



BULGARIAN NATIONAL BANK

The Financial System in the Bulgarian Economy

Jeffrey Miller
Stefan Petranov

DISCUSSION PAPERS

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Preface

In 1991 the University of Delaware-Bulgaria Coalition, with the support of the United States Agency for International Development, began a program of economics education for Bulgarians. A difficulty in teaching courses in money and banking at that time was the absence of summary materials that captured the specific detail of the Bulgarian economic system. The first edition of this monograph sought to fill that gap.

The intended audience was students of money and banking, who might use the book as a supplement to western textbooks on the subject. No attempt was made to explain standard concepts in money and banking, but rather to place the Bulgarian situation within the standard context and vocabulary.

Research for this project began in the autumn of 1992 as a class exercise for the Advanced Economics Program. The final class assignment for students in the money and banking course was to investigate a specific aspect of the Bulgarian banking system. The original monograph was an integration and embellishment of the papers that resulted from their research. The program participants who contributed to the manuscript were Svetlana Alexandrova, Anna Andonova, Kamen Antanassov, Tzvetan Bonev, Georgi Chalakov, Stoyan Iliev, Roumiana Ilieva, Jordon N. Jordanov, Jordan V. Jordanov, Dimitar Kanev, Hristo Mavrov, Antassia Miteva, Anton Pashov, Nedailka Petkova, Lambrin Shpatov, Valentin Vulov, and Plamen Yossifov. The monograph was published in 1993 by the Bulgarian National Bank.

As the Bulgarian banking system continued to change, the second edition was published in early 1996. It included a more complete description of the activities of the Bulgarian National Bank and a discussion of the Law on the Settlement of Nonperforming Credits which had been passed in the interim period.

After writing the second edition, it had been our intention to write a third edition within the next two years. This would have meant rewriting the monograph during 1996 and 1997. This was the middle of the financial crisis. Events overtook us. We decided that the system was changing so quickly that anything we wrote at that time would be out-of-date before the ink was dry.

In this third revised edition we chronicle the changes that took place during and following the crisis in 1996 and 1997. This edition has been extensively revised to reflect these changes. The sections on the Bulgarian National Bank and the money supply have been extensively revised to reflect the changes brought about by the establishment of the currency board. New sections have been added on nonbank financial institutions and the currency board. (The section on the Law on the Settlement of Nonperforming Credits has been dropped.) In the conclusion we have added a discussion of the impact on the financial system of efforts to join the European Union.

A project of this size could not be successfully completed without the help of many people. Over the years the leadership and staff of the Bulgarian National Bank have provided much needed encouragement and support. Publication of the early editions would not have been possible without Lubomir Christov, formerly Chief Economist, who provided much encouragement and reviewed the entire monographs. Former Deputy Governor Mileti Mladenov, also provided wonderful support during these early years.

The present leadership and staff of the Bulgarian National Bank have also provided great encouragement. We would especially like to thank Roumen Avramov, who read and commented on the entire manuscript, and Martin Zaimov, whose support made the project possible. Members of the research staff Nickolay Nenovsky, Kalin Hristov and Boris Petrov also reviewed the manuscript and gave generously of their time and expertise to help us. *Darina Koleva was very helpful with technical support and assistance.*

Special thanks are due to Virginia Miller and Andrew Kenningham who assisted with the production and provided comments on the first edition. Stan Shumway has provided much needed encouragement throughout the many editions of the monograph. Lew Staples *and Tzvetan Mantchev* provided helpful comments on the most recent manuscript. *Sonia Baleva helped us with data processing and technical formatting of the text.*

The United States Agency for International Development (USAID) through their grant to the University of Delaware has provided financial support for all three editions. Most recently this support came through FLAG International LLC, under a management contract with the University of Delaware, a USAID-funded private sector strengthening project in Bulgaria. The second edition would not have been possible without a 'Twinning Grant' from the National Research Council (U.S.A.). The project has also benefited from support from the Bulgarian National Bank which has covered translation and publishing costs for each of the three editions.

As can be seen, this monograph owes much to many. The remaining errors, however, are the sole responsibility of the authors.

I. Monetizing the Bulgarian Economy

*If capital is at the heart of capitalism, then well-functioning capital markets are at the heart of a well-functioning capitalist economy.*¹ Joseph Stiglitz

While all economies must organize production and distribute the output of production among members of society, the institutions which pro-

¹ Stiglitz (1992), p. 161. This chapter draws heavily on Stiglitz's description of the institutional requirements for development of capital markets during the period of transition.

duce and distribute goods and services are very different in centrally-planned economies (CPEs) and capitalist economies. As Bulgaria has transitioned from a CPE to a capitalist economy, many financial arrangements have been dramatically altered.

One essential difference between the two systems is the importance of money in capitalist economies. In a capitalist economy *money buys goods*. When money buys goods, resources are directed towards those economic agents enterprises or consumers who have money. This contrasts sharply with the situation in a CPE where the role of money is much more limited. Inputs to enterprise production are determined not by the money that the enterprise has, but rather by central planners. Even in the area of retail sales where money is more commonly used in a CPE, money is less important than it is in a capitalist economy. Who obtains goods and services is often determined by non-monetary criteria. In a CPE having money does not necessarily mean that an individual can purchase a good.

Prices were released, or freed, in Bulgaria in February 1991. Suddenly money bought goods. The economy was „monetized,“ although not without creating serious stress as the new role of money was superimposed on old practices. Two transition problems are of special importance. The first has its roots in the different incentives for household saving and consumption that arose when the economy was monetized. Because money had not been particularly useful for purchasing goods in the CPE, many people had saved large sums. When goods could finally be purchased with money, this „monetary overhang“ created a large demand for the existing supply of goods. A sharp increase in prices ensued. This along with an inability to control increases in the money supply generated an inflation that was not really brought under control until a currency board was established in 1997. The second problem is in the production sector. Under central planning financial statements, framed in monetary units, were used to account for firm inputs and outputs. Useful as these financial statements might have been for the central planners, they did not play a direct role in allocating resources to firms since money could not be used to purchase goods. If enterprises needed additional credits to account for the goods allocated to them under the plan, the credit was advanced. The difficulty was that this old governmental practice of providing additional credits persisted long after the production sector became monetized. When money was advanced to enterprises in the form of loans, it was used to purchase inputs or pay wages so that scarce resources are being allocated in the process. However, the money was often advanced without doing careful evaluations of the credit worthiness of the enterprises. As a result financial resources were not being directed towards the most productive activities. Valuable resources were wasted.

In part there were important political reasons why the state banks made these loans. Politicians feared that if too many enterprises suddenly

failed because of lack of credit, this would cause serious economic disruption, and there would be political problems. Eventually, too many resources were wasted and the economy could not be brought under control. In 1996 and 1997 there was a financial crisis and the economic disruption led to demonstrations in January 1997. The Videnov government fell, and there were new elections in April 1997.

The new government established a currency board in July 1997. Under a currency board, banks must be much more careful when they make loans. The question now is whether the banks are making enough loans and whether they are making good decisions when they make their loans. We will return to these questions in later sections.

As these examples illustrate, the movement from central planning to market institutions brought with it a big change in the role of money. With this must come a redefinition of the whole set of financial arrangements and practices that support a monetized economy. Stiglitz (1992, p. 163) lists eight functions that must be performed by financial institutions in a market economy:

- 1) Management of the medium of exchange;
- 2) Transferring funds from savers to investors in new economic production;
- 3) Pooling small amounts of savings so that larger projects can be undertaken;
- 4) Choosing among projects so that the most productive projects receive the most support;
- 5) Monitoring the use of funds so that they are used in the intended way;
- 6) Enforcement of loan contracts so that the loans are repaid;
- 7) Definition of how risks will be shared among borrowers and lenders when new economic projects are undertaken;
- 8) Lowering of risk by creating methods for diversification of investment risks.

None of these functions was performed by the financial system under central planning. Since money did not buy goods, even the management of the medium of exchange, the first function, was done differently. The other seven functions involve investment decisions, which were made by central planners using very different criteria than the evaluation of risks and profits. In creating its financial system, Bulgaria has been faced with the challenge of creating institutional *structures* that will perform these necessary *functions*.

Although the functions of financial systems are consistent across capitalist countries, their structures vary significantly. For example, German and Japanese banks are tied much more closely to nonfinancial firms than in the United States. This reflects both cultural and historical differences. During each stage of the transition, important choices were made regarding the design and structure of financial institutions but, as has been true in

other places, history does matter. Choices made during the early stages influenced later decisions as the new financial institutions began to take shape. It is important, therefore, to understand how financial institutions have evolved over time.

The development of a financial sector in Bulgaria began with reform of the existing banking system. What was initially a monolithic bank was broken up into two tiers – a central bank and commercial banks. Loans and accounts of state enterprises were distributed among the new commercial banks. Under central planning all savings accounts of individuals were held at the State Savings Bank. This changed so that commercial banks were allowed to accept deposits. While these changes created a structure that superficially looked like the banking systems in capitalist economies, more fundamental changes were required before the system could successfully perform basic financial market functions. Over time progress has been made in improving the functioning the banks, but important questions still remain.

At this point, it is time to retrace our steps. We shall first expand the discussion of the structure of financial institutions to which we have alluded by outlining the two-tier banking system as it is now codified in Bulgaria. In the next three sections we will trace the development of the financial system during the transition period. We begin with commercial banks. From the beginning of the transition they have been the most important financial institutions in the Bulgarian economy. In Section III we look at a broader set of financial institutions. Many of these institutions like the capital market and pension funds played almost no role in the economy before the financial crisis of 1996 and 1997. They still play only a small role, but as we will see, they will be increasingly important as the financial sector becomes more sophisticated. Then in Section IV we analyze the efficiency of the commercial banks. New financial institutions like the currency board were created to prevent further crises. In Section V we describe the functions of the Bulgarian National Bank in its new role as a currency board.

We have said that the Bulgarian economy is monetized, but have not discussed the formal Bulgarian definitions of money, an omission that will be corrected in Section VI. This section also explains how the composition of the money supply has changed over time. Section VII provides a formula for the money supply and shows how various actions will affect the money supply. Section VIII provides an overview of the performance of the currency board and identifies some areas where potential problems could arise. In the concluding section we shall briefly turn once again to Stiglitz's functions of a financial system to assess the progress of Bulgarian financial institutions in performing their new roles in a market economy and discuss whether Bulgarian financial institutions will be able to meet the requirements for entry into the European Union.

II. The Structure of the Commercial Banking Sector

The present section presents an overview of the key characteristics of the banking sector in the Bulgarian economy. In the early transition period financial sector reform began with the reestablishment of commercial banks. Since then commercial banks have been the most important financial institutions in the economy.

1. Post-socialist Restoration, Crisis and Development of Commercial Banks

During most of the communist era, all banking functions were the responsibility of the Bulgarian National Bank (BNB), which had absorbed through the process of nationalization all existing commercial banks. The BNB was under the direct control of the Council of Ministers. Besides the BNB there were only two other banks: the State Savings Bank, which was the only bank permitted to hold the accounts of individuals and the Bulgarian Foreign Trade Bank (now Bulbank), which handled all foreign exchange operations for the country. In 1987 specialized or sector-specific commercial banks were formed, each restricted to lending in a particular area such as the chemical industry or transportation.

At the end of 1989, following the dramatic political changes that year, major institutional reform took place in the banking system as it moved to a two-tier system with a central bank on one tier and many commercial banks on a second tier. The sector-specific banks were then transformed into universal banks which loaned to all sectors of the economy. At the same time, new local commercial banks were created out of the 59 branches of the BNB.

In June 1991 the Law on the Bulgarian National Bank came into effect, altering fundamentally the roles, objectives and functions of Bulgaria's central and commercial banks. In 1992, another key financial act, the Law on Banks and Credit Activity, was passed. This law established the regulatory framework for the activities of banking institutions. Under this law, all banks, even state-owned banks, were given significant autonomy.

These more independent state-owned commercial banks quickly proved to be very inefficient. They lacked lending expertise, and many were very small. To overcome these problems the government established the Bank Consolidation Company (BCC) to encourage the formation of larger state-owned banks through mergers.

Outside this consolidation process, however, many new private banks entered the market. Since only limited regulatory controls were in place at the time, these banks operated in an environment without the regulatory supervision found in developed market economies. In many instances the financial resources needed to open these private banks was borrowed from state-owned banks (or from other undetermined sources). The origins of the private banks would shape their later behavior and contribute to the 1996 – 1997 financial crisis.

Table 2.1 shows the number and type of banks in Bulgaria over the 1991 – 2000 period. The patterns of entry and exit reflect the changing legal and supervisory structure.

There are clearly two distinct periods. The 1991 – 1995 period was dominated by policies that promoted the development of comparatively large state-owned banks while restricting the entry of foreign banks. The total number of banks decreased as the Bank Consolidation Company encouraged small state-owned banks to merge. The total number of state-owned banks fell from 72 in 1991 to 12 in 1995. During this same period, 25 small private Bulgarian banks entered the market. Not a single state-owned bank was privatized.

At the outset of the reforms foreign banks were not allowed to open branches in Bulgaria. Finally, in 1994, two foreign banks, the Greek Xios Bank and the Dutch ING-Bank, set up branches in Sofia.² By the end of 1995 two other banks had opened branches and three foreign banks received full licenses from the Bulgarian regulators to open new banks in Bulgaria.³ Still, these banks were very specialized, limiting their activities to international settlements.⁴

Table 2.1

Number of Commercial Banks by Category

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Large Banks	3	4	6	9	9	6	6	6	7	8
<i>Ownership</i>										
State	3	4	6	9	9	6	5	4	4	2
Private	0	0	0	0	0	0	1	2	3	6
<i>Ownership by country</i>										
Bulgarian	3	4	6	9	9	6	5	4	4	2
Foreign	0	0	0	0	0	0	1	2	3	6
Small and Medium Banks	75	76	34	29	28	19	22	20	20	19
<i>Ownership</i>										
State	69	65	19	6	3	1	1	1	2	1
Private	6	11	15	23	25	18	21	19	18	18
<i>Ownership by country</i>										
Bulgarian	75	76	34	29	25	14	14	12	11	10
Foreign	0	0	0	0	3	5	8	8	9	9
Branches of Foreign Banks	0	0	0	2	4	4	5	7	7	8
Savings Banks	1	1	1	1	1	1	1	1	0	0
Total	79	81	41	41	42	30	34	34	34	35

Source: BNB

² A bank is categorized as a foreign bank if over 50% of the equity capital is owned by a foreign legal entity or individual; otherwise, banks are categorized as Bulgarian.

³ The National Bank of Greece and the Ionian Bank opened branches. Reifeisen Bulgaria, BNP-Dresdner Bulgaria, and Bayerische-Bulgarische Handelsbank obtained Bulgarian banking licenses.

⁴ Formally, there were no legal restrictions on foreign banks to compete in the local market.

Given their comparative advantages in reputation, viability, international contacts and experience, these foreign banks were clearly in a position to put strong competitive pressure on local Bulgarian banks. An important policy issue at that time was how much to restrict the entry of foreign banks into the Bulgarian market. Foreign banks could bring skills and experience. On the other hand, Bulgarian banks needed time to become fully competitive, and uncontrolled entry by foreign banks might have created an environment where Bulgarian banks could not survive. The protectionist policies of the 1991 – 1995 period were a compromise. Foreign banks were allowed to enter, but only if they specialized in a limited range of services.

Inadequate laws, insufficient institutional capacity and limited foreign competition led to a number of problems during the 1991 – 1995 period. Bank managers were able to exploit loopholes in the law for private advantage at the expense of different groups of economic agents. In the case of state owned banks managers exploited depositors, lenders and taxpayers. In the private banks the controlling shareholders and managers often colluded or acted together to prejudice the depositors, lenders, small private shareholders, and taxpayers (by means of government bank rescue mechanisms).

The level of bad loans soared as banks pursued misguided credit policies. Indeed, '[u]ntil 1996, commercial credit was expanded to the nonfinancial sector in Bulgaria to a degree that was unprecedented relative to any other European transition economy' (OECD, 1999, p. 32). As Table 2.2 shows more than 74% of bank loans were nonperforming by 1995.

Many of these loans were unsecured (i. e. either there was no collateral or the assets used as collateral were overvalued on the books).⁵ The risk and maturity structure of assets and liabilities was poorly managed by the banks, and internal audit systems were weak or nonexistent.

Table 2.2

Classification of Bank Loans in 1995 by Size of Banks (%)

Banks	Performing	Substandard (30 days overdue)	Doubtful (90 days overdue)	Uncollectable
Large	17.3	64.3	3.9	14.5
Small and Medium	49.0	28.6	4.8	17.6
Total for the Banking System	25.9	54.5	4.2	15.4

Source: BNB, Annual Report, 1995

⁵An additional problem during this period was the absence of a centralized collateral registration office where banks could check to see if there was a lien on the asset. Because banks were unaware of previous loans, borrowers were able to use the same asset as collateral on more than one loan if the loans were from different banks.

While state-owned and private banks shared many of the same deficiencies, there were also some significant differences. State-owned banks had many loans to state-owned enterprises that dated back to the pre-reform period (pre-1989). The government tried to reduce the burden of these loans by replacing these loans with government debt. The program failed, in part however, because the government also continued to pressure the banks to extend further loans to weak enterprises which were unable to repay.⁶

Many private banks were established by entrepreneurs who wanted to finance their other business activities. Even though large loans to bank managers and owners were restricted by law, these laws were not generally enforced. Often these loans to managers and owners of private banks were not repaid.⁷

As the banks grew weaker, the BNB provided more loans (i. e. refinancing) to the banks to keep the larger banks from failing. In the process the BNB lost control over the money supply (as these loans increased the size of the monetary base), and inflation ensued. This led to the crisis in the banking system in the second half of 1996 when the BNB placed 14 commercial banks under special supervision and later demanded that they should be declared bankrupt.

Following the 1996 – 1997 financial crisis, the Parliament passed two new laws; one for the Bulgarian National Bank and another for the commercial banks. These laws are designed to remedy the shortcomings of earlier legislation and provide more resources for bank supervision and regulation. The new Law on the Bulgarian National Bank altered the structure of the BNB so that it was transformed into a currency board. The currency board introduced strict controls over money supply.

Another important institutional change in the post-crisis period was the introduction of the Deposit Insurance Fund (DIF). The Law on Bank Deposit Guaranty, passed in April 1999, insures all commercial bank deposits of individuals and nonfinancial institutions up to BGN 6,900.⁸

All commercial banks must participate and pay insurance premiums into the DIF.⁹ Annual premiums are 0.5% of the deposit base on 31 De-

⁶ The largest program designed to help the banks was the ZUNK bond program of 1993. For a critical appraisal of this program, see *Miller and Petranov* (1996, chapter 8).

⁷ In 1997 an attempt was made to encourage delinquent borrowers to pay back old loans. A list of delinquents was published. This list of the so called ‘credit millionaires’ was full of companies related to bank managers and owners.

⁸ The Fund guarantees 95% of deposits up to BGN 2,000. For deposits exceeding BGN 2,000, the Fund guarantees 80% of the deposits on the next BGN 6,250. Thus, the maximum amount a depositor can receive from the Fund is BGN 6,900. This is the maximum regardless of the number of deposit accounts at the bank or whether the deposit accounts are in lev or foreign currency.

⁹ Branches of foreign banks are obliged to participate as well unless their mother institutions participate in a system of guarantees in their home country which provides the depositors with the same or better guarantees.

member of the preceding year. New banks must pay an entry fee within 30 days of the bank's registration equal to 1% of the bank's equity capital but not less than BGN 100,000.

The funds held by the DIF are conservatively invested in high liquidity low risk assets (i.e. government bonds, short-term commercial bank deposits and BNB deposits). Payments from the DIF are made when the Bulgarian National Bank withdraws a banking license, and the bank has insufficient funds to cover its deposit liabilities.¹⁰

To further strengthen the banking sector, the IMF and the World Bank encouraged the government to initiate a comprehensive program to privatize all state-owned banks. The earlier policy carried out during the 1991 – 1995 period where the Bulgarian banking community was given an opportunity to develop under restrictions on foreign bank entry was deemed a failure. Under the new policy the goal was to privatize the state banks quickly and create foreign competition through extensive foreign ownership of the banks.

With the privatization of Bulbank, the largest bank in Bulgaria, only three banks were still under state control at the end of 2000. These state-owned banks hold less than 20% of total banking system's assets.¹¹ Foreign banks can now enter the local market in three ways: purchase banks, open branches or establish Bulgarian subsidiaries.¹² All Bulgarian state-owned banks that have been privatized (through 2000), were bought by foreign institutions. The pattern of ownership in the banking sector has changed radically. Once there was no foreign ownership, at the end of 2000 more than 73% of banking system assets were either in foreign owned banks or branches of foreign banks. When Biochim and the State Savings Bank are sold to foreigners, this number will rise to more than 90%.

Many of these foreign banks are well known international banks (i. e. BNP and Unicredito). Others are less prominent institutions or off-shore institutions registered in off-shore zones like Cyprus where disclosure rules make it difficult to identify the owners.

Since most banks were privatized between 1998 – 2000, it is still too early to determine whether this strategy will be successful. If foreign banks

¹⁰ During its first year and half, the DIF made payments to depositors of the Credit Bank and Balkan Universal Bank when the Bulgarian National Bank withdrew their banking licenses.

¹¹ These banks are: Biochim Commercial Bank for which the government has launched concrete plans for privatization; the State Savings Bank which is being reorganized in preparation for privatization and the Encouragement Bank which was created specifically to support small business.

¹² Normally foreign banks have purchased state banks, but there is already an example where a foreign bank bought a previously privatized bank. National Bank of Greece bought UBB from Oppenheimer and the European Bank for Reconstruction and Development.

bring experience and new products that foster competition, this will be a successful policy. But if foreign banks do not support Bulgarian enterprises, channel scarce funds abroad, treat foreign companies preferentially and do not develop a full range of banking services, then the economy will continue to suffer from an inadequate financial system.

2. Dynamics and Structure of the Banking Sector

From 1991 to 2000 total bank assets in nominal terms rose from BGN 462.8 million to BGN 9.7 billion.¹³ See Table 2.3.

This enormous growth was entirely due to high inflation during this period. If recalculated in dollar terms at the exchange rate effective in the relevant year, total bank assets actually dropped from USD 21.2 billion to USD 4.1 billion.

Table 2.3

Banking Sector Assets, Liabilities and Macroeconomic Indicators (mln BGN, end-of-year)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Total Bank Assets	462.8	582.3	809.5	1,071.7	1,088.9	3,300.6	8,076.2	7,588.6	8,223.4	9,773.5
Growth rates (%)		25.8	39.9	32.4	1.6	203.1	144.7	-6.0	8.4	18.8
Funds Attracted from Nonfinancial Institutions and Clients	114.8	147.1	221.6	405.5	573.6	1425.9	5471.6	4933.9	5470.0	
Growth rates (%)		28.1	50.6	82.0	41.5	148.6	283.7	-9.8	10.9	
Claims on Nonfinancial Institutions	164.4	218.6	281.3	434.5	461.6	1479.9	1843.6	1853.9	2399.4	
Growth rates (%)		32.9	28.7	54.4	6.2	220.6	24.6	0.6	29.4	
BNB Refinancing	18.8	16.3	22.7	36.4	25.0	84.4	0.0	0.0	0.0	
Growth rates (%)		16.7	44.4	60.4	-31.3	237.6	-100.0	0.0	0.0	
Money Supply, M2	108.4	164.7	229.9	409.1	571.3	1,244.6	5,750.7	6,328.8	6,914.0	
Growth rates (%)		51.9	39.6	77.9	39.6	117.9	362.1	10.1	9.2	
Nominal GDP	135.7	200.8	298.9	543.4	880.3	1,748.7	17,055.0	21,570.7	22,776.4	
Growth rates (%)		48.0	48.9	81.8	62.0	98.6	875.3	26.5	5.6	

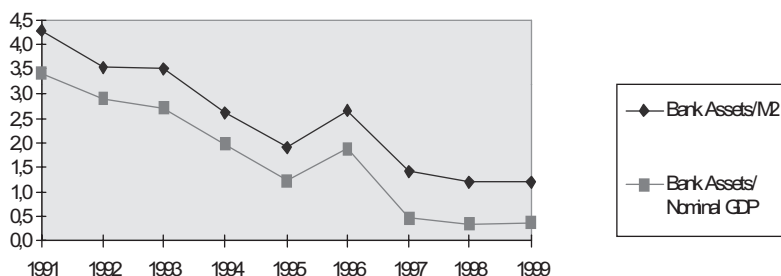
Source: BNB

As shown in Figure 2.1, the ratio of bank assets to the money supply (M2) also fell sharply. A similar downward trend is evident in the ratio of bank assets to nominal GDP. These ratios stabilized after 1998.

¹³ These figures include the assets of all commercial banks and the SSB. The SSB had a special status as the only savings bank until 1999.

Figure 2.1

Relative Size of Total Bank Assets



Source: BNB.

A central function for commercial banks is financial intermediation. One way to measure this activity is to look at data on funds attracted from nonfinancial institutions (i. e. savers) and data on bank claims on nonfinancial institutions (i. e. investors) (see Table 2.2). Funds attracted from nonfinancial institutions and other customers are essentially funds in deposit accounts at banks. While these funds rose dramatically in nominal terms between 1991 and 1999, this was again entirely due to inflation. In dollar terms they fell to a little more than half their original level (USD 5.3 billion in 1991; USD 2.7 billion in 1999).

Bank claims on nonfinancial institutions (i.e. bank lending) followed a similar trend. While nominal growth was high, in dollar terms they fell dramatically from USD 7.5 billion in 1991 to USD 1.1 billion in 1999.

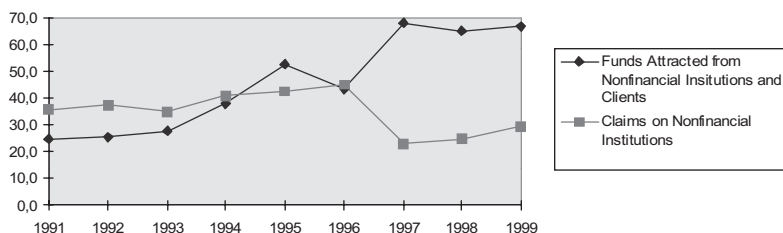
Bank behavior during the pre- and post-crisis period is clearly different. In the 1991 – 1995 period, banks borrowed heavily from the BNB or from one another through the interbank market.¹⁴ As a result the share of funds attracted from nonfinancial institutions was only 25% – 50% of total liabilities. At same time during this period lending policies were lax as banks came under government pressure to extend loans to state-owned enterprises and loans were extended to businesses with a relationship to bank management teams. Bank claims on nonfinancial institutions were in

¹⁴ Much of the activity on the interbank market was money being sold to commercial banks by the State Savings Bank which dominated household deposits market during this period. After the crisis the SSB continued to have a large share of this market although its share dropped as a result of increased competition. It is difficult to determine precisely SSB's share of total household deposits, but they have probably fallen from about 70 – 80% in 1995 to about 30% in 2000.

the range of 40% – 50% of total bank assets, a relatively high share compared to the post-crisis period and to the experience in other countries in transition.¹⁵

Figure 2.2

**Share of Funds Attracted from Nonfinancial Institutions
and Claims on Nonfinancial Institutions
as a Percentage of Total Bank Assets**



Source: BNB

These ratios have changed since 1996. Under the currency board the BNB cannot make loans to commercial banks, and the interbank money market performs its normal function of providing only short-term and emergency financing. As a result, the share of bank funds attracted from nonfinancial institutions has increased to 65% – 67%. At the same time, banks have implemented new stricter lending requirements. Given the high risk of lending to the real sector of the economy and more conservative bank credit policies, the relative share of bank claims on nonfinancial institutions has declined to 25% – 29%.

