3. A CHRONOLOGY OF THE BULGARIAN CRISIS

This chapter provides a chronology of the Bulgarian crisis. It is organized as follows. Early conditions are described in Section 3.1. Section 3.2 explores the mechanisms by which the Bulgarian government became financially vulnerable. It is argued in Section 3.3 that the ruling Socialist Party had in fact limited options to stop or limit the crisis given the severity of structural problems inherited from the Soviet era and previous cabinets. Section 3.4 provides a detailed account of the events and conditions leading to the collapse of the economy in February 1997. [58]

3.1 The Conditions in 1994-1995

The developments leading to the macroeconomic instability of late 1995 early 1996 are documented in this section. An overview of the early transition years is provided first, with an emphasis on the currency crisis of March 1994.

In early 1991, the country embarked on an *"ambitious shock therapeutic program"* and adopted a series of economic emergency measures: abolition of central planning, removal of (most) foreign trade barriers, and liberalization of prices. The exchange rate was also liberalized, and the internal convertibility of the Lev

[58] The structure of the chapter borrows from Sachs, Tornell and Velasco (1996a)'s account of the 1994 Mexican crisis.

introduced in February 1991.[59] A foreign investment law, a commercial code, and a competition law were also introduced in that year.[60]

The liberalization of prices and the release of the monetary overhang produced a burst of inflation in 1991: consumer prices rose but almost 500 percent in that year (see Table 3, below). The inflation burst, however, was successfully contained in the immediate following years: consumer prices rose by 80 percent in 1992, and a mere 64 percent in 1993.

Table 3: Macroeconomic Indicators, 1991-96

End-of-Year	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**
GDP (billion $)	7.5	8.6	10.8	9.7	12.9	9.5
Real GDP Growth (%)	-11.7	-7.3	-2.2	1.8	2.1	-10.9
Industrial Production Growth (%)	-22.2	-10.1	-6.6	6.9	-8.0	-5.5
Share of Private Sector in GDP (%)	25.6	35.4	37.9	42.3	48.3	47.4
Unemployment Rate (%)	10.8	15.2	16.4	12.8	11.1	12.5
Consumer Price Inflation (%)	490.1	79.4	63.8	121.9	32.9	310.8
Producer Price Inflation (%)	294.4	24.8	15.4	91.3	40.4	338.1
Fiscal Balance (% GDP)	-3.8	-5.3	-11.4	-5.8	-6.4	-13.4
Trade Balance ($million)	-32.0	-212.4	-885.4	-16.8	121.0	144.3
Current Account Balance ($million)	-76.9	-360.5	-1,098.0	-25.2	-25.6	-22.3
Gross Foreign Reserves ($million)	902	664	1,042	1,274	518	1,520
Exchange Rate (Lev / U.S. $)	21.8	24.5	32.7	66.0	70.1	487.4
Average Monthly Wage in the State Sector ($)	73	94	120	95	127	54

Sources: BNB Annual Reports, PlanEcon reports

The transition also provoked a severe contraction in economic activity: real Gross Domestic Product (measured in U.S. dollars) fell by more than 11 percent in 1991, and 7 percent in 1992. The trough of the *"transitional depression"* was

[59] Initially limited to current account convertibility

[60] Vestiges of the old regime remained: export bans on crude oil and some cereals stay put until June 1992, as well as various trade regulations (export licensing, registration, and quotas). Price controls on key commodities remained in effect throughout most of the early nineties.

reached in 1993, with recovery in a few industrial sectors, partially offset by a large decline in agriculture.[61] Overall, real GDP shrank by about 2 percent in that year. The economic branches most affected by the post-communist decline included construction and machine building (as a direct result of the collapse in industrial investment), electronics and the defense industry. Serious slumps also occurred in the garment making and food processing industries.[62] Relatively prosperous industries included chemicals and metallurgy.

The immediate costs of the transition were heavy: real income per capita fell by about 50 percent after the release of repressed inflation; the unemployment rate exceeded 16 percent at the end of 1993; industrial production fell by more than a third over the period (see Table 3). At the same time, with limited budgetary resources, social assistance was declining, pushing a large portion of the population into poverty.[63]

Overall, Bulgaria suffered one of the largest transition shocks among the *small* transition economies.[64] This can be explained by at least two factors. First, the high level of integration into the Council for Mutual Economic Assistance (CMEA) made Bulgaria's economy highly trade-dependent.[65] The country suffered greatly from the disintegration of the socialist commonwealth and the exposure to world markets, as a large portion of its manufacturing industry had been shaped for its place within

[61] In 1993, output in agriculture declined by 20 percent due to a severe drought

[62] For an explanation of the transitional depression, see Blanchard (1996)

[63] As in many other transitioning economies, the early transition years also saw an increasing polarization in the distribution of income and wealth.

[64] See Tables A-3 and A-4 in the Appendices

[65] Aggregate data on foreign trade shows that Bulgaria was the CMEA country with the largest share of intra-bloc trade. See also Dobrinsky (1997) in Chapter 2.

the Council. Second, the embargo on Yugoslavia from July 1992 to December 1993 limited Bulgaria's ability to engage in foreign trade. Bulgarian authorities have estimated that the balance-of-payments and output losses associated with the embargo amounted to a total of $3.7 billion.[66]

Early in the transition years, the government adopted a macroeconomic stabilization program based on three primary tools: i) high nominal interest rates on domestic currency to encourage money holdings; ii) the use of credit ceilings to restrain monetary expansion; and iii) periodic interventions in the foreign exchange market to support the domestic currency (a fixed exchange rate regime could not be considered given the scarcity of international reserves). In other words, Bulgaria's policy mix could be viewed as a *money-based stabilization plan*, with informal management of the exchange rate (managed float). Fiscal policy, as explained later, was largely neglected, in particular in the later years.

During the early transition years (from 1991 through 1993), as shown in the chart below, real money holding was remarkably stable, in spite of falling output and negative real interest rates on Lev deposits.[67]

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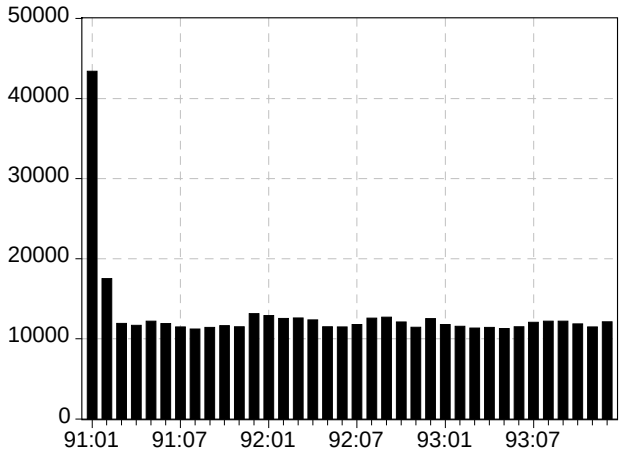
[66] The IMF estimated that balance-of-payments losses alone amounted to between $0.6 and $1.1billion (IMF 1996, pages 31-32)

[67] The annual interest rate on Lev time deposits averaged 56 percent in 1992, and 52 percent in 1993. Consumer price inflation in those years exceeded 79 percent, and 63 percent, respectively.

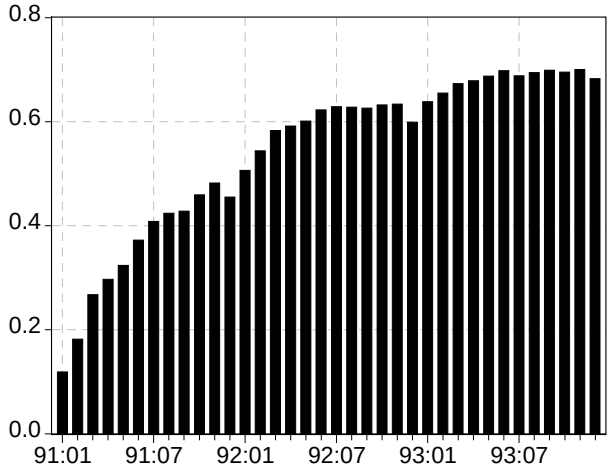
Figure 1: Real Lev Holdings, 1991 - 1993



This relative stability reflects two phenomena: first, the monetization of the economy, as experienced by many countries in the early years of transition, following the abrupt (and excessive) de-monetization associated with the release of repressed inflation; and second, the relationship between money supply and inflation, as nominal growth in money supply led to changes in the consumer price index, leaving real money balances roughly in line with demand.[68] Confidence in the domestic currency was strong through most of the period, as further illustrated by the increase in the ratio of long-term Lev deposits (time deposits) to total deposits (see Figure 2, below).

[68] IMF, 1996, page 42

Figure 2: Ratio of Time Deposits to Total Deposits, Lev Only



In the same spirit, foreign currency deposits in U.S. dollar terms were relatively stable, or even declining. Foreign currency holdings averaged $1.8 billion in 1991, $1.9 billion in 1992, and $1.5 billion in 1993. The sustained demand for domestic currency helped stabilize the exchange rate. After the rapid depreciation of early 1991 (more than 600 percent in February), the average monthly depreciation rate fell to 1.0 percent in 1992, and 2.5 percent in 1993.[69] With relatively low exchange rate depreciation (1.5 percent on average over the first three quarters of 1993), Lev deposits (and Lev time deposits in particular) were considerably more attractive than foreign currency deposits.[70] The *ex-post* uncovered interest differential in favor of the Lev might explain the stability of money demand during that period.

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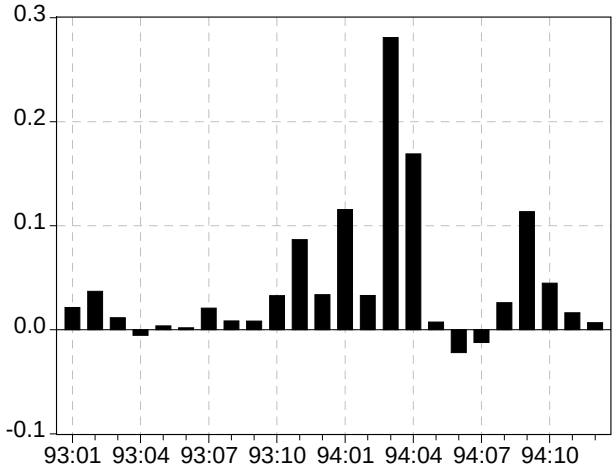
[69] The average monthly consumer price inflation in those years was 5.0 percent and 4.2 percent respectively, leading to a real appreciation of the Lev (again, on the basis of the *consumer* price index).

[70] From January through September 1993, Lev time deposits earned between 3.4 and 3.8 percent per month, while U.S. dollar denominated deposits earned about 0.4 percent.

In November 1993, however, signs of instability surfaced in the foreign exchange market, as foreign currency deposits began to rise. The Lev depreciated against the U.S. dollar at an accelerated rate in late 1993, as shown in Figure 3, below.

Figure 3: Depreciation Rate, 1993-1994



The demand for domestic currency fell rapidly in the spring of 1994. After repeated interventions of the central bank (running down its international reserves), the Lev collapsed in March 1994, loosing nearly a third of its value against the U.S. dollar. Three explanations have been proposed for the crash:

- In the spring and summer of 1993, the central bank had reduced its basic interest rate from 4.3 percent per month in May, to 3.7 percent in September. This reduction, together with the increased depreciation of the Lev, led to an *ex-post* uncovered interest rate parity of nearly 2 percent in favor of foreign currency denominated assets, during the fourth quarter. The repeated reductions in interest rates may have accelerated the portfolio shift towards foreign currency deposits,

leading to pressures on the exchange rate (this is the explanation put forward by Dobrinsky, 1997);[71]

- A preliminary agreement on a Debt and Debt Service Reduction (DDSR) operation was signed at the end of 1993. The upfront payments associated with this agreement, together with the relatively low level of foreign exchange reserves, limited the ability of the central bank to support the Lev. The foreign exchange market was aware of this need for international reserves, and reacted accordingly.[72] The exchange rate collapse of March 1994 may also have been facilitated by reported delays in expected foreign financing from the European Union.
- Political uncertainties were mounting, as rumors that the Berov government (a coalition of "experts" supported by the socialist party) would fall started circulating.[73] A severe political crisis might, in particular, have postponed foreign support, and financing.

