientation started before currency board adoption the role of the new exchange rate policy should not be undermined. Long-term fixation of the exchange rate removed the currency risk in trade contracts with EU companies which additionally contributed to the expansion of Bulgarian foreign trade towards the European Union. Results of this process can be observed in the following graphs:

Graph 5: Export of Bulgaria to EU (27) and to third countries

Graph 6: Percentage of Export to EU (27) countries in total export of Bulgaria

Source: Eurostat, National Statistical Institute of Bulgaria

*According to the official terminology export within the EU is called Intra-Community supplies of goods and import within the EU - Intra-Community acquisition of goods.
As it can be concluded from the graphs not only have both the export and import from EU countries increased in absolute values, but they have also increased their percentages of the total values of export and import of the country. Most importantly, throughout the whole period presented in the graphs foreign trade with EU countries prevails over the one with third countries. Of course, there are other factors for this tendency such as tariff regime, ease of access to the common market, etc, but it needs to be noted that the high share of the EU trade is present even in the period before EU accession of Bulgaria. It means that the contribution of fixed exchange rate for maintaining this large share is even higher in the first seven years of the period when Bulgaria did not have the privileges of an EU member state. So, in the observed period implications of fixed exchange rate can be considered to have major significance for the development of commercial relations between Bulgaria and the EU. Fluctuations in the volume of trade as well as those in the share of EU trade in the last years are due to the effect of the global financial crisis.
However, exchange rate fluctuations between euro and other currencies are not under the control of Bulgarian monetary authorities. And as long as Bulgaria trades with countries outside the EU and some of the export and import contracts are denominated in currencies other than euro, these fluctuations influence Bulgarian foreign trade. In that respect Bulgarian economy is most largely exposed to the exchange rate fluctuations between euro and US dollar.

At first glance one might assume that euro/ruble exchange rate might also have serious impact on Bulgarian economy having in mind that the Russian Federation is the main importer in Bulgaria. However, the main import goods from Russian Federation are oil and gas and the contracts are denominated in US dollars. So, it is again the euro/dollar exchange rate that affects trade balance. Exports to Russian Federation are not significant in the structure of Bulgarian foreign trade. Also, contracts for some of the largest export goods groups such as pharmaceutical products are denominated in dollars. That is why the euro/ruble exchange rate exposure of Bulgarian economy can be considered negligible.

To illustrate the effect of the movements of the euro/dollar exchange rate let us compare the price indexes of oil for the international and for the Bulgarian market. It can be seen on Graph 9 that movements of the oil price in Bulgaria do not strictly follow those on the international market and it is most obvious for 2008 when during the first half of the year international oil prices rose much more drastically than the oil prices on the Bulgarian market. After that, in the second half of the year they dropped more than the prices in Bulgaria. Looking at Graph 10 showing the movements of euro/dollar exchange rate we can see that for the same period there are also serious fluctuations in the exchange rate between the two currencies. At the time international oil prices increased, dollar depreciated against euro which explains why oil price increase in Bulgaria was lower. In the second half of 2008 together with the drop of international oil price dollar appreciated against euro preventing the internal market oil price from falling with the same percentage as the international one. Consequently, euro/dollar exchange rate fluctuations cause change of oil prices in Bulgaria. And it is a very well-known fact that oil prices have strong impact on the whole...
economy. An increase in the oil price would incur higher costs for Bulgarian industry which would push prices up. That is why local economy is extremely vulnerable when it comes to euro/dollar exchange rate. Moreover, these exchange rate fluctuations affect the competitiveness of Bulgarian export to countries using US dollar or countries whose currencies are pegged to it.

Graph 9: *Oil price indexes for the international and Bulgarian market* (2005 = 100)

Sources: IMF Official Statistical Data, National Statistical Institute of Bulgaria

Graph 10: *Euro/USD exchange rate fluctuations during 1999-2011*

Source: European Central Bank (ECB) Official Statistical Data
Another channel through which euro/dollar exchange rate can affect Bulgarian economy is public external debt. As long as there is part of the government external debt that is denominated in US dollars its value in levs is dependent on euro/dollar exchange rate. The higher the share of dollar denominated debt, the stronger the dependency. In case dollar appreciates against euro external debt would increase its value. However, the exposure of Bulgarian public external debt to euro/dollar exchange rate was much stronger during the first years after currency board adoption than it is now. As in 1998 the dollar denominated public external debt accounted for 82.60 % of the total, in the first quarter of 2011 its share was 20.70 %, meaning that government took actions to decrease public debt’s exposure to euro/dollar exchange rate. It should also be kept in mind that for the period between 2004 and 2009 the level of public external debt as percentage of GDP fell from 30.90% to less than 10% which decreased its overall impact on the economy.\(^{34}\)

Theoretically, changes in the exchange rate between the anchor currency and other currencies would also affect the value of foreign reserves denominated in those other currencies. However, in the Bulgarian case that effect is limited. As previously discussed, the Law on BNB mandates that the mismatch between assets and liabilities of the Issue Department which are held in currencies other than euro may not exceed 2% for every single currency. As a result a possible devaluation of dollar denominated foreign currency reserves that is due to a decrease of the euro/dollar exchange rate would be offset by the same devaluation of dollar denominated liabilities. Of course, the same effect applies for a possible appreciation.