Intermediation is a central function of a banking system. An important question is whether the Bulgarian banking system is performing this function well. In retrospect, it is clear that the banking system performed this function very poorly during the pre-crisis period. Money that was deposited with banks was lent to businesses that did not repay the loans. This is a strong indication that savings was not invested properly. While it is better to be careful with money than to waste it, the prospects for economic growth would be far better if the banking system performed its intermediary function well and made good loans to the real sector of the economy. Thus far for a large part of the period 1991 – 1999 the banks have not demonstrated widely that they have both the expertise and the motivation to do this.

¹⁵ This ratio for Hungary is 40%, and is 30% in Poland. Publicly available Czech financial statistics do not distinguish between banks' claims on financial and nonfinancial institutions.

3. Is There Competition in the Banking Sector?

Competition in a sector is often gauged by the degree of concentration, especially among the largest firms in an industry. Competition is considered to be more intense when there are many companies of relatively the same size. The Herfindahl index and the fourfirm-concentration ratio are commonly used indicators of industrial concentration.¹⁶ The smaller the concentration ratio the higher the level of competition. Table 2.4 provides several measures of concentration in the Bulgarian banking sector. The Herfindahl index and the concentration ratio are estimated on the basis of three indicators of bank size: (1) total bank assets; (2) bank claims on nonfinancial institutions, and (3) funds attracted from nonfinancial institutions and other customers.

Table 2.4

Measures of Concentration for the Banking Sector

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Bank Assets										
Herfindahl's Index	0.38	0.33	0.30	0.15	0.11	0.19	0.12	0.11	0.12	
Concentration Coefficient (%)	80.9	77.2	73.4	60.3	53.0	62.1	56.2	56.3	57.0	
Claims on Nonfinancial Institutions										
Herfindahl's Index	0.18	0.19	0.24	0.24	0.12	0.23	0.13	0.10	0.08	
Concentration Coefficient (%)	69.2	64.5	66.0	63.0	50.1	67.8	56.5	47.7	43.6	
Funds Attracted from Nonfinancial Institutions and Other Clients										
Herfindahl's Index	0.15	0.15	0.15	0.13	0.13	0.15	0.12	0.11	0.13	
Concentration Coefficient (%)	66.2	59.2	57.3	54.7	57.5	62.6	56.3	58.9	61.7	

Source: BNB

In general, the concentration measures followed a similar pattern over the pre-crisis and post-crisis periods. From 1991 to 1995 concentration levels fell. In the immediate post-1995 period concentration increased as insolvent banks were closed. Then concentration decreased again over the 1997 – 1999 period.

With respect to bank assets, the Herfindahl index shows a steady decline between 1991 and 1995. It then rises slightly during the crisis in 1996 before declining again in the post-crisis period. Thus the index shows a tendency towards a more even and balanced distribution of assets among banks. The concentration ratio also declined over time with 57% of bank assets in the four largest banks in 1999.

¹⁶ The Herfindahl index is estimated using the following formula: $H = \sum s_i^2$, where s_i is the share of company i in the sector. The index reaches its maximum value of one if there is a monopolist in the market. The concentration ratio is the sum of the market shares of the four largest companies in the sector.

Claims on nonfinancial institutions show some contradictory trends. The four largest banks lost market share, but the Herfindahl index rose steadily during the 1991 – 1995 period. This suggests that concentration was rising, but this greater concentration was occurring below the level reported by the four largest banks. This phenomenon can be attributed to the ZUNK Law. Enacted in 1994 this act allowed banks to substitute government debt (ZUNK bonds) for state-owned enterprise nonperforming credit, this reduced the level of claims on nonfinancial institutions. Large state-owned banks were the main beneficiaries of this program.

Following 1996, both the concentration ratio and the Herfindahl index based on claims on nonfinancial institutions reported a significant decline, reflecting growing competition in the lending market.

The Herfindahl measure for funds attracted from nonfinancial institutions remained relatively stable over the entire 1991 – 1999 period although it decreased slightly during 1991 – 1994. The four-firm concentration ratio, on the other hand, declined steadily throughout the period. As pointed out above, the amount of funds attracted declined dramatically in real terms over this period. As the amount declined, competition intensified. In the post-crisis period, these competition indicators have changed little as the economy stabilized and inflation fell. These changes also reflect the reorientation of the banks over this period. During the 1991 – 1994 period, many banks began to build their branch networks attempting to attract household deposits in addition to enterprise deposits. As a result, the SSB, which had dominated this market segment, lost much of its market share.

There are many aspects and dimensions of banking sector competition. Over the first decade of transition, bank services have become more diverse. New types of deposits are now offered, credit and debit cards are available and e-banking services are being developed, although on a very limited scale. While these services cannot match the diversity and quality of services in the developed market economies, they are expanding.

While banks competed to supply new financial services, price competition has not been so evident. As Table 2.5 shows, the spread between deposit and loan interest rates has been high throughout the 1990s. In the pre-crisis period this relatively high interest rate spread reflected the financial difficulties of troubled state-owned banks. Interestingly, the new private banks did not opt to compete by offering narrower spreads. Instead, competition was directed towards offering new services and banks made an all out effort to capture new customers. The high spreads in the early 1990s were also a result of the common interest rate policy.¹⁷ During the financial crisis the spreads became very high as inflation volatility threat-

¹⁷ This was a policy coordinated within the Association of Commercial Banks in the 1992 – 1994 period. Under this policy all banks voluntarily set common interest rates on deposits and loans.

ened bank profits. After 1997 with the establishment of the currency board, spreads have fallen but they remain very high at 8% – 9%. These spreads are especially high considering that inflation has stabilized and interest rates on deposits have fallen to the 3% – 4% level.

The reasons for these large spreads deserve further study. Low deposit rates discourage savings and high credit rates discourage investment. Two possible explanations include: (1) a lack of competition and (2) a risky loan environment. The banks have a dominant position from the viewpoint of the saver since the capital market still does not provide a viable alternative. Private sector pension funds are just beginning their operations and investing abroad was forbidden until 2000. It is not easy for most people to invest in government bonds which would give them almost the same rate of return. In short, there are still no alternatives comparable to bank deposits. Furthermore, there is little competition within the banking sector. With the exception of the largest cities, there are only one or two bank branches in a town, which is not enough to generate strong competition.

Table 2.5

Annual Interest Rate Spreads and Deposits Rates

	1992	1993	1994	1995	1996	1997	1998	1999	2000
Interest Rate Spread	18.3	26.3	37.5	36.1	153.8	129.0	11.1	10.3	9.2
Deposit Interest Rate	55.8	52.0	65.1	43.7	146.4	80.8	3.0	3.3	3.0
Spread/Deposit Rate	0.3	0.5	0.6	0.8	1.1	1.6	3.7	3.1	3.1

Source: BNB, authors' calculations.¹⁸

On the credit side, high interest rates may reflect high risks related to changing ownership structure, changing management, limited markets, and unstable economic conditions that are still part of the economic landscape in Bulgaria. But lack of competition may also be an important issue here as well. Because the capital markets are still so undeveloped, enterprises that need credit have no other place to go but the banks.

4. Conclusion

The commercial banking sector went through enormous change during the last decade of the 20th century. The early part of the 1990s was a period of extensive institutional reform. These reforms were unsuccessful, and there was a major financial crisis in 1996 – 1997. The period since the crisis has produced greater stability as new institutions have been put into place, but there are still many challenges ahead. The sector is still dominated by large banks. Due to high risk and lack of competition, interest

¹⁸ Calculated by averaging annualized monthly interest rates.

rate spreads are too great. Banks loan too small a part of their funds to the real sector of the economy and channel a lot of scarce funds abroad. The financial services market is still heavily segmented, and the competitive pressure of foreign financial institutions while steadily growing, remains weak. Most of the banking sector has been privatized by foreign investors, but this has yet to bring about a significant change in the quality or in the range of services offered.

III. Nonbank Financial Institutions¹⁹

The establishment of the currency board, and the financial stabilization that has come with it coincided with the end of the first wave of mass privatization. This first wave was modeled after an earlier Czech program where citizens paid a small fee for vouchers that could be used to bid for shares in state-owned enterprises in national auctions. (Miller and Petranov, 2000a)

Once the mass privatization auctions were concluded, there was increased pressure to develop new capital markets so that the new shares could be traded. New regulations were passed and, unlike the Czechs who did not establish a regulatory agency immediately, a Securities and Stock Exchange Commission (SSEC) was created in Bulgaria.

At about the same time pressures began to build to find better ways to manage the pension system. The value of state pensions had seriously eroded during the early 1990s, and the government turned its attention to creating private institutions that could provide additional channels for retirement savings.

Increased stability and lower inflation since the establishment of the currency board also made it easier for a private insurance market to develop. By passing new laws and making it more difficult to obtain a license, the government was also able to reduce mafia influence that had been very extensive in the insurance industry. The next section presents an overview of recent developments in the capital markets. These markets have gotten off to a rocky start with low volume and poor liquidity. The insurance industry, which is analyzed in Section 2, has experienced the most growth among nonbank financial sectors but is still relatively small. New pension systems are beginning to expand and should show more rapid growth in the future. An analysis of these developments is presented in Section 3.

¹⁹ This section draws heavily on *Miller and Petranov (2000b)*

1. Capital Market and Capital Market Institutions

1.1. Laws and Institutions

1.1.1. The Legal Basis for Capital Market Institutions

In June 1995 the Law on Securities, Exchange and Investment Companies (LSSEIC) was passed and actions were undertaken to create a regulatory structure and reorganize the capital market. The Securities and Exchange Commission [now the State Securities Commission (SSC)] was then established (January 1996) and the Central Depository opened (August 1996). Following the last auctions in the first wave of mass privatization, the Sofia Stock Exchange and the Bulgarian Stock Exchange merged and formed the Bulgaria Stock Exchange – Sofia (BSE – Sofia). This new exchange opened in October 1997. The LSSEIC was later amended and in 2000 was superseded by the Law on the Public Offering of Securities (LPOS). The changes incorporated in LPOS reflect experience gained during the early years of capital market development and bring Bulgarian law into close alignment with the EU *acquis*. While it is too early to judge what the full impact of these changes will be, there already appears to be improvement in general corporate governance procedures.

1.1.2. Bulgarian Stock Exchange – Sofia

The BSE – Sofia operates three separate markets, i. e. an official market, a free market and a bond market. In addition, there is also a separate market where shares of state-owned enterprises are sold as a part of the state's privatization program. The official stock market is subdivided into three segments. The specific listing standards for each segment are given in Table 3.1.

Table 3.1

BSE Official Market Listing Standards

	Segment A	Segment B	Segment C
Completed years with audited financial statements	At least 3	At least 2	At least 1
Market capitalization	At least BGN 20 million	At least BGN 10 million	At least BGN 500,000
Part of the issue owned by minority shareholders (%)	At least 25%	At least 10%	At least 5%
Number of shareholders	At least 400	At least 100	At least 100
Average monthly turnover – number of shares	At least 1,000	At least 1,000	The issue should consist of minimum 50,000 shares

Source: *Proceedings Rules of the Sofia Stock Exchange*.

Municipal and corporate bonds can also be listed on the bond market. New bond issues must be at least BGN 1 million, and the maturity must be at least 6 months. Issuers of corporate bonds must have completed at least three financial years. Government securities could also be listed on the bond market but are not presently intensively traded because their market is technically organized by the BNB.

Although the barriers to official market listing are very low, there are still very few market participants. For individuals, trading directly in the market is relatively expensive. Few companies have tried to raise additional capital by issuing new bonds and none have tried by issuing shares.

The BSE – Sofia is organized as a joint-stock company, the state has a 37.6% interest, and the remaining shares are owned by financial institutions, i.e. banks, investment intermediaries, financial brokerage houses and insurance companies. BSE – Sofia is managed by a Board of Directors which is responsible for the operations of the exchange. All decisions as to membership, trade in securities and sanctions against stock exchange members are coordinated through a five member *ad hoc* committee with representation from shareholders in the exchange, members of the exchange, stockbrokers and issuers of securities. The BSE – Sofia has also established a court of arbitration and a guarantee fund to guarantee transparency of transactions, equal treatment of traders and strict observance of obligations.

The BSE – Sofia is striving to improve its operation by focusing on the trading system and the clearing and settlement system. It is trying to improve its information technology systems and even create a system where remote trades can take place. Nevertheless declining turnover jeopardizes the viability of the stock exchange as an institution. While the stock exchange reported a profit in 1998, in 1999 it registered losses of BGN 56,000. Losses are even higher for the financial year 2000: BGN 106,000.

1.1.3. The State Securities Commission

The State Securities Commission (SSC) was established to ensure protection of investors' interests and promote the development of the securities market. The seven officers of the Commission are appointed by the Council of Ministers on the recommendation of the Finance Minister. Officers serve for 5 years.

The Commission regulates the issuance of new securities and monitors transactions in securities. It oversees the establishment and operation of stock exchanges, investment intermediaries and investment companies. It also proposes and drafts new legislation. For example, the Commission deserves credit for the important role it played in bringing LPOS, the new securities law, into line with the EU *acquis*.

Licensing and supervision are at the core of the Commission's activity. Institutions regulated by the Commission are required to submit reports to the Commission on a regular basis and notify the Commission of important changes. The Commission can require the disclosure of information and/or carry out on-site inspections. If the Commission finds violations or identifies an investor who needs protection, the Commission can authorize and impose sanctions and administrative penalties directly.

Central Depository

Under LPOS (as well as previously under the LSEIC), all companies that offer their shares publicly have dematerialised shares (i. e. bookkeeping entries only) , and their shareholder registration books are kept by the Central Depository. The Depository is also responsible for the settlement of transactions (i. e. it also acts as a transfer agent).

The Depository was established as a joint-stock company in August 1996. The company's shareholders include the BNB, the Ministry of Finance, commercial banks and investment intermediaries. The Depository has a five member Board of Directors. Two members are representatives of the BNB and the Ministry of Finance. Either the BNB or the Finance Ministry can veto decisions of the General Meeting of Shareholders.

All transactions must take place on the BSE – Sofia and must be recorded by the Depository. Since only Depository members are authorized to carry out registrations, all transactions must be negotiated via investment intermediaries who are also members of the Depository. Clearing and settlement are guaranteed within three days.²⁰

The establishment of the Depository has greatly facilitated trade and transactions in securities. In other transition economies where shareholder books are kept by the companies themselves, the accuracy of these records have been questioned, further eroding confidence in the markets. There have only been a few controversies regarding shareholder registrations in Bulgaria, and there is confidence that transactions in securities are timely and accurately filed.

Investment Intermediaries

Under LPOS, all transactions on the BSE – Sofia must be concluded by licensed investment intermediaries. Nonbank investment intermediation licenses are issued by the SSC. When banks obtain their banking licenses from the BNB, they also receive a license as investment intermediaries. Still banks are required to register with the SSC as agents carrying out investment intermediation.

²⁰ Until the end of 2000, it was possible to carry out off-the-exchange transactions under very limited conditions. This loophole was exploited by some traders and substantial trading actually took place off the exchange. See *Petranov and Miller* (1999) for a more extensive discussion of this issue.

To trade on the BSE – Sofia an intermediary must become a member of the exchange, and establish a trading post manned by stockbrokers certified by the SSC. The SSC also reviews the capital adequacy, liquidity, and managerial competence of investment intermediaries. The SSC issues two types of licenses: partial licenses allowing intermediaries to render brokerage services and full licenses which also allow intermediaries to deal on their own account and underwrite new issues.

By mid-2000, there were 101 licensed investment intermediaries of which 29 were commercial banks. For such a small and shrinking market, this is a large number. Seven or eight large investment intermediaries control between 55% – 65% of the BSE – Sofia turnover and the twenty most active intermediaries account for about 80%.

Given this situation, investment intermediaries have opted for reducing operating costs and have turned to trading off-the-exchange instruments like compensatory notes.²¹ Table 3.2 shows how the situation has changed. While the number of intermediaries has been increasing slowly, many intermediaries are not members of the BSE – Sofia and do not have trading posts. These firms do not attach great importance to on-the-exchange business and are mostly involved in outside activities like trading in compensatory notes.

Table 3.2

**Number of Investment Intermediaries
(including commercial banks)**

	31.12.1998	30.06.1999	31.12.1999	31.06.2000
Licensed by SSC	78	92	97	101
Deregistered by SSC	0	1	1	2
Members of BSE – Sofia	61	73	76	78

Source: Public Register of SSC.

1.1.4. Investment Companies

An important part of the mass privatization program was the participation of privatization funds. These funds collected vouchers from citizens and then used these vouchers to bid for firms in the privatization auctions. After the first round of the mass privatization program concluded, these funds became investment companies.

Later, however, these companies were required to declare themselves holding companies or continue their status as investment companies. Holding companies can make loans to companies in which they hold 25%

²¹ Compensatory notes are notes created as part of the restitution process. These notes have been given to previous owners of property that could not be physically returned. The notes can only be used to bid in privatization auctions, but they can be transferred.

or more of the shares.²² Investment companies are intended to have more diversified portfolios and are not permitted to hold more than 10% of the shares in any one company.

All but five of the original privatization funds became holding companies.²³ As a result there are only five registered investment companies now. Four became closed-end companies and only one, Zlaten Lev, became an open-end fund. Unfortunately, no special legislation was passed to regulate holding companies so, even though they are really financial institutions, they are operating under the general commercial code. This is a potentially dangerous situation for the financial sector.

1.2. General Conditions of the Capital Market

In spite of establishing extensive market institutions and regulatory agencies, trading has been so light that it threatens the viability of the market and raises important issues regarding the mass privatization program upon which the capital markets were built.

Stocks, as measured by the Warburg 30 Index of the largest market capitalization stocks, performed most successfully in the initial period. The index was set to 100 in December 1997. The index reached its high in May 1998 at 165 but fell to 67 in late 2000. Other market indicators have followed a similar trend. For instance, total market capitalization peaked in the second quarter of 1998 at BGN 3 billion but had fallen to BGN 1 billion by mid-2000.

Market activity has also fallen over the 1999 – 2000 period. The number of listed companies has declined and activity has diminished²⁴. Large block trades are an important percentage of overall turnover. During the early months of 1998 there were a large number of block trades as previous agreements made between privatization funds or between foreign investors and privatization funds during the voucher auctions were settled.

After a lull, block trades are again an important part of overall turnover in the market. Block trades, although they are recorded as taking place on the exchange, are not normal trades. These are agreements negotiated off the exchange and reflect attempts by large shareholders to gain more concentrated ownership positions. A better gauge of the liquidity of the BSE – Sofia auction market is turnover and the number of nonblock

²² In the present environment where the banks are providing little credit and interest rates on loans are high, these loans can benefit both the holding companies and the companies in their portfolios. The loans provide liquidity to the companies, and the holding companies which often have representatives on the board can evaluate the risk.

²³ One company Zlaten Lev split into two parts. One part is a holding company and the other continues to be an investment company.

²⁴ The new LPOS allowed that small companies (with registered capital less than BGN 200,000) whose shares were initially auctioned in the mass privatization to become closed companies through a decision of the General Meeting of Shareholders. Many companies used this opportunity.

market transactions. As Table 3.3 shows, liquidity has fallen dramatically based on both of these measures. Transactions in the first two quarters of 2000 were occurring at about half the rate they were in 1998. Turnover has fallen from a high of BGN 52.0 million in the second quarter of 1998 to only BGN 11.1 million during the entire last six months of 2000.²⁵

Table 3.3 shows large increases in both regular and block trading in the last quarter of 2000. This increase reflects new rules requiring that all trading take place on the BSE – Sofia. It has been estimated that 82% of all shares were traded off the exchange in 1999. In the last quarter of 2000 the Central Depository started recording transfers of shares only from the stock exchange. Thus the increase in trading in the table probably reflects a shift from off- the-exchange- trading to on- the-exchange trading rather than a true increase in the number of shares traded.²⁶

The increase in bond trading in 2000 reflects two changes. Private companies issued two new bonds, and it became technically possible to trade some government securities on the BSE – Sofia.

²⁵ The total turnover including block trading is BGN 65 million. This compares with turnover on the Prague market of approximately USD 750 million and turnover on the Warsaw exchange of more than USD 2 billion. Some analysts believe that the Prague and Warsaw exchanges are too small to survive.

²⁶ Off-the-exchange transactions have been a serious problem since the very beginning of the exchange trade. Initially it was intended that all transactions in shares of companies that participated in the mass privatization program have to take place on the stock exchange. This restriction represented an attempt to seek better price integrity and market transparency. Even block trades that are negotiated off the exchange must be registered on the exchange. The only transactions that were allowed to take place off the exchange are swaps and dealings between individuals. In spite of these restrictions off-the-exchange trade far exceeded on the exchange trade.

Table 3.3

Indicators of trade on BSE- Sofia

	1998				1999				2000			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Official Market												
No. Companies		1	4	10	19	25	25	25	25	25	25	25
No. Shares (million)	0.247	0.444	0.912	1.365	0.546	0.611	0.265	0.928	0.467	3.906	0.260	0.222
No. Transactions	193	166	1,269	1,753	2,047	1,807	808	1,222	1,150	1,340	973	1,448
Turnover (million BGN)	5.2	8.7	3.4	2.7	1.4	7.6	0.6	1.6	0.9	1.5	6.0	0.2
Mkt Capitalization (million BGN)	17.5	48.1	182.4	243.4	268.5	268.2	242.1	219.1	255.6	325.0	277.2	283.5
Free Market												
No. Companies	322	983	983	979	844	844	826	828	811	734	545	478
No. Shares (million)	1.626	5.776	4.236	2.704	1.287	0.624	0.479	2.804	0.810	1.266	0.375	5.908
No. Transactions	277	4,903	6,376	4,141	3,982	2,711	935	1,757	1,494	1,463	809	1,318
Turnover (million BGN)	16.5	43.3	39.3	33.6	11.3	4.1	2.8	14.5	6.6	4.8	1.3	10.9
Mkt Capitalization (million BGN)	1,824	3,094	1,655	1,092	1,452	1,324	1,203	1,154	1,152	1,012	914	1,003
Subtotal												
No. Shares (million)	1.872	6.220	5.148	4.068	1.833	1.235	0.744	3.732	1.277	5.172	0.634	6.131
No. Transactions	470	5 069	7 645	5 894	6 029	4 518	1 743	2 979	2 644	2 803	1 782	2 766
Turnover (million BGN)	21.8	52.0	42.7	36.3	12.8	11.7	3.4	16.0	7.4	6.3	7.3	11.1
Block Trading												
No. Shares (million)	6.629	1.942	0.000	0.336	4.331	1.821	1.603	2.848	2.645	5.817	1.377	18.062
No. Transactions	318	117	0	8	51	42	14	46	46	40	29	157
Turnover (million BGN)	53.7	5.2	0.00	1.8	38.1	16.7	3.7	15.9	14.8	7.9	13.6	54.7
Bond Market												
No. Companies	0	0	0	0	0	0	1	1	1	1	1	2
No. Bonds	0	0	0	0	0	0	3,235	1,007	20	1	1,1449	16,805
No. Transactions	0	0	0	0	0	0	23	12	1	1	17	21
Turnover (million BGN)	0	0	0	0	0	0	0.2	0.2	0.0	0.0	1.2	2.4
Total												
No. Shares (million)	8.5	8.2	5.2	4.4	6.2	3.1	2.4	6.6	3.9	11.0	2.0	24.2
No. Transactions	788	5,186	7,645	5,902	6,080	4,560	1,780	3,037	2,691	2,844	1,828	2,944
Turnover (million BGN)	75.5	57.3	42.7	38.2	50.9	28.5	7.4	32.2	22.3	14.2	22.0	68.3

Source: BSE – Sofia.

In spite of the high cost of borrowing from banks, the capital market has provided only a limited alternative. Investment banking has not really developed. At the end of 2000, there had been only two offerings of corporate bonds and no primary issues of stocks. It is difficult to discern whether

the lack of investment banking is due to a lack of interest in new issues or inadequately trained investment bankers.

Why have the capital markets developed so slowly?²⁷ There are several factors. Some are external factors like the 1998 crisis in Russia and subsequent withdrawal of international investors from risky emerging markets. Other problems are internal, however. The core problem lies with the very genesis of the Bulgarian capital market in the mass privatization program. Over one thousand companies initially traded on the BSE – Sofia were part of the mass privatization program. Unlike companies in the West that come to the capital market to acquire new financing, these companies were registered as public companies in a purely administrative way without having any economic motivation to become publicly traded companies.²⁸

Another important reason for the slow development of the capital market is that the government has failed to take important steps to help the markets expand. While new laws like LPOS should improve market conditions, it is important that efforts be made to ensure that the law is effectively enforced. This is particularly important if good corporate governance is going to be supported and shareholders' rights protected. The government could provide further support for the market if new laws were passed that provided equal tax treatment of all institutional investors and motivation for companies to go public.²⁹

Several other transition economies have been successful in creating viable capital markets. Bulgaria has passed good legislation and established appropriate institutions to promote its capital market. Some big issues remain, however. It is important that the government take a more active role in promoting the market by ensuring that new laws are enforced and shareholder rights are protected. It can also help broaden the market by completing the sale of important companies like the telecommunications company.

2. Insurance

Before 1997 there was weak regulation of the insurance industry and few requirements to promote transparency. There were questions about whether insurance companies' capital came from legitimate sources and a number of powerful insurers were mafia-like businesses which often resorted to strong arm tactics.

²⁷ For a comparison between the capital market performance in other transition economies, see *Johnson and Shleifer* (1999), *Pohl, et.al.*, (1995), World Bank (1999) and OECD (1998).

²⁸ For further details on the impact of the genesis of the capital market on its future development, see *Petranov and Miller* (1999).

²⁹ For further information on the possible economic policy measures of the government that may promote capital market development, see *Petranov and Miller* (1999).

In 1997 and 1998, the insurance sector in Bulgaria was thoroughly restructured when the Insurance Law was substantially amended. Stricter requirements on insurers were imposed and the National Insurance Council (reporting to the Council of Ministers) and the Insurance Supervision Directorate (under the Ministry of Finance) were created to regulate the industry.

The highest regulatory body is the National Insurance Council. The Council has seven members with representatives from the Minister of Finance, the Minister of Justice, and the Minister of the Interior, and the CEO of the Insurance Supervision Directorate. The Council is chaired by the Finance Minister. It is responsible for licensing, authorization of mergers and divestitures, and bringing insolvency/bankruptcy proceedings.

The Insurance Supervision Directorate is responsible for daily regulatory matters. The CEO is appointed by the Prime Minister on the recommendation of the National Insurance Council. The Insurance Supervision Directorate monitors the overall activities of insurance companies and insurance brokers. These include control over products offered and insurance premiums charged. The Directorate also authorizes the promotion of new insurance products, determines the minimum premium amount on compulsory insurance and approves the annual reinsurance programs of insurers. It may also undertake certain administrative measures to stabilize the financial condition of insurance companies and oversee the sale of insurance portfolios when an insurer is undergoing liquidation.

Since the beginning of 1998 the National Insurance Council has instituted new licensing procedures for insurance companies and mutual insurance societies to bring insurers into compliance with the 1997 amendments to the Insurance Act. Most companies (87 out of 112) failed to meet the new stricter requirements and lost their licenses. Seventeen new joint-stock property insurance companies and another six life insurance companies and four mutual insurance societies were licensed in 1998.