All in all, the foreign exchange crisis might have been precipitated by a shift in expectations: future expected return on Lev holdings fell abruptly as

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[71] A closer look at foreign currency deposits held in Bulgaria's commercial banks, however, indicates that the shift was *relatively limited* prior to March. Larger portfolio shifts occurred *after the crash*, in the second and third quarters of 1994. The tensions in the foreign exchange market of early 1994 may in fact be due *primarily* to capital flight (resident capital flight and capital flight abroad; see Chapter 4). This being said, the (limited) increase in foreign currency deposits of January – March 1994 can still be interpreted as *an indicator* of foreign exchange market turbulences.

[72] The DDSR operation was expected to require up-front payments of about $700 million, with foreign financing covering only a portion of these payments (IMF, 1996, page 40). BNB international reserves (excluding gold) amounted to $655 million in December 1993.

[73] Anecdotally, the early March collapse coincided with the Prime Minister suffering a heart attack.

households anticipated that the government would not be able to defend the Lev in case of an attack. This shift in expectations might have been encouraged by the reduction in the BNB basic interest rate, although the magnitude of the change, when compared in particular with the anticipated shifts in foreign exchange reserves associated with the DDSR, suggest that interest rate movements were probably *not* the leading factor in the crisis.

More *fundamentally*, fiscal and monetary data suggest a growing *"mismatch"* between domestic credit expansion and money demand through most of 1993. In that year, the budget deficit represented about 11.4 percent of nominal GDP, versus 5.3 percent the year before.[74] Domestic financing of the deficit almost tripled, to reach 12 percent of GDP by year-end (See Table A-9 in the Appendices). Domestic credit to the government sector grew by 91.5 percent (including government securities operations); the Lev component of which increased by more than 200 percent (see Table A-2). At the same time, BNB foreign exchange reserves fell by more than $120 million in the third quarter of 1993 alone. According to IMF data, commercial banks lost more than $320 million in foreign assets in the 12-month period to September 1993. Overall, the banking system lost more than $0.5 billion in foreign assets from September 1992 to September 1993, suggesting that *"credit expansion was substantially ahead of money demand"* (IMF, 1996, page 39).[75]

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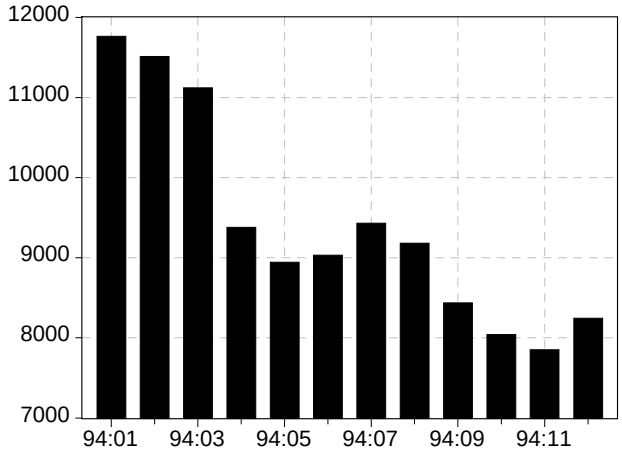
[74] The deterioration of the budget was caused by reductions in tax revenues, and increases in spending on debt servicing and social programs (Wyzan, page 11)

[75] Similarly, Guenov (1994) explains: *"in the nine-month period of 1993, the slowdown in the growth of time deposits was paralleled by a large increase in claims on the government. The higher growth rate of the government budget deficit compared to the nominal growth of the deposit base may generate an inflationary pressure since the sources of financing the government expenditures are severely limited"* (page 85).

After the foreign exchange crisis of March 1994,[76] the economy suffered from monetary instability through the rest of the year. From March to December, real holding of Lev money fell by more than 25 percent (see Figure 4, below), while foreign currency deposits grew from $1.4 billion in March to $1.9 billion in December, peaking at $2.1 billion in October.

Figure 4: Real Lev Holdings, 1994



The mid- to late-1994 "currency substitution" resulted largely from the March crisis itself, and the subsequent bout of inflation (as Bulgarian households were fleeing to quality). Large foreign debt payments in July, the impending resignation of the Berov Government (which actually took place in September) and renewed tensions with the IMF and the World Bank led to a second currency crisis, from August 1994

[76] Rapidly brought to an end with an IMF standby package of $328 million, in April.

through October 1994 (this can be seen in Figure 3, above).[77] The crisis led to a further depreciation of the Lev of about 20 percent in three months.

3.1.1 A Modest Revival of Growth

After the turbulences of 1994, economic developments were extremely positive for Bulgaria through most of 1995. Gross domestic product grew by 2.6 percent in real terms, consumer prices rose by less than 30 percent over the year, and the nominal exchange rate was remarkably stable. Part of this success, however, resulted from the large depreciation of the Lev in the preceding year, and other temporary stimuli.

As shown in Table 3, the 1994 depreciation led to a 20 percent fall in the dollar value of wages in the state sector. In early 1995, a highly *undervalued* domestic currency (relative to the currency of other central and eastern European countries, and according to purchasing power parity [78]) helped improve the competitiveness of Bulgarian products on international markets. The resulting boom of exports led to a strengthening of the current account (and domestic currency), and contributed to the resumption of economic growth.[79]

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[77] In July 1994, the BNB switched from using credit ceiling to reserve money management. Besides technical problems associated with reserve requirements (IMF, 1996, page 45), the growth in reserve money accelerated in the third quarter of the year, fueled by the refinancing of two commercial banks with liquidity problems (more on this later). The ensuing increase in Lev domestic credit allegedly "accommodated" the currency crash of September.

[78] OECD (1997)

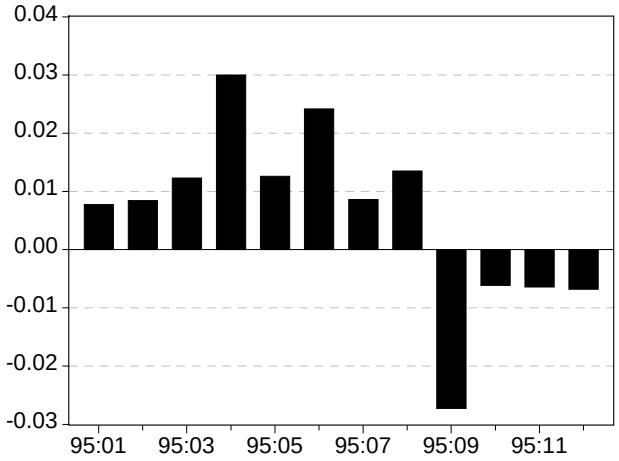
[79] Reasons for the trade surplus in those years also include reduced domestic demand, and delays in foreign and post-privatization investments (that normally produce a surge in machinery imports).

According to the OECD, during that time, the *private* sector was the primary source of GDP growth. The strengthening of economic activity was based primarily on the emergence and expansion of new firms, especially in trade and services (where the private sector was dominant), in transportation, and in agriculture (as a consequence of the restitution policy enacted in 1994). Some successful restructuring also took place in export-oriented industries: in 1995, the index of industrial production rose by 1.2 percent on average, compared to the year before.

The country also experienced large inflows of capital through most of the year: the BNB was able to purchase substantial amounts of foreign currency (raising foreign exchange reserves by $600 million from January to June) without affecting the exchange rate. These capital inflows were motivated by large interest rate differentials in favor of the Lev, and increases in the demand for Lev money associated with increased export earnings, economic growth and the return of the Communists to power. This is explained below.

In early 1995, domestic currency deposits were very attractive to investors as: i) the basic interest rate had been raised repeatedly through 1994; and ii) expected depreciation was low, given the large exchange rate adjustments in the preceding year. Furthermore, the (ex-post) real interest rate on Lev deposits was positive through most of 1995, as shown in Figure 5 below.

Figure 5: Real Return on Lev Deposits, 1995



The increase in BNB's international reserves [80] contributed to restoring the confidence in the domestic currency, in a self-sustaining way: increasing foreign exchange reserves suggested that the BNB would be able to defend the Lev in case of an attack, leading to capital inflows, and further increases in reserves. 1995 also marked the return of the Communists to power, with a *"sweeping victory"* of the Bulgarian Socialist Party in the general elections of January 1995.[81] The return of the Communists at the head of the economy implied renewed opportunities to engage in asset stripping (and other illegal activities), and might explain a portion of the capital inflows. Recent empirical evidence on the size of the underground economy in Bulgaria indicates that a significant increase in shadow activities took place in 1995,

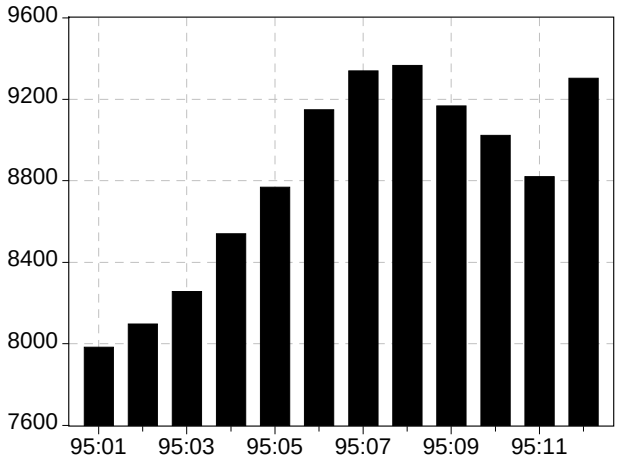
[80] Foreign financing ceased in early 1995, and did not resume until the summer of 1996.

[81] Wyzan (1998), page 13

and early 1996.[82] *Anecdotal* evidence suggests that the entourage of Prime Minister Videnov was largely corrupt and engaged in various forms of asset stripping.

For the first time since the inception of market reforms, the 1995 growth rate of broad money (+39.6 percent) exceeded the inflation rate (+32.9 percent). Over 85 percent of this growth was due to Lev money, increasing from 69 percent of broad money in December 1993, to 74 percent in June 1995. The conversion of Lev funds into foreign currency deposits ("currency substitution") stopped during most of the year. Foreign currency deposits actually shrank between December 1994 and June 1995. The reduction of foreign currency deposits, despite large capital inflows, was remarkable. It suggested, in particular, that most of the real increase in Lev money of early 1995 was demand-driven. Beside the factors highlighted in the previous paragraph, the recovery in money demand could be viewed as a natural response to the *"overshooting"* of 1994 and the excessive reduction in (real) Lev money, following the March and September panics.

Figure 6: Real Lev Holdings, 1995



[82] See Kyle et al. (2001)

The higher growth of Lev money (the increase in desired Lev holding) provided additional funds to increase domestic credit to both the real sector of the economy, and the government. The BNB argues that in 1995 *"(...) the economy was supplied with sufficient resources for the first time after the initiation of 1991 reforms, in spite of the increased government borrowing requirements,"* (BNB, Annual Report 1995, page 60).

However, the stabilization of the exchange rate and the price level depended crucially on the recovery of Lev holdings, i.e., on restored confidence in the domestic currency and the banking sector. The remonetization of the economy and financial deepening (increase in the money base and other monetary aggregates as a percentage of GDP) also meant increased financial vulnerability.