6.3.2. Financing the Current Account Deficit

Monetary policy conducted by the central monetary institution affects indirectly a country’s balance of payments. It sets a tone for the demand level of local goods and services from abroad and respectively – for the supply of foreign goods and services on the domestic market.

\(^{34}\) Annual Overview of Government Debt, BNB, 2009
From a theoretical point of view the relationship between monetary policy, foreign trade and balance of payments dynamics is determined by exchange rate policy. The type of monetary regime in a country plays a significant role in the determination of the exchange rate of local money which further on shapes the structure of foreign trade and flow of capital. A system with a floating rate can benefit from depreciating currency in the form of increased export competitiveness (because prices of local goods abroad become relatively lower to foreign residents) and drive the current account into a surplus. At the same time local money appreciation would stimulate import due to the relatively decreasing prices of foreign products to domestic residents and hinder export because local products would become relatively more expensive for foreign customers ultimately resulting in a trade deficit. This process at least in theory would effectively regulate the balance of payments and contribute to its stability in the long term.

A fixed exchange rate regime on the other hand cannot benefit from this mechanism. In effect the economy is exposed to a risk of developing chronic trade misbalance and importing of shocks that originate from the anchor currency economy. Nevertheless, unfavorable developments can be offset by long-term gains on the volume of foreign trade, due to the more intensive economic relations between the countries with fixed exchange rates and increased inflows of funds from abroad because of the higher reliability of the domestic financial system given the fixed rate. Of course, these theoretic principles do not always apply to reality to a full extent because the structure of trade and particularities of domestic production are not uniform around the world. Although discrepancies should be expected the general case can be attributed to the Bulgarian currency board regime and its implications for the balance of trade and capital.

Despite the alleged absolute value of the Bulgarian lev to the euro, reports of renowned financial institutions in the last years indicate that the fixed exchange rate in Bulgaria has its effect on the real value of the currency. Changes in the CPI-based Real Effective Rate index constructed by BNB

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indicate that since 2002 the real exchange rate has increased by more than 30%. As a result the fact that the lev is overvalued reflects on trade performance because it affects export competitiveness. This factor along with structure of trade specifics determines the long history of current account deficits in Bulgaria since the introduction of the board. After 1997 the deficits have increased rapidly, in 2005 they were roughly double the amount in 2004 and increased even further in the consecutive periods which can be seen in the table below:

Table 7: Bulgarian Balance of Payments selected indicators (2002-2009)

<table>
<thead>
<tr>
<th>Indicator Name</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>CA balance (BoP, US$)</td>
<td>-319,0</td>
<td>-1 022,1</td>
<td>-1 671,1</td>
<td>-3 347,0</td>
<td>-5 863,2</td>
<td>-11 437,0</td>
<td>-11 887,9</td>
<td>-4 751,1</td>
</tr>
<tr>
<td>FDI, net inflows (BoP, US$)</td>
<td>904,6</td>
<td>2 096,8</td>
<td>2 662,2</td>
<td>4 312,4</td>
<td>7 757,6</td>
<td>13 214,5</td>
<td>9 926,8</td>
<td>4 594,6</td>
</tr>
<tr>
<td>CA balance (% of GDP)</td>
<td>-2,0</td>
<td>-4,9</td>
<td>-6,6</td>
<td>-11,6</td>
<td>-17,7</td>
<td>-27,2</td>
<td>-22,9</td>
<td>-9,8</td>
</tr>
<tr>
<td>FDI, net inflows (% of GDP)</td>
<td>5,7</td>
<td>10,1</td>
<td>10,5</td>
<td>14,9</td>
<td>23,4</td>
<td>31,4</td>
<td>19,2</td>
<td>9,4</td>
</tr>
</tbody>
</table>


But there are other factors that play an important role in the country’s balance of payments. Capital movement liberalization and financial market integration made Bulgaria more attractive for foreign investors which resulted in better options for financing of the current account deficit. Further capital inflows were due to the rapid privatization of domestic companies and an increase in current transfers by Bulgarian citizens working abroad (the transition period was accompanied by significant outflow of human capital).