Table 3.4 shows how the structure of the sector changed between 1997 and 1999. The sector is highly concentrated. In 1999 the State Insurance Institute – General Insurance, the largest property insurance company, accounted for nearly 30% of the market. The four largest companies controlled 70.2% of the market. The concentration of life insurance companies was even higher. In 1999, the State Insurance Institute had a market share of 62.4% and the four largest insurance companies 91.7%. Both the Herfindahl index and the four firm concentration ratio provide evidence that the sector is becoming more competitive, but concentration remains high.

In 2000 the largest companies in both segments of the insurance market were state-owned. Two other insurance companies were state-owned, and another company, the Municipal Insurance Company, was indirectly

controlled by the Sofia Municipality. The remaining companies were private, although there was an indirect state interest in some companies e.g. Bulstrad PLC. which was privatized. The gradual increase in the number of new private companies, the privatization of state-owned companies, and the entry into the Bulgarian market of well-established foreign insurance companies are positive signs that the insurance industry will continue to grow.

Table 3.4

Structure of the Insurance Sector

	General Insurance			Life Insurance		
	1997	1998	1999	1997	1998	1999
Number of insurance companies*	na	17	18	na	10	12
State-owned	3	4	3	2	2	1
Private	na	13	15	na	8	11
O/w foreign companies**	0	3	6	0	0	3
O/w mutual insurance societies	na	0	0	na	4	5
Herfindahl index***	0.458	0.421	0.384	0.774	0.756	0.658
Four-Firm Concentration ratio (%)***	84.1	76.4	70.2	97.2	94.1	91.8

* In 1997 the number of insurers (joint-stock companies and mutual insurance societies) totaled 112. Data, however, were not reliable enough to treat them in separate groups.

** Insurance companies with foreign shareholders owning over 50% of their capital.

*** 1997 estimates draw upon the market shares of the insurers licensed to operate in compliance with the amendments to the Insurance Law.

Source: Annual Report of the Insurance Supervision Directorate; Authors' Calculations.

Between 1997 and 1999, general insurance generated 90% of premium income. (Table 3.5) Total income from premiums in both segments, i.e. general insurance and life insurance, grew by almost 88% over two years.

Table 3.5

Total Income from Premiums for the Insurance Sector in Bulgaria (millions of BGN)

	1997	1998	1999
General Insurance	147.3	204.5	278.1
Life Insurance	17.5	28.3	31.6
Shareholding companies	17.5	27.6	30.9
Cooperatives	0.0	0.7	0.7
Total	164.8	232.8	309.7

Source: Annual Report of the Insurance Supervision Directorate.

Despite its impressive growth, the sector remains relatively small. Total

income from insurance premiums was only 1.36% of GDP in 1999 (see Table 3.6). This is far below other countries in transition. For example, in 1997 insurance premiums were 2.89% of GDP in the Czech Republic, 2.74 in Poland and 2.33 in Hungary. The penetration was 6.53% in Germany and 1.74% in Greece which has the smallest insurance sector in the EU.

Table 3.6

Macroeconomic and Insurance Sector Indicators

	1997	1998	1999
GDP (current prices, million BGN)	17,055.2	21,577.0	22,776.0
Gross Income from Premiums (million BGN)	164.8	232.8	309.8
Insurance Penetration (% of GDP)	0.97	1.08	1.36
Population (thousand)	8,283.2	8,230.3	8,190.8
Insurance Density (BGN)	19.9	28.2	37.82
Labor Force (thousand)	4,749.5	4,749.7	4,752.8
No. of Individuals w/ Life Insurance Policies (thousand)	-	1374.1	1,688.9
Percentage of labor force w/ Life Insurance Policies	-	28.9	35.5

Source: National Statistical Institute; Annual Report of the Insurance Supervision Directorate.

Under the Insurance Law, all insurance companies must invest insurance reserves in certain instruments. Furthermore, the structure of the various investment categories within total insurance reserves is also subject to regulation. At least 50% of reserves must be invested in bank deposits or government securities. In addition there are further limitations on other holdings: real estate cannot exceed 10% of total reserves; the share of municipal bonds cannot exceed 5%, and the share of corporate securities cannot surpass 30%.

Because the sector has been expanding, total assets and total insurance reserves have grown quickly. The insurance business, as a whole, is profitable, although some smaller companies have experienced losses in certain years (see Table 3.7).

Presently, insurance companies are pursuing very conservative investment strategies. Very few financial instruments meet their investment needs. The poor liquidity of most shares on the stock exchange has discouraged insurers from actively participating in the capital market. Furthermore, they do not have the expertise, information or experience to invest in risky assets. As a result, they tend to invest their reserves almost exclusively in bank deposits and medium and long-term government securities (see Table 3.7). This is a very low risk strategy, but it also means very low returns on insurance company investments.

Table 3.7

**Net Profit, Total Assets and Reserves
of the Insurance Sector (million BGN)**

	General Insurance			Life Insurance		
	1997	1998	1999	1997	1998	1999
Net Profit	0.31	3.09	5.96	0.28	0.54	0.88
Total Assets	165.0	261.4	355.9	194.0	178.2	188.3
Total Reserves	39.6	86.4	103.2	108.5	86.8	79.0
Distribution of Reserves (%)						
Government Securities	3.7	13.5	40.7	53.2	56.9	75.6
Real Estate	0.0	8.6	5.18	0.7	1.7	8.0
Municipal Bonds	0.0	0.0	0.09	0.0	0.0	0.2
Corporate Securities	0.0	1.2	1.94	0.2	3.5	0.3
Bank Deposits	96.3	76.7	52.08	45.6	37.8	15.7
Loans against Life Insurance	0.0	0.0	0.0	0.3	0.1	0.1

Source: Insurance Supervision Directorate, Annual Report.

3. Pension and Health Insurance Funds

The first private pension funds were established in 1994. They started operating without any specific legal framework or regulation, drawing upon the general provisions of the Law on Commerce. In early 1999 there were 30 registered pension funds, but only a few were operating actually in 2000.

The retirement system now has three pillars. The first pillar is the existing mandatory state operated 'pay-as-you-go' social security system. The second pillar provides additional obligatory pension insurance for certain professions with high risk jobs and for individuals born after 31.12.1960. Employers and employees are required to make insurance contributions to special private pension funds. Employees have a choice of funds. The third pillar embraces the whole system of additional voluntary insurance. This third pillar is defined contribution pension insurance purchased by individuals on the free market from licensed pension insurance companies. In 1999 the Law on Additional Voluntary Pension Insurance (LAVPI) was passed. This Law provides a legal basis for the third pillar. LAVPI provides for state regulation and control of pension insurance companies and pension funds. The State Agency for Social Security Supervision under the Council of Ministers was established under the Law. The Agency is authorized to license and regulate companies selling pension insurance. The Agency is a legal entity funded by government with annual appropriations. The Council of Ministers is responsible for appointing the chairman of the agency and determining the number of staff. The law also establishes a Council for Additional Voluntary Insurance which has seven members

representing various ministries and the SSC. The Council is assisted by a representative of the Association of Companies for Additional Pension Insurance who performs advisory functions. The Council is chaired and convened by the Minister of Labor and Social Policy on a regular basis. It makes decisions regarding licensing and authorizes the merger or divestiture decisions of companies. Under LAVPI, the State Agency for Social Security Supervision began licensing pension insurance companies. Out of thirty original pension insurance companies only nine were able to meet the new stricter requirements and were granted licenses to establish and manage pension funds. It is estimated that at the end of 2000 the licensed pension insurance funds in Bulgaria manage BGN 50 million obtained from contributions from about 500,000 people.

Legally, pension funds are required to meet specific requirements and comply with a number of restrictions in implementing their investment policy. Investments are limited to certain instruments. Pension funds must invest at least 50% of their assets in government securities or bank deposits. There are also other restrictions. For example, no more than 10% of the assets can be invested in real estate and mortgages and no more than 10% of their assets can be invested abroad.

A special feature of the Bulgarian system is that licensed pension insurance companies can also establish funds for which pension premiums can be paid by investment bonds obtained as vouchers in the second wave of mass privatization program. However, most companies privatized so far in the second wave of the privatization program are in poor financial condition so their shares have been very illiquid. For this reason, investment bonds are considered unattractive asset for pension funds.

Indeed there are real potential problems here for the pension funds. If premiums are paid in investment bonds, the assets of pension funds will then consist of highly illiquid securities. At the same time, pension funds must make regular pension payments. This mismatch between the liquidity of assets and liabilities could destabilize the funds. For this reason, no licensed pension insurance company has decided to start such a pension fund.³⁰

Pension funds should play an important role as the financial system develops. Because contributions to the 'second pillar' pension funds are mandatory, they should grow rapidly once some technical start-up problems are solved.

Health insurance, as provided for by the Health Insurance Law, and the pension insurance system have similar structures. Besides the mandatory health insurance system implemented by the state, there will also be funds for supplementary health insurance. Companies providing supplementary health insurance must be licensed by the State Agency for Insur-

³⁰ In the second wave of the mass privatization program using investment bonds as pension payments was supposed to support the mass privatization program. The program so far has been very small and has had little effect on overall privatization efforts.

ance Supervision. As 2000 drew to a close, there were no licensed health insurance funds as the licensing procedure needs further clarification.

4. Other Financial Services

Other financial institutions that are commonly found in countries with more developed financial markets have not made serious inroads in Bulgaria. In part this is due to the breadth of activities in Bulgaria's universal banks. For example, the development of mortgage banks, investment banks, savings banks, savings and loan associations, finance companies, leasing companies and public financial agencies is very limited.

Only four commercial banks extend housing loans backed by real estate as collateral. This activity may expand, however. The Mortgage Bonds Law (admitted in October 2000) details the rules for underwriting and trade in mortgage bonds. The expectation is that banks will be able to attract additional resources by underwriting mortgage bonds, thus giving rise to bond trading. This should foster supply and lead to the expansion of the housing loan market.

The State Savings Bank (SSB) functioned as a savings bank until 1999 when its legal status was changed and it became a commercial bank with broader authority to make loans and offer additional banking products. Still, the SSB has the largest branch network and customer base of any bank. Its business is still oriented towards consumer loans. The ongoing restructuring of the SSB will present a number of challenges since it lacks expertise in risk evaluation and still has a reputation for poor customer service.

Other financial institutions include the Agriculture State Fund which provides financial support to agricultural producers under different programs and the state sponsored Encouragement Bank. Agriculture Fund is also related to the accession process to the EU: it has been accredited as the single Paying Agency in Bulgaria to manage EU SAPARD funds.

Established in 1999 by the government, the Encouragement Bank enjoys a special status and is supposed to provide financing for small- and medium-sized businesses. After a little more than a year of unsuccessful operation, the Small- and Medium-Sized Enterprises Law, under which the bank was established, was amended by Parliament. The amendments have provided for the removal of restrictions on the bank's lending operations.³¹

5. Conclusions

When considering the expansion of nonbank financial institutions, there are important lessons from the early experience with commercial

³¹ All state-owned banks except Biochim Commercial Bank and DSK Bank have been privatized. Many analysts argue that the Encouragement Bank was established by the government to again gain control of a commercial bank.

banks in Bulgaria. In the early 1990s, commercial banks were not properly regulated and this led to disastrous results.

Since 1997, real progress has been made in creating the appropriate legal and regulatory framework for the expansion of nonbank financial activities. While these steps are important, it is equally important that these new laws be enforced. Furthermore, regulatory organizations must find the right balance between enforcement that builds confidence in these new financial sectors, and regulation that stifles growth.

As yet, the insurance sector is the only sector that has seen significant expansion, but pension funds should begin to grow. The development of the capital market is less certain, but the expansion of the insurance and pension sectors should assist the development of the capital markets by providing a new demand for shares. An important question, however, is whether this will be enough to create sufficient liquidity in the capital market. If the capital markets remain illiquid, serious consideration should be given to closing the local stock exchange and organizing or participating in a larger regional effort.³²

Nonbank financial institutions are too small to provide significant competition to the banks. If these nonbank institutions are able to gain public confidence and expand, this could create more competition for the banks and provide more financial resources to the real sector. This could improve the prospects for more sustained economic growth.

IV. Commercial Banks' Activities

Understanding the activities of commercial banks is important for at least two reasons. First, the principal mechanism for passing savings from individuals to investors is through the commercial banking system. This is Stiglitz' second required function of financial institutions in a market economy. Since the other financial institutions still play only a limited role in Bulgaria, the importance of commercial banks in this process of financial intermediation is great. Secondly, the banks play an important role in determining the money supply, a key macroeconomic policy variable. The various money supply definitions discussed in Section VI all include both cash held by the public and deposits at commercial banks. The role of commercial banks in the determination of the money supply is critical, as these deposits are the liabilities of commercial banks. We begin by looking at the items that appear on the balance sheets of commercial banks. Close analysis of the balance sheets provides valuable insights into bank behaviour and efficiency and provides a better understanding of the changes in business conditions and the institutional environment in Bul-

³² If Bulgarian companies are traded on foreign or regional markets rather than local markets, it is still important that company law is enforced so that potential investors have confidences that their rights will be protected.

garia during the transition period. Then we consider how the commercial banks manage their assets and liabilities.

1. Consolidated Balance Sheet of Commercial Banks

Table 4.1. shows the consolidated balance sheets of the Bulgarian commercial banks in 1995 and 2000.³³ The 1995 figures are indicative of the financial conditions that existed in the 1991 – 1995 pre-crisis period. The period was characterised by dynamic changes in market share among banks, protectionist policies favouring local and state-owned banks, weak bank regulation and supervision, activist monetary policy, poor control over the money supply, bad enterprise debts and rising inflation.

Table 4.1

Consolidated Balance Sheet of Commercial Banks

ASSETS	1995		2000	
	million BGN	%	million BGN	%
Vault Cash and Current Accounts with the BNB	70.4	9.4	737.4	7.6
Claims on Banks and Other Financial Institutions	114.2	15.3	3,874.1	39.8
Securities in Trading Portfolio	232.7	31.2	1,065.3	10.9
Securities in Investment Portfolio	6.1	0.8	436.7	4.5
Credits to Nonfinancial Institutions and Other Clients	274.3	36.7	3,014.1	30.9
Other Assets	29.2	3.9	202.8	2.1
Fixed Assets	20.0	2.7	407.1	4.2
TOTAL ASSETS	746.9	100.0	9,737.7	100.0
of which pledged assets	470.8	63.0	527.7	5.4
LIABILITIES AND CAPITAL				
Deposits by Banks and Other Financial Institutions	178.1	23.9	740.5	7.6
Deposits by Nonfinancial Institutions and Other Clients	425.3	57.0	6,393.8	65.8
TOTAL DEPOSITS	603.4	80.8	7,134.3	73.4
Other Liabilities	55.0	7.4	1,114.4	11.4
TOTAL LIABILITIES	658.4	88.2	8,248.7	84.8
Capital	59.1	7.8	1,095.4	11.2
Reserves	29.0	3.9	393.5	4.0
OWN CAPITAL (CAPITAL AND RESERVES)	88.1	11.8	1,488.9	15.2
TOTAL LIABILITIES AND OWN CAPITAL	746.5	100.0	9,737.7	100.0
OFF-BALANCE SHEET LIABILITIES	470.6	63.0	1,182.9	12.1

Source: BNB

The 2000 figures reflect the post-crisis behaviour of banks. The 1997 – 2000 period witnessed the stabilisation of the banking sector, accelerated

³³ The balance sheets shown in the table were prepared in compliance with the National Accounting Standards (NAS) as they are currently applied. Over the years there have been several amendments to NAS as well as modifications in their interpretation and implementation rules. As a result, the classification of some assets has undergone important changes. Caution should be exercised in making data comparisons. For purposes of comparison, the 1995 consolidated balance sheet, prepared in compliance with the applicable NAS at that time has been readjusted to bring it into conformity with current standards.

privatization of state-owned banks, the entry of foreign banks into the Bulgarian financial market, passive monetary policies and low inflation under the currency board arrangement.

We now look in more detail at the most important assets and liabilities on the consolidated balance sheet.

1.1. Assets

Vault cash and current accounts with the BNB. This category includes all banknotes (cash) in the bank's vaults, required reserves at the Bulgarian National Bank, and transaction deposits at banks.

Banks keep cash funds to service the demands of their customers. Cash is widely used as a means of payment in Bulgaria. As a result the level of cash held by banks needs to be higher than in other countries where other means of payment are more common.

By law, commercial banks must meet required minimum reserve requirements established by the BNB. Under Article 41 para. 1 of the Law on the BNB 'the BNB shall lay down certain minimum reserve requirements commercial banks are required to meet, the methodology of calculation as well as the terms and conditions of paying interest on them.' At first (1991) the required minimal reserves were 7% of the total attracted deposits, but this ratio was raised in a series of steps during 1994 and 1995 until it reached a record high of 12% in April 1995. Later the requirement was stepped down to 8.5% as the BNB attempted to increase the amount of money outstanding. In the post-crisis period, the ratio was raised to 11% to maintain stability in the system. In mid-2000 it has been lowered to 8% as the performance of Bulgarian banks improved.

The BNB is allowed to set the interest rate on the minimum required reserves of commercial banks. Before August 1994, no interest was paid on these reserves. Between 1994 and 1999, the interest rate varied depending on economic conditions. In mid-1996 the interest rate was 36% as the BNB attempted to alleviate liquidity problems in the commercial banks. Currently, no interest is paid on minimum required reserves.

If banks provide services to customers holding foreign currency deposits, part of the reserves with the BNB may be kept in foreign currency.³⁴ Required reserves at the BNB are also used as settlement accounts, i.e.

³⁴ When the BNB introduced minimum reserve requirements in 1990, commercial banks were allowed to use foreign currency deposits to meet reserve requirements. The ratio of foreign currency reserves to lev reserves had to correspond to the ratio between the foreign currency liabilities and lev liabilities. This element of the monetary policy underwent a number of changes. There was a decision to remove foreign currency reserves by end-1993. At a later stage foreign currency reserves were once again introduced. In 1994, the relative share of foreign exchange reserves changed several times. Thus for instance in August 1994 alone monetary policies underwent two modifications (BNB, Monthly Bulletin, No. 8, pp. 42-43). Frequent amendments impeded bank planning and assets management. Presently, commercial banks can keep their reserves in foreign currency, but the ratio of foreign currency to lev reserves cannot exceed the ratio of foreign currency to lev liabilities.

clearing accounts.³⁵ When one enterprise makes a payment in leva to another enterprise and they are customers of different banks, the transfer of funds is cleared through accounts the commercial banks have at the BNB.³⁶

The clearing system through the Central Bank is only applied to transactions in leva. Foreign currency transactions are settled by commercial banks themselves and to make settlements easier banks are required to hold foreign currency accounts with other banks.³⁷

Claims on banks and other financial institutions. In this general category there are two types of claims: deposits at other banks and financial institutions, and loans to other banks and financial institutions. At the end of 2000, claims on banks and other financial institutions accounted for 39.8% of total bank assets, more than 2.5 times increase from 1995.

The percentage of claims on banks and other financial institutions has been relatively high in Bulgaria (when compared with international standards.) The reasons behind the high shares in 1995 and 1999 were radically different, however. In 1995 the high share was due to lending to emerging private banks and the special role of the State Savings Bank (SSB). State banks often loaned money to friends at emerging private banks. Also in 1995 the SSB was the largest deposit-taker. Other banks mostly borrowed from the SSB through the interbank money market.

By 2000 the picture was completely different. The banking system was largely privatized by foreign banks. Other banks besides SSB became also important deposit takers and did not have to borrow as much on the interbank money markets. Private banks were much less willing to loan to risky new emerging banks. Indeed banks were very conservative in their lending practices. Because there were still problems associated with lending to the real sector, banks began to rechannel a large portion of their money abroad, mostly as deposits to their mother companies. As a result, the relative share of these assets grew significantly.

Securities in trading portfolio and securities in investment portfolio. This item covers shares, bonds, other securities and transferable claims. These may be short-term instruments with maturities less than one year or long-term securities with maturities greater than one year. Short-term securities are used for hedging or speculation. Long-term securities not only pay interest and dividends they also provide the possibility of exercising control over other banks.³⁸

³⁵ During part of the reviewed period commercial banks kept separate accounts with the BNB for required reserves and clearing transactions. This practice was abandoned in 1998.

³⁶ For more details see Section VII.

³⁷ Over the years several suggestions have been made to clear foreign currency transactions through the BNB. (BNB Regulation BUS 1092, Settlement in BNB, p. 2.1; 2.2.6).

³⁸ Banks are restricted to buy equity in companies other than banks. The total amount of bank's investments in real estate, tangible fixed assets and equity shall not exceed bank's own funds. (Article 30 para. 1, Law on Banks).

Due to the limited range of financial instruments in the underdeveloped capital market, banks hold mainly government securities. Indeed, close to 80% of outstanding government securities are held by banks. There are two types of government securities: securities issued for budget financing purposes and special-purpose securities. The bulk of special-purpose securities were issued under the Law on Settlement of Nonperforming Credits (ZUNK). These bonds were issued to cover the bad debts of state-owned enterprises.³⁹

Between 1995 and 2000 the ratio of securities to total bank assets declined from 32.0% to 15.4%. The decline was entirely due to the lower volume of government securities issues as the overall government budget stabilized.

Credits to nonfinancial institutions and other customers. This category includes loans extended to both corporate and individual customers. Interest rates on these loans are freely negotiable between the lending bank and the borrower. One of the most important functions of commercial banking is lending to support the operations of companies. Legally, banks may extend loans in levs or foreign currency. More than half of corporate loans (between 50% and 60%) are in foreign currency.

Housing loans are the most important type of loans to individuals. Housing loans are normally extended by the SSB, which has traditionally provided services to this segment of the market. Recently three other banks, besides SSB, have begun offering mortgage loans.

The relative share of credits to nonfinancial institutions and other customers within total bank assets decreased in the post-crisis period from 36.7% in 1995 to 30.9% at the end of 2000. This compares with ratios of 50% – 60% in well-developed banking systems.

Several factors contribute to the low level of lending activity in Bulgaria. Banks are trying to avoid past mistakes made during the 1996 – 1997 crisis. In addition there are new legal requirements to provision for bad loans and stricter bank supervision. Risk associated with lending in the real sector is still high and is reflected in the large spreads between deposit and lending rates. On the other hand, some institutional changes are lowering risks. A public registry of collateral has made lending more secure.

Other assets and fixed assets: In addition to the income-bearing assets described above there are other assets that are not immediately income-bearing. Also there are fixed assets that help to support bank operations. It is noteworthy that banks are not allowed to invest in real estate, equipment and equity (with the exception of equity in other banks) that exceeds their own capital. This restriction has important implications for the role of banks in the management of companies in the real sector. It means that

³⁹ For a detailed description of the program and its implications see Miller and Petranov, 1996.

Bulgarian banks cannot play a role similar to German or Japanese banks which support, direct and help govern companies in the real sector.

1.2. Liabilities

Deposits of banks and other financial institutions. Commercial banks can borrow funds from other commercial banks, nonbanking financial institutions or from the BNB. In the early 1990s banks often deposited funds in other commercial banks. This was mostly state-owned banks placing deposits in private banks. As part of its monetary policy, the BNB also placed deposits in commercial banks. These deposits were unsecured loans being made by the BNB to commercial banks. The amount of these BNB deposits grew dramatically in the last two years before the crisis.

In the post-crisis period, the privatization of banks, amendments to bank legislation, and tough restrictions on the BNB under the currency board arrangement have caused the level of these deposits to fall from 23.9% of total bank liabilities in 1995 to 7.6% in 2000.

Deposits of nonfinancial institutions and other clients. This item includes all current accounts and savings and time deposits of individuals, companies and organisations in both levs and foreign currency. Since the SSB was the only bank used by individuals before the transition, the majority of these accounts were still at the SSB during 1990s. Over time, however, with banks expanding their activities and establishing regional branches, there has been a progressive movement away from the SSB as other banks compete for these funds. The relative share of funds attracted from nonfinancial institutions within total liabilities had followed a steady upward trend, reaching 65.8% in 2000 versus 57.0% in 1995. This increase is an indication of the growing competition among banks in attracting funds from primary depositors.

Other Liabilities. This category includes loans from other banks, interest payments due on these loans as well as other liabilities and deferred expenditures.

Banks can borrow from other commercial banks through the interbank money market, or from the BNB. Funds borrowed from other banks are recorded here. Deposits of commercial banks or the BNB are entered under 'deposits of banks and other financial institutions'. At the outset of the bank reforms in Bulgaria, interbank auctions were used as the major mechanism for transferring funds to banks. At a later stage, the BNB switched to other forms of collateralised bank lending such as Lombard credits. Any form of commercial bank refinancing, lending included, by the BNB has stopped with the establishment of the currency board.

A comparison between 2000 and 1995 data shows that the share of *other liabilities* has increased from 7.4% to 11.4%. Although BNB refinancing has been removed, the interbank money market has expanded.

Own capital. This item covers the equity capital of banks and includes authorized capital, profit and reserves. Authorised capital is determined by the nominal value of shares in the bank. The current banking legislation requires that banks' authorized capital should be at least BGN 10 million.

Own capital also includes operating profit in the current financial year and undistributed profit, if any, from past years. The relative share of capital, the combination of authorized capital and profits, in total liabilities rose from 7.8% in 1995 to 11.2% in 2000. This is due to both rising profits and higher capital requirements.

There are two types of reserves: legal provisions for bad loans and reserve funds. Under the Law on Banks, banks must set aside provisions for bad loans from their pre-tax profits. The BNB regulates the classification of credits and provisions against them. If delinquencies are expected, banks must reduce their dividends and create a pool of reserve funds to meet any future loss. Under Article 24 of the Law on Banks, banks must set aside at least one-fifth of their post-tax profit for a reserve fund until the reserve fund reaches 1.25% of total assets. Amounts above these levels can be paid out in dividends. In accordance with the Basle arrangements, BNB regulations state that the capital base must be at least 12% of the risk component of banks' assets.⁴⁰

2. Issues of Asset Management

In managing their asset portfolios private banks pursue three often contradictory objectives: profitability, liquidity, and solvency. For banks to be liquid they must hold assets that are easily converted into transferable assets. To ensure solvency the banks must be cautious about the riskiness of loans. To be profitable, they must put financial resources to work, seeking the highest yields on assets. But none of these can be pursued independently of the others. High yields can mean not only higher profits but also greater risk of insolvency. Liquidity can be at the expense of profitability as money sits idle. When banks manage their assets, they are pursuing strategies that will fulfill each objective without seriously impairing the others.

There are several features of the Bulgarian financial environment which further complicate the already difficult task of bank asset management. We shall focus on four major issues: the paucity of secondary markets in most assets, high risk, the burden of bad loans of SOEs, and the need to finance the emerging private sector. Each impacts liquidity, solvency or profitability of Bulgarian commercial banks.

⁴⁰ The Basle arrangements provide for different risk categories and capital adequacy requirements vary for the different categories. The precise definition of capital base and the risk component of the assets is given in Regulation No. 8 of the BNB. Since 1997 the average capital adequacy ratio of the banks has been far above the requirement with ratios in the range of 30%.