3.1.2 Delays in Structural Reforms and their Consequences

After the initial wave of structural and institutional reforms documented in Section 3.1, the transition process slowed down considerably, in particular in the areas of privatization and financial discipline.[83] According to World Bank estimates reported by the OECD, the proportion of medium and large state enterprises privatized by more than 67 percent (the minimum amount needed for full control) was less than 4 percent in late 1996.[84]

The delays in structural reforms, along with relatively soft budget constraints on the way to privatization, had several important consequences:

- The expansion of value-subtracting activities and the decapitalization of state firms (see Chapter 2);

[83] IMF (1996), page 11

[84] OECD (1997), page 113

- The accumulation of bad debt in commercial banks' portfolio; initially tolerated, if not encouraged, by the government to soften the costs associated with the transitional recession (see Chapter 2 and Section 3.2.1);
- An increase in fiscal and quasi-fiscal deficits (initially in the form of tax payment arrears, including payment arrears to the social security system; later through the conversion of bad debt into interest-earning Treasury bills) leading, *possibly*, to domestic credit expansion and inflationary pressures;
- Poor budgetary revenues, through an erosion of the tax base (associated with the decapitalization of the economy), and low proceeds from cash privatization;
- Limited inflows of foreign exchange[85] due to relatively poor export earnings and low foreign direct investment.

In fact, most of the developments in the Bulgarian economy through the mid-to-late nineties (and the 1996-1997 crisis in particular) can be related to delays in restructuring. As explained below, the early signs of instability appearing in 1995 were associated with problems in the banking sector, which, again, resulted *largely* from the lack of reforms (see Chapter 2 and Section 3.2.1).

3.1.3 Early Signs of Instability

Signs of instability resurfaced in the fall of 1995 with an increasing budget deficit, increases in foreign currency holding, falling foreign exchange reserves, accelerating inflation, and growing concerns with respect to state firms and commercial banks.[86]

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[85] Most of the inflows of early 1995 were associated with the capital account of Bulgaria's balance of payments.

[86] The section borrows from comments and statistics reported by the BNB in its 1996 Annual Report.

In 1995, the government budget was burdened by measures taken to stabilize two commercial banks[87] with liquidity deficiencies (Economic – Stopanska - Bank and Mineral Bank) early in the year, and by increasing interest payments on domestic debt. More than BGL 60 billion worth of medium-term Treasury bonds were issued in May, to replace long-term low-income dollar-denominated ZUNK bonds held by the banks.[88] Initially quite conservative, the State Budget Law was revised at year-end to accommodate a larger deficit (see Section 3.2). The cash deficit of the central government budget reached 6.7 percent of GDP by year-end.[89] The deficit was entirely financed by issues of government securities (see Table A-9), primarily short-term debt instruments. More than 80 percent of these issues were acquired by commercial banks.[90] [91] Overall, domestic debt increased by more than 25 percent during the year.

Monetary policy was relatively restrictive during most of the year. The BNB, in particular, tried to offset the liquidity injected both as lender-of-last-resort (through the refinancing of commercial banks) and as major buyer of incoming foreign currency through open-market operations.[92] Refinancing of troubled banks

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[87] Representing about a fifth of the assets of the banking sector in 1995 (OECD, 1997, page 76)

[88] See Table A-12 in the Appendices

[89] The overall cash deficit was budgeted to decline from 6.5 percent of GDP in 1994 to 5.6 percent in 1995.

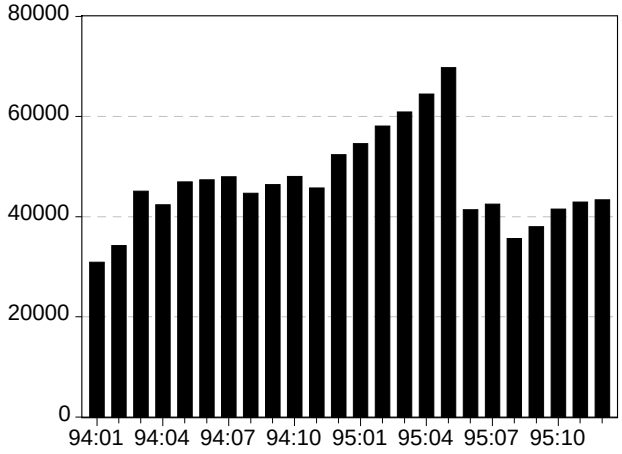
[90] In 1995, most of the issues of government securities offered an average annual yield equal to, or higher than, the effective basic interest rate, hence their popularity with commercial banks.

[91] The State Insurance Company acquired most of the remaining 20 percent.

[92] BNB, Annual Report 1995; the BNB used government security transactions to regulate the liquidity of the banking system; these open market operations replaced credit ceilings as the primary tool of monetary control in July 1994.

intensified in early 1995, with large liquidity injections in Economic Bank and Mineral Bank.[93] As shown in Figure 7, below, total refinancing grew rapidly from January through May; but fell abruptly after May as a consequence of the fiscal measures taken to rehabilitate the two banks.[94]

Figure 7: BNB Claims on Commercial Banks (Refinancing), 1994-1995



In spite of BNB's efforts, the growth in reserve money accelerated in April and May (the Lev component of reserve money rose by 15 percent in April, and over 9 percent in May), and again in December (exceeding 11 percent). The acceleration of reserve money growth was primarily associated with the refinancing of commercial banks with liquidity problems. By the end of the year, a total of 19 commercial banks (out of 45 in the banking system) would receive loans from the BNB. Later in the year, the growing budget deficit and associated need for domestic

[93] From 1994 to mid-1995, these two banks accounted for the majority of BNB refinancing, OECD (1997), page 76

[94] The issue of BGL 60 billion worth of government bonds reduced the need for central bank refinancing in the months that followed.

financing led to an acceleration of central bank credit, as the BNB purchased increasing amounts of government securities (Balyozov (1999), page 12).

Table 4: Growth in Money Supply and Money Multiplication, 1995

	Broad Money	Lev Component	Foreign Currency Component	Dollarization Ratio	Reserve Money (Lev Only)	Money Multiplier (Lev Only)
Jan-95	1.1%	0.6%	2.2%	31.7%	-6.7%	3.754
Feb-95	2.7%	5.2%	-2.7%	30.0%	-2.0%	3.852
Mar-95	3.4%	5.4%	-1.3%	28.6%	2.2%	3.960
Apr-95	2.1%	4.5%	-3.7%	27.0%	15.0%	3.841
May-95	4.8%	4.6%	5.3%	27.1%	9.3%	3.794
Jun-95	3.6%	4.9%	0.1%	26.2%	5.3%	3.448
Jul-95	3.4%	3.6%	2.7%	26.1%	3.2%	3.300
Aug-95	2.7%	0.8%	8.1%	27.4%	1.2%	3.045
Sep-95	2.5%	2.5%	2.4%	27.4%	2.4%	2.897
Oct-95	1.1%	0.9%	1.4%	27.5%	3.7%	3.069
Nov-95	0.7%	0.3%	2.1%	27.9%	-1.5%	2.879
Dec-95	5.9%	8.2%	-0.2%	26.3%	11.3%	2.769

All numbers are monthly growth rate, except the dollarization ratio, which is the ratio of foreign currency deposits to broad money including foreign currency deposits.

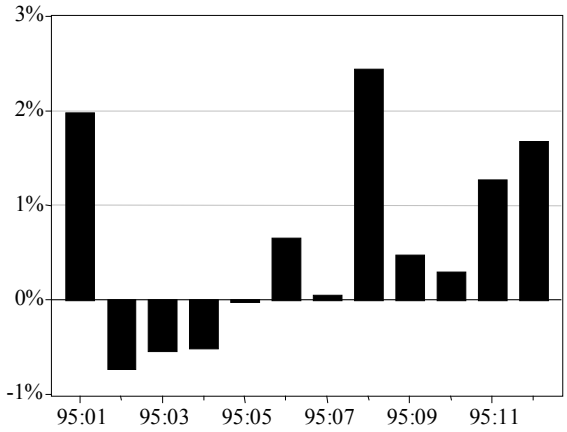
Source: BNB Data, *http://www.bnb.bg*

In August 1995, and for the first time since the beginning of the year, the growth rate of Lev time deposits fell short of the interest rate on these deposits, indicating a net *withdrawal* of funds. In the same month, foreign currency deposits increased by over 8 percent, in U.S. dollar terms.

Rumors about a possible depreciation of the Lev started circulating in early August. On August 3rd, Bulgarian newspapers reported that central bank leaders were about to discuss policy measures aimed at facilitating the depreciation. An adjustment of the nominal exchange rate would, in particular, have helped relieve pressures on commercial banks and the government budget (both with large domestic-currency-denominated liabilities), and reduce the costs associated with the continued

real appreciation of the Lev.[95] The governing board of the BNB had to step forward to diffuse rumors that the Lev could loose up to 50 percent of its value: *"Claims that the dollar would rise sharply against the Lev would serve only the speculative interests of cash-strapped economic groups. (...) Several weeks ago the central bank decided to take steps towards the smooth strengthening of the dollar with a view to encouraging exports."* (Reported in BTA Press Review, August 3rd 1995)

Figure 8: Depreciation Rate, 1995



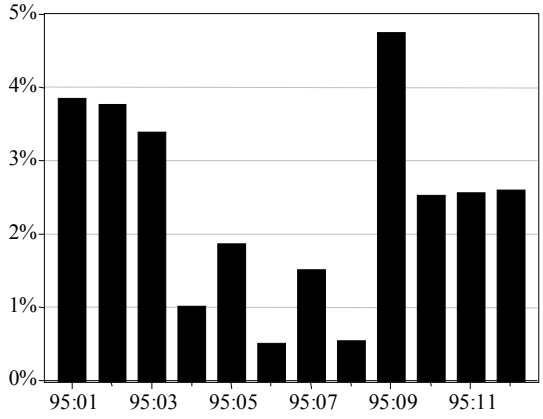
The depreciation in the fall of 1995 was magnified by seasonal factors and repeated reductions in the basic interest rate. The basic interest rate had been reduced gradually on seven occasions between April and July (leading to negative real interest rates on Lev deposits between September and December). On August 1st, the annual interest rate was reduced from 39 to 34 percent, which *coincidently* equaled the 1995 forecast for the consumer price inflation. According to the BNB, the associated

[95] From December 1994 through July 1995, consumer prices had increased by more than 15 percent; the Lev had lost less than 0.4 percent of its value.

psychological effect may have *"brought forward to August the traditional autumn tension in the foreign exchange market"* (BNB, Annual Report 1995, page 78). In the following months, due to deteriorating expectations, the BNB had to intervene heavily in the foreign exchange market to support the Lev. Foreign exchange reserves fell by about $200 million from October through December.

Movements in consumer prices through the year are depicted in the figure below. The monthly inflation rate jumped to nearly 5 percent in August, and stabilized around 2.5 percent thereafter, after five months of relative calm.