Gradually foreign investment replaced privatization profits as the main force balancing the current account. A major reason for that was the fact that Bulgaria signed an agreement to join the EU in 2004 after which a surge in capital inflows and a credit boom followed. EU accession prospects coupled with a firm fiscal policy and a currency board arrangement increased the overall confidence in the system. In the most recent years, immediately before the world financial crisis, inflows of capital completely compensated for the current account deficit. Foreign direct investment alone covered more than 120% of the current account deficit in 2006 and more than 115% in 2007 (Table 7). By the
end of 2007 net inflows had soared to about 31% of GDP which according to 
IMF statistics was almost unprecedented in emerging market economies. 
Private sector financing increased dramatically as the credit-to-GDP ratio went 
up to 73% in 2008 in comparison to 35% in 2004\textsuperscript{36}.

The consequence of this substantial capital inflow was positive overall 
balance of payments and foreign reserve accumulation in the country. It is 
favorable that these inflows were in the form of net FDI because it is deemed 
the most reliable way of providing financing. On one hand it does not represent 
short term engagement like the majority of portfolio investments which have a 
transitory nature. On the other, foreign direct investment is not a form of debt, 
maturing at a point in time in the future and accompanied with interest 
repayments which are being reported in the balance of payments. Therefore it 
does not facilitate a further hypothetical increase of deficit. Foreign direct 
investment also enabled the development of a sound corporate culture in 
Bulgaria by supplying management expertise, knowledge and technological 
novation capabilities along with capital investment.

\textbf{6.4. Banking sector implications}

As mentioned earlier, the currency board mechanism in Bulgaria had a 
strong disciplinary effect on Bulgarian banks. That is due to the limited 
possibility for commercial banks to be bailed out by BNB in case they 
experience liquidity problems. Normally an orthodox currency board authority 
does not serve as a lender of last resort for commercial banks which means that 
banks experiencing serious financial difficulties cannot be rescued by capital 
injections from the board. The case of Bulgaria however strays from the 
orthodox one and the Bulgarian national Bank retains the ability to exert this 
function although under serious restrictions. The central banking institution can 
intervene when there is a danger of systemic liquidity deficiencies, which occur 
in the economy, by providing loans to domestic banks but only if those loans are 
short-term and fully backed with assets such as convertible foreign money or

\textsuperscript{36} IMF Statistical Data
gold. Also, only the excess reserves over the liabilities of the Issue Department may be used for that purpose. This mechanism is instrumental in improving banking stability because it allows for shock absorption and thus banks become more credible in the eyes of the market agents. However, bearing in mind the limited possibilities for central bank interventions, commercial banks avoid taking too much risk. Testimony to the effectiveness of the mechanism is the fact that since the introduction of the board no bank has resorted to the lender of last resort capability of the BNB. It can be seen on Graph 11 that after the currency board adoption domestic credit as percentage of GDP significantly decreased as in the preceding period it had reached extremely high levels reflecting the weak financial discipline in the sector. The shrinking of the domestic credit can clearly be attributed to the increased responsibility of commercial banks and improved supervision.

Graph 11: *Domestic Credit as Percentage of GDP in Bulgaria (1992-2001)*

![Graph 11: Domestic Credit as Percentage of GDP in Bulgaria (1992-2001)](image)

Source: Nenovsky, Nikolay et.al., *Banks-Firms Nexus under the Currency Board: Empirical Evidence from Bulgaria*, April 2003

Another evidence of the disciplinary effect of the currency board is the capital adequacy of Bulgarian banks. BNB requires minimum capital adequacy of 12%. Nevertheless, banks tended to keep that value higher than the required minimum, especially during the first years of the board. Later, values gradually
came closer to the minimum and increased again during the years of financial crisis. This tendency can be observed in the following Graph 12:

**Graph 12: Capital Adequacy of Bulgarian Banks during 1999-2010 (in %)**

The economic stability in the country after 1997 attracted the interest of foreign financial institutions towards Bulgarian banking sector. The share of foreign owned banks in Bulgaria rapidly increased and by the time Bulgaria joined the EU over 80% of the banking capital in the country was foreign. That tendency was also a result of the competitive advantage that banks from eurozone countries had – in case of financial difficulties they could rely on help from the headquarters. In other words, the lender of last resort function might be carried on by the parent bank. As it is widely accepted in the literature it is one of the reasons why currency board establishment creates conditions for entry of banks from the reserve currency country. Indeed, the majority of foreign owned banks in Bulgaria are part of banking groups form EMU countries (examples include Societe Generale - Expressbank, Piraeus Bank, Reiffeisen Bank, etc.). This tendency has a very important impact on the banking sector in Bulgaria. As prof. Nikolay Nenovsky and Kiril Tochkov prove in their empirical study, foreign owned banks were more efficient than domestic ones during the period. However, in 2005-2007 local banks managed to catch up with their
competitors\textsuperscript{37}. Obviously, the entry of more efficient foreign banks triggered the development of the whole sector.