Bad debts. One aspect of the reform of the banking system was the distribution of loans or credits of SOEs to the newly formed commercial banks. The unfortunate legacy of these state enterprise loans created a severe challenge for the banking system. The 'original loans' to many SOEs were not really loans in the normal sense at all. The money was extended under the previous system of central planning where the risks of default on repayment were not evaluated. Once these loans appeared on the accounts of the newly established commercial banks, they became assets of these banks. As bank assets, the loans had value only if they were repaid. Unfortunately, many SOEs were suffering from severe financial problems, especially following the collapse of the CMEA markets, and were therefore not able to repay these loans. They could not simply be written off as the banks holding them would be seriously threatened with insolvency.

These problems were exacerbated by two other problems. The first was high interest rates. When prices were freed in February 1991, nominal interest rates rose sharply to reflect the high inflation. Even SOEs that might have been able to repay existing loans were faced with high interest payments on the loans. The banks were fearful that if the loans went into default, they might be threatened with bankruptcy themselves. The banks, therefore, did not want to declare the loans to be in default.

The second problem was that many of these enterprise loans were in convertible currency. Bulgaria borrowed large sums of money from foreign banks in the late 1980's. Even though the central planning system determined how the money would be spent, it was recorded in the banking system as if these were convertible currency loans being made by the central bank to enterprises. When the banking system was reorganized, these became real loans which the enterprises were now obligated to repay. If these loans had been denominated in levs, the high inflation in 1991 would have greatly reduced their real value, but the sharp depreciation of the lev more than offset this effect.⁴¹

As time passed the problem became worse because enterprises paid neither the interest nor the principal on these loans. During the 1991 – 1996 period there was also government complicity in all of this. The government feared high unemployment and social unrest. SOEs were in bad financial difficulty, but they were still functioning at some level. If the bad debts forced liquidation of SOEs, unemployment would rise even higher. The banks understood this and recognized that the government would bail them out if state enterprise loans were not repaid.⁴² Thus the banks knew

⁴¹ Inflation reduces the problem of repaying a fixed loan. If the value of a loan was fixed at BGL 500,000, it would have been much easier to repay it after prices had increased five fold in 1991. When the loans were denominated in dollar amounts, however, the BGL 500,000 loan became a BGL 5,000,000 loan. See *Dobrinisky* (1994) for a more complete explanation of these problems.

⁴² Ironically enough there were cases when the Minister of Industry issued official ordinances to state-owned enterprises to suspend debt repayment.

the risks associated with extending further credits to the SOEs.

Government protection created an atmosphere where there was little incentive to improve efficiency. Management of companies was poor and in many instances managers just siphoned off profits into their own pockets. More bad debts were generated by commercial banks themselves. Weak regulation and poor supervision created an atmosphere where the criteria for new loans was side payments to bank officials rather than evaluation of actual risks. This created more loans that were never repaid.

All this led to the adoption of the ZUNK Law at the end of 1993. Under this law, ZUNK (government) bonds were substituted for bad loans to SOEs on bank balance sheets. By removing the bad debt from the balance sheet of the commercial banks, it was hoped that the financial condition of both the banks and the SOEs will improve. Unfortunately, the results fell well short of expectations. Even after a grace period, most debt was never repaid to the government. Soon the government was faced with the same dilemma as before: launch bankruptcy procedures against the debtors and trigger a chain of enterprises failures and higher unemployment or write off even more debt and let the problems in the SOEs continue to fester.

High risk. Lending to SOEs throughout this period was very risky. On top of the usual business risks, a number of transition-specific circumstances made it difficult to anticipate future problems. Sweeping institutional changes, radical shifts in the government's economic and trade policies, political pressure on state-run enterprises, insecure markets, the short-term horizon of management teams, all contributed to these problems in the pre-crisis period. In the post-crisis period, the macroeconomic situation stabilized, but the fast pace of privatization created new uncertainties. Enterprise restructuring and privatization by management-employee-buy-outs (MEBOs), sometimes with 'behind the scene' investors are sources of greater risk for creditors. As a result banks are still making few loans to the real sector of the economy. In an effort to place their funds in less risky assets they are investing a substantial part of their portfolio in foreign bonds. It is estimated that in 2000, banks had approximately USD 1.5 billion invested abroad. This means that a substantial part of the savings accumulated by Bulgarian citizens in Bulgarian banks is not being invested in the Bulgarian economy.⁴³

Secondary markets: The paucity of secondary markets in most financial assets limits the strategies that Bulgarian commercial banks can pursue to maintain liquidity. Secondary markets are valuable to banks because these markets make it possible for banks to manage unanticipated or extraordinary needs for cash. At the beginning of the transition, the only liquid assets were cash and deposits at the BNB. Banks could also acquire cash by

⁴³ The impact on the economy of this outflow of funds is offset by the inflow of foreign investment in Bulgaria. The improved stability of the Bulgarian economy in the post-crisis period has encouraged greater foreign investment.

borrowing from other banks in the interbank money market. With the opening of secondary markets in government securities in January 1993, banks were able to hold these securities and sell them when they needed extra funds. The emergence of the stock market in late 1997 made it possible for banks to maintain portfolios of corporate and municipal securities as well, but the sluggish development of this market and the low liquidity of most assets limits its usefulness.

Throughout the 1990s the government securities market improved steadily. By 1997, the BNB was pursuing an active monetary policy and trading heavily in repos.⁴⁴ Under the currency board arrangement the BNB is not allowed to trade in the government securities market and the liquidity of government bonds has decreased. The market in government securities is rather narrow and cannot be compared with stock markets or government security markets in the US, for instance, where tremendous volume of bonds are traded on a daily basis.

The low return on government securities since the financial crisis ended in Bulgaria has been another problem for banks. Small government budget deficits has reduced the flow of new government securities. Banks have been reluctant to lend to the real sector, increasing the demand for government securities. Smaller supply of bonds and higher demand for bonds has reduced nominal interest rates. Real interest rates have even been negative at times.

Improvements in these markets should be possible. The Ministry of Finance could become a market-maker in the government security market, thereby increasing liquidity and stabilizing prices in the secondary markets. Presently the Ministry provides some services for individuals, but these are for specific purposes and are a tiny part of the market. Another possibility would be to develop a resale market in loans. An extensive resale market in mortgage loans exists in the US, for example. Currently this market cannot develop in Bulgaria because bank secrecy regulations in the Law on Banks limit the dissemination of information to potential buyers of loans. Careful amendment to the Law would open opportunities for developing such a market. Then banks could manage their assets better.

Lending to the private sector: The principal function of commercial banks should be to make loans to the business community. However, loans to the private sector have been limited so far. In the pre-crisis period, banks preferred to loan to the SOEs, private sector loans were only 12.4% of total credit in 1993 and 13.9% in 1994. This compares with 50% and 45% to the government sector and 37% and 41% to SOEs. Given that the

⁴⁴ When the BNB sold government securities to banks, a repurchase agreement (repo) was usually part of the contract. Under the repurchase agreement, the BNB would agree to repurchase these securities at a specified time and at an agreed price within a short period of time. This would make the security more liquid from the point of view of bank since the bank knew that the BNB would buy the security back.

private sector was somewhere between one-quarter to one-third of the economy at that time, there was a clear bias towards lending to the public rather than the private sector.⁴⁵ As late as 1996 there had been little change, private-sector loans were 20.7% (private sector share 40% of the economy) while loans to SOEs and the government were 14.8% and 64.4%, respectively. Throughout this period the banking sector was dominated by state-run banks and new emerging private banks sought out large SOEs to gain market share.

In the post-crisis period, bank lending shifted dramatically. By 2000, government loans were only 10.5% of total domestic credit and SOEs loans 9.1%; private sector loans ballooned to 80.4% of total domestic credit (67% claims on private enterprises and 13% claims on public) as the importance of the private sector expanded to 69.3% of the economy. While the private sector share of loans has grown, the overall volume of loans has decreased so much that the actual level of private sector credit has increased for four years by only 20% in dollar terms (USD 1,599 million in 2000 vs. USD 1,327 in 1996). If improvements are measured in terms of credit extended to the private sector, private sector loans are still low relative to other transition economies. Even Belarus had a higher percentage of loans to the private sector. While private sector loans in Bulgaria are about 12% of GDP, in the Czech Republic it is more than 60%. (EBRD, Transition Report, 1999, p. 94)

There are several reasons why the financial system has failed to successfully transfer funds from savers to investors in this new economic situation. *First*, as mentioned above, there is great risk in the private sector. The economy has been going through enormous change. Future developments are difficult to predict. Most prospective business people and most bank personnel are very inexperienced. Furthermore, bank personnel and business people were not always driven by the proper incentives to help their organizations prosper. All these factors increase the likelihood that mistakes will be made and increase the riskiness of loans. The result is that the most productive projects do not necessarily receive the most support, and loans are not effectively monitored (Stiglitz' points 4 and 5).⁴⁶

Secondly, there is a differential in the risk that banks incur when they loan to the private sector. As the ZUNK Law demonstrated, there is some probability that the government will protect the banks when loans to SOEs go into default. There is no similar guarantee for loans to the private sector.

Third, the laws regarding the bank's right to seize collateralized assets in the event of default are still cumbersome. This is part of the more gen-

⁴⁵ The data provided draw upon BNB's Annual Reports in the relevant year. Due to accounting problems during this period, these figures probably understate the relative size of the private sector.

⁴⁶ For a more detailed discussion of the problems of making loans in an economy in transition, see Miller (1995).

eral problem of relatively weak legal protection of lenders. Without such protection, banks cannot use collateral to protect against future risk.⁴⁷ Despite the fact that the Bankruptcy Law has been in place for some time, there are still obstacles and impediments in its implementation. Court procedures are slow and inefficient, and debtors can throw up many barriers, which further prolong the process.

Even with these problems, banks remain the main source for financing private activity. Presently, much small-scale business is self-financed. To help the private sector grow two serious problems must be addressed: (1) lack of incentives for banks to lend money to the private sector, and (2) resolving information related problems in an uncertain environment. From 1998 to 2000 a large part of the Bulgarian banking sector was privatized by foreign banks. This may prove to be helpful. Foreign banks can bring in valuable experience in risk evaluation and marketing. This may help banks build longer-term relationships with their customers. In the process this can breakdown some of the information barriers that presently exist. Backed by the stability and experience of their new institutions, bank officers should be able to evaluate private-sector needs and risks. At the same time private enterprises should be prepared to submit realistic business plans and information. These changes should improve overall lending practices.

3. Issues of Liabilities Management

The liability side of the balance sheet describes how bankers acquire funds that can be loaned out. Banks prefer to acquire funds, which require low interest payments and remain in the bank for long periods of time. Commercial bankers are far from powerless in managing the liabilities side of the balance sheet. By varying the interest rates they pay and the types of deposits they offer, banks can influence the deposits they receive. Furthermore, banks can obtain funds by borrowing money from other banks or the central bank (if the central bank acts as a 'lender of last resort').

In most countries deposits are a significant share of bank liabilities. To attract deposits customers must have confidence in the bank. In many countries, bank deposits are insured by some form of guarantee. If a bank fails, its customer deposits are protected.

In Bulgaria, the Deposit Insurance Fund protects depositors.⁴⁸ Prior to its establishment, the only bank providing explicit deposit guarantee was the SSB. This gave a comparative advantage to Bulgaria's biggest depositor-taker, but few customers were aware of the important difference between

⁴⁷ As risk is very difficult to evaluate in the extraordinary conditions of a transition to a market economy, banks are heavily reliant on collateral as a way to provide security against risk even though they are aware that acquiring the collateralized assets after default will be a long and painstaking exercise.

⁴⁸ The characteristics of the Fund are described in Section II.

the SSB and the other banks. Most people believed that the government was responsible for all money deposited with banks, be they state-run or private. These expectations were later confirmed when the first bankruptcy (Jambol Bank) occurred and the government protected depositors. Later, the governments stepped in again during the financial crisis and protected depositors when seventeen commercial banks failed. No distinction was made between state-run and private banks.

The dimensions of the problem of implicit guarantees became clear as the financial crisis unfolded. Either explicit guarantees were needed or there should be no guarantees at all.⁴⁹ The problem was resolved by establishing the DIF. The DIF insures all depositors up to a certain limit. Commercial banks pay insurance premiums into the Fund that are used when banks fail. With the transformation of the SSB into a commercial bank (i. e. abolishing its special status of a savings institution), the SSB no longer enjoys a special status and now all banks have the same deposit guarantee.

Building confidence in financial institutions is important if funds are to be transferred from savers to investors. During the early transition when most banks were state-owned, their viability was not seriously questioned. This confidence was completely shattered during the crisis. In the post-crisis period, restoring confidence has become a top priority. Some progress has been made, but it is slow. Funds attracted from nonfinancial enterprises and other customers rose 16.8% between 1997 and 2000 while nominal GDP rose 49.2% over the same period. Public opinion polls have shown that confidence, four years after the crisis, is still far from being fully restored.⁵⁰

If people had greater awareness and understanding of the deposit insurance provided by the DIF, this would probably increase confidence in the banking system. Raising the deposit limit above current BGN 6,900 would also help. To protect the DIF the banks must be properly supervised so that any abuse of deposit insurance is avoided, and government guarantees should be made explicit and enforced. Without strict supervision, deposit insurance is like a time bomb that could trigger another financial crisis.

Beyond deposits another important bank liability during the pre-crisis period was refinancing provided by the BNB. Central banks in developed

⁴⁹ Bulgaria was not alone in facing such problems. The dangers of associated with deposit insurance were clearly visible from the events that took place in the US economy in the 1980's when deposit insurance helped destabilize the savings and loan banks. (See *Mishkin*, pp. 254 – 256). On the other hand, deposit insurance had provided stability to the US banking system for more than 40 years after the Great Depression.

⁵⁰ Asked about their confidence in the banking system over the last few years 7% of those responding said they had never lost confidence; 35% said that their confidence had been restored and 55% answered that their confidence had not been restored. See 'The Lessons Paid for the Big Bank Robbery', Kapital Newspaper, #5, 2001.

market economies often use refinancing to provide additional funds to banks. In the pre-crisis period, refinancing by the BNB in various forms was a significant source of funds for commercial banks. Unfortunately, refinancing led to high unsustainable money supply growth. Loss of control over the money supply was an important contributor to the crisis. BNB refinancing was suspended when the currency board was established.

The interbank market is another credit market. This market provides a mechanism where banks can lend funds they do not need on a short-term basis to other banks. The establishment of the interbank money market in 1991 improved the efficiency of the banking system and made it possible for funds to be rechannelled to banks that could make better use of them. The interest rate varies with supply and demand for funds.⁵¹ Higher interest rates are an indication of more restrictive lending conditions in the economy as a whole and result from fierce competition among banks to attract scarce financial resources.

4. Efficiency of the Bulgarian Banking System

Because it is difficult to define exactly what product banks produce, it is hard to identify a single indicator of overall banking efficiency. Table 4.2. presents information on three common indicators of bank efficiency: (1) return on assets, (2) return on equity and (3) leverage. The data has been drawn from the consolidated balance sheets and the income statements of two groups: (a) large banks and (b) small and medium-sized banks.⁵²

As shown in the table, ROA in the banking system as a whole over the period surveyed varied between -0.3% and 5.0% whereas ROE ranged from -3.7% to 115.5%. The high values for ROE in 1996 and 1997 was due to hyperinflation. High interest rates for these years led to high nominal returns. ROA values did not rise because the nominal value of the assets also rose with inflation. On the hand, capital was not revalued along with inflation, so higher nominal interest income raised the ROE ratio. Profits created by inflation were taxed as a normal corporate profit at the same time that banks were losing business in the crisis. Post-tax returns were significantly lower than the inflation rate, which decapitalized the banks in real terms.

⁵¹ See Petrov (2000) for an in-depth analysis of the supply and demand for bank reserves in the interbank market during the 1998 – 2000 period.

⁵² This grouping draws upon BNB's classification system that was applied until 1998. In 1999 the BNB introduced a more detailed classification into five bank groups. To make comparisons easier the authors have aggregated 1999 and 2000 data into two groups. The indicators used are calculated as follows: ROA= Net Profit/Total Assets; ROE=Net Profit/Capital; Leverage=Attracted Funds/Capital

Table 4.2

Banks' Efficiency Ratios

		Large Banks	Small and Medium Banks	Total	Inflation (CPI,%)
1995	ROA (%)	-0,1	-1,3	-0,3	
	ROE (%)	-2,6	-6,7	-3,7	32,9
	Leverage	16,2	4,1	12,8	
1996	ROA	3,3	2,0	3,2	
	ROE	86,2	13,2	65,2	310,8
	Leverage	25,0	5,8	19,5	
1997	ROA	6,8	-0,6	5,0	
	ROE	303,1	-6,0	115,5	578,0
	Leverage	43,7	8,3	22,2	
1998	ROA	2,0	0,9	1,7	
	ROE	36,5	6,9	21,5	1,0
	Leverage	17,0	6,4	11,7	
1999	ROA	3,0	1,4	2,5	
	ROE	30,2	10,5	23,1	6,2
	Leverage	9,0	6,6	8,2	
2000	ROA	3,7	0,6	2,8	
	ROE	34,3	5,1	25,0	11,4
	Leverage	8,3	7,0	7,9	

Source: BNB, Banks' Annual Reports.

Following the crisis, inflation was low as the macroeconomic situation stabilized. Banks reported positive real ROE, i. e. higher than inflation.⁵³ Large banks reported higher efficiency ratios than small and medium-size banks throughout the period. Sometimes the ROA and ROE values for large banks were several times larger than the ratios for small and medium-size banks. Even in 'hyperinflationary' 1997, small and medium banks experienced losses while large banks registered profits. The higher efficiency of large banks is not surprising given the economies of scale in banking. Also, large banks reported a higher leverage indicating that they were able to attract more money per unit of capital. Until 1998 the funds, borrowed by large banks per unit of capital was 3 to 4 times higher than small and medium-size banks. After that the difference is not so significant as a result of increased competition but still remains in favour of large banks.

This supports the contention of some analysts that there are too many banks in Bulgaria. Many banks are too small and inefficient. While further

⁵³ Comparisons in a dynamic perspective should be cautiously handled, for the inflation rate in the different years followed a largely different dynamics. The period also witnessed sweeping and all-embracing institutional reforms, constant changes in bank accounting and the accounting practices of individual banks, changes in the capital structure, minimum reserves requirements as well as changes in the scope and mix of the bank services offered.

consolidation can be encouraged by government policy, the long-term stability of the banking would be enhanced if further consolidation is left to the market.

5. The Role of Commercial Banks

Commercial banks perform two important functions in the Bulgarian economy. First, deposits of the banks are part of the money supply. Secondly, banks are financial intermediaries, which pass funds from savers to investors. Until other financial institutions develop, banks will have tremendous influence on future investment in Bulgaria and the development of the Bulgarian economy. Important improvements in the banking system have been made since the transition to a market economy began, but there are still very serious problems, which must be solved. We have noted the ways in which the current financial system is unable to meet many of Stiglitz's requirements for a market economy. Because the key to future economic prosperity lies with rational investment decisions, further development of the banking system have a significant impact on the growth path of the Bulgarian economy.

V. The Bulgarian National Bank

The Bulgarian National Bank (BNB) has a central role in the financial system. During the early 1990s the BNB underwent major reform. In June 1991 the Law on the Bulgarian National Bank was passed. This law provided a legal basis for the BNB to function in a market economy. Under this law the BNB functioned as a traditional central bank with discretion to carry out monetary policy. This changed dramatically with the introduction of the currency board in July 1997. A new Law on the BNB was passed. Under this new law, the power of the BNB to influence monetary policy is much more limited.

This section will look at the responsibilities of the BNB and compare and contrast its present organization with the structure of the BNB when it was a more traditional central bank in the early 1990s. First, however, we will outline the basic responsibilities of the BNB and describe its basic organizational structure. As we will see, the responsibilities and goals of the BNB have not changed very much, but under the currency board arrangement the methods used to achieve these goals have changed radically.

1. The Responsibilities of the Central Bank

Presently, the role of the Bulgarian National Bank is limited to central banking and supervision functions. The BNB has been given three mandates:⁵⁴

⁵⁴ Article 2, Section I, Law on the Bulgarian National Bank.

(1) The main task of the Bulgarian National Bank shall be to contribute to the maintenance of the stability of the national currency through implementation of monetary and credit policy and to assist in the establishment and maintenance of efficient payment mechanisms.

(2) The Bulgarian National Bank shall have the exclusive right of issuing banknotes in this country.

(3) The Bulgarian National Bank shall regulate and supervise other banks' activities in this country for the purpose of ensuring the stability of the banking system and protecting depositors.

Maintaining a Stable Currency: In the first statement, the BNB is given its most important and most difficult charge. Because the sections which follow will discuss in detail the mechanisms used by the central bank to manage the money supply and to clear and collect payments, our comments here will be brief. It is useful, however, to highlight at this point the emphasis given in the Law on the Bulgarian National Bank on the maintenance of stability. Stability means both internal and external stability. These are related but independent tasks. They are the prerequisite for Stiglitz' first function, management of the medium of exchange, that must be performed by financial institutions in a market economy.

Internal stability is typically achieved when inflation is controlled by manipulation of credit and the money supply and when the currency is accepted as the medium-of-exchange. In a move to support the lev as the internal medium of exchange, the Council of Ministers passed in February 1991 Ordinance No. 15, which prohibited the use of foreign currency in internal transactions.⁵⁵ More important to the viability of the lev for internal transactions, however, has been the smooth functioning of the foreign exchange markets. This eliminated the incentive to transact in foreign currencies. In the early 1990s the lev quickly became accepted in spite of the high inflation that ensued. This was a major accomplishment during the early years of the transition.

External stability depends on the establishment of foreign exchange rate convertibility. During the early phases of the transition, this was a major objective of the central bank. Here also the bank met with considerable early success, but this was not sustainable. When prices were released in February 1991, the convertibility of the lev was established for many types of transactions. During 1991 the floating exchange rate fluctuated between 15 and 22 leva per dollar. From early 1992 until the autumn of 1994 the fluctuations of the lev were moderate and its nominal value fell from 22 to about 26 leva per dollar. In the spring of 1994 the first sharp adjustment in the lev occurred. By the summer of 1994 the exchange rate was 54 lev per dollar, less than half the value of a year earlier.

⁵⁵ This restriction was removed in 1999 as confidence in the lev improved.

Over the next two years the lev depreciated further in fits and starts and fell to 74 levs to the dollar by the spring of 1996. At this point a real financial crisis erupted. At one point in early 1997 the exchange rate was over 3,000 levs to the dollar before falling back into the range of 1,800 levs to the dollar.⁵⁶ The failure to maintain external stability was a major reason for the reform of the BNB and the establishment of the currency board.

Issuing Currency: The second statement requires the central bank to decide on the issuance and withdrawal of banknotes. By the end of 2000 there were more than 2 billion levs in banknotes in circulation.

As this mandate is discussed, bear in mind the distinction between money and currency. The **money supply** includes both currency and other liquid funds. Attention is often directed at the money supply when analyzing national macroeconomic objectives such as limiting inflation, maintaining stable foreign exchange rates and spurring economic growth. In **issuing currency**, the BNB's objective is more limited. Decisions can be guided by public preferences, as to both quantity and denomination of banknotes and coins so long as the central bank controls the overall quantity of money and credit.

The rapid inflation during the transition years has prompted many changes in the banknotes used by the public. As prices rose small notes were no longer adequate and larger notes were introduced. In 1999 a redenomination occurred and the new lev was introduced. Each new lev is equal to 1,000 old levs. This created a need to change all the banknotes. It also led to the reintroduction of stotinka coins. These coins had become practically worthless during the inflationary period of the 1990s.

The redenomination of the lev did not have any significant economic impact. It did not change the real value of the money supply. The purpose was to make it easier for people to use the lev. Prices can now be stated in smaller numbers. This makes it easier to use the money.⁵⁷ The redenomination also made it easier to compare the lev to the Deutschmark since the exchange rate became one Deutschmark to one lev.

In addition to these changes in the demand for banknotes, there are times when a need develops for relatively more currency and relatively fewer bank deposits. The BNB can respond to these seasonal needs by expanding the amount of banknotes in circulation. These peaks may correspond to the public's increased needs for currency during holiday periods.

⁵⁶ The exchange rates describing the movements of the lev were the actual exchange rates during this period. Since that time there has been a redenomination of the lev. 1,000 old (nonredenominated) levs is now equal to 1 new (redenominated) lev.

⁵⁷ Monetary units can be very unwieldy. In spite of very high inflation Turkey has not chosen to redenominate its currency. Bus tickets can be 200,000 lira. A car can cost 6,000,000,000. With such large numbers it can be difficult to keep track of all the zeros.

Commercial Bank Regulation: Finally, to the BNB has also been given responsibility as the State's regulator of commercial banks. Throughout the world, governments typically set rules and monitor the performance of banks to a much greater extent than they do other businesses. Underlying this caution is first the fact that banks operate primarily with other people's money. Depositors who place their money in banks require protection against mismanagement of their funds. Secondly, given the central role of commercial banks in the allocation of financial resources, the disturbing effects of bank failure can resound throughout the economy as happened during the financial crisis of 1996 – 1997.

Central banks need not be supervision agencies. Indeed the alternative of an independent supervision agency outside of the BNB was considered, but because of the limited number of skilled bank staff and the possibility of overlapping control issues, a decision was made to keep supervision within the BNB (Stratev, 1992).

In the massive changes that took place during the early 1990s, bank supervision did not receive very high priority. Supervisory staff were not well trained, and the accounting systems were deficient. It was not until June 1995 that better accounting requirements were finally put into place. It was then that the severe problems in the banking system became more obvious. Regulators were not able to solve these problems before they exploded on the economy in the financial crisis in 1996.

The broad outline of the BNB's regulatory responsibilities regarding commercial banks are found in the Law on the Bulgarian National Bank. At the beginning of the transition these general obligations were further elaborated in the Law on Banks and Credit Activity (1992). This latter law specified the power of the BNB to grant and revoke licenses for conducting banking operations. It also provided for both off-site and on-site inspections of commercial banks.

The inadequacies of the Law on Banks and Credit Activity became obvious as time passed. In June 1997 along with the establishment of the currency board a new 'Law on Banks' was passed. This new law expanded the supervisory authority of the BNB. In particular it made it easier for the BNB to close failing banks. Under the earlier law, court delays made it difficult for BNB to take control of banks before they were stripped of their assets.

The new law is a considerable improvement over the old law, but problems still remain. Once bankruptcy is declared, the courts control the process and the BNB has only a secondary role. This has not been totally satisfactory so there have been proposals to amend the law to give the supervision department more input into the process of selling off assets and paying off creditors as part of the bankruptcy procedures.

Other amendments to the 1997 banking law were also made during the three years following the passage of the act. These changes reflected ef-

forts by the BNB to bring Bulgarian law into conformity with EU directives and IMF proposals. There is also an increasing understanding that passing new laws is not sufficient. It is important that the new laws be enforced.

2. BNB Organization

When the currency board was established in 1997, the BNB was reorganized to reflect its new function. The BNB is administered by a Governor and a Managing Board. The Managing Board has seven members: the Governor, three Deputy Governors and three additional members who do not work in another capacity at the BNB or in the banking sector. The Governor and the Deputy Governors are elected by the National Assembly to six-year terms. The three outside members of the Managing Board are appointed by the President also to six-year terms. All major policy and regulatory decisions must be adopted by the Board. To protect the BNB from political influence, the Law on the BNB specifically states that Board members can be dismissed only when there is dereliction of duty or serious misconduct.