Figure 9: Consumer Price Inflation, 1995



Price movements in the second part of the year were explained by several factors including: i) the depreciation of the Lev; ii) a significant increase in the price of farm products, after the release of government controls in August; and iii) inflationary expectations associated with a forthcoming hike of electricity prices. On August 11th, the Bulgarian government announced increases in electricity prices, to be enacted on September 1st. According to the National Statistical Institute (NSI), this announcement led to sharp increases in the price of food items in the last ten days of

August. On September 19th, the newspaper "Troud" ran an article headlined *"Inflation Boomerang Returns."* [96]

Other important events led to the deterioration of expectations in the last months of 1995. News about state firms and the banking system were reported in the press. On August 21st, the NSI announced that the debts of the state enterprises for the first six months of the year amounted to BGL 376.5 billion, another BGL 57.4 billion being transformed into government debt (see Section 3.2). On August 26th, the BNB revealed that it had sanctioned four banks for their failure to submit information about their operations. Three of the sanctioned institutions had a predominant state participation (Economic Bank, Mineralbank and Serdika). On September 1st, the newspaper "Pari" reported that the banking system as a whole had ended the first six months of the year with losses up to BGL 30.7 billion. The much needed foreign financing was also compromised, as tensions between the socialist government and the IMF started to mount. On September 12th, the leader of the IMF mission for Bulgaria, Russel Kincaid, was reported as saying upon his arrival in the country that *"a politically strong Bulgaria"* would get the support of the IMF and the World Bank. Two days later, the Union of Democratic Forces, the main opposition party, submitted a motion for a vote of no confidence against Prime Minister Videnov!

To conclude, confidence in the domestic currency and the domestic financial system (commercial banks) started to crumble at the end of 1995. On one hand, depreciation and inflationary expectations started to build up through a conjunction of factors. On the other hand, the government's need for financing escalated with the deepening of fiscal and quasi-fiscal deficits (payment arrears and

[96] See OECD (1997), page 50, for further evidence of cost-push inflation in late 1995.

bad debts in commercial banks portfolio), brought about by long-standing difficulties in the industrial sector. The absence of foreign financing through most of the year (and the lack of IMF funds in particular), the rapid reduction in foreign exchange reserves at year-end, and the forthcoming foreign debt payments also suggested that the country might not be able to defend its currency in case of an attack.

3.2 How Did the Government Become Financially Vulnerable?

The essence of the crisis is an abrupt weakening of the liquidity position of the consolidated government. The government became vulnerable on three fronts: i) the banking system, ii) the budget deficit and domestic debt, and iii) the need for foreign exchange to service large foreign debt payments, and credibly defend the domestic currency. The absence of IMF support through most of the period (1995-1996) also contributed to the government's weakening and loss of credibility in dealing with the financial crisis. This is explained below.

3.2.1 Bank Weaknesses

As in virtually all transition economies, Bulgaria experienced an immediate banking crisis with the inception of market reforms in 1991 (see Section 2.1). This early crisis was caused by the presence in banks' portfolio of large non-performing loans, granted to state-owned enterprises during the pre-transition era.[97] The bad loan problem was attenuated through large-scale conversions of state firm debt into long-term government bonds from 1991 through 1994 (as discussed in the next section). Delays in structural reforms and relatively loose financial discipline in

[97] Although a large part of the initial losses had been inflated away with the liberalization of prices

state and private firms through 1995 led to a further deterioration of commercial banks' portfolio, as losses in the real sector were increasingly transferred to the banking system through interest payment arrears. The poor regulatory and legal framework within which commercial banks were operating also led to excessive risk taking (including overexposure to unviable sectors of the economy) and other forms of "bad banking," (including connected lending, and outright fraud).[98]

The weakness of commercial banks' portfolio is illustrated in the table below. As of December 31, 1995, an estimated 74 percent of all bank loans were either un-collectible or substandard.[99]

Table 5: Loans Classification, 1994-1996

	1994	**1995**	**1995b**	**1996**
Standard	18%	26%	51%	42%
Substandard	70%	59%	42%	46%
Un-collectible	12%	15%	7%	12%
Total	**100%**	**100%**	**100%**	**100%**

Source: BNB, Annual Reports, 1995 and 1996

The large proportion of non-performing assets in banks' balance sheet resulted in negative financial results despite large margins between interest rates on extended credits and attracted funds, and in rapid bank decapitalization. By the end of 1995, 18 banks, representing 60 percent of the banking system had capital deficiencies; 9 banks, representing about a third of the banking system, reported negative capital base. According to BNB data, the overall capital base of the banking

[98] See Dobrinsky (1997) and Tang et al. (2001)

[99] Note that the estimates under 1995b and 1996 cannot be compared directly with those in the preceding years, as they exclude, in particular, the 14 banks placed under conservatorship in 1996. This is explained later in the text.

system, excluding Bulbank Ltd.[100] and a few newly established banks, was negative at that time.

Table 6: Capital Adequacy as of December 31, 1995

	Number of Banks	Market Share
Under 0 percent	9	28.9%
From 0 to 4 percent	4	14.3%
From 4 to 8 percent	5	16.8%
Over 8 percent	22	39.6%
Exempt	4	0.4%
Total	**44**	**100.0%**

Source: BNB, Annual Report 1995, page 93

Notes: Market share based on balance sheet data, as of December 31, 1995; the required capital adequacy ratio was 8 percent in 1995.

Despite growing evidence of banking problems in late 1995, the absence of legal framework concerning bankruptcy proceedings and deposit insurance prevented the BNB from taking radical measures against insolvent banks.[101] In the first months of 1996, commercial banks developed severe liquidity shortages (especially in foreign currency), and lines outside banks became commonplace. Rumors about the poor state of the banking sector started circulating. They led to a rapid loss of deposits throughout the system, deposit runs against a few institutions, and a *"visible financial disintermediation."* During that period, to prevent panic and keep the system afloat, the central bank lent over BGL 25 billion in refinancing (about 16 percent of end-1995 reserve money), while the State Saving Bank (SSB) increased inter-bank lending by BGL 12 billion.[102]

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[100] An offspring of the Bulgarian Foreign Trade Bank, which handled all foreign exchange operations during the communist era

[101] BNB, Annual Report 1996, page 89

[102] Enoch, Gulde, and Hardy (2002), pp. 12-13

In March 1996, the BNB revoked the license of two commercial banks (Crystalbank and the Private Agricultural Investment Bank). The disciplinary measures taken against troubled banks as well as a certain confusion regarding deposit insurance[103] accelerated the withdrawal of funds, and led to widespread deposit runs. Legislation to allow bank closure was passed in May. A first round of bank closures occurred in that month, when the central bank placed two of the weakest banks (Mineralbank and First Private Bank) under conservatorship, and immediately applied for bankruptcy proceedings. The BNB also enforced severe lending restrictions on the remaining weaker banks.[104] The bank closures produced only limited demonstrations by depositors, as all Lev deposits formerly held in barred institutions were available for withdrawal at the State Saving Bank, after a short delay.[105] A relative stabilization of deposits ensued, and pressures on the BNB and the State Saving Bank were considerably reduced.

The effects of the May 1996 measures, however, were short-lived: a number of insolvent banks were still in operation through the summer, closure decisions were contested by bank owners (leading to lengthy court battles), and delayed reforms in the enterprise sector led to a further deterioration of banks' portfolio. In addition, the mounting indebtedness of the government (see Section 3.2.2) prevented any large-scale recapitalization program (in the spirit of the 1993 ZUNK bonds), and contributed to a growing loss of confidence in the central bank's

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[103] First introduced in December 1995, revised in March 1996 with a 100 percent guarantee on household deposits. See Dobrinsky (1997) for details.

[104] Through memoranda of understanding between the central bank and each individual bank

[105] Foreign currency deposits were transferred to another bank (Postbank) and were to be paid in four installments over a two-year period, or immediately in Lev; see Enoch et al. (2002), page 13.

actions. After July, escalating liquidity problems led to significant delays in the payment of deposits, lines outside banks throughout the country, and large deposit outflows from almost all Bulgarian banks.[106]

During that period, the central bank, once again, was forced to provide sizeable liquidity assistance to failing banks. In September, as the banking crisis intensified, the BNB engaged in a *"comprehensive and wide-ranging restructuring program."* Nine banks were placed under conservatorship on September 23; supervision was to be substantially strengthened in the remaining banks. In an attempt to restore confidence in the banking system, the BNB also made a formal announcement that the September wave of bank closures would be final, thereby committing itself to providing liquidity assistance to any of the remaining banks.

In October 1996, sporadic bank runs occurred, following rumors that the Bulgarian Customs Service was pulling funds from a soon-to-be-failing institution.[107] In November 1996, finally, no insolvent banks were left in the system; although a few of the remaining institutions were still considered extremely vulnerable.

Overall, a total of 14 banks, representing about a fourth (24 percent) of the banking sector's reported assets were closed by year-end.[108] Attracted resources (and other liabilities) for those commercial banks still in operation by the end of 1996, and excluding foreign banks, are shown in the table below.

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[106] Enoch et al. (2002), page 16

[107] Enoch et al. (2002), page 18

[108] As of January 2002, 10 banks were declared bankrupt, 7 removed from the commercial register, and 2 others were under liquidation.

Table 7: Attracted Resources in Commercial Banks, 1995-1996

In BGL billion	**1995**	**1996**	**Percent Change**
Total Attracted Resources	601	1,954	225%
In Lev	328	542	65%
In Foreign Currency	273	1,412	417%
From Banks and Other Financial Institutions [1]	177	798	351%
In Lev	22	37	68%
In Foreign Currency	155	761	391%
From Non-Financial Institutions and Other Clients [2]	424	1,156	173%
In Lev	306	505	65%
In Foreign Currency	118	651	452%
Future Revenue [3]	43	36	-16%
Other Liabilities	12	67	458%
Own Capital	88	643	631%
Total Liabilities	**744**	**2,700**	**263%**
Attracted Resources from Banks and Other Financial Institutions as % of Total Attracted Resources	29%	41%	12% (% points)

Notes: 1. Includes BGL150 billion refinancing from BNB and SSB in 1996

2. 48 percent of the total was attracted by the State Saving Bank in 1996

3. Includes unpaid interest

The relatively modest growth rate of attracted funds in domestic currency (65 percent, against an inflation rate of 311 percent in 1996), and in foreign currency (452 percent against a 589 percent depreciation of the Lev) reflected serious liquidity shortages in a number of banks.[109] On the asset side, liquidity problems were reflected in the reduction, through the year, of the share of government securities and cash balances (reserves) in total assets. Between December 1995 and December 1996, government securities and reserves, two of commercial banks' most liquid assets, fell from 40 to 33 percent of total assets.

Weaknesses in the banking sector had important consequences. Since no hedging instruments against inflation were available to Bulgarians besides high nominal interest rates on bank deposits and foreign currency holding, the likelihood of

[109] BNB, Annual Report 1996, page 92

a currency run in the event of a bank run was extremely high. The BNB was therefore left with a double-edge sword: try to restore the credibility of the banking system by announcing the end of bank closures and injecting large amounts of liquidity to support commercial banks (as it did through most of 1996), at the risk of a large currency depreciation; or frustrate the run on the currency (à la Miller (1986)) at the risk of shutting down the payment system.

3.2.2 The Domestic Debt Burden

By the end of 1995, Bulgaria's internal debt amounted to BGL 345 billion, nearly 40 percent of nominal GDP.[110] About half (47 percent) of the outstanding debt consisted of long-term bonds issued against non-performing loans in commercial banks' portfolio (including ZUNK bonds). Roughly another half (45 percent) consisted of securities issued to finance the deficit. Interest coupons on all Lev-denominated bonds were indexed on the basic interest rate of the BNB.[111]

Programs to convert non-performing credit to state owned firms into government securities started in 1992, and culminated in late 1993 - early 1994 with the Law on the Settlement of Non-performing Credit, and the issue of BGL 123 billion worth of Lev and Dollar denominated ZUNK bonds. In the spring of 1995, ZUNK bonds held by two distressed banks (Mineralbank and Economic – Stopanska – Bank) were replaced by special short-term securities, earning BNB's basic interest rate, for a total value of BGL 60 billion (see Table A-12 in the Appendices).

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[110] Ministry of Finance and BNB data, reported in OECD (1997) page 56. See Table A-13 in the Appendices.