Since 1997 bank privatization intensified and led to restructuring of the sector and ever increasing bank reputation. BNB’s efforts were instrumental in deregulating capital movement which enabled private enterprises to gain access to the global money markets. As discussed previously regulation and supervision of the banking sector also marked a definite improvement in the period after 1997 until present day.

During the years before the global financial crisis commercial banks in Bulgaria did not experience problems with capitalization and non-performing loans as they used to before the board was implemented. Although in the years before the Global Financial Crisis credit started increasing again at a great pace banks remained solvent. The rise in private sector crediting came as a consequence to the steadily increasing lending capacity of the banking sector. After the introduction of the currency board interest rates normalized in comparison to the discretionary monetary regime reaching single-digit values in most periods which can be seen in the table below:

Table 8: Interest rate indicators in Bulgaria after the introduction of the currency board

<table>
<thead>
<tr>
<th>Indicator Name</th>
<th>1997</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deposit interest rate (%)</td>
<td>47</td>
<td>2.80</td>
<td>2.93</td>
<td>3.05</td>
<td>3.08</td>
<td>3.17</td>
<td>3.68</td>
<td>4.44</td>
<td>6.18</td>
</tr>
<tr>
<td>Lending interest rate (%)</td>
<td>213</td>
<td>9.21</td>
<td>8.54</td>
<td>8.87</td>
<td>8.66</td>
<td>8.89</td>
<td>10.00</td>
<td>10.86</td>
<td>11.34</td>
</tr>
<tr>
<td>Interest rate spread (%)</td>
<td>166</td>
<td>6.40</td>
<td>5.61</td>
<td>5.82</td>
<td>5.58</td>
<td>5.72</td>
<td>6.32</td>
<td>6.42</td>
<td>5.16</td>
</tr>
<tr>
<td>Real interest rate (%)</td>
<td>-71</td>
<td>4.33</td>
<td>6.13</td>
<td>4.51</td>
<td>1.19</td>
<td>1.87</td>
<td>0.75</td>
<td>2.27</td>
<td>7.00</td>
</tr>
</tbody>
</table>


Conclusions on the effect of the board introduction could be drawn on the basis of the interest spread between credits and deposits. Traditionally, if values are high, that might be due to inefficiency stemming from lack of competition, overburdening minimum reserve requirements, high operating expenses, etc. During the years after 1998 the interest rate spread has consistently moved to


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lower levels which means that the banking sector operates in healthy conditions of intensive competition and broader investment opportunities.

6.5. The Global Financial Crisis

The fact that after the introduction of the board Bulgarian economy has expanded and has become increasingly more and more liberalized and open to the world, meant that it could not remain unaffected by the development of the world financial crisis. Although Bulgaria is not among the countries with the most developed financial markets and the ones overly exposed to toxic assets, it got hit by the unfavorably trending processes within the EU due to the highly constrained possibility to exert its own monetary policy and therefore vulnerability to external factors. Logically, the manifestations of the crisis have been multi-leveled since the economy functions as a uniform system and thus the influence of certain factors cannot be isolated from the others. Nevertheless, some of these factors deserve attention because they give us important insight into how an economy under strict monetary regime would perform and whether it possesses the necessary features to counter recession.

Many scientists have argued that a currency board arrangement considerably cripples the ability of a country to respond quickly enough to unforeseen events and mitigate the negative consequences on the economy. On the other hand there is considerable evidence that this presumption is highly debatable and does not do justice to the evolution of the currency board concept. Examples from recent years confirm that this form can survive in times of world financial hardship. Such is the case of Estonia where the economy managed to dodge grim prospects and although it is still experiencing the aftereffects of the crisis, it remained stable and went on to successfully join the euro zone in January 2011. It was only then when Estonia had to abolish the currency board in order to become part of the ECB system. Bulgaria is another example of a country that has thus far shown relentless loyalty to the board rule despite the many provocations from economists and certain political figures in the course of the last two years. In this part of the paper we will highlight some
of the main aspects of the crisis that have implications for the well-functioning of the regime.