The Governor is the BNB's chief executive officer, responsible for organizing, directing and supervising the activities of the Bank, and representing it at home and abroad. The Governor is the chairman of the Managing Board. Each Deputy Governor heads a major department established when the BNB became a currency board.

The three major departments within the BNB are the Issue Department, the Banking Department and the Banking Supervision Department. The heart of the currency board is the Issue Department. Most financial transactions affecting foreign currency holding, the exchange rate and the money supply pass through the Issue Department.

The Banking Department was established to give policymakers flexibility in the event of financial crisis. The Banking Department has monetary reserves that can be used in a crisis situation to help banks, but these funds are not to be used as part of the normal operations of the BNB.

The third major division is the Banking Supervision Department. The Banking Supervision Department is the regulator of commercial banks. As outlined in the preceding section, these responsibilities were greatly expanded when the currency board was established.

3. What Is Special about a Currency Board?

A currency board is at bottom an arrangement that legislates a particular monetary rule: a rule that changes in the monetary base will be equal to the country's overall balance of payments surplus or deficit (Williamson, 1995, p. 1).

There are several important aspects to this definition of a currency board. A monetary rule is a statement about how the monetary authority

will conduct monetary policy. With a currency board policymakers have no control over movements in the monetary base, an important tool for controlling the money supply (see Section VI). The monetary base changes automatically when there are balance of payments surpluses or deficits so policymakers have no direct control over the money supply.

A currency board also fixes the exchange rate to a reserve currency. When the Bulgarian currency board was established a decision was made to fix the lev price to the Deutschmark (DEM). The price was set at 1 DEM = 1000 leva. When new leva replaced old leva during redenomination, the price became 1 DEM = 1 lev. In January 1999 the euro was adopted and the exchange rate is now fixed to the euro at 1 e = 1.9558 leva.

The price is fixed because the BNB promises to buy or sell as many leva as anyone wishes to exchange at the established exchange rate. When the BNB buys or sells leva, the monetary base automatically adjusts (see Section VI). In order to make good on the promise to buy leva with DEMs, the BNB must have sufficient foreign currency reserves to meet the demand for DEMs (euros). During the first three years of the currency board, the BNB has easily met this criterion.

To further guarantee that the monetary base will change automatically with balance of payment surpluses and deficits, a currency board does *not* hold domestic assets. This means that it cannot loan to the government or commercial banks. Since buying government securities is a way of loaning money to the government, a currency board is also prohibited from holding government securities.

Traditional currency boards operate on automatic pilot. Their key responsibility is to keep the exchange rate fixed. If there is a crisis in the banking system and people withdraw funds from the banks in mass (i. e. there is a 'run on the banks'), there is nothing that a currency board can do.

The Bulgarian currency board was created during a time of crisis. The problems created by a financial crisis were very real. A decision was made to move away from a traditional currency board and create a Banking Department, which could act as a lender of last resort in a time of crisis. Since there were sufficient foreign currency reserves to put aside for this purpose, these reserves were placed in the Banking Department.⁵⁸

To protect the integrity of the currency board, the Banking Department is permitted to lend only under very restrictive conditions. BNB's Regulation No. 6 states that BNB may extend loans in leva to commercial banks only when a bank is illiquid and then only if the stability of the banking system is at risk. Even then only solvent banks experiencing acute

⁵⁸ Most currency boards are not traditional currency boards. The structure is usually adapted in some way to local conditions. For example, in Argentina the reserve currency is the US dollar, and the currency board does hold some dollar denominated government debt.

needs for liquidity that cannot be provided from other sources can receive loans and the loans have to be collateralized with liquid assets and their repayment term shall not exceed three months.

Furthermore, the Banking Department can provide only limited help in a time of crisis. Regulation No. 6 further restricts the amount of loans that the BNB can provide to the amount of funds the Banking Department has on deposit at the Issue Department (see Table 5.2 below).

To understand the difference between a currency board a standard central bank, it is useful to compare the present structure of the BNB with its previous organization. This can be done by analyzing the key elements of the balance sheets of the BNB before and after the establishment of the currency board.

3.1. The BNB before the Establishment of the Currency Board

Before the establishment of the currency board, the BNB was not divided into departments, and there was only one balance sheet. Table 5.1 shows this BNB balance sheet at the end of 1994, about two and half years before the establishment of the currency board. The key elements of this balance sheet are written in bold and are discussed below.

Table 5.1

Balance Sheet of Bulgarian National Bank, December 1994

(million BGL)

ASSETS		LIABILITIES	
Bulgarian coins	342	Statutory fund	200
Foreign currency	109	Reserve and other funds	91,094
Participation in international organizations	12,075	Currency in circulation	45,935
Foreign securities	50,391	Current and deposit accounts	86,361
Deposits and loans extended to commercial banks	89,946	Other liabilities	17,734
Loans to the government	40,087		
Government securities	14,767		
Other assets	33,606		
TOTAL ASSETS	241,324	TOTAL LIABILITIES	241,324

Source: BNB Annual Report, 1994.

Assets:

Holdings in foreign currency: These were cash holdings of foreign currency. When combined with holdings of foreign securities, these holdings represented the foreign currency reserves of the BNB.

Holdings in foreign securities: The BNB held most of its foreign currency reserves in securities in order to earn interest on its foreign currency

balances. The BNB accumulated foreign currency reserves when it sold levs and purchased foreign currency on the foreign exchange market. Another important source of foreign currency reserves during this period was loans from international organizations including the International Monetary Fund (IMF) and the World Bank. This continues to be the case in the currency board period.

During the period leading up to the establishment of the currency board, Bulgaria had a floating exchange rate. When a country has a floating exchange rate, the central bank does not buy or sell foreign currency. However, it was recognized by policymakers that movements in the exchange rate could affect prices in Bulgaria and the competitiveness of Bulgarian products in foreign markets. There were several periods during the pre-currency board period when the BNB did buy and sell foreign currency. For example, during the sharp exchange rate movements in late 1993 and the spring of 1994, the BNB sold foreign currency in an attempt to keep the lev from depreciating too dramatically. Later the BNB attempted to smooth movements in the lev and prevent large fluctuations.⁵⁹ These efforts failed when speculators began to sell levs in the spring of 1996. The BNB tried to buy levs, the BNB had to use its foreign currency reserves to purchase the levs. Soon BNB reserves fell to such low levels that the BNB could not buy sufficient levs to prevent the lev from depreciating.

Loans to the government: When the government operates with a deficit, expenditures exceed revenues. The government must borrow. The government has operated with a budget deficit in almost every year since the transition began. Before the establishment of the currency board, there were two ways that the government could borrow. The first was to borrow directly from the BNB. This entry in the 1994 balance sheet is the amount of loans to the government at the end of 1994. This transaction is almost equivalent to having the BNB print money for the government to use to pay its expenses.

Government securities: The government can also borrow money by issuing government securities. These securities were purchased by commercial banks, the State Insurance Institute and the BNB. A very small part was purchased by individuals. The BNB's holding of these securities was recorded here in the BNB accounts.

When the government issued government securities and they were purchased by the BNB, the end result was the same as having the government borrow directly from the BNB. The BNB essentially printed money that the government spent.

⁵⁹ Bulgaria was not unusual in this regard. In many other countries that officially have a floating exchange rate the central bank, in fact, intervenes extensively in the foreign exchange market to manage the movements of the exchange rate. See *Calvo and Reinhart* (2000) for a discussion of the 'fear of floating.'

As mentioned above, an important difference between a typical central banking arrangement and a currency board is that a currency board is not allowed to make direct loans to the government or purchase government securities. This prohibition is a significant constraint and makes it more difficult for a currency board to print money. It means that the BNB has more limited discretion in carrying out monetary policy.

Deposits and loans extended to commercial banks: The largest single category of BNB assets in 1994 was deposits and loans to commercial banks. Following the ZUNK bond recapitalization of the banks in 1994, two large banks (Mineralbank and Economic Bank) found themselves in great financial difficulty. The BNB extended them large loans to keep them from failing. This is referred to as ‘refinancing.’ This increase in loans to the banking system also caused the money supply to expand.

Under the currency board arrangement, the BNB is not permitted to make loans to commercial banks under normal economic conditions. Thus under present institutional arrangements the BNB is not be permitted to make the type of loans that were being extended to banks in 1994.

Liabilities:

Only brief explanations will be given here of the liabilities on the 1994 balance sheet since corresponding entries exist on the currency board balance sheets.

Currency in circulation: This entry reflects the role of the BNB as the issuer of currency.

Current and deposit accounts: These accounts fall into two basic categories. As we will see these are broken into separate categories in the currency board balance sheet. First, the Ministry of Finance uses its account at the BNB in the same way that an individual or enterprise would use a commercial bank account. Secondly, commercial banks hold deposits at the BNB. Two important types of commercial bank deposit accounts are settlement accounts and reserve accounts. Settlement accounts are used by the commercial banks to facilitate the transfer of funds between banks when, for example, payments are made between enterprises, which have accounts at different banks. Commercial banks also place funds in reserve accounts to satisfy minimum reserve requirements.

Reserve and other funds: This entry in the balance sheet contains more than one important component. The first component is the net worth of the BNB. Like other banks the net worth of the BNB must be positive to remain solvent. The second component is borrowings from the IMF. Throughout the transition period support from the IMF has been important in maintaining economic stability. Indeed, the failure to reach agreement with the IMF during the financial crisis prolonged the crisis.

3.2. The BNB after the Establishment of the Currency Board

When the currency board was established in July 1997, separate balance sheets were created for the Issue Department and the Banking Department. Because the functions of the BNB were divided between these two departments, the entries in the 1994 balance sheet were divided between the two balance sheets. Since the Issue Department is so central to the operation of the currency board, we analyze its balance sheet first.

Table 5.2

Balance Sheet of the Issue Department, 29 December 2000

ASSETS		LIABILITIES	
Cash and nostro accounts in foreign currency		Currency in circulation	2,504,693
Monetary gold	1,944,085	Bank deposits and current accounts	515,938
Foreign securities	4,625,328	Government deposits and accounts	2,608,609
Accrued interest receivable	61,973	Other depositors' accounts	675,213
		Accrued interest payable	4,949
		Banking Department deposit	963,752
Total Assets	7,273,154	Total Liabilities	7,273,154

Source: BNB.

Table 5.2 is the complete balance sheet. We will focus only on the most important elements (**in bold**) in the balance sheet.

Assets:

Perhaps what is most significant about the asset side of this balance sheet is what is missing. Unlike the 1994 balance sheet there are no entries for loans to the government or loans to commercial banks. Under the currency board arrangement, these are not permitted.

The other entries are similar to those found on the 1994 balance sheet. *Cash in foreign currency accounts and monetary gold* are part of the foreign reserves of the BNB. *Foreign securities* are holdings, which earn higher interest for the foreign currency reserve so most foreign currency holdings are placed there. As can be seen in the balance sheet, these three entries make up almost all the assets of the BNB Issue Department.

While the currency board limits the discretion of the policymakers at the BNB, the board does have important decisions to make regarding the choice of foreign currency assets to hold. The 1997 Law on the Bulgarian National Bank (LBNB) provides very explicit guidelines on how these assets should be invested. The risks here are very similar to those of any investor. It is important that credit risk, exchange rate risk, and interest rate risk be considered.

The Law on the BNB states that the BNB must place its foreign reserves in very safe foreign banks and bonds. The banks must be highly rated by international credit rating agencies (Article 28). To protect the BNB from exchange rate risk, the foreign reserves must be in currencies that reflect the balance of foreign currency liabilities (Article 31, para. 3). To minimize interest rate risks the majority of the reserves must be invested in short-term instruments. It is important that the reserves be invested in liquid assets so that the BNB can satisfy the demands of any citizen to exchange leva for DEMs (or euros).

During the first six months of 2000, 84% – 88% of foreign reserves were in euros and 7% – 11% in dollars. Dollar holdings are important to protect against exchange rate risk because most of Bulgaria's foreign debt is in dollars and the payments for servicing this debt come from the foreign reserve accounts at the BNB. To minimize the interest rate risk, 60% or more of the foreign reserves were in instruments with less than a year before maturity.

Liabilities:

On the liability side of this balance sheet we see some elements that were on the 1994 balance sheet. For example, *currency in circulation*, which measures the amount of coin and banknotes outstanding, appears on both balance sheets. On this sheet *bank deposits and current accounts* and *government deposits and accounts* appear as separate categories. In the 1994 balance sheet these were grouped together. This separation is useful because it is now easier to see the level of commercial bank reserves at the BNB. We will see in Section VI that these commercial bank reserves are important in determining the size of the money supply.⁶⁰

A new entry on this balance sheet is the *Banking Department deposit*. This entry connects the activities of the Banking Department to the activities of the Issue Department. The Banking Department balance sheet is below.

⁶⁰ Another large entry is *Other depositors account*. In October 2000 Bulbank was sold. These 'Other depositors' are almost all deposits of the Bank Consolidation Company which received the money from the sale.

Table 5.3

Banking Department Balance Sheet, 29 December 2000

(thousand BGN)

ASSETS		LIABILITIES	
Nonmonetary gold and other precious metals	89,498	Borrowings from IMF	2,778,646
Investments in securities	167,695	Liabilities to other financial institutions	1,664,287
Loans and advances to banks, net of provisions	17	Accrued interest payable	1,995
Receivables from Government	2,560,928	Other liabilities	6,798
Bulgaria's IMF quota and holdings in other international financial institutions	1,664,086	Total obligations	4,451,726
Accrued interest receivable	1	Capital	20,000
Equity investments in domestic entities	2,294	Reserves	940,374
Fixed assets	141,382	Retained profit	230,235
Other assets	52,682	Equity	1,190,609
Deposit with Issue Department	963,752		
Total Assets	5,642,335	Total Liabilities	5,642,335

Source: BNB.

The entire operation of the BNB should be looked at as a combination of these two sheets. (Indeed, the BNB also publishes a consolidated balance sheet as well as these separate balance sheets.) The Banking Department balance sheet really has three parts. On the liability side of the balance sheet there are two parts: Total Obligations and Equity. Equity is the net worth of the BNB. In the 1994 balance sheet this was included under 'Statutory fund' and 'Reserves and other funds.'

Because the BNB earns money on its foreign securities but pays no interest on its banknotes or commercial bank reserve deposits, the BNB is expected to be profitable. 25% of its profits are added each year to its reserves. The remaining 75% are returned to the government. In 2000 the BNB added to its reserves and made a payment to the government of BGN 178 million. These payments are a form of seignorage.⁶¹

Under 'Total Obligations' there are two large liabilities: *Borrowings from the IMF* and *Liabilities to other financial institutions*. 'Borrowings from the IMF' are loans that Bulgaria has received from the IMF. As a member of the IMF, Bulgaria has an IMF quota. 'Liabilities to other finan-

⁶¹ Seignorage is earnings that the government receives from its monopoly to print money. In an economy without inflation, the government earns seignorage because people will demand more money when the economy expands. The government can print money at little cost to itself and then spend it.

cial institutions' is borrowing against this quota and unpaid parts of this quota. This entry will shrink as Bulgaria pays off this obligation. (This is closely matched on the balance sheet by the entry on the asset side: *Bulgaria's IMF quota and holdings in other international financial institutions.*)

Under a currency board arrangement, inflows of foreign currency reserves normally cause the money supply to increase; outflows cause the money supply to contract. In designing the currency board in Bulgaria, care was taken to organize the accounts so that flows surrounding foreign debt payments would have a minimal influence on the money supply.

To minimize the impact of these flows involving the foreign debt, two entries also appear on the asset side of the Banking Department balance sheet: *Receivables from Government*, and *Deposits with the Issue Department*. Deposits with the Issue Department correspond to the entry on the Issue Department balance sheet *Banking Department deposit*.

Suppose that Bulgaria receives an additional loan from the IMF of BGN 100 million. Bulgaria now has more foreign currency reserves, and its liabilities to the IMF are now greater. The accounting, however, is a little more complex than this. At first there will be entries on both the Issue Department and the Banking Department T-accounts. These are shown in Tables 5.4a and 5.4b.

Table 5.4a

Issue Department	
ASSETS	LIABILITIES
Cash in foreign currency +100 mln.	Banking Department deposits +100 mln.

Table 5.4b

Banking Department	
ASSETS	LIABILITIES
Deposit with Issue Department +100 mln.	Borrowing from the IMF +100 mln.

Note that with this transaction the foreign reserve position of the BNB has increased, but this transaction has not affected either the amount of *Currency in circulation* or the amount of *Bank deposits and current accounts*. When these entries are not affected, the money supply will not change.⁶²

Following this transaction, the Government then has 90 days to determine if it wants this money to be transferred to its account. If the funds are

⁶² The sum of Currency in circulation and Bank deposits and current accounts is the monetary base. Changes in the monetary base will affect the money supply. For a more complete explanation see Section VI.

transferred to the Government, then the following changes will be made to the balance sheets of the Issue Department and the Banking Department:

Table 5.5a

Issue Department

ASSETS	LIABILITIES
	Banking Department deposit -100 mln.
	Government deposits and accounts +100 mln.

Table 5.5b

Banking Department

ASSETS	LIABILITIES
Deposit with Issue Department -100 mln.	
Receivables from Government +100 mln.	

This new transaction does not affect money in circulation or commercial bank reserves so there is still no effect on the money supply.⁶³ It is important, however, that this money is passed to a Government account **at the BNB**. If the money were passed to a Government account at a commercial bank, then commercial bank reserves at the BNB would change and so would the money supply.⁶⁴

3.3. Using the Banking Department's Reserves

We have seen that the Banking Department was established to provide resources to commercial banks in the event there are severe problems in the banking system. If such a situation were to arise, the Banking Department can use its resources to make lev-denominated loans to solvent commercial banks. These loans must be fully collateralized and must mature within three months. The balance sheet entries for the Issue and Banking Departments would be the following.

In this case 'Bank deposits and current accounts' increase. This is part of the monetary base so the money supply will also increase.

Table 5.6a

Issue Department

ASSETS	LIABILITIES
	Bank deposits and current accounts +100
	Banking Department deposit -100

⁶³ Since this is effectively a loan from the BNB to the government and the BNB, under the currency board arrangement is not allowed to make loans to the government a special provision had to be written into the law specifically for these transactions.

⁶⁴ For a further discussion of the decision to place government deposits at the BNB see Section VIII.

Table 5.6b

Banking Department

ASSETS		LIABILITIES
Loans to banks	+100	
Deposits at the Issue Department	-100	

This raises serious questions about how this will operate in a time of crisis. If commercial banks get into difficulty and the BNB extends loans, the money supply will increase. As long as these loans do not exceed the reserves held at the Banking Department, the monetary base should still be smaller than the level of foreign reserves at the BNB.

As long as foreign reserves are greater than the monetary base, the BNB should be able to guarantee a fixed exchange rate. But if people begin withdrawing money from the commercial banks to exchange levs for DEMs (euros), the commercial banks will lose reserves and will have to contract. This could cause further economic disruption.

Thus the Banking Department provides some security in that the BNB will be able to provide loans in its capacity as a 'lender of last resort,' but it should also be recognized that this is not a panacea for financial disruptions. A better protection against financial panics is good bank regulation and prudent lending practices so that financial disruptions do not occur.

4. The Independence of the Bulgarian National Bank and Political Support for the Currency Board

The BNB is an important economic institution. Ever since the founding of the Bulgarian National Bank in 1879, there has been controversy about the appropriate nature and extent of the BNB's independence from the government. A period of increased independence from government in the 1920's, for example, was followed by increasing government control in the 1930's (Avramov, 1999).

The relationship between the government and the BNB was a contentious issue during the period immediately before the establishment of the currency board. The issue was who should control monetary policy: an independent agency headed by an appointed official who in theory is protected by law from removal from office or the government selected by the citizenry? Independence is sought by those who wish to preserve the ability of a central bank to make needed but unpopular decisions on policy matters. Greater control by government is sought by those who value responsiveness to a governmental policy course.

While the law provided support for independence, independence is also a matter of actual practice. Christov (1997) makes a strong case that during the early 1990s the BNB had little independence from the government.

A currency board provides little discretion for monetary policy. The key political issue, therefore, is not independence, but government support for the currency board. Support for the currency board is, in effect, support for the monetary policy that the currency board represents.

Good macroeconomic policy requires good coordination between monetary and fiscal policy. The existence of a currency board and the monetary policy it represents does not change this requirement. A currency board disciplines the government because it is no longer able to borrow from the central bank. This may make it more difficult for the government to carry out expensive programs if it has difficulty borrowing from the private sector.

The mechanisms for stabilization under a currency board work better if wages and prices are flexible. In most economies there are institutional constraints that prevent wages and prices from moving freely in response to supply and demand shifts. For this reason there can be large swings in output as the economy slowly stabilizes. It is important the government recognize these problems and refrains from carrying out policies that further constrain wage and price movements.

Fixed exchange rate systems are always subject to possible speculation when people anticipate there will be a decision to change the exchange rate or abandon the fixed exchange rate regime. Even if financial support in the form of foreign currency reserves at the BNB is strong and the fixed rate can be maintained, speculative attacks on the fixed exchange rate can be very economically disruptive. It is, therefore, important that the government expresses strong support for the currency board to minimize the chances of these speculative attacks.

5. Concluding Remarks

In this section we have seen the BNB has the responsibility for issuing currency, maintaining the stability of the lev, and managing the total supply of money and credit. While the BNB was successful in the early transition years in establishing the lev as the medium of exchange, it failed to maintain stability and manage the supply of money and credit. The result was a financial crisis in 1996 – 1997.

The crisis created pressure for institutional changes. The currency board came into being in July 1997. This was a major change. The currency board took discretion for monetary policy away from the Managing Board of the BNB and substituted a strict monetary rule where the money supply expands and contracts with changes in the balance of payments. Since the creation of the currency board, the exchange rate has remained fixed to the DEM (euro). The supply of money and credit has been more controlled.

A question that remains is whether the currency board is sustainable. To be sustainable the currency board needs political support and good

government policies. In Section VIII these issues are discussed in more detail in the context of advantages and disadvantages of a currency board.

VI. Defining the Money Supply

The functions of money in a market economy are to act as a medium of exchange, a unit of account, and a store of value. Under central planning, however, money did not necessarily function as either a medium of exchange or as a store of value. Rather there were two types of money in Bulgaria. One type was used to pay wages and circulated among individuals. This money was used to purchase goods and services on the market. The second type, in state enterprise bank accounts, was used to describe the transactions, which took place among state enterprises. There were constraints on converting the second type of money into the first type. When the Bulgarian economy was 'monetized' the distinctions between these two types of money disappeared. Now that the Bulgarian lev performs the functions of money as they are understood in market economies, Bulgaria faces the same issues of definition and measurement of money that exist in market economies. Arriving at good definitions of the money supply in Bulgaria is especially challenging, however, because financial institutions are constantly changing.

Different definitions of money are used depending on the purpose for which they are employed. Utilization of the proper measure of money is particularly important in the analysis of macroeconomic issues, where using the wrong measure can result in poor policy choices. Traditionally the most narrow definition of money is called M1 and successively broader definitions are referred to as M2, M3 and so on. M1 refers to assets that function as a medium of exchange. M2 includes all these assets as well as those, which are extremely liquid, that is, easily converted into alternative assets, which can be used as medium of exchange. M3, M4 include progressively less liquid assets.

The determination of what to include in each of these definitions can change over time depending on institutional arrangements and common practice. If mechanisms are established which enable economic agents to make payment with certain assets then these assets **could** be included in M1. They **should** be included in M1 if economic agents actually use them to make payments. For example, money market accounts in the United States pay interest rates competitive with savings accounts. A limited number of checks can be written on these accounts each month. Even though the funds in these accounts can be used to make payments, individuals rarely do so. In other words, individuals could treat these accounts as a medium of exchange but in fact they do not. So the decision was made to include them in M2, not in M1.

In Bulgaria, the BNB reports three measures of the money supply: M1, M2, and M3 (or broad money). The Bulgarian M1 corresponds to the standard formulations. M2 includes the assets in M1 plus foreign currency

deposits and time and savings deposits, which together constitute 'quasi-money.' Broad money is the sum of M2, money market instruments, import and restricted deposits, and deposits in non-operating banks.

Currently the definitions of the money supply, M1, quasi-money, and broad money are:

$$M1 = C + DD \text{ (lev)}$$

$$QM = FCD + S + T$$

$$M2 = M1 + QM$$

$$BM = M2 + RMN$$

where C is cash not in banks, DD(lev) is demand deposits in lev, FCD is foreign currency deposits,⁶⁵ S is savings deposits and T is time deposits of all maturity levels. RMN is restricted accounts, which include funds deposited for purposes such as the registration of business licenses, money market instruments and deposits in non-operating banks.

We shall shortly discuss each of these components, but first it may be useful to get an overall sense of the magnitude and movements of the different measures. Table 6.1 gives BNB's calculation of the money supply from 1991 until 2000. The table shows that all elements of the money supply have grown rapidly over the 1990s. This growth is misleading because prices have also been rising rapidly over this period. The first row in the table shows the lev/dollar exchange rate (expressed in new lev). The exchange rate changes are an indication of the price level change that has taken place during this period. As can be seen in this row, it took almost 100 times more lev to buy a dollar in 2000 than it did in 1991.

Table 6.1

Money Supply

(millions of new levs)

	Dec. 1991	Dec. 1992	Dec. 1993	Dec. 1994	Dec. 1995	Dec. 1996	Dec. 1997	Dec. 1998	Dec. 1999	Dec. 2000
Exchange rate BGN/USD	0.02181	0.02449	0.03271	0.06602	0.0707	0.48735	1.7765	1.6751	1.9469	2.1019
Broad money	112.02	158.57	234.07	418.01	583.66	1310.28	6018.59	6597.17	7351.11	9304.00
M2	108.43	154.98	229.92	409.11	571.31	1244.57	5538.77	6180.59	6914.02	8920.21
M1	26.89	37.83	48.30	75.13	107.89	236.63	2266.89	2755.60	2996.64	3640.28
Cash	11.87	18.27	25.15	38.50	61.62	126.46	1314.11	1742.03	1957.35	2372.38
Demand deposits	15.02	19.57	23.15	36.63	46.27	110.17	952.78	1013.57	1039.29	1267.90
Quasi-money	81.54	117.15	181.62	333.98	463.42	1007.94	3271.89	3424.99	3917.39	5279.93
Time deposits	25.87	59.41	109.97	164.95	255.57	326.15	796.15	776.38	924.78	962.70
Savings deposits	15.95	20.22	28.05	40.85	57.82	81.61	224.83	292.29	387.86	450.20
Foreign currency deposits	39.73	37.52	43.60	128.17	150.03	600.18	2250.91	2356.32	2604.73	3867.03
Money market+Import and Restricted										
+Dep. Non-operating banks	3.59	3.59	4.15	8.90	12.36	65.66	479.81	416.58	437.09	383.80

Source: BNB.

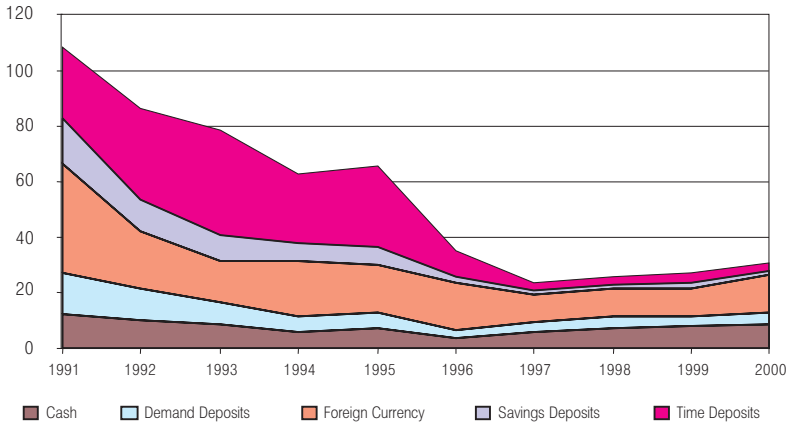
⁶⁵ Until October 1992 both lev and foreign currency deposits were included in the definition of M1. In November foreign currency deposits were moved out of M1, but were still included in the calculation of quasi-money.