[111] ZUNK bonds earn only 1/3 to 2/3 of the basic interest rate, in the first 6 years. See Dimitrova (1996) page 2 for details.

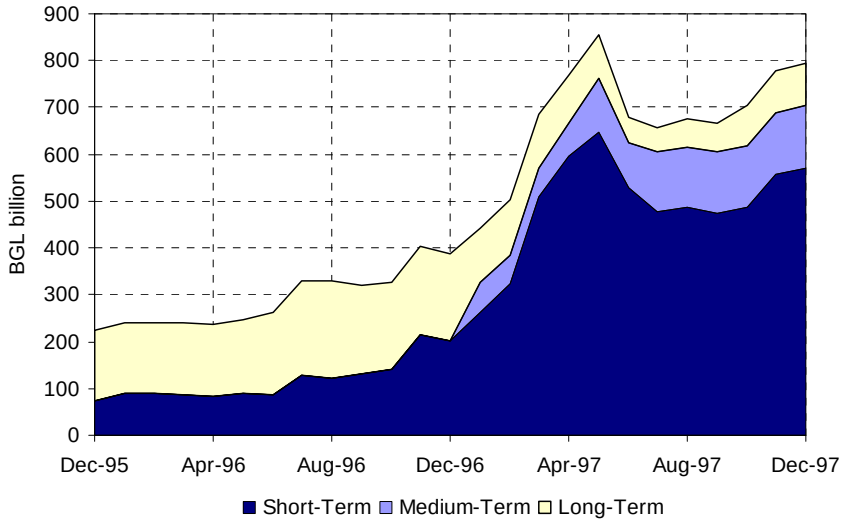
From late 1995 to December 1996, domestic debt more than tripled (to BGL 1,052 billion[112]), exceeding 60 percent of nominal GDP at year-end. In 1996, total debt servicing represented 32 percent of GDP. Several factors contributed to this degradation; most of them are related to the crisis in the banking sector:

- Repeated hikes in the basic interest rate to stop capital flight led to substantial increases in interest payments (on outstanding debt), a growing budget deficit (see Section 3.4 and Table A-10 in the Appendices) and the issue of new government bonds to finance the deficit;
- New securities had to be issued to cover the deposits held in banks under bankruptcy proceedings (under the Law on the State Protection of Deposits and Accounts with Commercial Banks, the government had to provide, and honor, deposit insurance);
- With the growing distrust in the ability of the government to stabilize the economy, and liquidity problems in the banking sector, the Treasury had difficulties placing medium and long-term bonds, and had to issue securities with shorter maturities (and higher nominal interest rates). This is illustrated in Figure 10, below.[113]

[112] *Net* public debt (excluding the portion held by the central bank) represented 87 percent of the total, or about BGL 916 billion; see Table A-13 in the Appendices.

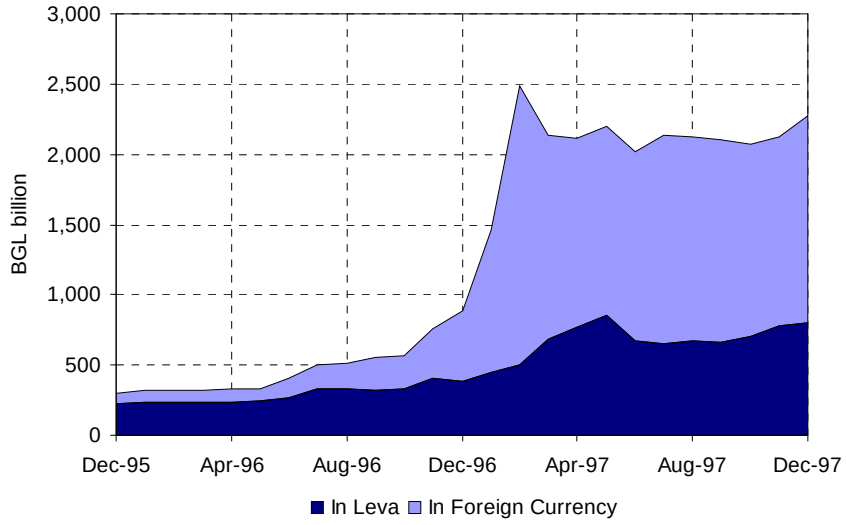
[113] Domestic-currency-denominated claims held by commercial banks and the BNB are shown in the chart; all foreign-currency denominated securities are long-term.

Figure 10: Maturity of Claims on Government Budget, Government Securities, in Domestic Currency Only, 1996-1997



- A large portion of domestic debt was denominated in hard currency (most of the ZUNK bonds). The rapid depreciation of the Lev through the year led to a substantial increase in the domestic currency value of outstanding foreign currency denominated debt. This is illustrated in the chart below for the portion of government debt held by the banking system, including the BNB.

Figure 11: Claims on Government Budget, Government Securities, in Domestic and Foreign Currencies, 1996-1997



The tripling of Bulgaria's domestic debt in 1996 was both a consequence of the financial (banking) crisis, and an important source of macroeconomic instability. This is explained below.

Again, a large portion (more than two thirds) of government bonds was held by commercial banks. Repeated increases in the basic interest rate through the year, and the associated increase in the nominal yield of government securities, led to large liquidity injections from the "consolidated" government (government plus central bank) into the economy, through the banking system. Notwithstanding inter-bank transactions, most of the financial revenue from interest payments on government debt was used by commercial banks (as a whole) to pay for increased

interest costs on Lev deposits.[114] As a large portion of these deposits was being withdrawn, and converted into foreign cash and (domestic) goods, the interest-induced increase in Lev money (assuming everything else constant) might have contributed to an acceleration of inflation/depreciation.

The government financed increased interest spending through two principal channels: by issuing new debt (as explained before) and, as difficulties in the banking system intensified and investors' expectations deteriorated (see Section 3.4), through direct credit from the BNB.[115] In the fall of 1996, it became impossible for the BNB to sell all government bonds it had acquired in the primary market, leading to a *de-facto* central bank credit extension to the government. In December, the Treasury renounced issuing new debt and requested, and obtained, a BGL 115 billion (about 7 percent of GDP) direct credit from the BNB. Note that direct and indirect credits from the central bank were destabilizing (inflationary) only to the extent that they led to *actual* expenditures: central bank credit used to pay interests on

[114] The primary purpose of the increase in the basic interest rate was to make Lev deposits more attractive and limit capital outflows (out of the domestic financial system).

[115] In the past, the government budget was also financed through the State Saving Bank (SSB). The SSB was the largest Bulgarian bank, holding over a third of household deposits (in 1996), with an *explicit* state guarantee on all deposits long before the introduction of formal deposit insurance in late 1995. The bank extended almost no credits to enterprises, but merely re-channeled household savings to the BNB, commercial banks and the government budget through deposits, credits and purchases of government securities; Guenov (1994), page 83. In other words, the SSB financed the government budget through two principal channels: indirectly, through credits to the BNB, and directly through its participation in the market for government debt.

domestic debt (held by the banking system) are inflationary only if the proceeds of these payments are eventually used in the purchase of goods, or foreign currency.[116]

The increase in public debt and public debt servicing also contributed to overall macroeconomic instability through its effect on investors' expectations (holders of domestic assets, including money). By the end of 1996, total domestic debt servicing represented a third of GDP, with crumbling tax revenues, limited to no foreseeable foreign financing, and a distressed banking system. Investors probably understood that the BNB had become the lender-of-last-resort, not only to the banking system, but to the government as well and were expecting, rightly or wrongly, an acceleration of "money printing" and inflation.

3.2.3 The Foreign Debt Burden

Given the large foreign debt inherited from the communist era and the relatively low level of international reserves, a moratorium on foreign debt had been enacted in the spring of 1990. Partial interest payments resumed in October 1992; and a Debt and Debt Service Reduction (DDSR) program was signed in November 1993. In June 1994, after three years of negotiations, Bulgaria signed a large debt restructuring deal with the London Club of commercial banks. The deal, along with other measures, cut foreign debt by nearly a fifth (from $13.9 billion in 1993 to $11.4 billion by the end of 1994), while reducing the share of short-term debt from 77 to 19 percent (see Table A-11 in the Appendices).[117] Despite the considerable relief brought

[116] In 1996, the banking system (all commercial banks) generated BGL455 billion of interest revenue; and spent the exact same amount in interest expenditures. About BGL300 billion were paid out of the government budget as interest payments.

[117] See Dimitrova (1996) page 6 for details on the Brady deal and its effect on foreign debt payments.

about by the Brady agreement, annual foreign debt payments remained substantial. In late 1995, estimates of the annual payments through 2000 associated with the deal alone amounted to $270 million (more than a fifth of BNB's foreign exchange reserves at that time). In 1996, when exceptionally large repayments were due, principal and interest payments were expected to exceed $1 billion![118] They actually reached $1,048 million, more than 10 percent of GDP.

Although it has been argued that Bulgaria's foreign debt burden was not excessively large for a country of that size,[119] foreign debt developments had important repercussions on the foreign exchange market, as it affected residents' expectations concerning the ability of the central bank to use foreign exchange reserves to fend-off potential speculative attacks. In other words, large foreign debt payments, by reducing foreign exchange reserves, created tensions in the foreign exchange market.[120] As explained earlier, the signature of the DDSR agreement preceded the currency crash of March 1994 by only a few months. In 1996, as large payments were expected through the year (with $136 million due in January), the destabilization effects were probably much stronger; especially so when foreign financing was delayed and eventually terminated (in spite of the rapid deterioration of the economy, the IMF put its loan program on hold in the summer).[121] Finally, with the depletion of foreign exchange reserves, the rapid depreciation of the Lev after

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[118] OECD (1997), page 57

[119] Kenningham (1997)

[120] See Sachs (1998) in the survey of the literature

[121] The pressures on the Lev experienced in late 1995 (November and December) might have been partially motivated by large foreign debt payments due in January 1996. Similarly, sizeable repayments were due in July 1996, only two months after the initial panic and crash of May.

May, and the sudden increase in the domestic-currency value of forthcoming foreign debt payments, it became apparent to investors (and households) that the government was facing a severe liquidity crisis, possibly adding to the pressures on the exchange rate.

The table below retraces changes in the gross foreign exchange reserves of the BNB, in relation with foreign debt payments and other factors, from January 1995 through December 1996. As shown in the table, Bulgaria received very little foreign financing through the period (largely as a result of disagreements with the IMF and the World Bank regarding the conduct of economic policy [122]), while large payments were still being made to international creditors during some of the worst months of the crisis (in July and September 1996, in particular).

[122] An important point of discord between the Bulgarian Government and the IMF concerned the closure of a number of loss-making state-owned companies, which the IMF had repeatedly suggested (requested). This discord became known as the "64-firm question." Again, see Wyzan (1996) for more details on the relationship between Bulgaria and the international financial institutions during that period.