One of the main consequences of the crisis was that the majority of the transition countries from Central and Eastern Europe experienced a strong devaluation in their floating currencies (Graph 13):

Graph 13: *Dynamics of selected exchange rates against the euro (2008-2011)*

![Graph](image_url)

Source: European Central Bank Official Statistics

What can be observed is that between September 2008 and the first quarter of 2009 most of the currencies in question indeed lost value to the euro while the Bulgarian lev remained stable and fixed to the euro due to the currency board arrangement. On one hand this development has a positive effect on the economy in Bulgaria because it does not feed speculation and prevents the lev from rapidly losing ground. Unlike in 1996-1997 this time people did not panic and flee from the local currency converting all their deposits into foreign currency because the central bank could ensure the fixed rate with the excessive international reserves it had piled up before the crisis. On the other hand however these transition economies compete with Bulgaria for the euro zone markets and the relative depreciation of their currencies to the euro in comparison to the lev creates a competitive advantage when it comes to export. It turned out that with the fixed rate Bulgarian produce got more expensive in relative terms for eurozone clients and competitiveness was
becoming an alarming issue especially for homogeneous products designated for export. During 2009 Bulgarian export to EU countries contracted significantly in comparison to the previous year (with more than 15%\textsuperscript{38}) and the mentioned effect had its logical contribution. According to the official Eurostat statistics, however, this depreciation has not effectively contributed to the increase in export in those countries either. The situation is in fact quite the opposite – export values in most transition countries decreased on average with roughly 15 % compared to 2008 (18.8 % in Hungary; 19 % in Czech Republic; 14 % in Poland; 9 % in Romania) which suggests that the overall contraction of demand in the EU is the most decisive factor and it negates the influence of exchange rate fluctuations. Obviously in view of the facts a decision to abandon the board and devaluate the lev would not have boosted the external competitiveness of the economy but it would have given rise to many other consequences the outcome of which had proven detrimental in the past.

The long history of current account deficits in Bulgaria has been one of the cornerstones that gave rise to criticism against the board. The country was fortunate enough to have a large influx of foreign capital throughout the years before the crisis which offset the trade deficit and contributed to the increase in international reserves. But in the aftermath of the crisis foreign direct investment shrank sharply and that meant a negative overall balance of payments was looming large. A country with a currency board arrangement is greatly dependent on the amount of foreign reserves because they guarantee the fixed exchange rate. A situation in which the BoP is plagued by chronic deficits is associated with corresponding outlays of foreign capital because foreign currency denominated import payments exceed revenues from export. In effect, the international reserves are prone to decline which would question the ability of the board to maintain its primary function. At the end of 2009 the market value of gross international reserves amounted to EUR 12,264 billion which represents a decline of nearly EUR 500 million (3.72 % less than in 2008)\textsuperscript{39}. Should the current account worsen further and that is not compensated with the necessary inflow of capital, then the board might be in danger under the

\textsuperscript{38} Statistical Data from the National Statistical Institute of Bulgaria
\textsuperscript{39} BNB Annual Report 2009
pressure to devalue the currency. A possible devaluation however would be disastrous not only because it could lead to a self-perpetuating uncontrollable depreciation. It also has to do with the external indebtedness of Bulgarian firms. Prior to the crisis entities from abroad invested primarily in non-tradable sectors of the economy (such as real estate) and the focus was set on the internal market. Since the companies earn their income in local currency, its devaluation would make it extremely difficult for them to service their external debt obligations.

Fortunately the accumulated international reserves by the BNB have been sufficient in servicing operations while at the same time covering 100 % of the monetary base. In 2010 the export value to the EU countries went above the one from 2008 (9,49 billion EUR compared to 9,1 billion) signaling that external trade was beginning to recover from the shock and that the fixed rate is not necessarily a burden to trade. The total export also increased considerably (30 % on an annual basis). Alternatively, the contracted internal demand in the country made total amount of imports rise at a slower pace than export and thus in 2010 the current account balance showed improvement.

The global financial crisis had also its internal influence on the economy. Contraction of domestic demand saw real GDP fall with 5,5 % in 2009 and although it improved slightly in 2010, it remained relatively at the same level. Declining consumption of goods and services made inflation go down to 2,8 % and 4,4 % in 2009 and 2010 respectively. Government finance was also affected by these processes. Even though the authorities followed a conservative policy the overall decrease in output caused an insufficient collection of revenue for the state budget (9 % decrease in tax revenue in 2009; 5,7 % in 2010). At the same time overall government expenditure increased due to the application of the so called automatic stabilizers of the economy – increase in unemployment and social aid benefits. The fiscal deficit in 2009 and 2010 amounted respectively to 3,8 % and 2,8 %. Financing of the deficit however did not represent a serious concern because of the large fiscal reserve. The fact that Bulgaria kept the deficit relatively low while at the same time maintaining the lowest direct tax rates in the EU (personal income tax,
corporate tax – 10 %) is extremely important when evaluating the competitiveness of the country during the crisis.