It is possible to get a better understanding of the movements in the money supply if the nominal values of the money supply are deflated by the Consumer Price Index. Figure 6.1 shows the movement of the various money supply components deflated by the Consumer Price Index so that the movement in real money can be seen. The graph shows all the elements of M2. Since the top line is the vertical sum of all the elements in the graph, the movements of the top line in the graph shows movements in M2.

Figure 6.1

Real Money Supply Components

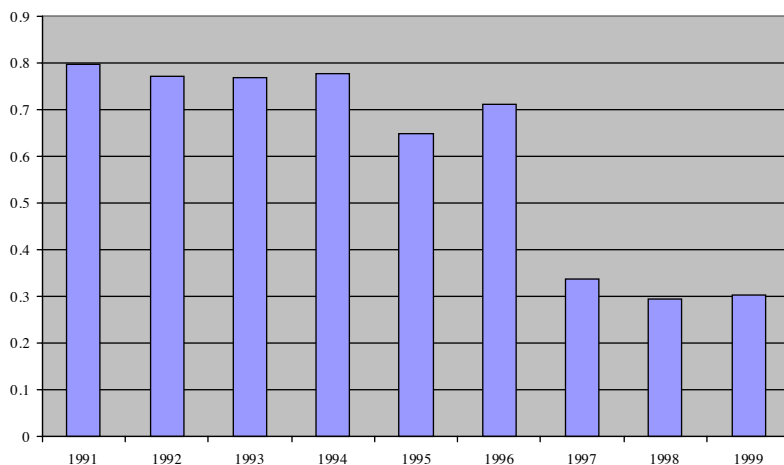
(millions of levs)



Source: BNB.

Figure 6.2

Ratio of M2 to GDP in Bulgaria



Source: BNB.

Real M2 fell over the entire period 1991 to 1997, but the fall was particularly dramatic during the financial crisis in 1996 and 1997. By the end of 1997 real M2 was less than one-quarter its 1991 level. This was really a startling change. Since money did not play as big a role in the economy under central planning, the expectation has been that transition economies would become increasingly monetized over time; not less. Since 1997 the money supply has grown, but it is still less than one-third the level of 1991.

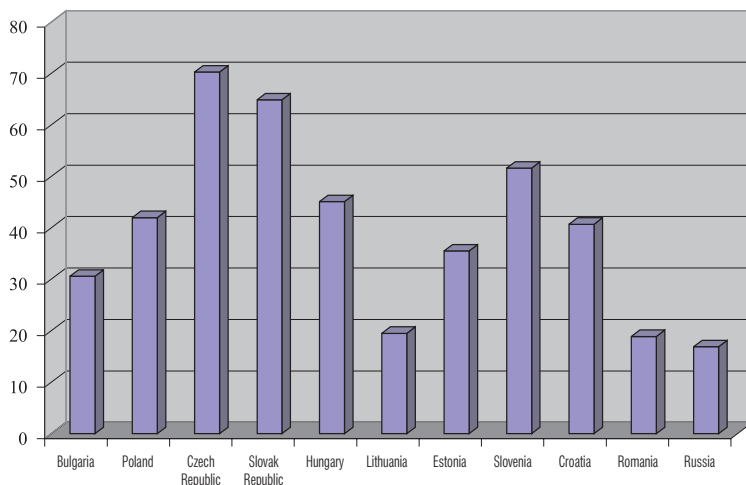
Another way of measuring the degree of monetization is to compare the movements in M2 to changes in GDP. Figure 6.2 graphs the ratio of M2 to GDP. The graph shows that the fall in the money supply was not simply a reflection of the decline in GDP that occurred in the 1990s. The money supply fell even faster than GDP.

What does this mean for the Bulgarian economy? One way of viewing these changes is to compare money to GDP ratios across transition economies. Figure 6.3 shows the broad money to nominal GDP ratios across several transition economies in 1998. The range is vast. The ratio of broad money to GDP varies from 70.2 for the Czech Republic to 16.9 for Russia. Bulgaria's ratio of 30.6 in 1998 is considerably lower than the ratio for most of the more advanced transition economies (i.e. Poland, Hungary, Slovak Republic and Slovenia). On the other hand, the ratio is much higher than the ratio for slower transitioning economies like Russia and Romania. The comparison with the Baltic countries is particularly relevant

since both Estonia and Lithuania have currency boards and had severe banking crises.⁶⁶ As the graph shows, Estonia has a somewhat higher ratio, but Lithuania has a much lower ratio than Bulgaria.

Figure 6.3

Comparison of Broad Money to GDP Ratio in Transition Economies



Source: EBRD Transition Report 1999.

It is difficult to conclude too much from these comparisons, especially given the range of ratios among the other countries. It would appear that Bulgaria's present ratio is approximately what should be expected at this point in the transition. This suggests that the earlier M2/GDP ratios were unusually high and reflected the lack of monetary control. If the economy expands and confidence grows in the banking system, then this ratio should move upwards.

1. Definition of M1: $M1 = C + DD$ (lev)

Analysis of the various components of the money supply provides a revealing picture of the financial changes taking place in the Bulgarian

⁶⁶ As might be expected countries that have had financial crises, in general, have lower ratios of broad money to GDP. The decline in the ratio of money to GDP was particularly large in Bulgaria, however. Tang, *et. al.* (2000) present a table (Table 1) showing the movement of M2/GDP ratios for twelve countries that have had banking crises. With the exception of Macedonia, the fall in the ratio was largest for Bulgaria. In part this was because the ratio was so high in Bulgaria before the crisis. The cost to the government of bank restructuring was also highest in Bulgaria (26% of GDP).

economy. We begin with M1, which contains only the most liquid assets: cash and demand deposits. Both of these assets can be used as a means of payment. More sophisticated financial systems provide a variety of ways that payments can be made. Reliance on cash as a medium of exchange is an indication that many of these alternative systems are still undeveloped. Reliance on cash is particularly strong in Bulgaria and has remained so throughout the 1990s. The widespread use of cash is related to several factors: the mechanisms of payment, the evasion of taxes and general concerns about the banking system following the financial crisis.

What does not show up in the data is cash held in foreign currencies. Other form of money are easier to monitor. Commercial banks are required to file reports describing their deposit balances so these numbers can be calculated. Cash in levs can be measured because these notes are issued by the BNB. The holding of foreign currency outside of banks is very difficult to measure, however. People and businesses can acquire foreign currency by exchanging levs in Bulgaria or bringing banknotes from abroad. Because it is not possible to calculate foreign currency cash balances, they are not reported in official statistics.⁶⁷

Economists know that these foreign currency balances are important, however. When people become nervous about the potential depreciation of the lev, they will buy dollars and DEMs. Sometimes they will leave this money as foreign currency deposits in the banks, but if they concerned that the banks may fail or they want to hide these balances away from government authorities, they will hold them as cash in foreign currencies. This is what happened in 1996 in the middle of the financial crisis. People withdrew money from the banks and held this money as cash in foreign currency.⁶⁸

The use of banking services for making payment is largely restricted to firms. In part this is a carry over from the central planning period when banks were used by state enterprises to manage their financial transactions. Demand deposits are now being used by both state firms and private firms (some of which are former state firms that have been privatized). A factor which has contributed to the wider use of demand deposit accounts by firms is the development of **Bank Integrated System of Electronic Transfers (BISERA)**. This clearing system is operated by the BNB. Before the development of this system it could take a very long time before a pay-

⁶⁷ It might be noted that \$100 bills are much more visible in Bulgaria than they are in the United States. The main reason for this is that cash is not used for most transactions of any size in the United States. Credit cards or checks are the preferred method of payment.

⁶⁸ A recent study by BNB has estimated that the public holds cash balances of about 400 million in euro currencies. A study by the U.S. Treasury Department (2000) estimated that Bulgarians were holding about USD 1 billion in 1997 during the financial crisis. For comparison this is more than 40% of all bank deposits by nonfinancial institutions and other clients and more than one third of total reserves of the currency board.

ment was cleared through the banking system. BISERA operated well even during the financial crisis when banks were failing. Recently further improvements have been made to the system.

Demand deposits are not used extensively by individuals. An important reason why individuals rely on cash rather than demand deposits is that it is still difficult for individuals to make payments from their demand deposit accounts. Although settlement deposits, which are accounts held by individuals, can be used directly for payment, their use is limited to the payment of utility bills. For this reason most individuals keep their liquid assets in time deposit accounts rather than demand deposit accounts. This contrasts sharply with the United States and most West European countries where other forms of payment are widely used.

This may change in the future as new services are introduced. For example, banks are trying to convince companies to pay salaries through banks. Employees could then withdraw their money using debit cards at ATM machines. If the payrolls are deposited in demand deposit accounts, then the use of demand deposit accounts would increase.

2. Definition of Quasi-Money: $QM = FCD + S + T$

Quasi-money contains assets that are very liquid but are not normally used directly for making payments.

Demand deposits in foreign currency: Until September 1992 approximately 60% of demand deposits at commercial banks were in foreign currency deposits. Until November 1992 these accounts were included in M1. They were moved to quasi-money because they were used to store value and make payments for imported goods but could not be used in domestic transactions. In 1999 the law was changed and foreign currency can now be used in domestic transactions, but it is more difficult to use foreign currency because foreign currency transactions cannot be processed through the BISERA system, and there are special reporting requirements for large transactions in foreign currency. For this reason the use of foreign currency in domestic transactions is limited.

Until foreign currency is more widely used in domestic transactions, it is logical that foreign currency deposits remain in the quasi-money category. The reasoning behind the decision is similar to the example of money market accounts in the United States given earlier. That is, since these accounts are not in fact used very much for making domestic payments, they should not be included in M1.

Savings deposits: Although savings deposits (i. e. accounts) are reasonably liquid, they are included in the calculation of quasi-money rather than M1 because they are not widely used for transactional purposes. These accounts are held by households. At one time this was the only type of account available to individuals and only at the State Savings Bank. Now all commercial banks may offer these accounts. Unlike the past, individuals

can now negotiate with the State Savings Bank (renamed DSK Bank) to issue checks on these accounts. However, the usefulness of the checks is constrained by the small number of payments that can be executed with them, causing their inclusion in quasi-money rather than M1.

Time deposits: The remaining category, time deposits, consists of deposits held at a bank for specified periods of one month to a year, with penalties for early withdrawal of funds. These are similar to certificates of deposit in the United States. Penalties differ among banks.

The interest rates on these accounts vary with interest rates in the economy. While the rates tend to adjust with the central bank base rate, normally there is no enforceable contractual agreement between the customer and the bank as to exactly how the interest rates will be set over time.⁶⁹ The inability of consumers to get a clear contractual agreement regarding interest rate adjustments on these accounts is an indication that the banks still enjoy a powerful position relative to their customers. In general, interest rates on longer-term deposits are higher to encourage customers to place their money in longer-term time deposits. While time deposits are not used directly for making payment, they are now being used by individuals as a highly liquid asset, which can be easily converted into cash for making payments.

3. Defining M2 and Broad Money

M2 is simply the sum of quasi-money and M1. Thus, M2 contains all the assets that we have described so far. Broad money contains all these assets and money market accounts, import and restricted deposits and deposits at non-operating banks.

Import and restricted deposits: Import and restricted deposits include funds deposited for purposes such as the registration of business licenses and money put aside for the purposes of capitalization of companies. Deposits restricted by courts to secure legal claims would also fall into this category.

Deposits at non-operating banks: A number of banks failed during the financial crisis, but the liquidation of these banks took some time. Depositors in these banks received their deposits, but there were restrictions placed on the accounts and depositors were not permitted to withdraw all their funds immediately. In 1999 the methodology for accounting for these deposits was changed, and these deposits were included with restricted deposits in M3 until the banks were fully liquidated.

Money market accounts: These accounts include instruments that are supposed to be tradable on the money market. They include instruments like certificates of deposits. At present only First Investment Bank issues these certificates of deposits, so there is very little money in these accounts.

⁶⁹ Some banks include a statement that the interest rate is adjustable and dependent on the central bank rate, but then they do not necessarily abide by these statements.

4. *The Changing Structure of the Money Supply*

Figure 6.1 shows the movements of the various components of M2 over the 1990s. Not only have there been dramatic movements of the M2 aggregate, there have also been shifting relationships between the various components of M2. The changes in the relative size of the components of M2 reflect changes in how money is being used by different agents in the economy.

As suggested earlier in this section, if the transition process proceeded smoothly, banks would develop many new services, which would make the process of completing transactions easier. This should reduce the need for cash and increase the value of deposits. There have been some new services, which have led to improvements in the payment system. For example, the BISERA system for clearing transactions is a vast improvement over earlier arrangements. Automatic Teller Machines did not exist in the early 1990s. These machines make it easier for people to withdraw money from their accounts.

There are several important developments in the components of M2 in the 1990s. In the early period time deposits grew dramatically. The level of these deposits collapsed in the financial crisis of 1996 and have never really recovered from this experience. A similar but less dramatic pattern is observable with respect to savings deposits. All savings accounts and almost 73% of time deposits were held by individuals in 2000. The sharp decline in time and savings deposits is, therefore, a household phenomenon.

A recent study by GfK Bulgaria (Pari, 9.3.2000) found that only 27% of the Bulgarian households had bank accounts in 2000. By way of comparison 98% of Austrian, 85% of Slovak, 83% of Czech, 65% of Hungarian and 62% of Polish households had bank accounts. The study also found that 11% of Bulgarian households had time deposit accounts and 10% had savings deposit accounts.

These figures illustrate how households lost faith in the banking system during the financial crisis, and the banks have not offered sufficient incentives for individuals to return. While lack of confidence in the banking system is surely an important factor, low interest rates on time and savings accounts are another. Indeed for much of the recent period real interest rates on deposits accounts have been negative.⁷⁰

Demand deposits and foreign currency deposits show a different pattern. In 2000, 85% of demand deposits were held by either state or private businesses. Along with other elements of the money supply foreign cur-

⁷⁰ With low inflation, the opportunity cost of holding cash has also declined dramatically. When nominal interest rates are 25% – 40%, the opportunity cost of holding cash is very high even when real interest rates are negative, as they were during some periods in the early 1990s. When nominal interest rates are 4% or 5%, the opportunity cost of holding cash is much lower.

rency deposits and demand deposits fell in 1996. While the levels of foreign currency deposits and demand deposits are still below pre-crisis levels, the recovery is far better than the improvement in time and savings deposits. Banks have done a better job in servicing business customers than they have households. Total real business deposits have fallen only 21% whereas total household accounts have fallen 86% between 1995 and 2000.⁷¹ Many of these business accounts are transactions accounts and probably reflect the growing confidence in the BISERA system.

The level of real lev cash holding has actually grown and is actually 15% higher now than it was at the end of 1995. This is quite astonishing given the expectation that other means of payment would replace cash as the financial system improved. The growth in cash holdings reflects two economic forces. First, with the establishment of the currency board, people are more confident that the lev will not be devalued. Since we do not have data on foreign currency cash holdings, we cannot measure the trends in these holdings directly. However, these figures on lev cash holdings would suggest that people have moved some of their cash holdings from foreign currency cash holdings to lev cash holdings. Secondly, confidence in the banks is still low so people are holding levs, but have not put this money into the banks. Cash remains the alternative to bank deposits.

While the banking system is much stronger than it was in the pre-crisis period, these trends highlight some continuing difficulties in the financial system. The loss of faith in the banking system is significant because the banks are still the principal financial intermediary in Bulgaria. When households withdraw funds from the banking system, it is more difficult to direct household savings towards investment opportunities. Without intermediation, funds for investment purposes are harder for firms to acquire, and the economy then grows more slowly.

5. Conclusions

The money supply in Bulgaria has experienced dramatic swings in the 1990s. While economists expected that a transition economy would become more monetized as time passed, the financial crisis of 1996/7 caused the real money supply to fall significantly. By 2000 the banking system had only partially recovered. The money supply in 2000 was still far smaller than it was before the crisis. This is an indication that the banking system has only partially recovered from the crisis. Further evidence that these problems are continuing is the high dependency on cash in the economy in spite of a growing array of new banking services.

⁷¹ Households also hold foreign currency accounts. Balances in household foreign currency accounts have recovered much more than time and savings accounts. In 2000 the level of household foreign currency balances had recovered to about 82% the 1995 level. Because time and savings accounts have fallen so precipitously, household foreign currency accounts were 57% of household accounts in 2000 versus only 15 % in 1995.

The difficulties with restoring confidence in the banking system have important economic implications. Banks are still the dominant financial intermediaries in the Bulgarian economy. Until confidence is restored, there will be less intermediation and future growth in the economy will be slower.

Until October 1992 both lev and foreign currency deposits were included in the definition of M1. In November foreign currency deposits were moved out of M1, but were still included in the calculation of quasi-money.

VII. Money Supply Determination

The supply of money and credit in the economy is determined by an interaction between commercial banks and the BNB. In this section we describe this interaction and develop a formula which describes how the money supply is determined in Bulgaria. We begin with a description of the transaction settlement system that is now being used in Bulgaria. This is followed by a discussion of the relationship between the BNB and the commercial banks as defined by the law on commercial banking. Then, a modified version of the standard money supply formula is derived. The final section shows how the money supply will change under the currency board arrangement.

1. *Transaction Settlement System*

Before the movement towards a market economy, there was no need to quickly clear transactions through the banking system. The banks performed the accounting procedures used by the central planning system, but not the type of transaction service essential in a market system. It was not uncommon for transactions to take several weeks to clear. To meet the demands of the changed environment, the BNB created the BISERA electronic gross settlement system which is designed to provide clearance of lev transactions within the banking system within three days. BISERA does not encompass transactions in foreign currency. If companies wish to carry out transactions in foreign currency through banks, banks must use their 'nostro accounts.' These are accounts that banks have at other banks.

To understand how transactions are recorded through the BISERA system we describe a series of examples. In each case the payer is Company X and the payee is the Company Y. What changes in each example is where these two firms hold their accounts.

Payee and Payer at the Same Bank: The simplest situation arises when the payee and the payer have accounts at the same bank. Suppose that both Company X and the Company Y have accounts at Bank A. Company X makes a payment to the Company Y of 1000 levs. Money must be deducted from the Company X account and credited to the Com-

pany Y account. This transaction can be described on the T-account of Bank A as:

BANK A

Assets	Liabilities
	Company X BGN -1000
	Company Y BGN +1000

The responsibility for transferring these funds from one account to the other is totally the responsibility of Bank A. No other bank is involved in this process.

Payee and Payer at Different Banks: When Company X and the Company Y have accounts at different banks, transaction clearance becomes more complicated. The BISERA system is used and the banks utilize their settlement accounts at the BNB to clear the transaction. Suppose instead of banking at Bank A, the Company Y has an account at Bank B.⁷²

Since Company X still has an account at Bank A, the payment will still have to be made from this account. The transaction begins when Company X gives Bank A an instruction to make payment to the Company Y. Under the BISERA system the account of Company X is reduced by 1,000 leva and the Bank A account at the BNB is reduced by 1,000 leva. These entries should be made at the end of the first day or Bank A will be penalized.

BANK A

Assets		Liabilities	
Dep. at BNB	BGN -1000	Company X	BGN -1000

On the second day it is BNB's responsibility to make the next two entries. First, on its own balance sheet it records the corresponding entry to Bank A's entry showing that Bank A's account at the BNB has been reduced by 1,000 leva. Since the Company Y has an account at Bank B, the leva are transferred to Bank B.

BNB

Assets		Liabilities	
		Bank A	BGN -1000
		Bank B	BGN +1000

Bank B now records the increase in its account at the BNB and credits the account of the Company Y.

⁷² There are several methods of clearing transactions under the BISERA system. We describe direct transfers. A detailed description of BISERA can be found in the operations manual.

BANK B

Assets		Liabilities	
Dep. at BNB	BGN +1000	Company Y	BGN + 1000

The money has now been transferred from Company X to the Company Y. Under the BISERA system each stage takes no more than one day so the whole process should take no more than three days. This was a great improvement over the previous system, where the process of clearing a transaction could be very lengthy.⁷³

2. A Money Supply Formula for Bulgaria

The money supply in Bulgaria is determined by the interaction of the commercial banks and the BNB. The process is essentially the same as any country that uses a reserve system. Once a commercial bank acquires reserves, the bank can loan this money to nonfinancial borrowers and create additional deposits at the bank. This adds to the money supply. A description of how additional bank reserves will cause the money supply to grow can be found in any standard money and banking textbook.

A special feature of the Bulgarian system is that, under a currency board, the money supply is determined by foreign exchange transactions and the decisions of commercial banks. The purpose here is to describe the special features of the Bulgarian banking system and show how these features alter the way in which the money supply is determined. First, a formula for the money supply is presented. Then this formula is used to analyze how the money supply changes.

Over time there have been improvements in the way that the money supply has been controlled in Bulgaria. At the beginning of the transition, credit ceilings were used to control the money supply. Credit ceilings were abandoned in July 1994.⁷⁴ Under later arrangements there were tensions between the BNB and the commercial banks regarding foreign deposits. Because of concerns over money supply control, the BNB limited the use of foreign currency as reserves. This created problems for the commercial banks that had foreign currency deposit liabilities. If the commercial banks had assets in levs to satisfy the reserve requirements, they had exchange rate risk.⁷⁵ Under present regulations commercial banks are allowed to keep their reserves in foreign currency in the same ratio as their foreign currency liabilities. So if half a bank's deposits are foreign currency deposits, the bank can keep up to half its reserves in foreign currency.

⁷³ It might be noted that this procedure is the opposite of the check clearing system used in the United States. In the United States the first entries are made at the bank receiving payment since the check is deposited by the payee.

⁷⁴ See the first edition for an analysis of the effectiveness of credit ceilings. It was argued there that credit ceilings were inadequate for controlling the money supply.

⁷⁵ See the second edition for a discussion of these problems.

The issue of exchange rate risk for the commercial banks has also changed. Because the currency board fixes the exchange rate between the euro and the lev, there is no fluctuation between the lev and the currencies in Euroland. Thus there is no currency risk as long as the currency board is maintained, and the exchange rate remains fixed. On the other hand, holding US dollars or other non-Euroland currencies does create potential exchange rate risk. For example, if the value of US dollar deposit liabilities rise because the dollar strengthens relative to the euro (as it did during 2000), a commercial bank has to increase (the lev value of) its reserves. If the commercial bank is holding dollar reserves, it will not have to increase its actual reserves since the value of its reserves will also rise. However, if a bank holds its reserves in levs, then reserves must be increased to meet the minimum reserve requirement.⁷⁶

Given the present treatment of foreign currency deposits and reserves, there is no reason to distinguish between deposits in lev and deposits in foreign currency when deriving a money supply formula. The reserve requirement ratio used to determine the reserves that must be held against lev and foreign currency deposits is the same. Foreign currency can be deposited at the BNB to satisfy the minimum reserve requirement. The only distinction between the use of foreign currency and levs is that commercial banks cannot use foreign currency cash in the vault when determining their reserve position.⁷⁷ Commercial banks can include a percentage, presently 60%, of their cash position in levs when calculating their reserves.

In constructing a money supply formula, we derive a formula for $M2$. Let D^{DE} be the sum of all demand deposits, savings deposits, and time deposits in lev, and all deposits in euros. If foreign currency deposits in US dollar terms are D^F , then the total money supply will be:

$$M2 = C_p + D^{DE} + \varepsilon D^F = C_p + D \quad (1)$$

where C_p is the amount of cash in the hands of the public, ε is the US dollar exchange rate and D is all deposits at commercial banks. Consistent with the definition of $M2$ used by the BNB, cash holding does *not* include foreign currency held by Bulgarian citizens.

In the standard construction of the money supply formula, movements in the money supply occur when there are changes in the monetary base MB .⁷⁸ The monetary base is the sum of two liabilities of the central

⁷⁶ See the section *Changes in exchange rates* later in the text for a more detailed explanation of these changes.

⁷⁷ Even though commercial banks cannot use foreign cash to satisfy the minimum reserve requirement, they will need to hold some foreign currency cash to satisfy potential requests for foreign currency withdrawals by customers. Any cash holding by commercial banks will constrain money supply expansion because it will leave less money available to lend.

⁷⁸ When a central bank has discretionary control over the money supply, the central bank controls the money supply by manipulating the level of the monetary base. With a

bank: cash C and commercial bank deposits at the central bank D_C . The central bank controls the monetary base and the commercial banks determine whether they wish to hold cash or deposits at the central bank. In other words, the commercial banks are free to deposit or withdraw cash from the central bank at any time. From the definition of the monetary base we have:

$$MB = C + D_C \quad (2)$$

All cash (in lev) issued by the BNB will also be cash in the hands of the public C_p or be vault cash C_v held by commercial banks. So

$$C = C_p + C_v \quad (3)$$

Let r represent the percentage of demand, savings, time and foreign currency deposits that banks are required to keep in their reserve accounts at the BNB. Then the relationship between required reserves, RR , and total deposits, D , will be:

$$RR = rD \quad (4)$$

There are two assets that banks can use to satisfy this requirement. First, there are reserve deposits at the BNB, D_C . Secondly, there is vault cash. Only part of vault cash can be counted towards meeting the minimum reserve requirement. Let k_v be the percentage of vault cash, C_v , that banks are allowed to use to satisfy the reserve requirement. Then $k_v C_v$ will be the share of vault cash included as required reserves. Also let k_f be the percentage of foreign vault cash C_f that banks are allowed to use to satisfy the reserve requirements.⁷⁹ Then $k_f C_f$ will be the share of banks' foreign cash holdings included as required reserves. Total reserves of the banking system, R , will then be:

$$R = C_v + C_f + D_c \quad (5)$$

Required reserves will be part of total reserves since not all of the vault cash can be counted to meet the reserve requirements.

$$RR = k_v C_v + k_f C_f + D_c \quad (6)$$

Combining equations (4) and (6), we have

$$D_c = rD - k_v C_v - k_f C_f \quad (7)$$

currency board the monetary base changes automatically when levs are bought and sold on the foreign exchange market.

⁷⁹ At the present moment a bank's foreign cash holdings cannot be used to satisfy reserves requirements. So in this case $k_f = 0$. But we derive the formula in a more general format in order to trace the implications of changing this regulation.

Substituting equations (3) and (7) into equation (2) we have:

$$MB = rD + C_p + (1 - k_v)C_v - k_f C_f \quad (8)$$

Let ρ_v and ρ_f be the desired ratios of banks' vault cash holdings to lev and foreign currency deposits respectively. They reflect the desire of banks to serve their customers' cash needs. Then using the definition of these ratios equation (8) becomes:

$$MB = rD + C_p + (1 - k_v)\rho_v D^{DE} - k_f \rho_f \varepsilon D^F \quad (9)$$

If we factor D from the right side of equation (9), we obtain

$$MB = [r + cp + (1 - k_v)\rho_v(1 - d) - k_f \rho_f d] D \quad (10)$$

where $cp = C_p / D$ and $d = \varepsilon D^F / D$.