Table 8: Monthly Variations in BNB Gross Foreign Exchange Reserves, January 1995 – December 1996, USD million

Date	Reserves	Change in Reserves	Comments / Description
Jan-95	899	-103	Sizable repayments on foreign debt
Feb-95	977	+78	Supply of foreign currency exceeds demand on inter-bank market; purchases by BNB
Mar-95	1,127	+150	
Apr-95	1,304	+177	
May-95	1,422	+117	
Jun-95	1,500	+78	
Jul-95	1,466	-34	Sizable repayments on foreign debt
Aug-95	1,451	-15	Reduction in Lev equivalent of reserves due to stronger dollar
Sep-95	1,434	-17	Payments to creditors
Oct-95	1,465	+32	Reduced commercial bank refinancing in foreign currency
Nov-95	1,363	-103	Internal speculative pressures; seasonality; BNB intervention
Dec-95	1,282	-81	
Jan-96	956	-326	Sizable repayments on foreign debt; BNB intervention
Feb-96	904	-52	Loss of confidence in commercial banks and Lev; seasonality; massive BNB interventions
Mar-96	644	-261	
Apr-96	628	-16	
May-96	600	-28	Two banks under conservatorship; currency substitution; limited BNB intervention
Jun-96	573	-27	Reserves below $600M: expectations deteriorate; limited BNB intervention
Jul-96	480	-94	Sizable repayments on foreign debt; loan from IMF[123]
Aug-96	548	+68	Loan agreement with the European Community
Sep-96	471	-77	Interest payments to IMF, EU, and EFTA; nine banks placed under conservatorship
Oct-96	490	+19	Status-quo; political stalemate
Nov-96	525	+35	
Dec-96	518	-7	

Source: BNB, Annual Reports, 1995 and 1996

As shown in Table A-11 in the Appendices, most BNB interventions were motivated by large resident capital outflows (so-called changes in short-term capital), which accounted for most of the capital account balance in 1996. Further evidence of

[123] The first tranche of the fourth standby agreement was paid in July 1996, after months of negotiations. See Wyzan (1998) for details.

resident capital flight is provided in Section 3.4 and discussed in Chapter 4. The large BNB interventions stopped in May 1996 when gross foreign exchange reserves fell below $600 million. In Bulgaria, $700 million worth of foreign exchange reserves was considered a critical level, a psychological barrier that might trigger investors' panic; $500 million was a sanitary minimum, needed to ensure expenses on grain and oil supplies.

3.3 A Policy Dilemma

The delays in structural reforms, together with the distress of the banking system, the accumulation of domestic debt and the low level of foreign exchange reserves (relative to the forthcoming payments on foreign debt, in particular) made the conduct of macroeconomic policy extremely difficult in late 1995 and through 1996. We focus below on stabilization tools available to the central bank, and discard fiscal policy (again, burdened by the servicing of the government debt), income policies and price controls.

We argued earlier that the relative success of the Bulgarian stabilization policy in 1992, 1993 and 1995 depended crucially on the willingness of Bulgarian households to hold domestic currency. This willingness hinged on the relative stability of the exchange rate and on high nominal interest rates on domestic money, both making domestic currency deposits more attractive than either foreign currency deposits, or domestic and foreign cash. The banking system, in turn, channeled part of the attracted resources toward financing the budget deficit (commercial banks held a large portion of their portfolio in government securities), making that financing relatively non-inflationary. Evidently, that strategy became rapidly unviable with the difficulties experienced by the banking system.

3.3.1 Monetary Policy

As stressed by Eichengreen and Rose (1998), there may be one level of central bank lending consistent with exchange rate stability, but yet another needed to prevent the collapse of distressed financial institutions. This is the problem that the Bulgarian central bank had to face in 1996. It had to deal with two contradictory objectives set forth in the Law on the BNB: defend the value of the Lev on one hand, and maintain the stability of the banking system, on the other hand.[124]

With eroding public confidence in the banking system and in the strategy of the government, most of the liquidity injected by the central bank to replenish commercial banks' reserves (through refinancing) were withdrawn and converted into domestic and foreign cash. Evidence of the drain on central bank refinancing is provided in the chart below.[125] As can be seen on the chart, both foreign currency deposits and Lev time deposits (net of interest earnings) were rapidly depleted, as central bank refinancing accelerated, in late 1995 and through most of 1996. [126]

Note that only the time deposit component of total Lev deposits is shown on the chart (time Lev deposits peaked at 78 percent of total Lev deposits in June 1995). The purpose of the chart is simply to show the *dynamic* of both time deposits (after controlling for interest earnings) and central bank refinancing. As can be seen on the chart, after November 1996, total outstanding central bank refinancing exceeded Lev time deposits *net of interest earnings*. Total Lev deposits (including demand deposits) still exceeded total refinancing by a large margin.

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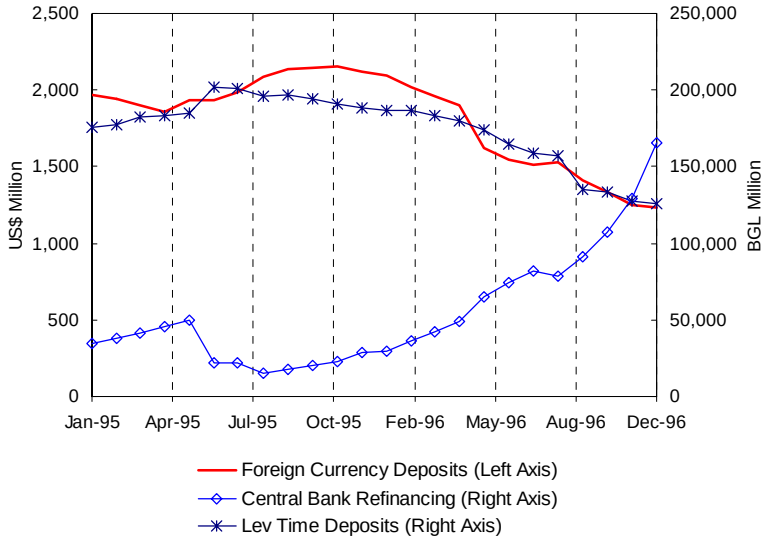
[124] BNB, Annual Report 1996, page 59

[125] See also Table A-7 in the Appendices

[126] Inspired from OECD (1997), page 34. The chart is somewhat misleading as part of the long-term Lev time deposits were being converted into short-term demand deposits.

Figure 12: BNB Refinancing and Net Inflows of Bank Deposits



With falling money demand, the central bank had to intervene in the foreign exchange market to support the Lev. From November 1995 through May 1996, "the central bank was forced to mop-up liquidity it had itself provided as lender-of-last-resort, by depleting its foreign exchange reserves" (BNB, Annual Report 1996, page 63). The linkage between domestic credit expansion and foreign exchange reserves has been stressed in the literature by the monetary approach to the balance-of-payments, under a fixed exchange rate.

The central bank's balance sheet relates the *nominal* supply of high powered money (at the end of period t) H_t, to central bank assets: central bank credit, D_t, and foreign exchange reserves $E_t.F_t$ (in nominal terms, where E is the exchange rate, and F the foreign-currency value of foreign exchange reserves):[127]

$$H_t = D_t + E_t.F_t$$

[127] This presentation of the monetary approach to the balance-of-payments borrows from Obstfeld (1991)

Rearranging, and expressing the above equation in differences:

$$E_t.\Delta F_t = \Delta H_t - \Delta D_t$$

Net domestic credit D_t increases ($\Delta D_t > 0$) as a result of central bank credit extension to the government, central bank lending to commercial banks (refinancing) or central bank open-market purchases of government securities. Assuming a constant unitary money multiplier, *with no loss of generality*: [128]

$$E_t.\Delta F_t = \Delta M_t - \Delta D_t$$

Equilibrium in the money market implies that money supply equals (nominal) money demand, or equivalently:

$$\Delta M^S_t = \Delta M^D_t$$

Leading to:

$$E_t.\Delta F_t = \Delta M^D_t - \Delta D_t$$

From the above equation, it is clear that any increase in domestic credit (ΔD_t) not matched by a corresponding increase in *nominal* money demand (ΔM^D_t), brings a corresponding loss of foreign exchange reserves ($E_t.\Delta F_t$), with E_t fixed.

---

[128] During a run on banks, the money multiplier μ_t falls, for at least two reasons: (i) an increase in the currency deposit ratio, as depositors convert the proceeds of their deposits into cash; and (ii) an increase in banks' excess reserve ratio, as banks hold more reserves in order to prevent liquidity shortages. As μ_t falls, *other things being equal*, $M_t = \mu_t.H_t$ also falls. During the crisis, banks cannot fully liquidate outstanding loans to meet deposit withdrawals (as the demand for Lev cash increases), necessitating an injection of liquidity by the central bank: $\Delta H_t > 0$ and $\Delta M_t > 0$, but with $\Delta \mu_t < 0$, so that ΔM_t is less than what it would have been in "tranquil" times. In other words, under a banking crisis, for any increase in H_t, the change in M_t is reduced, trimming down the volume of domestic liquidity available for conversion into foreign currency. The run on banks, while provoking the initial expansion of H_t, reduces money multiplication and thereby limits liquidity available for running on the domestic currency. In a sense, the currency crisis is "frustrated" by the banking crisis. See Miller (1996), in Section 1.3 of this paper.

To summarize, the policy dilemma for the BNB was either defending the exchange rate by limiting lender-of-last-resort operations and "frustrating" the attack on the Lev (by reducing ΔD_t) at the risk of intensifying the bank runs and shutting down the payment system; or trying to salvage the banking system and restore the public's confidence by fully engaging in lender-of-last resort operations, at the risk of fueling the collapse of the exchange rate (with $\Delta D_t >> \Delta M^D{}_t$ and $\Delta F_t < 0$).

3.3.2 Interest Rate policy

The literature on money demand and inflation stabilization has demonstrated how paying high nominal interest rates on money (bank deposits) can reduce the inflationary effects of monetary expansion, at least in the short term (see Appendix F). This is illustrated in the chart below, where the nominal demand for domestic money M^D is proportional to the price level P:

$$M^D = P.f(i, y, \zeta) \qquad f_i > 0, f_y > 0, f_\zeta > 0$$

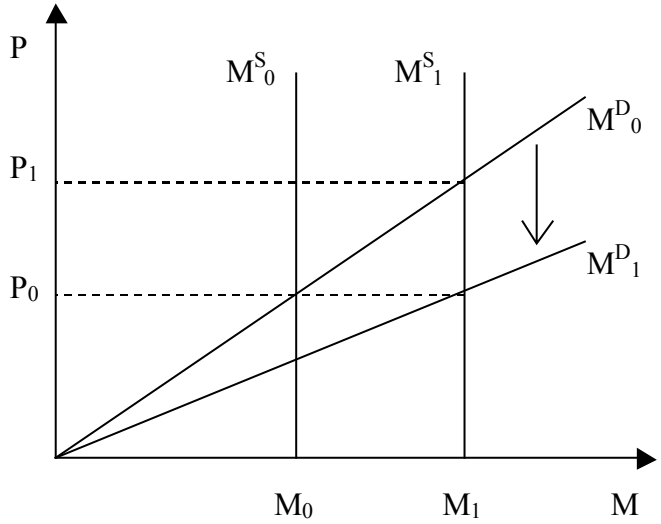
And where i is the nominal interest rate on bank deposits, y output, and ζ an arbitrary measure of the perceived solvency of the banking system.

Note that this is *not* the standard model of money demand, where the demand for domestic money is inversely related to i: the return on the competing asset, domestic bonds. In this model, i is the return on domestic money: other things being equal, an increase in i increases the demand for money ($f_i > 0$). In this model, M^D is the demand for both domestic cash and domestic currency deposits. In the absence of cash-in-advance constraint, and with $i > 0$, all of M^D is held as bank deposits, with no loss of generality. It is further assumed that the only asset competing with domestic money is a real asset (a bundle of goods), held outside banks and

earning π, the rate of inflation, with $0 < \pi < i$ so that: i) investors always prefer goods over domestic cash; and ii) investors prefer domestic currency deposits over goods, but only when confidence in the banking system is strong (with ζ high).

In the figure below,[129] a monetary expansion increases the money supply from M^S_0 to M^S_1, leading to an increase in the price level, from P_0 to P_1. To limit the inflationary effects of the policy, the central bank simultaneously increases the interest rate on money, increasing real money demand (M^D/P), shifting M^D_0 to M^D_1, and bringing the price level back to P_0.[130]

Figure 13: Money Market Equilibrium, Monetary Expansion and Changes in the Interest on Domestic Money



Again, this model is different from the standard model of money demand: the choice (arbitrage) here is not between money and bonds, but between money and

[129] This presentation of the money market borrows from Sachs and Larrain (1993).