During the last two crisis years Bulgaria established itself as one of the countries in the European Union with the lowest levels of public indebtedness. The disciplinary effect of the board on government spending has been instrumental in achieving this result in the words of Professor Steve Hanke\(^\text{40}\). In 2010 Bulgaria ranked sixth among the countries with the lowest fiscal deficits in the European Union with significantly better figures than most of the Eastern European countries (except for Estonia) and far better indicators in comparison to countries like Ireland (32 % of GDP), the UK (10,4 %) and Greece (10,5 %). With government expenditure of less than 40 % of GDP Bulgaria takes third place in the EU following Slovakia and Romania whereas the average value for the whole community is 48,09 %. As far as government debt is concerned Bulgaria had the second lowest obligation (16 % of GDP in 2010) in the union (again after Estonia) while the average for the euro zone was 73 % and the prospects are that Bulgaria will remain in the top three countries with the lowest public debt during 2011-2012\(^\text{41}\). All these numbers suggest that the prudent fiscal policy in the last decade made it possible for the state to minimize losses associated with the crisis which brings to the fore the issue of fiscal stability within the eurozone (especially in view of the current developments in Greece, Ireland and Portugal).

Despite the achievements of Bulgarian fiscal authorities we should also bear in mind that the conservative policy could also be costly to the economy. Reduced expenditure often means that the government’s focus falls on what is most urgent and medium- and long-term goals tend to be neglected. Cutting government spending on important internal projects and social reforms would increase unemployment and harm the competitiveness of the economy in the long run. It is up to the current cabinet to find the balance between levels of debt and spending in order to ensure the growth of the economy if the crisis is to be overcome completely.

\(^{40}\text{Hanke, S 2010. ‘Europe’s Economic Crisis and the Future of the Euro’, Policy Forum, May 11, 2010}\)

\(^{41}\text{Statistical Data from IMF and the Ministry of Finance of Bulgaria}\)
The banking sector in Bulgaria remained sound and well-financed during 2009-2010. Unlike in other European countries Bulgarian banks were not exposed to the toxic American assets and remained solvent throughout the period. Although in general the loan quality worsened, banks managed to protect themselves against increase in credit risk. The result of the measures was that Bulgarian banks were among the best performing in the EU. They consistently reported very low values of non-performing loans and very high capital adequacy ratios and very good ROE. In accordance with the principles of the currency board, no banking institution received direct support by the central bank or the government. Since the board was implemented, banks have been required by regulation to keep higher levels of reserves and capital adequacy than in the euro zone (10 and 12 % versus 2 and 8 % for the euro area). We have to mention however that the bank reserve requirement was even higher before November 2008 and the consequent decrease was a measure to boost banking performance. The reasoning behind this decision had to do with the dominant position of large international banking groups on the local market before and after 2008 – around 80 % of the market share belonged to EU subsidiary banks and branches. Bulgarian authorities were aware that problems European banks face could translate into problems within the country so they decided that it would be adequate to increase the funds at banks’ disposal to stimulate crediting and thus ensure the greater flexibility of the system. The deteriorating business conditions indeed caused a drop in the solvent demand for credit. Nevertheless, by the end of 2009 and beginning of 2010 gross lending went up in all portfolio segments (the total amount of loans rose by 4,5 %) whereas attracted funds remained at the same level as in 2008

As a whole, the global financial crisis left its mark on Bulgarian economy both externally and internally. Externally the current account deficit could not be backed up by inflows of foreign capital as successfully as in the years prior to 2008 which created conditions for a net outlay of foreign reserves from the country. The large international reserves retained in the economy however

42 As reported by the BNB, the structure of attracted funds changed echoing the decrease of foreign investment and increased internal saving due to uncertainty about unemployment and future income – funds from non-resident institutions marked a decline while individual and household deposits increased with 12,1 %
mitigated the shocks on the economy. Internally the reduced output resulted in
greater unemployment, increased savings and fewer investment opportunities
and although the government continued to lead a conservative fiscal policy, the
budget balance incurred deficits during 2009-2010 causing a reduction of the
fiscal reserve. Despite these developments the banking sector in the country
remained stable, inflation decreased significantly and the country established
itself as one of the most reliable in the EU when it comes to servicing its debt.
7. PERSPECTIVES AND FUTURE CHALLENGES

The long-term orientation of the last several governments in Bulgaria has been towards further European integration. As the country is currently in the European Union and will probably soon join the Schengen area, the next logical step would be accession to the euro area. The current government is also actively pursuing that goal even though the crisis raised questions about the suitability of such a step in the near future.