The cp ratio depends on economic agents' behavior. It reflects the public's desire to hold cash in levs rather than deposits. At present cash is the principal method of payment for transaction conducted by individuals in Bulgaria. The cp ratio depends in general on four factors: (1) ease of withdrawal from the banks and usefulness of deposits in transactions, (2) nominal interest rates on bank deposits, (3) the size of the shadow economy, and (4) the preference for hoarding cash in the form of lev rather than foreign currency.⁸⁰ Cash pays no interest so people holding cash are foregoing the interest payments they would otherwise receive on their money. The deposit ratio d reflects the preferences of depositors for lev versus holdings of foreign currency. These preferences may differ for individuals and institutions.

The ratios ρ_v and ρ_f relate to bank behavior. Banks need to retain cash in the vault to service the demands of their depositors for withdrawals. Since banks earn no interest on the cash in their vaults, they have the incentive to keep these balances at low levels so they can loan out as much money as they can at higher interest rates. The need to service depositors withdrawals imposes limits on the minimum level of vault cash they will hold.

Finally, the ratios k_v , k_f and r are policy variables determined by the BNB.

The level of total deposits, D , can be found by rewriting equation (10):

$$D = MB / [r + cp + (1 - k_v)\rho_v(1 - d) - k_f \rho_f d] \quad (11)$$

⁸⁰ The level of cash outstanding has risen dramatically since the introduction of the currency board. For an extensive study of the implication of the rise in cash holdings in lev see *Nenovsky and Hristov (2000b)*.

The total money supply can then be found by noting that equation (1) can be adjusted

$$M2 = (C_p / D)D + D = (cp + 1)D \quad (12)$$

so that the money supply formula is

$$M2 = MB(cp + 1) / [r + cp + (1 - k_v)\rho_v(1 - d) - k_f\rho_f d] \quad (13)$$

With some modifications, this formula is similar to the one used in the United States. The basic differences are two. (1) Banks offer both lev and foreign exchange deposits which is reflected in the deposit ratio and in the foreign exchange vault cash. (2) Only part of the vault cash can be counted to meet the required reserves. If there were not foreign exchange deposits and all vault cash counted as required reserves then $d = 0, k_f = 0, k_v = 1$ and the formula becomes the standard money multiplier formula.

Equation (13) illustrates that as long as there are certain regularities in these ratios, changes in the money supply will be a function of changes in the monetary base. On the other hand, the BNB has no direct control over the behavioral variables cp , d , ρ_v and ρ_f , and so changes in these ratios may also affect the money supply.

The above formula gives us the opportunity to trace the impact of changes in different variables on the money multiplier and the money supply. Since k_v and k_f appear in the formula with minus signs larger values will increase the money multiplier. When k_v and k_f are larger, banks need to keep fewer reserves with the BNB. Banks can then extend more credit and the money supply will be larger. A smaller r will have the same effect. If the public withdraws cash in lev from the banks (as occurred during the financial crisis period) the money supply will decrease because cp will rise reducing the money multiplier.⁸¹ When depositors change the distribution of their deposits between levs and foreign currency this will change the d ratio. If the k 's and ρ 's differ, then this could affect the multiplier.

3. Changes in the Monetary Base

Analysis of the money supply formula shows that the money supply is most directly affected by changes in the monetary base. Before the establishment of the currency board the BNB was, in theory, able to exercise considerable control over the monetary base through changes in its refinancing policies and its purchases and sales of foreign currency or of government securities. In fact the BNB was under heavy pressure to finance

⁸¹ The negative relationship between the cash to total deposits ratio and the money multiplier can be proven by using derivatives.

government deficit spending. When the BNB loaned money to the government, this increased the monetary base.

During the financial crisis in 1996 – 1997, the BNB also tried to support the banking system by providing loans to the banks. These loans also increased the monetary base and in turn the money supply. This expansion was offset by foreign currency trading by the BNB. When the BNB entered the foreign currency market and tried to keep the lev from depreciating, it had to buy levs, this decreased the monetary base.

Under the currency board arrangement the BNB cannot lend to the government or the banks so the monetary base now increases or decreases when levs are (i) exchanged for foreign currencies, (ii) the government collects taxes or makes payments, or (iii) the value of foreign currency deposits at banks increase or decrease. We look at each in turn.

3.1. Foreign Currency Operations of the BNB

When the BNB fixes the exchange rate, it is promising to buy all the levs that anyone wishes to sell at that price or, alternatively, promising to sell all the levs anyone wishes to buy. When the BNB buys levs, it pays for the levs in foreign currency. This reduces the amount of levs outstanding. The monetary base declines, causing the money supply to decrease.

For example, if someone comes to the BNB and buys DEMs with lev currency notes, this will be recorded on the BNB's T-account as:

BNB

Assets		Liabilities	
Foreign currency reserves	DEM - 1,000	Currency in circulation	BGN - 1,000

Since currency in circulation is part of the monetary base, the monetary base falls by BGN 1,000. This fall in the monetary base will create a further contraction of the money supply. The size of this decline in the money supply can be calculated using the money supply formula. Conversely, foreign currency transactions can increase the money supply if people use their foreign currency to buy levs.

3.2. Government Operations

When the currency board was established, a decision was made to place the government accounts at the BNB (see the Issue Department balance sheet in Table 5.2.).

Thus, the BNB serves as the bank for the government and all financial transactions for the government pass through this account at the BNB. *Money in this account is not part of the monetary base.* When the government interacts with the public, either currency in circulation or accounts at commercial banks are affected.

For example, suppose that Company X has an account at Bank A, and

Company X pays its taxes from this account. The T- account transactions would be the following:

BANK A

Assets		Liabilities	
Deposits at BNB	BGN - 10,000	Deposit of Company X	BGN - 10,000

BNB (Issue Department)

Assets		Liabilities	
		Deposits of Bank A	BGN - 10,000
		Government deposits	BGN + 10,000

Bank A's deposits at the BNB are part of the monetary base. Since these deposits have fallen by BGN 10,000, the monetary base has decreased by BGN 10,000. The money supply formula will determine how much the money supply will then fall.^{82, 83}

This points to two problems with a currency board. First, tax collections and government expenditures in the economy will cause the money supply to rise and fall unless they happen to be timed in such a way as to offset each other. A central bank with discretionary authority can offset these changes caused by government activity by increasing or decreasing bank reserves (perhaps through open market operations).⁸⁴ A currency board cannot do this because it cannot engage in discretionary activities that will affect the size of the money supply.

Secondly, when the government deficits spends its expenditures exceed its income. More money is being put into the economy than is being withdrawn so the monetary base will expand and so will the money supply. Fortunately, during the years following the establishment of the currency board, government deficits have been very small and this has had very little effect on the money supply.

⁸² When the Banking Department becomes a lender of last resort and loans money to a bank, the monetary base increases in the same way. This is described in Section V, Tables 5.6a and 5.6b.

⁸³ See *Nenovsky and Hristov* (1998, pp. 16 – 18), *Dobrev* (1999, pp. 20 – 21) and *Manchev* (2001, VI.8.2) for a more detailed description of the impact of government actions on the money supply. Dobrev also discusses this issue in the context of holding domestic and foreign assets as backing for government deposits.

⁸⁴ Indeed, most of the open market operations in the US are various forms of repurchase agreements. These are temporary sales and purchases of government securities and they are designed to counter the impact of actions that have a temporary effect on the money supply.

3.3. Change in Exchange Rates

Since foreign currency deposits of commercial banks at the BNB are part of the monetary base, the *lev valuation* of these deposits will change with changes in exchange rates even if there is *no change* in the actual amount of foreign currency on deposit. Since the lev value of these deposits changes, the monetary base valued in levs will change. This will make it possible for the *lev value* of the money supply to change.

To see this, let's focus on the foreign currency deposits that the Bank A might have at the BNB. First, note that foreign currency deposits in euros (or Euroland currencies) should not create problems since the exchange rate is fixed between levs and euros. On the other hand, if the deposits are in dollars, changes in the exchange rate can affect the position of the banks. Let's assume that the deposits are in dollars. We will ignore the other assets and liabilities of the Bank A and BNB. (Note these are balance sheets, not T-accounts.)

BANK A

Assets		Liabilities	
Deposits at BNB in dollars	BGN 100,000	Deposits in dollars	BGN 1,000,000
All other assets		All other liabilities and net worth	

Example 1: This example assumes that the reserve requirement ratio, r , is 10%. Even though the deposits are in dollars they appear on the balance sheets in levs since the balance sheet accounting is in lev. In this instance, Bank A is holding dollar balances at the BNB which match the dollar deposits that it has in customer accounts on the liability side of its balance sheet.

Suppose that the dollar appreciates by 5% relative to the euro and the lev. On the balance sheet of the Bank A, the lev valuation of both the customer accounts and the deposits it has at the BNB will change:

BANK A

Assets		Liabilities	
Deposits at BNB in dollars	BGN 105,000	Deposits in dollars	BGN 1,050,000
All other assets		All other liabilities and net worth	

In this instance, Bank A's deposits at the BNB have increased by BGN 5,000 levs and the money supply has increased by BGN 50,000 levs.

These changes occur automatically when the exchange rate changes, but the process does not stop there. Other changes can be expected to occur to keep behavioral ratios in balance. For instance, with a higher level of bank deposits, the public will want to keep higher cash balances (so that cp is constant.) The money supply formula calculates the eventual change in the money supply that results when all these other changes have taken place.

Example 2: Suppose the reserve requirement is still 10%, but Bank A decides to keep half its reserves in dollars and half in lev.

BANK A

Assets		Liabilities	
Deposits at BNB in dollars	BGN 50,000	Deposits in dollars	BGN 1,000,000
Deposits at BNB in lev	BGN 50,000		
All other assets		All other liabilities and net worth	

Suppose the dollar appreciates by 5%:

BANK A

Assets		Liabilities	
Deposits at BNB in dollars	BGN 52,500	Deposits in dollars	BGN 1,050,000
Deposits at BNB in lev	BGN 50,000		
All other assets		All other liabilities and net worth	

With this change Bank A does not have sufficient reserves. It needs BGN 5,000 in additional reserves, but the change in the dollar exchange rate has increased its deposits at the BNB by only BGN 2,500. Bank A will have to sell securities or take other actions to increase its deposit position at the BNB. In the end the 5% increase in the value of the dollar will cause the money supply to increase (the monetary base increased by BGN 2,500), but the increase will be half the size of the increase in the first example.

This example also illustrates that when banks hold their reserves (and their assets) in currencies different from their liabilities, they will have exchange risk. When exchange rates change, they will have to adjust their portfolios.⁸⁵

4. Summary

In this section we have seen how the standard money supply formula can be used to describe the relationship between the money supply and the monetary base. Under the currency board arrangement, the BNB has a legal obligation to buy and sell foreign currency under exchange rate fixed at 1 BGN = 1 DEM. When the BNB buys foreign currency, the monetary base increases. Other changes that will cause the monetary base to increase are purchases made by the government and appreciation of non-euro currencies against the lev. When the monetary base increases, the money supply increases.

⁸⁵ While we have not shown it here, the BNB must also be conscious of exchange rate risk. If commercial banks hold foreign currency deposits at the BNB, the BNB will want to hold assets in the same currencies to avoid exchange rate risks.

VIII. The Currency Board Advantages and Disadvantages⁸⁶

When Bulgaria established a currency board in July 1997, it was following the lead of two other small transition economies: Estonia, 1992 and Lithuania, 1994. Later, Bosnia-Herzegovina also established a currency board.⁸⁷ In many respects the Bulgarian currency board has been a great success. From hyperinflationary levels in February 1997, inflation fell to single-digit levels in 1998 and 1999. Even with a large increase in world oil prices inflation was only 11.4% in 2000. A dramatic fall in nominal interest rates made it possible for the government to reduce large government deficits. The economy also began to grow, albeit more slowly than might be hoped during a recovery period.

In part this success is due to the discipline that has been created throughout the economy. Not only has the discretion of policymakers been severely circumscribed, limitations on central bank lending to commercial banks has greatly reduced bank lending to state enterprises. State enterprises have been forced to restructure. In addition, fiscal policy has been more disciplined because the government cannot borrow from the BNB.

What distinguishes currency boards from other fixed-exchange-rate regimes is the credibility of the exchange rate fix. Credibility depends on both economic and political factors. To sustain confidence, a currency board must have sufficient foreign currency reserves to honor the pledge to exchange local currency for reserve currency. Politically, the government must be prepared to maintain the fixed exchange rate when adverse circumstances arise. To build confidence in the currency board and make it difficult to change the exchange rate, the exchange rate was written into the law establishing the Bulgarian currency board. Whether there is the political will to sustain the board will not really be known, however, until there is a real test. Thus far the Bulgarian currency board has not been confronted with a real challenge, but growing current account imbalances may create problems in the near future.

When considering the future, two issues are of special concern. The first is Bulgaria's large foreign debt. Bulgaria has been able to service this

⁸⁶ This chapter draws heavily on Miller (2001).

⁸⁷ See Bennett (1992) for a discussion of the Estonian currency board. Proposals have also been put forward to establish a currency board in Russia (see Hanke, Jonung and Schuler (1993)). Hanke also proposed a currency board for Bulgaria in 1991.

Since the Asian crisis and the success of the Argentine currency board, there has been extensive debate about the viability of currency boards. For some earlier discussion of currency boards see Liviatan (1993), Schwartz (1993) Williamson (1995). Schuler maintains a web site with references to papers about currency boards. It can be found at www.dollarization.org. Some earlier discussions of the Bulgarian currency board include Hanke (1997), Minnasian (1998), Yotzov, et. al. (1998), Nenovsky and Hristov (1998), Avramov (1999), Dobrev (1999).

debt since the crisis ended in 1997, but the debt issue could become more serious if current account deficits persist. The second concern is whether the automatic adjustment mechanisms which maintain balance-of-payments (BOP) equilibrium under a currency board arrangement will create so much economic pain that they will not be politically sustainable. Without political support the credibility of the currency board will be undermined and the currency board will not be sustainable.

To analyze these issues we begin by describing some of the special features of the Bulgarian currency board and discuss some problems associated with Bulgaria's situation. Then we utilize a framework provided by Williamson (1995). He presents a list of advantages and disadvantages of currency boards. We analyze whether advantages Williamson identifies with currency boards have indeed brought about the improvements in Bulgaria that would be anticipated. Then we analyze whether the Williamson list of disadvantages to currency boards foretells serious future problems for the Bulgarian economy.

1. Special Features of the Bulgarian Currency Board

In Section V we presented a description of the basic organization of the Bulgarian currency board. There we described the separation of the Issue Department and the Banking Department.

The currency board was organized this way because this structure has important advantages for a country that has an ongoing IMF program and large foreign debt service obligations. With a currency board changes in foreign reserves will normally affect the size of the money supply. With this structure IMF tranches and payments of foreign debt obligations do not affect the monetary base. This arrangement reduces the volatility of the money supply that would otherwise be affected by large movements in the BNB's holding of foreign currency reserves. We will not show here how this will affect the balance sheet of the BNB since we have already used this example in Section V (see Tables 5.4a – 5.5b and the discussion there). It is important to emphasize, however, that reducing volatility in the money supply that otherwise would have resulted from these transactions was an important reason why the currency board was structured the way it was.

This arrangement has some additional consequences, however. Under a currency board arrangement a BOP surplus or deficit should generate an equivalent change in the monetary base. However, the Bulgarian currency board is structured so that government transactions involving international financial flows do not affect the monetary base.

To see this suppose that through the privatization of a major company to a foreign purchaser, the government receives a payment of BGN 20 million. This would be recorded on the Issue Department T-account as:

Table 8.1

Issue Department

ASSETS	LIABILITIES
Cash in foreign currency BGN +20 million	Government deposits BGN +20 million

Neither currency in circulation nor commercial bank deposits at the BNB are affected. So while foreign currency reserves have increased, the monetary base has not changed. In effect these international activities of the government have been ‘spontaneously sterilized.’⁸⁸

Another interesting aspect of the present structure of the currency board is the impact that government expenditures has on the money supply. As we saw in Section VII tax collections of BGN 10,000 will decrease the monetary base by BGN 10,000. As the money multiplier formula shows, the money supply will then decrease by a multiple of BGN 10,000. When normal government receipts and payments affect the size of the monetary base in this way, there is substantial money supply volatility. To reduce this volatility, Nenovsky and Hristov (1998) have argued that government deposits should be held at a commercial bank instead of the currency board. There are several tradeoffs to be considered here. Government deposits were originally placed at the currency board because the banking system was considered to be too weak (Enoch and Gulde, 1997). If deposits were placed at a commercial bank, IMF tranches and debt service payments would create more money supply volatility than the present arrangements. Another alternative would be for the government to keep deposits at both the currency board and commercial banks. The deposits at the currency board could be used for IMF tranches and debt service, and the deposits at commercial banks could be used for normal government operations. A possible disadvantage of this arrangement is that the government could influence the size of the monetary base by moving deposits from one account to another.⁸⁹

From the viewpoint of a purist, none of these arrangements is ideal.⁹⁰ Since the government’s deposits and its international transactions are large, government activities will influence the size of the monetary base. Under ideal conditions, money supply adjustments under a currency board system should reflect only imbalances in the balance of payments.

⁸⁸ The term ‘sterilization’ is normally used to describe a situation where a central bank (not a currency board) engages in an expansionary policy action (i.e. buys government bonds) to offset the contractionary effect of buying local currency in the foreign exchange market. (These purchases are usually undertaken to support the value of the local currency.) Many economists believe that such sterilization efforts are futile. The situation here is different since there is no discretionary policy action being taken. The effect is the same, however, since there is no change in the monetary base.

⁸⁹ For example, a decision of the government to move money from the BNB to UBB would cause UBB’s deposits at the BNB to rise, increasing the monetary base.

⁹⁰ This is one of the reasons why Hanke refers to the Bulgarian system as a ‘currency board like system’ rather than an orthodox currency board.

2. Advantages of a Currency Board

In this section and the next we consider more general issues regarding currency boards. First we analyze whether Bulgaria's currency board has benefited from the advantages commonly associated with currency boards. Then in the next section we investigate what economic problems may arise in Bulgaria under a currency board system.

2.1. Convertibility

A key aspect of a currency board is its guarantee of currency convertibility at a fixed exchange rate. To assure convertibility there must be adequate reserves to cover any demands for foreign currency. For a currency board where commercial banks hold their reserves at the currency board, the central bank should have foreign currency holdings at least as large as the monetary base. This will be adequate to guarantee the fixed exchange rate but insufficient to prevent a banking crisis. Commercial banks themselves will not have sufficient foreign currency to guarantee the convertibility. People will be forced to withdraw money from the banks and present their demands for foreign currency at the currency board. The currency board will be able to honor these demands, but the withdrawals will bring about a contraction of bank liabilities and the money supply as banks are forced to call in their loans and sell other assets.⁹¹

In Bulgaria at the end of 2000 gross foreign currency holdings far exceeded the minimum requirements for coverage of the monetary base. The Issue Department balance sheet (Table 5.2) shows that the BNB had foreign currency reserves of BGN 7.27 billion and the monetary base was only BGN 3.02 billion. Foreign currency reserves at the BNB were almost twice as large as M1. Indeed the ratio, broad money/foreign currency reserves, was only 1.3 (see Tables 5.2 and 6.1). Under these conditions there should be no problem in honoring commitments to the exchange rate fix.

While there should be no immediate problems, the longer-term picture is not so rosy. At the end of November 2000 Bulgaria's foreign debt was more than USD 10 billion. Debt service payments have been in the range of USD 1 billion a year. To put these figures in perspective, the government's deposits (including other deposits) at the Issue Department represent approximately one and half year's service payments. The total assets of the Issue Department are approximately the same as the debt service obligations over the next three years.

The future strength of the currency board depends on the management of these foreign debt service obligations. Thus far these obligations have been managed, but assistance from International Financial Institutions (IFIs) [i.e. the IMF, World Bank, European Union, etc.] has been crucial. Support from IFIs is a shifting situation. The IMF may change the direc-

⁹¹ *Caprio, et. al.* (1996) analyze how these questions are tied to the lender-of-last resort function.

tion of its programs, as some critics of the IMF have suggested. If the IMF stops its long-term loan programs, this could have serious repercussions for Bulgaria unless other IFIs expand their lending.⁹²

Other potential sources of foreign currency reserves include foreign direct and portfolio investment and floating a Eurobond. Attracting private portfolio money or floating a Eurobond has been made more difficult by the financial crises in emerging markets, especially the crisis in Russia. The war in Kosovo has further highlighted problems in the region. On the hand, improvements in the situation in Yugoslavia could bring more financial resources into the region.

The high inflation that preceded the establishment of the currency board in Bulgaria created a situation where there were more than enough initial foreign reserves, but without the support of IFIs, the foreign debt problem could still threaten the viability of the board. Because of these debt problems, dependence on the IFIs has grown. It is still too early to determine whether the stability provided by the currency board will provide sufficient impetus to the private sector to reverse this trend, but it is unlikely that these changes will occur quickly.

2.2. Macroeconomic Discipline

Advocates of currency boards argue that currency boards will tend to instill macroeconomic discipline. Williamson (1995) views fiscal policy, in particular, as a political problem that may or may not be solved by the establishment of a currency board.

Very weak commercial bank balance sheets and large government deficits helped bring on the Bulgarian financial crisis in 1996 – 1997. Proponents of the currency board hoped that the establishment of the currency board would signal a change of regime and greater economic discipline.

The currency board has indeed brought an end to these problems. The high inflation during the crisis reduced the value of the lev-denominated government debt. This, along with lower interest rates, lowered government debt service obligations. From 1998 through 2000, the government budget has been more or less in balance.

The situation in the banking sector has also improved dramatically. The banks have reduced their exposure to the nonfinancial sector and the capitalization of the banks rose to more than 35% in 2000 (against the minimum requirement of 12% required under the Basle guidelines). Initially the banks did little additional lending to the nonenterprise sector and expanded their cash holdings and their holdings of securities. After the first two years of the currency board, banks began to expand their lending to the nonfinancial sector and reduced their cash holdings. Still the banks continue to lend very conservatively.

⁹² As accession talks proceed with the European Union relatively more assistance will probably be forthcoming from the European Union and less assistance from the World Bank and IMF.

By bringing more discipline to banking and government budgetary policy the currency board has enhanced macroeconomic stability. This is certainly a major accomplishment. While the economy has not grown rapidly, it has been stabilized, and it is easier for economic decision makers to make new business plans with longer horizons.

2.3. Confidence in the Monetary System and Promotion of Trade, Investment and Growth

Another important aspect of a currency board is that it should create confidence and promote trade and growth. A recent empirical study by Ghosh, Gulde and Wolf (1998) finds that countries that adopt currency boards do have better inflation experiences, and this improved inflationary environment does promote better growth. Indeed, they find that growth rates in currency board countries are twice as high as in pegged or floating exchange rate countries, a difference of about 1.8% a year.

When the currency board was adopted in July 1997, there were immediate indicators of confidence in the exchange rate fix. Nominal interest rates fell from more than 80% in May 1997 to single-digit annualized levels once the board was in place. These changes are to be expected since speculators will arbitrage between the DEM and the lev. The interest rate premium on lev securities is a measure of the additional risk in the Bulgarian market. The interest rate differential between three month DEM and three month Bulgarian government bonds has been around 2% since the beginning of 1998.

While the currency board has been able to stabilize the exchange rate, it has not brought dramatically increased inflows of foreign capital. A number of privatization deals have been completed but the deterioration in the capital stock over the past decade has been so great that many firms have very little value. *Per capita* foreign investment remains much lower than most other Eastern European countries.

3. Disadvantages of a Currency Board

In this section we discuss four disadvantages of a currency board identified by Williamson (1995): (a) the transition problem which arises when inflation leads to overvaluation of the real exchange rate; (b) the adjustment problem caused by BOP disequilibrium; (c) the potential crisis problem in the banking system when there is no lender of last resort; and (d) the political problem.⁹³

⁹³ The other issues that Williamson discusses are: seigniorage, the start-up problem and the management problem. Currency boards allow countries to collect seigniorage. If Bulgaria adopted the euro, it would not be able to collect seigniorage. The start-up problem is the problem of collecting sufficient foreign currency reserves before establishing the currency board. The management problem is the inability of a country with a currency board to manage its monetary policy. This last problem is discussed below when the adjustment problem is analyzed.

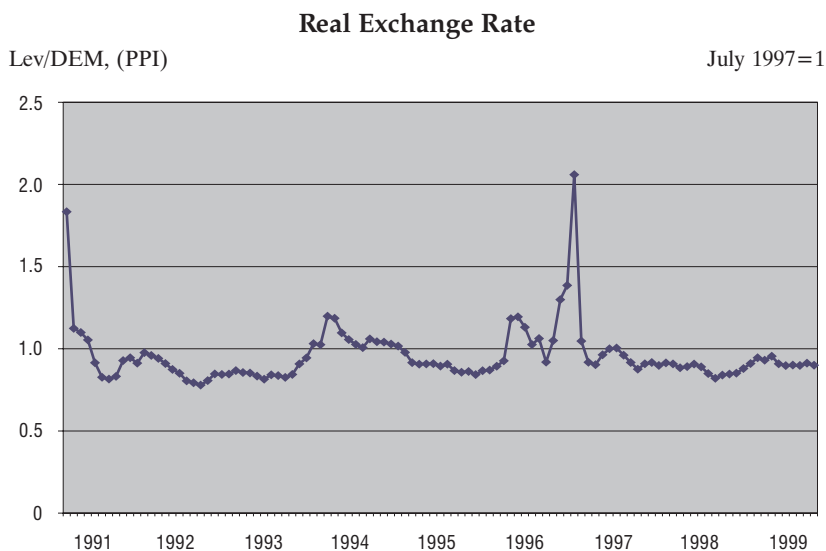
3.1. Transition Problem

The transition problem is the problem of bringing inflation down quickly enough after the establishment of the currency board. Fixing the exchange rate should bring inflation down, but inflation can have a momentum that leads to an overvaluation of the real exchange rate. The gold standard mechanism will eventually correct the BOP imbalance that results, but the adjustment can be long and painful.

In Bulgaria there was some inflationary momentum, but it was short-lived. Following the very high inflation during the first half of the year, the CPI rose only 16% during the second half of 1997 and only 1% in the 1998. In 1999 the inflation rate was 6.2%; in 2000 it was 11.4%. The higher inflation in 2000 reflected the worldwide increase in oil prices. In the first part of 2001, the inflation rate was much lower, rising less than 1% during the first five months. This is relatively low inflation, but it is still higher than the inflation rate in Germany.

To determine whether this inflation would cause an overvaluation of the lev depends on where the nominal exchange rate fix was initially set. The real value of the lev fluctuated dramatically during the period immediately preceding the establishment of the currency board (see Fig. 8.1.). This made it more difficult to determine an appropriate nominal rate. While perhaps a little undervalued, the nominal exchange rate chosen secured a real rate in the middle of the range during the 1990s.

Figure 8.1



Source: BNB.

From the time the currency board system was implemented until the end of 2000, the real value of the lev is little changed against the dollar. This reflects two offsetting factors. Inflation in Bulgaria has been higher than in the US, but the US dollar has appreciated significantly in nominal terms against the euro. Because inflation in Germany has been very moderate during this period, the real appreciation relative to the DEM has been 27%.