[130] The effect of higher nominal interest rates on the cost of credit is neglected here.

real assets holding. It is the price level, not the interest rate on bonds, which equilibrates the market.

In Bulgaria, the return on Lev deposits was also the interest rate paid by the government on its domestic debt.[131] Therefore, higher deposit rates implied higher debt servicing and, other things being equal, a larger fiscal deficit. In 1996, as documented in the previous sections, the large increases in interest rates aimed at stopping the outflow of bank deposits led to snowballing increases in government debt servicing. Given the distress of the banking (financial) system, these fiscal imbalances were eventually financed by money printing. In addition, the rise in interest rates was largely ineffective in stopping the ongoing contraction of real money holdings. The BNB reported: *"in this complex environment, the rise in the Lev nominal interest rate failed to help restore confidence in the national currency, in practice burdening additionally the real and government sector"* (BNB, Annual Report 1996, page 57). At some point, as evidenced during other crisis episodes, there is no interest rate high enough to reverse capital outflows. Interest rate changes can help against a modest turn in capital flows, but are generally helpless against drastic changes, when expectations have deteriorated to a point where large nominal rates act as a signal that default is near.[132] This is true for capital flows in and out a country, and for capital

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[131] See Section 3.2.2

[132] Mihov (2002), for example, suggests that raising the interest rate may signal higher fiscal stress and lead to higher expected inflation. Thus, he argues that prior to the introduction of the currency board in July 1997, *increases* in the BNB's basic interest rate were associated with *higher* inflation (in the short run). In the context of the model introduced in this section, such findings could be captured by having expected inflation as a determinant of money demand, and assuming that money supply simply accommodates money demand, as suggested by Dobrinsky (1997). An increase in the interest rate could

flows in and out a financial system within a country. Another reason behind the ineffectiveness of interest rate changes in Bulgaria was the banking crisis itself: for interest rate policy to be effective, households and other investors have to believe that their investments (deposits) are safe in the banks. If the perceived risk of bankruptcy out-weights the expected real return on deposits, then deposit withdrawals are inevitable.

A simple illustration of these developments is provided in the chart below where shifts in domestic money demand driven by deposit withdrawals (possibly motivated by reductions in ζ), and shifts in money supply driven by increases in nominal interest rates (focusing, again, on the impact of interest rate changes on domestic debt servicing, and budget deficit financing) can lead to accelerating inflation, from P_0 to P_1, to P_2.

In this expanded model, changes in i, the nominal interest rate, are exogenous. The supply of money increases with i, through the budget constraint of the government:

$$G + i.B - T = \dot{M}$$

Where G stands for government purchases, T tax revenues and B is the stock of government debt; $\dot{M}$ is the change in net domestic credit and base money, assuming no change in central bank foreign assets. Therefore, the supply of money can be rewritten as:

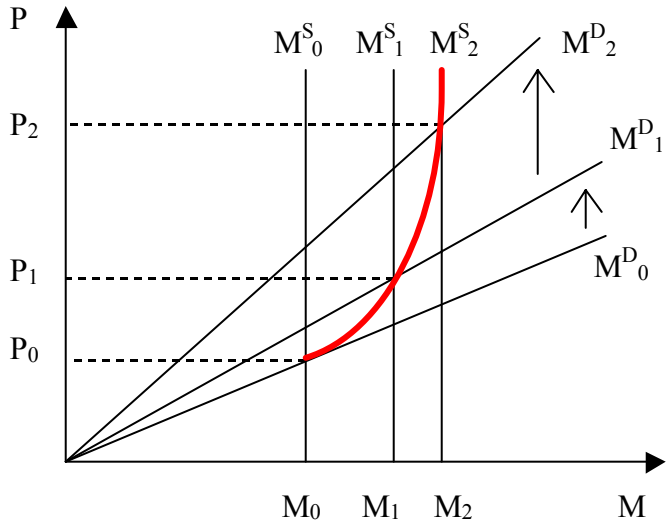
$$M^S = h\ (i) \qquad \text{with } h_i > 0$$

---

explain a one-time increase in the price level, through falling money demand and increased demand for goods.

It is further assumed that reductions in ζ (growing distrust in the banking system) more than offset the effect of i on money demand, so that real money demand falls (the money demand schedule shifts upward, despite repeated increases in i).

Figure 14: Money Market Equilibrium, 1996 Bulgaria?



A direct extension to this basic model consists of making the growth in money supply endogenous (through the budget constraint of the government) and adding expected inflation among the parameters of the money demand function. With adaptive expectations, such model can produce situations where hyperinflation becomes possible (more on this later).

High nominal interest rates also implied large credit costs, and possibly a credit squeeze in the real sector of the economy. They created financial difficulties for enterprises that had contracted large debts when interests were lower. Finally, they led to balance sheet problems for commercial banks with a large portion of non-performing assets or assets earning less than the market interest rate, but with most liabilities serving the (higher) market rates.

With limited room to maneuver for both monetary and fiscal policies, and the perverse effects of interest rate hikes, the only remaining stabilization tool was direct interventions in the foreign exchange market.

3.3.3 Exchange Rate Policy

The BNB had quasi-systematically intervened in the foreign exchange market to defend the Lev against speculative attacks when it had sufficient reserves to do so, as it understood early on that any relaxation of exchange rate policy could weaken confidence in the domestic currency, and provoke large outflows of capital.[133]

Interest rate policy and exchange rate policy were largely complementary through the nineties. The guarantee that the central bank would intervene in the foreign exchange market allowed, in particular, *lower* interest rates on Lev deposits than otherwise. To understand why, consider the following. The expected real return on domestic currency holding is:

$$E[r_{dd}] = i - \pi$$

Where i is the nominal interest rate on Lev deposits, and π expected inflation.

The expected real return on foreign currency holding is:

$$E[r_{fc}] = i^* + \varepsilon - \pi,$$

Where i^* is the nominal interest rate on foreign currency deposits, and ε expected depreciation. Assuming $i^* = 0$:

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[133] Bulgaria's exchange rate regime prior to the introduction of the currency board may best be described as a "pegged" exchange rate, following Steve Hanke's definition. While both fixed and flexible exchange rate regimes rely on well-understood mechanisms, pegged exchange rates imply discretionary interventions by the Central Bank, as both monetary aggregates and the exchange rate are (alternatively) targeted. This discretion is generally source of instability. Dobrinsky (1997) characterized Bulgaria's macroeconomic policy as "the impossible trinity;" as the BNB not only targeted monetary growth (through credit ceilings first, and open market operations) and the exchange rate (through direct interventions in the foreign exchange market), but also set the interest rate on most financial and monetary assets (through the basic interest rate).

$$E[r_{fc}] = \varepsilon - \pi$$

In this simple framework, and if foreign and domestic currency deposits are the only two assets available to residents to hedge against inflation, i can be set just slightly above ε. When there are enough international reserves, ε can be lower than actual (and expected) inflation, leading to negative real interest rates on Lev deposits without flight to foreign assets (at least in the short-term). To summarize, the main determinant of foreign (and domestic) currency holdings is domestic interest rate *minus* expected depreciation. And given the history of central bank interventions in the foreign exchange market (and the crash of March 1994 in particular), expectations about the level of foreign exchange reserves were probably equally, if not more important than changes in interest rates.

In addition, with fully flexible exchange rates (i.e., after May 1996, when the BNB international reserves hit a low), the central bank literally lost control over the nominal value of broad money (inclusive of foreign currency deposits).[134] As discussed in Section 3.4 below, in the second half of 1996, a large part of the variations in nominal money supply were indeed attributable to exchange rate movements.[135] The inflationary consequences of this indexation have been explored in Georgiou (1991).

Georgiou demonstrates that when a monetary shock leads to an excess supply of money, the existence of foreign currency deposits magnifies the resulting acceleration of inflation (and depreciation). Consider a small country that produces

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[134] By the end of 1996, the Lev value of foreign currency deposits represented nearly two third of the nominal value of broad money.

[135] See also Miller and Petranov (1996), and the impact of having reserve requirements in foreign currency, pages 67-68

only traded goods. Nominal broad money, M, is defined as the sum of domestic money, D, and the domestic currency value of foreign currency deposits, $E.FD$, where E is the exchange rate. Assuming partial adjustment in the money market, change in real money balances can be expressed as:

$$\frac{\dot{M}}{P} = \lambda.(\frac{M^D}{P} - \frac{M^S}{P})$$

Where λ denotes the speed of adjustment of the market, M^D is the nominal demand for money balances (domestic money and foreign currency deposits), and M^S, the supply of money. Under a few simplifying assumptions, Georgiou demonstrates that after a monetary shock, the rate of inflation π is given by:

$$\pi = \lambda.(\frac{M}{D}).(\frac{M^S - M^D}{M})$$

For any monetary disequilibrium (M^S - M^D), the higher the proportion of foreign currency deposits in broad money (the higher M/D), the higher the rate of inflation. This is explained below.

With lagged adjustment in the money market, an increase in the nominal money supply leads initially to higher real money balances, and a temporary excess supply of money. As the price level increases (other things being equal, the excess supply of money implies excess demand for goods), the *nominal* demand for money rises and the excess money supply declines, bringing down the rate of inflation. When broad money includes foreign currency deposits, however, the nominal money supply

rises during the adjustment to market equilibrium (as E rises), leading to further increases in the price level.[136]

In summary, due to problems in implementing monetary and interest rate policy, the management of the exchange rate was central in the BNB's attempts to stabilize the economy. As confidence in the government was deteriorating, developments in the foreign exchange market became a key indicator (and determinant) of investors' expectations, and of overall economic stability. Exchange rate policy, however, was limited in scope by the *extremely* low level of foreign exchange reserves, possible conflicts with foreign debt payments, and tensions with the IMF and the World Bank originating from the deterioration of agreed performance criteria, and leading to restrictions on the availability of foreign financing. This is explained in Section 3.4 below.

3.4 The 1996-1997 Panic and Collapse

1996 was probably the worst year in the (short) economic history of transitioning Bulgaria. We interpret the rapid deterioration of most economic indicators and the collapse of asset prices, as a consequence of the banking crisis. We also insist on the key role played by BNB's foreign exchange reserves in the formation of inflationary expectations in the second half of the year. Finally, Bulgaria's economic collapse occurred in the midst of a severe political crisis: we argue that the political events of January and February 1997 might explain some of the economic developments during that period.

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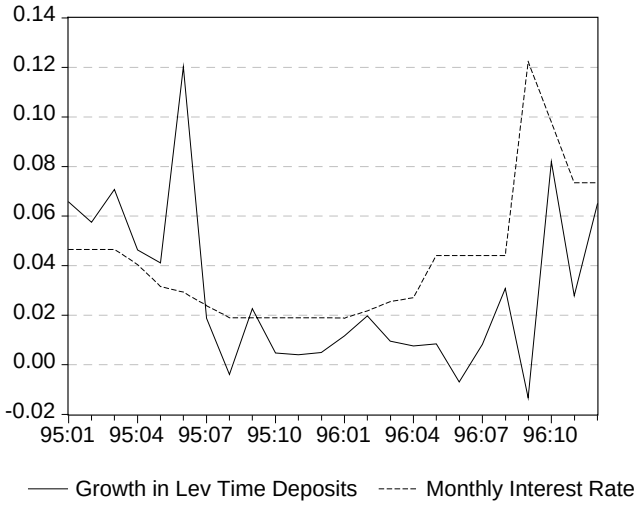
[136] Georgiou (1991), pages 8 and 9

BNB data indicate that Lev deposits and foreign currency deposits *both* started to decline in late 1995, as news about the conditions of commercial banks, as well as disciplinary measures taken against four of them, caused anxiety among depositors (see Section 3.1.3). As shown in Figure 15 below, the withdrawal of deposits intensified in the spring of 1996, and eventually developed into a full-blown panic.[137]

[137] In the figure, both the nominal growth in time deposits and the nominal interest rate on those deposits are shown. Assuming that no new funds are either deposited or withdrawn, the two series should be very close. On the other hand, if the growth in time deposits falls short of the interest rate, this indicates that funds are being withdrawn. As can be seen in the chart, the gap between the two series widened considerably after February 1996, suggesting large withdrawals. Also, note that the peak of June 1995 (when time deposits grew by 12 percent in nominal terms) was associated with a reduction in both demand deposits (-19%) and saving deposits (-14%), resulting in a net increase in total Lev deposits of only 4 percent in that month.