There is a set of criteria prescribed by the Treaty of Maastricht the compliance with which is mandatory for euro adoption candidates. They include:

- government finances - the Member State’s budgetary position must be without a deficit exceeding 3 % of GDP and the ratio of government debt to GDP must not exceed 60 % unless the ratios are sufficiently diminishing and approaching the reference value at a satisfactory pace
- participation in the exchange rate mechanism of the European Monetary System (ERM II) – the exchange rate fluctuations of the local currency should not be outside of the prescribed boundaries for at least two years without devaluing against the currency of any other Member State
- convergence of interest rates - over a period of one year before the examination, a Member State should have had an average nominal long-term interest rate that does not exceed by more than 2 percentage points that of, at most, the three best performing Member States in terms of price stability.
- price stability - In order to fulfil this criterion, the Council observes the inflation rate of the Member State for the period of one year. It then compares this rate with the inflation rates of the three best performing Member States in terms of price stability. If the rate of the candidate Member State does not exceed that of the best Member States by more than 1.5%, the criterion of price stability is fulfilled.
The global financial crisis saw the budget balance in Bulgaria turn negative for the first time since 2003 (3.8 % in 2009; 2.8 % in 2010). As a result of this in 2009 Bulgaria was not able to apply for entry in ERM II which made authorities concerned about future compliance with this criterion. That is why they took drastic measures to ensure that irrespective of the current economic state the requirement will be fulfilled. In the end of June 2011 the Bulgarian parliament passed amendments in the legislation on government budget as of 1 January 2012 according to which if there is a budget deficit it cannot be more than 2 % of GDP. Also the maximum amount of government expenditures cannot exceed 40 % of forecasted GDP. It is not yet certain to what extent this measure will burden the economy but it represents a clear commitment to leading a restrictive fiscal policy and meeting the Maastricht criteria in terms of government finances. Having in mind that in the last years the ratio of government debt to GDP is very low and stable (14.3 % in 2009 in comparison to 14.2 % in 2008) Bulgaria is not expected to have problems complying with this parameter.

Possibly one of the greatest contributions of the currency board is that the lev has been successfully pegged to the euro since its establishment implying that Bulgaria possesses the capability to maintain its currency stable and the exchange rate within the prescribed boundaries (in fact it does not vary at all). But although the situation looks promising from this viewpoint, the fact that the rate is artificially fixed might bring about severe consequences after an eventual euro adoption. The consistently higher inflation rates compared to the EU and the long period of current account deficit in Bulgaria mean that the lev has been effectively overvalued and thus it is questionable whether it is prudent for Bulgaria to enter the euro area with such an overvalued exchange rate, as overvaluation means that Bulgarian produce will be less competitive on the European markets and once the country has become a member of the euro zone it would be extremely difficult to reverse. That is because the central bank in Bulgaria will not have any possibility to foster currency devaluation. In the current state although the lev is firmly fixed, the parliament retains the legal ability to make changes to the exchange rate. On one hand a devaluation of the currency immediately before entering ERM II and keeping it fixed at the new
level is not devoid of sense because this would again ensure compliance with the accession criterion while the local economy would not suffer the negative effects of the overvalued money. On the other however, an official proclamation of such a step might trigger a chain reaction and flight from domestic currency prior to the actual act of devaluation and it will become extremely difficult for the government to sustain credibility of the board rule. Moreover, even if a lev depreciation commences without these negative consequences, a following economic growth would mean that external demand for Bulgarian goods and services would increase because of the more attractive prices. This would soon drive inflation up and prevent compliance with the inflation criterion.

After the currency board implementation in Bulgaria basic interest rates have gradually normalized decreasing dramatically in comparison to 1996-1997 period. During 2008-2009 however they were above the average value of the three best-performing states in the EU in terms of price stability which suggests that there is no compliance with that criterion. Nevertheless, Graph 14 depicts how basic interest rates on 10-year government bonds develop in the most recent time and we can see that interest rates have been sustainably decreasing. This means that probably by the next assessment session Bulgaria would have kept the trend within the prescribed boundaries (requirement level for 2010 was 6 %).

Graph 14: Dynamics of Long-term Interest rates on 10-year government bonds in Bulgaria (2009-2011)
Thus far Bulgaria has managed to adjust its economic performance so that it would easily be able to conform to the criteria regarding government finance, exchange rate and interest rates. The main challenge ahead remains tackling inflation so as to cover the 1.5% deviation from the three best performing countries level. Before the crisis this proved to be a nearly insurmountable task (inflation capped 12.35% in 2008) and although the global crisis processes led to shrinking of domestic demand and consequently lower inflation, it is still highly uncertain that compliance with this criterion can be achieved any time soon.