There is considerable disagreement about the importance of this real appreciation. Banerji and Gelos (2000) have looked carefully at this question. They concluded that the real appreciation during the currency board period has been "quite moderate compared" with other transition economies' (p. 12). They point out that this situation could change, however, if productivity improvements do not continue. An important factor here is that wages in Bulgaria measured in US dollars are among the lowest in the region.

On the other hand, Dobrinsky (2000) is more concerned about the competitiveness of Bulgarian exports and worries that lack of competitiveness could lead to further deterioration in the balance of payments.

At present the most serious problem is that the balance on the current account has moved from surplus to deficit. So a transition problem has arisen. The current account surplus in 1997 was USD 426 million. In 2000 for the January – November period, the current account deficit was USD 656.1 million.

The deterioration in the trade deficit is even more severe, moving from a USD 380 million surplus in 1997 to a deficit of more than USD 1 billion in the first eleven months of 2000. Some of the deterioration in 1999 and 2000 can be attributed to the war in Kosovo and the difficulties associated with trade routes to Western Europe through Yugoslavia which have been blocked since the war.

Most of this shift is occurring in the trade balance. Initially, most of the change in the trade balance was due to a fall in exports, but exports recovered dramatically in 2000 and this increase in exports offset the rise in imports caused in part by the increasing price of oil. The increase in exports is an encouraging sign. In the period since the establishment of the currency board, there has been a major realignment of export markets away from the former Soviet Union towards the EU and more recently other countries in the Balkan region.

Rising imports reflect increases in both investment and consumption goods. Given the very low levels of investment in the early 1990s, new investment is important if the economy is to continue growing.

The current account problems in Bulgaria are not yet severe. Indeed, the current account deficits in Bulgaria (4.6% of GDP in January – November 2000) are considerably smaller than recently recorded current account deficits in Estonia, Lithuania and Latvia where currency board ar-

rangements were established earlier than Bulgaria. These countries still have economic stability and their currency boards have survived. Bulgaria has been hurt by the crisis in emerging markets, particularly the crisis in Russia and the events in Yugoslavia. Progress in expanding export markets in 2000 is an encouraging sign. Without this expansion in exports, the higher price of imported oil would have caused the current account deficit to be much worse.

3.2. Adjustment Problem

Unlike Hong Kong and Argentina which have had a currency board for a longer period of time, the currency board in Bulgaria has not been faced with a speculative attack. Hong Kong experienced a severe attack during the Asian Crisis, and there was speculation against the Argentine peso during the Mexican crisis of 1994.

There have been external events that might have generated a speculative attack against the lev, but there has been no attack. This suggests that there is a perception that the currency board is strong. For example, there was no speculation against the lev when the Russian crisis occurred in 1998 or when fighting started in Kosovo in 1999 or Macedonia in 2001. Bulgaria has also had to manage the large increase in oil prices and the appreciation of the dollar in 2000.

Events like the increase in oil prices, the appreciation of the dollar and economic problems in Turkey have had negative effects on the Bulgarian trade balance. Current account deficits have been growing, and these deficits could cause a contraction in the economy. These are the kind of problem that Argentina has been experiencing since Brazil devalued its currency in 1998.

Under a currency board arrangement there are two automatic adjustment mechanisms if current account deficits arise. First, if the current account deficits create BOP deficits the monetary base will contract, the money supply will fall and aggregate demand will decline. Either a fall in output or a decline in prices will improve the current account balance. The greater the decline in prices, the smaller the decline in output needed to bring about equilibrium. Second, if the current account deficits are offset by flows in the financial account, expanded investment in the economy will lead to greater export potential. Greater exports will then reduce future current account deficits.

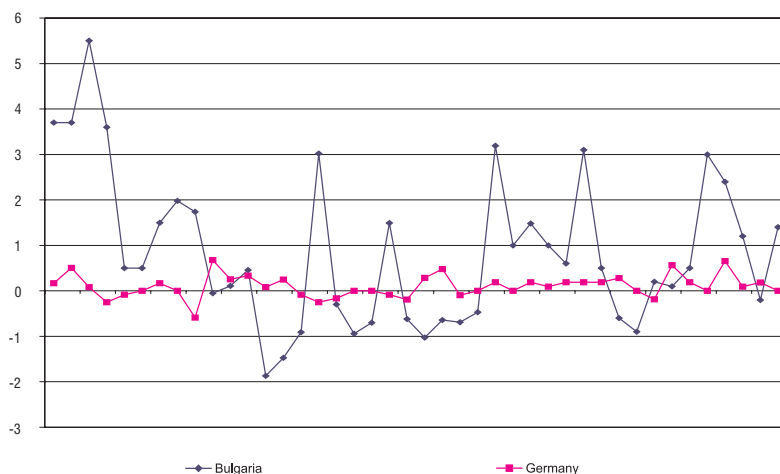
Thus far the current account deficits are not creating a monetary contraction. In spite of current account deficits the monetary base has actually increased during the period mid-1997 to end of 2000. On the other hand, the decline in exports is reducing aggregate demand. This should slow the growth of the economy. If the money supply contracted, this would reduce aggregate demand even more.

Under a currency board arrangement there is little that can be done to offset these contractionary pressures. In a more flexible policy environment expansionary, fiscal or monetary policy might slow the contraction. If Bulgaria had a floating exchange rate, a depreciation of the real exchange rate might spur exports. None of these options exist under a currency board.

The impact of contractionary policies on prices can be very important. If prices are more flexible in a downward direction, the contraction in output should be less severe. Figure 8.2 shows the relationship between monthly CPI adjustments in Germany and Bulgaria during Bulgaria's currency board period. The volatility of price adjustments in Bulgaria has been much greater than in Germany. This suggests that Bulgarian prices might indeed fall more during a contraction than a country like Germany. This should ease the output effects of a contraction caused by the adjustment process that will take place under a currency board arrangement.

Figure 8.2

Monthly CPI Inflation in Germany and Bulgaria



Sources: BNB, IMF: *International Financial Statistics*, Bundesbank.

Since there has not been a contraction in the money supply, improvements in the current account depend on the second mechanism where increases in foreign investment improve productivity. Higher investment levels, more imports of investment goods and indications of enterprise restructuring suggest that improvements in productivity may be possible. Still it is too early to determine whether these productivity improvements will be sufficient to bring about near term improvements in the current account.

3.3. Crisis Problem

What Williamson refers to as the crisis problem arises because there is no 'lender of last resort' under a formal currency board. In Bulgaria the Banking Department provides some protection during a crisis. A substantial amount of money was put aside in the Banking Department when the currency board was created and the amount has increased over time. In December 2000 Banking Department deposits at the Issue Department were 14% of all commercial bank deposits.

Another protection against banking crises is the presence of foreign banks. Most countries with currency boards have been countries where foreign banks were dominant. This was true, for example, of the first currency boards that were in British colonies. If banks have lines of credit in foreign currency upon which to draw, the contraction will be less severe. Foreign banks should be able to draw on their parent banking institutions for resources in the reserve currency, especially if their parent is in the reserve currency country. For Bulgaria today any bank from Euroland would serve this function. With the sale of Bulbank to the Italian bank Unicredito, a substantial part of banking assets are in banks with foreign ownership from the EU.⁹⁴

It is difficult to judge what will happen during a financial crisis, but one can interpret from portfolio behavior what economic agents perceive the risks to be. Under a currency board the risk of currency devaluation is reduced, but the risk of bank failure is greater. In Figure 2 the cash-to-deposit ratio is plotted for period beginning in December 1990.⁹⁵ As can be seen from the figure, the cash-to-deposit ratio rose dramatically when the currency board was established. This rise reflects the greater confidence in the lev as people exchanged dollars for levs. But confidence in the banks is still weak.

The behavior of banks has also been conservative since the establishment of the currency board. During the first two years of the currency board banks held more reserves than was required. Later they became more aggressive and reduced their cash holdings and extended more loans. In part this reflected changes in the procedures for determining compliance with the minimum reserve requirements, but it may also reflect pressures on bank profitability. It is difficult for banks to make profits if they are holding large cash balances and low interest paying government securities.

⁹⁴ The DSK Bank (former State Savings Bank) is now the largest bank without foreign ownership interest. It was not formerly a commercial bank but is presently being prepared for sale to foreign investors.

⁹⁵ Deposits include both lev and foreign currency deposits.

3.4. Political Problem

The last disadvantage that Williamson lists is the political problem. The question he raises is whether the currency board will really impose controls on the fiscal authority. He remains skeptical that this will necessarily be the case.

Thus far the currency board in Bulgaria has created an environment where the government has been able to control budget deficits. If there is a political problem, it is the appearance, perhaps, that the currency board is too strong. In political debate the government has used the currency board to deflect demands on the budget. This has created an environment where the greatest political threat to the currency board is not the fiscal actions of the present government, but the political attacks on the currency board.

Ganev and Wyzan (2000) argue that these attacks are coming from elites that have, in the past, been able to extract money through their control of enterprises. This extraction is more difficult now that the currency board is hardening these budget constraints. Previously this group has had the support of the poor who feared that restructuring would result in job loss. As restructuring is proceeding, unemployment is rising. Ganev and Wyzan state that it remains to be seen whether this rich-poor coalition will form again and politically threaten the currency board.

4. Conclusions

The currency board has brought needed discipline to the Bulgarian economy. The money supply is no longer growing too rapidly. Government budgets are now under control. Banks' lending is much more cautious. The result is that inflation has come down dramatically, and the economy is beginning to grow.

Having met these challenges, there are others that still lie ahead. Bulgaria still has a very large foreign debt. The servicing of the debt is still a problem, and there is a heavy reliance on the IFIs to provide support for these payments. These problems have been made more difficult because the current account is now in deficit.

The current account deficit may well create the most serious challenge for the currency board. Herbert Stein⁹⁶ has been quoted as saying that when something cannot continue forever it will stop. The current account deficits in Bulgaria cannot go on forever. The problem will have to be corrected. The question is how.

The long-term solution is growth. It is still too early to determine whether the increased stability brought on by the currency board and the inflow of new foreign capital will be sufficient to increase productivity. If

⁹⁶ Stein was a former chairman of the US Presidential Council of Economic Advisors who was known for his humor.

productivity improves, Bulgarian goods will become more competitive, and the current account will readjust. If productivity does not improve, then the long-term viability of the board will be in question.

If the Argentine experience is an indicator of what lie ahead for Bulgaria, the biggest challenges may come from unpredictable external events. Argentina adopted a currency board in 1991. Since then there has been the Mexican crisis in 1994 and the worldwide financial crisis in 1998. The currency board survived the Mexican crisis, but the devaluation of the Brazilian real in 1998 has caused a severe downturn in Argentina.

Bulgaria's major trading partner is the EU. The lev is fixed to the euro so there will be no devaluation of the euro relative to the lev, but deteriorating economic conditions in Europe or in other trading partners could hurt the Bulgarian economy. The economy has already been hurt by the decline in exports to countries in the former Soviet Union as economic conditions in these countries have deteriorated. A currency board arrangement provides little policy flexibility to offset the damaging effects of these economic forces.

The Bulgarian currency board passed its first big political test during the election of 2001. All major political parties officially announced their support for the currency board. These announcements were made at a time when people were clearly unhappy with the slow growth rate of the economy. If, however, the current account deficits continue to increase or there is a negative external shock and the economy contracts, there will be additional pressure on the government to take action. The currency board limits the options that the government has. If political uncertainty reduces confidence that currency board arrangement will survive, the currency board could lose credibility, increasing the risk of speculation against the lev. It is, therefore, crucial that strong political support for the currency board be maintained.

IX. Conclusion

Before concluding our analysis of the financial system in Bulgaria, we would be remiss if we did not address the impact that European accession efforts have had on the financial sector in Bulgaria. In this final section, we first analyze these issues and then assess the overall situation of the financial sector using Stiglitz's financial sector criteria that we outlined in the introductory section.

1. European Accession

As in many areas of the Bulgarian economy, developments in the financial sector have been strongly influenced by the desire to meet the criteria for accession into the European Union and eventual participation in the euro system. The establishment of the currency board and the macro-

economic stability that has followed has made the prospects for accession more realistic, although it remains many years off.

The explicit criteria for entry into the EU are very broad. They include: a stable democracy, a functioning market economy, the capacity to cope with competitive pressures within the EU and endorsing the economic, monetary and political objectives as stipulated in the *acquis* that binds the union together (Lavigne, 1998, p. 40).

Lavigne (1998) argues that more important than these explicit conditions are the implicit conditions for EU membership. Among the most important implicit conditions is reasonable monetary stability that allows the applicant country to participate in the single currency zone. While accession countries are not expected to adopt the euro immediately, it is a good signal if they can participate in the present exchange rate mechanism (ERM-II). This requires a country to fix its exchange rate to the euro within a wide band of plus or minus 15%.

The European Central Bank has stated that a Currency Board is legally compatible with ERM-II. A decision by ECOFIN (9.11.2000) confirms this position. This means that there is no need to abandon the currency board before joining the EU. Thus having a well-functioning currency board should make it easier for Bulgaria to argue that the country is prepared to meet the conditions for membership.

Joining the euro zone also provides an exit strategy from the currency board. Critics of currency boards argue that they are inflexible and must be abandoned at some point. The Bulgarian currency board need not last forever. If reasonable stability can be maintained and inflation is reasonably low, the euro can eventually be adopted to replace the board.⁹⁷

The prospect of eventual accession into the EU has been a catalyst for legal changes and development of more sophisticated and well-functioning institutional arrangements that meet the conditions of the *acquis*. New laws and regulations for the financial sector have been structured to meet these conditions. As Lavigne points out, this is only the first step for accession into the EU, however. "The law must be applied and – above all – be expected to be applied" (European Commission, 1995, Annex, p. 51). For Bulgaria to satisfy this condition, the courts and the regulatory authorities will have to demonstrate that these new laws and regulations can be applied in a reasonable manner, and the likelihood of another financial crisis is very small.

Another condition for membership is competitiveness. To be economically competitive with the countries in the EU, Bulgaria will have to develop a more sophisticated set of financial institutions. Banks will have to

⁹⁷ Indeed there has been some debate on the question whether Bulgaria should adopt the euro as its currency at some earlier stage in the process. See *Nenovsky, et. al.* (2000) for some arguments supporting early adoption of the euro and *Avramov* (2000b) some arguments against.

develop better lending practices, and nonbank financial institutions will have to demonstrate that they can play a larger role in the economy.

The desire to join the EU has provided a strong motivation for reform of the financial sector. The *acquis* has provided valuable guidance for how this should be done. It will be years before a sound and well-functioning financial sector is established and there will be bumps along the road ahead, but there now exists a broad consensus on the direction of reform in the financial sector.

2. The Stiglitz Criteria

While accession into the EU hopefully lies in the future, it is also valuable to assess what progress has been made to date in transforming the financial sector. To appreciate the progress made in the development of Bulgaria's financial system, it is important to remember the starting point. Levs did not necessarily buy goods. Banking was monolithic and entirely state-controlled. Secondary markets for financial instruments did not exist.

Since the transition to a market economy began, pressing macroeconomic problems, from financial crises to the establishment of a currency board, have dominated the attention of policy makers. Many of these problems are now under better control. But the long-term growth of the economy also depends on the development of sound financial institutions. Here many weaknesses remain. At the beginning of this essay we cited Stiglitz's (1992) list of functions that a financial system in a market economy must perform. Now that we have described the Bulgarian banking system it is useful to return to this list in order to assess how much progress has been made in each of the functional areas Stiglitz describes. The difficulties at the microeconomic level become more evident as we review this list.

1. *Management of the medium of exchange.*

Considerable progress has been made in management of the medium of exchange. The lev has been established as a viable internal currency used as a means of payment. The BISERA transaction payment system now provides for more reliable transfers of funds among banks. The fixed exchange rate established under the currency board has also facilitated international transactions.

2 and 3. *Transferring funds from savers to investors in new economic production. Pooling small amounts of savings so that larger projects can be undertaken.*

These two criteria are closely related since they both involve financial intermediaries. The financial system is beginning to expand beyond the core banking system, but almost all financial intermediation still involves the banking system which is performing in a very conservative manner. By selling the banks to foreign financial institutions which have more expertise, it is hoped that the banks will function better. It is still too early to

determine whether this strategy will work, but similar strategies have been working well in Poland and Hungary.

At present there are few viable investment options in Bulgaria for the individual saver beyond the banks. New laws and regulations have now laid the groundwork for the development of other nonbank financial institutions. Regulatory agencies have been created. If these institutions perform reasonably well over time, confidence in these alternatives should grow, giving savers more options and providing alternative vehicles for directing savings into longer-term projects.

4 and 5. Choosing among projects so that the most productive projects receive the most support. Monitoring the use of funds so that they are used in the intended way.

These two functions are closely tied. The difficulties that currently hinder their effective performance are identical. Some economists have referred to the early period of transition as the 'noisy period' (Tirole, 1991). During this period it is difficult to evaluate risks because there is so much uncertainty about the future course of the economy. Greater macroeconomic stability has lowered these risks from what they were in the early 1990s, but the rapid changes that are taking place as the economy restructures still creates an atmosphere where risks are high, although improving. Added to this is the lack of expertise and experience of economic agents. Unfortunately, the banks did not have the proper incentives to manage their assets properly during the pre-crisis period so there are still many inexperienced or untrained loan officers. Hopefully, the new foreign owners will provide the needed management controls and training.

In the nonbank financial institutions, there is little experience since these organizations are just opening their doors. The regulatory system is far better than it was for the banks in the early 1990s so a future financial crisis is less likely. But it will take time before these institutions function effectively.

6 and 7. Enforcement of loan contracts so that the loans are repaid. Definition of how risks will be shared among borrowers and lenders when new economic projects are undertaken.

Both of these criteria relate to the creation of laws that support business activity. These laws are particularly important if a country is going to have viable credit markets, because it is difficult to make loans if the lender does not believe that the creditor will be forced by the law to repay the loan.

Since the early 1990s, there have been significant improvements in the law regarding bankruptcy and collateralization of loans. The process of understanding the law and how it should be applied has begun. Significant steps have been taken in setting up a public registry for recording collateral. Bankers can now be more confident that they can recover their collateral if a collateralized loan is not repaid. This was a significant problem during the pre-crisis period.

8. Lowering of risk by creating methods for diversification of investment risks.

There has been little diversification of risk in private sector investment. The inability to obtain credit from the banks has forced most private enterprises to finance their activities out of their own savings. This has made it difficult to start even medium-sized private production activities. It also means that there has been almost no opportunity to diversify risks of private market activity. As nonbank financial intermediaries grow, alternatives to bank lending should develop.

For an economy to grow, effective mechanisms must be established to channel savings to investment activities. Thus far these mechanisms are still working inefficiently in Bulgaria. On the other hand, substantial progress has been made in defining a legal and regulatory structure for the financial system, creating an internal medium of exchange, and providing monetary and exchange rate stability. Judged by the Stiglitz criteria it is clear that there are still weaknesses in the functioning of the financial system in Bulgaria, especially at the microeconomic level. Improving conditions at the microeconomic level will take time and many problems remain, but the path forward is now much clearer than it was at the start of the transition.

References

Avramov, R. Exit Strategies from Currency Board Arrangements, *Paper presented at the conference Currency Boards: Experience and Progress*, Tallinn, May, 2000a. (available at www.bnb.bg)

Avramov, R. Euroization: An Artificial Problem, *Capital*, 20 – 26 May, 2000b.

Avramov, R., editor, 120 Years Bulgarian National Bank, *Bulgarian National Bank*, Sofia, 1999.

Avramov, R. The Role of a Currency Board in Financial Crises: The Case of Bulgaria, *Bulgarian National Bank Discussion Papers*, DP/6/1999.

Banerji, A., R. Gaston Gelos Does Bulgaria Suffer from a Competitiveness Problem? A Look at Real Exchange Rate Indicators and Export Performance in Bulgaria: Selected Issues and Statistical Appendix, *IMF Staff Country Report No. 00/54*, April 2000.

Bulgarian National Bank, *Annual Reports* (1991 – 1999)

Bulgarian National Bank, *Semiannual Reports* (1991 – 2000)

Bulgarian National Bank, *Monthly Bulletin* (various issues)

Calvo, G., C. Reinhart Fear of Floating, *National Bureau of Economic Research Working Paper*, No. 7993, 2000.

Caprio, G., Jr. M. Dooley, D. Leipziger, C. Walsh The Lender of Last Resort Function Under a Currency Board: The Case of Argentina, *World Bank Policy Research Working Paper* 1648, September, 1996.

Christov, L. A Role for an Independent Central Bank in Transition? The Case of Bulgaria, *The Bulgarian Economy: Lessons from Reform during Early Transition*, ed. D. Jones, J. Miller, Ashgate Publishing Company, 1997.

Clark, G., R. Cull, L. D'Amato, A. Molinari The Effect of Foreign Entry on Argentina's Domestic Banking Sector, *World Bank Policy Research Paper Working Paper* 2158, August 1999.

Dobrev, D. The Currency Board in Bulgaria: Design, Peculiarities and Management of Foreign Exchange Cover, *Bulgarian National Bank Discussion Papers*, DP/9/1999.

Dobrinsky, R. Enterprise Arrears and Bad Loans in Bulgaria, *XXI Century Foundation*, (1994)

Dobrinsky, R. Fiscal Policy Under a Currency Board Arrangement: Bulgaria's Post-crisis Policy Dilemmas, *Vienna Institute for International Economic Studies (WIIW) Research Report*, No. 256, March 2000

Enoch, C. Anne-Marie Gulde Making a Currency Board Operational, *IMF Paper on Policy Analysis and Assessment, Monetary and Exchange Affairs Department*, International Monetary Fund, 1997.

European Bank for Reconstruction and Development (EBRD) Transition Report (London: EBRD, 1999)

European Commission, 1995, Preparation of the associated countries of central and eastern Europe for integration into the internal markets of the Union, *Brussels: European Commission, document COM (95) 163 final*, 2 vols, 3 May.

Filipov, L. Monetary Policy Instruments of the Bulgarian National Bank, *Bank Review: Quarterly Journal of the Bulgarian National Bank*, No. 4, 1992, pp. 13 – 18.

Ganev, G., M. Wyzan Bulgaria: Macroeconomic and Political-economic Implications of Stabilization under a Currency Board Arrangement, *Center for Liberal Studies*, Sofia, 2000.

Ghosh, A., Anne-Marie Gulde, H. C. Wolf Currency Boards: The Ultimate Fix?, Policy Development and Review Department, Monetary and Exchange Affairs Department, *International Money Fund*, WP/98/8, January 1998.

Gulde, Anne-Marie The Role of the Currency Board in Bulgarian Stabilization, *Finance and Development*, September, 1999, pp. 36 – 39.

Hanke, S. H. Good News from a Bad News Spot, *Forbes* Vol. 159, No. 4: 106. February 24, 1997.

Hanke, S. H., L. Jonung, K. Schuler Russian Currency and Finance, *Routledge*, London: 1993.

Johnson, S., A. Schleifer Coase and Coasians: The Regulation and Development of Capital Markets in Poland and the Czech Republic, *MIT and Harvard University*, 1999.

Lavigne, M. Conditions for Accession to the EU, *Comparative Economic Studies*, Vol XXX, No. 3, (Fall 1998), pp. 38 – 57.

Liviatan, N. (ed.) Proceedings of a Conference on Currency Substitution and Currency Boards, *World Bank Discussion Papers*, 207, 1993.

Manchev, T. Financial Crises and Restructuring of the Financial System: Theory, *National and International Practice*, unpublished PhD thesis, SU St. Kliment Ochridski, 2001.

McKinnon, R. The Order of Economic Liberalization: Financial Control in the Transition to a Market Economy, *Johns Hopkins University Press*, Baltimore, 1993.

Miller, J. The Bulgarian Currency Board, *Comparative Economic Studies*, XLIII, No. 1, Spring 2001.

Miller, J., S. Petranov The First Wave of Mass Privatization in Bulgaria and Its Immediate Aftermath, *The Economics of Transition*, Volume 8, No. 1, 2000a.

Miller, J., S. Petranov Non-banking Financial Institutions in Bulgaria, *MOCT-MOST*, 3 – 4, 363 – 380, 2000b.

Miller, J. Industrial Planning and the Transition to a Market Economy, *Economic Thought*, (in Bulgarian) No. 5, 1995, pp. 65 – 78.

Miller, J., S. Petranov Banking in the Bulgarian Economy, *Bulgarian National Bank*, Sofia, 1996.

Minassian, G. The Road to Economic Disaster in Bulgaria, *Europe-Asia Studies*, Vol. 50, No. 2: 331 – 350, 1998.

Mishkin, F. S. The Economics of Money, Banking, and the Financial Markets, Third Edition, *Harper Collins*, New York, 1992.

Nenovsky, N., K. Hristov, B. Petrov Changing the Lev with the Euro: A Forward Step towards Europe, *Capital*, 12 – 18 Feb., 2000a.

Nenovsky, N., K. Hristov Currency in Circulation after Currency Board Introduction in Bulgaria (Transactions Demand, Hoarding, Shadow Economy), *Bulgarian National Bank Discussion Papers*, DP/13/2000b.

Nenovsky, N., K. Hristov Financial Repression and Credit Rationing under Currency Board Arrangement for Bulgaria, *Bulgarian National Bank Discussion Papers*, DP/2/1998.

Organization for Economic Cooperation and Development Economic Survey of Bulgaria, 1999, OECD, Paris 1999.

Organization for Economic Cooperation and Development Bulgaria: An Economic Assessment, (Paris, 1992)

Petranov, S., J. Miller Bulgaria's Capital Markets in the Context of EU Accession, *Center for the Study of Democracy*, Sofia, 1999.

Petrov, B. Bank Reserve Dynamics Under Currency Board Arrangement for Bulgaria, *BNB Discussion Papers*, DP/15/2000.

Pohl, G., G. Jedrzejczak, R. E. Andersen Creating Capital Markets in Central and Eastern Europe, *World Bank Technical Paper*, No. 295, 1995.

Ravicz, R. M. The Bulgarian Banking System, *Bank Review: Quarterly Journal of the Bulgarian National Bank*, No. 2, 1992, pp. 28 – 45.

Schwartz, A. Currency Boards: Their Past, Present and Possible Future Role, *Carnegie-Rochester Conference Series on Public Policy*, 39:147 – 87, 1993.

Stiglitz, J. E. The Design of Financial Systems for the Newly Emerging Democracies of Eastern Europe, Christopher Clague and Gordon C. Rausser, *The Emergence of Market Economies in Eastern Europe*, *Blackwell*, (Cambridge, Mass., 1992).

Stratev, B. The Law on Banks and Credit Activity as the Legal Framework for Commercial Banking, *Bank Review: Quarterly Journal of the Bulgarian National Bank*, No. 2, 1992, pp. 46 – 50.

Tang, H., E. Zoli, I. Klytchnikova Banking Crises in Transition Countries: Fiscal Costs and Related Issues, (mimeo) *World Bank*, 2000.

Tirole, J. Privatization in Eastern Europe: Incentives and the Economics of Transition, *Macroeconomics Annual*, *National Bureau of Economic Research*, 1991, pp. 221 – 267.

U.S. Department of the Treasury The Use and Counterfeiting of U.S. Currency Abroad, *Report to Congress*, January 2000.

Williamson, J. What Role for Currency Boards?, *Institute for International Economics*, Washington, D.C., 1995.

World Bank Czech Republic, *Capital Markets Review*, 1999.

Yotzov, V., N. Nenovsky, K. Hrsitov, I. Petrova, B. Petrov The First Year of the Currency Board in Bulgaria, *Bulgarian National Bank Discussion Papers*, DP/1/1998.

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