Since Bulgaria is one of the least developed countries in the EU its main goal is to catch up with the economically superior countries. In order to achieve this, Bulgarian economy has to become more competitive which at the current stage mainly involves increasing productivity for goods and services subjected to external demand (often referred to as “tradable sector”). Higher productivity would eventually increase salaries in that sector. But the labor market in the country is interrelated and that means that the non-tradable sector would have to adjust the salary level as well even though there might not be a corresponding increase in productivity. The broken relationship between productivity gains and income increase is a source of additional inflation pressure within the economy. This phenomenon is often referred to as the “Balassa-Samuelson” effect and is characteristic of less developed countries with rapid economic growth. The stable exchange rate contributes to the importance of this process as volatility in rates cannot offset the influence of the above mentioned factors. So it can be expected that traditionally higher inflation in Bulgaria would persist in the near future after the impact of the crisis has passed. Such is the price Bulgarian economy would have to pay to catch up with the developed countries.

Based on the previous conjectures we can stipulate that if Bulgaria wants to continue its further European integration it would have to compromise on its productivity and growth in order to fit the prescribed profile. In effect, there is sort of a contradiction within Bulgarian national priorities. On one side stands the Bulgarian desire to level out with Western Europe which as we discussed suggests higher inflation. On the other – there is all advantages of euro zone
accession requiring among all low inflation levels. This very contradiction is valid not only for Bulgaria but also to other Central and Eastern European euro adoption candidates and represents a problem that gave rise to debate. For example, professors Willem Buiter and Anne Sibert share the opinion that the Maastricht criterion concerning inflation should be revised. They suggest that the Balassa-Samuelson effect should be taken into account when setting the acceptable inflation limits so that countries do not have to necessarily sacrifice their striving for prosperity.\footnote{Buiter, Willem H & Sibert, Anne S 2006. ‘The Inflation Criterion for Eurozone Membership: What to do when you fail to meet it’}

In view of the Bulgarian experience with a currency board in the last 14 years we can definitely conclude that the country has by far increased its chances of joining the euro area. Although the success of this form of monetary rule has been deemed temporary by many, the common opinion in the country is that the drawbacks of a hypothetical premature abandonment of the board would outweigh all advantages associated with such an act.
8. SUMMARY AND CONCLUSIONS

A currency board is a specific long-term form of a monetary regime based on full convertibility of local currency to a reserve one by fixed exchange rate and 100 % coverage of the monetary supply with foreign currency reserves. This is the common theoretical definition of the term but in reality every single example of its application represents a modification – a reflection of the particular framework of the economy of the country accommodating it. All these modifications are effectively attempts to tackle the alleged disadvantages of the orthodox form and to fine-tune the regime in order to gain maximum benefit from its advantages. History has witnessed both successful and unsuccessful cases and that provoked the evolution of the concept. Initially currency boards were inherent to colonial countries but the modern day interpretation establishes them mostly as a stabilization measure. Such stability proved to be extremely necessary for the so called transition countries in Central and Eastern Europe on their way to market economy transformation. That is why some of them resorted to currency boards. Such is the case of Bulgaria in which the experience with traditional central bank turned out to be disastrous and a currency board was implemented because it was deemed that it had the properties to lay the foundations of sustainable economic growth.

This radical system change raised some restrictions. It would require wide public and political commitment. If the government didn’t conform to the board ideology and spent more than was prudent, the system would be put under severe pressure. The highly restricted lender of last resort function raised the question how a possible banking crisis would be handled. Moreover, sustaining the board required meticulous discipline regarding the management of foreign reserves. Those reserves could not be invested in domestic assets rendering it impossible for the central bank to credit the government and other institutions.

Despite the described red flags a currency board raises, the Bulgarian experience showed that the positive outcomes of such a regime can overcome them. The modified form proved efficient in tackling inflation. It led to unprecedented foreign investment inflows, decrease in foreign debt, stability of
the banking sector and last but not least - strong confidence in the national currency. In respect to these contributions we can mention that the imposed conservative fiscal policy could be viewed upon as a positive development. After all, the government is less prone to taking unnecessary risks and that has a lot to do with why the worldwide reputation of Bulgarian authorities has improved in the last years.

In view of Bulgarian euro adoption aspirations, the higher trust in government actions as well as the overall economic stability and potential put the country on the road to achieving the long-term goal. Being a cornerstone of this stability and transparency, the board has to be sustained until Bulgaria becomes part of the euro area.
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