Figure 15: Nominal Growth in Lev Time Deposits, 1995-1996



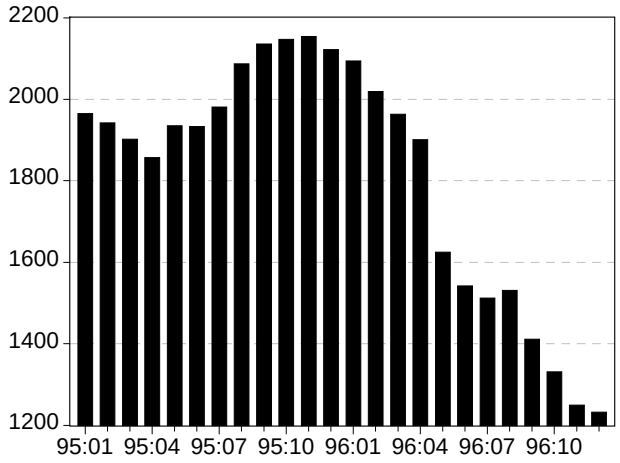
Coincident tensions in the foreign exchange market *suggest* that a portion of the withdrawn funds were being converted into foreign currency.[138] Through the year, an estimated $890 million worth of foreign currency deposits were withdrawn from domestic commercial banks. Overall, capital flight was extremely large in 1996.[139] In addition to *resident* capital flight (withdrawal of foreign currency deposits held in domestic banks), capital flight also included capital flows outside the country. By the end of the year, total *estimated* capital flight amounted to $1,007 million, more than 10 percent of GDP (See Table A-11). Again, it was primarily motivated by a profound loss of confidence in the banking system. Expectations of drastic nominal depreciation, and accelerating inflation, were also important in explaining the conversion of withdrawn funds into foreign cash, and other hard assets. Foreign

[138] In the early months however, a large portion of Lev time deposits were converted into more liquid Lev demand deposits.

[139] The most sizable outflow of capital since the inception of market reforms in 1991

currency deposits in U.S. dollars, from January 1995 through December 1996 are shown in the chart, below.

Figure 16: Foreign Currency Deposits in U.S. Dollars, 1995-1996

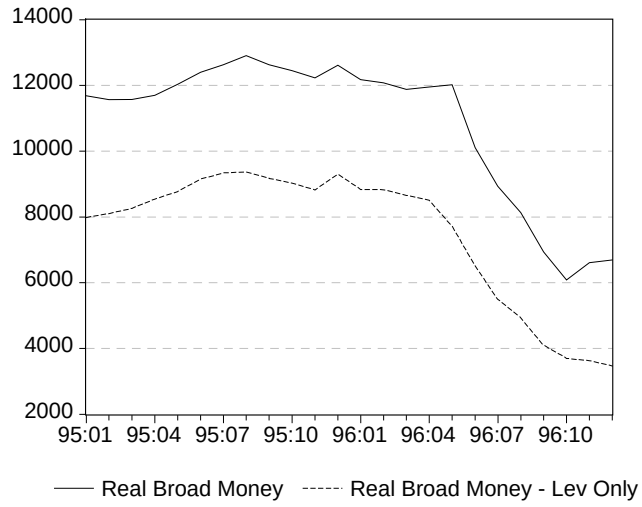


The concomitant withdrawal of domestic *and* foreign currency deposits, evidenced in the above charts, suggests that the runs on Lev deposits were not *primarily* motivated by a desire to run on the domestic currency (as in some of the models of the twin crises, explored in Chapter 1). Rather, the speculative attack against the Lev *seems* to have originated in the desire to hedge against expected inflation, once Lev deposits had been withdrawn. If the primary reason for the withdrawal of Lev deposits had been to speculate against the Lev, then foreign currency deposits would have increased (or at least remained constant) during that period, as it did shortly before (and after) the crash of March 1994 (see Section 3.1). Again, the fact that both domestic and foreign currency deposits were being withdrawn in late 1995 and through most of 1996 suggests that the crisis originated in the banking sector. It is the fear of deposit losses, blocking and/or confiscation, which

pushed depositors to withdraw in the first place. The conversion of *withdrawn* domestic funds into foreign currency can then be explained by a flight to quality (the desire to avoid losses), as in standard models of currency crises.

Real money balances (broad money deflated by the consumer price index) from January 1995 through December 1996 are shown in the figure below. Starting in August 1995, the rate of inflation exceeded the rate of money growth, leading to a slight reduction in real money through May 1996. In June, as the BNB stopped supporting the Lev in the foreign exchange market, real broad money fell rapidly. The fall was sustained through the end of the year (sources of nominal money growth are explored later in this section).

Figure 17: Real Money Holding, 1995-1996



Another evidence of the loss of confidence in the banking system is the relative decline of (long-term) Lev time deposits in total Lev deposits, from 71 percent in December 1995, to 63 percent a year later. This is shown in the table below. The table also shows the share of total deposits held by households, as opposed to private

and public enterprises or non-bank financial institutions. The numbers in the table suggest that most of the portfolio shifts documented in this section originated from households. [140]

Table 9: Composition of Lev Deposits

	Dec-95	Dec-96	Jan-97	Feb-97	Mar-97
Lev Deposits					
Demand Deposits	13%	21%	21%	26%	25%
Savings Deposits	16%	16%	15%	13%	12%
Time Deposits	71%	63%	65%	61%	63%
Total Lev Deposits	**100%**	**100%**	**100%**	**100%**	**100%**
Percentage of Deposits Held by Households:					
Demand Deposits	10%	6%	5%	5%	5%
Savings Deposits	100%	100%	100%	100%	100%
Time Deposits	91%	91%	90%	91%	91%
Overall (Lev)	**82%**	**74%**	**74%**	**70%**	**70%**
Foreign Currency Deposits	59%	42%	42%	40%	40%
Overall (Lev and Foreign Currency)	**75%**	**57%**	**52%**	**46%**	**49%**

Source: BNB, Monetary Survey1996-1997

To limit the flow of funds out of the banking system, and reduce tensions in the foreign exchange market, the central bank raised its basic interest rate repeatedly during the year. This is illustrated in the figure below. Significant increases occurred in June, immediately after the depletion of foreign exchange reserves, and again in September. In late September, the basic annual interest rate was raised to a staggering 300 percent (or 25 percent per month, representing an effective annual rate of almost 850 percent!), as part of a package of restrictive measures initiated by the BNB.[141]

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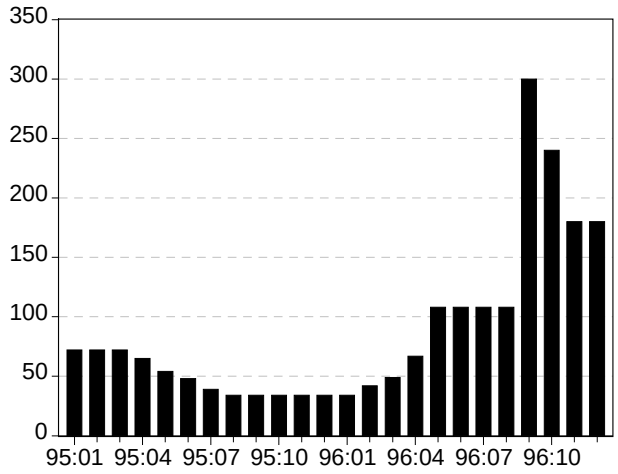
[140] Anecdotal evidence suggests that speculative deposits by so-called business groups might have been disguised as "household deposits." In addition, some private businesses deposited part of their funds into personal bank accounts, in the form of time deposits.

[141] Including the closure of nine banks and renewed support to remaining viable banks (see Section 3.2.1)

Figure 18: Basic Interest Rate, 1995-1996



The increase in the basic interest rate above the inflation rate (monthly inflation averaged 20 percent in the third quarter) led to an immediate stabilization of the foreign exchange market: the Lev depreciated by less than 5 percent in October. However, it is difficult to assess which element of the BNB package contributed the most to this temporary relief. On September 23, the central bank announced, in particular, that it would *"participate in the foreign exchange market, assisted in the foreseeable future by receipts from the privatization program announced by the government"* (BNB, Annual Report 1996, page 162). The acceleration of structural reforms (as well as positive real interest rates) was also a condition for obtaining funds from the World Bank and the IMF. Expectations of future foreign financing might have played an important role in the stabilization of the economy in October. As explained below, when foreign financing stopped (with the termination of the fourth

standby agreement in November [142]), the economy went through a new period of exchange rate turbulence.

The increase in interest rates led to growing interest payments on domestic debt, adding to the government budget deficit. Through the year, the budget was also burdened by the mechanisms used to overcome the banking crisis (under the Law on the State Protection of Deposits, in particular) and by the blocking of budget funds in banks under conservatorship.[143] The State Budget Law was amended twice in 1996. On July 30, the cash deficit of the general government budget was officially raised from BGL 58.3 billion to BGL 80.7 billion (a 38 percent increase). On December 12, it was increased by more than 155 percent to BGL 206.0 billion (representing nearly 12 percent of nominal GDP). In both instances, the larger deficit reflected *"increased expenditures for interest payments on domestic and foreign debt."* [144]

The financing of the deficit was made extremely difficult by the crisis in the banking system. Commercial banks with liquidity problems had difficulties acquiring new government debt. They were also increasingly reluctant to do so, as expectations of accelerating inflation (and depreciation) reduced the expected real return on government securities. The termination of foreign financing, in the fall, brought another source of budget finance to an end. The only remaining option for the central bank (besides refinancing commercial banks, which then could acquire Treasury bills!) was to extend direct credit to the government. "*The crisis in the financial system (...) limited the possibilities of the primary market to realize the*

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[142] From the failure to meet IMF performance criteria

[143] See Section 3.2.2 and BNB 1996 Annual Report, page 15

[144] BNB 1996 Annual Report, page 157

government securities issues. This entailed the use of direct bank lending to cover temporary cash deficiencies in the budget and to finance the cash deficit, despite their pro-inflationary effect." (BNB, Annual Report 1996, page 49)

As a result, monetary policy became relatively *loose* from mid- to end-year. The release of monetary restrictions was, again, motivated by the combination of increased borrowing requirements for the budget, and reduced real credit resources in the banking system (due in part to bank runs and capital flight). To avoid a collapse of the payment system, and a default on government domestic debt, the BNB was "forced" to compensate the lack of funds by printing money. Money printing occurred both directly (through direct credit to the government budget[145]) and indirectly, as the central bank was unable to sell the government securities it had acquired on the primary market, especially so after October.

Another important source of nominal monetary growth through the year was the depreciation of the Lev and its effect on the domestic currency value of foreign currency deposits.[146] The changes in monetary base and money supply (in nominal terms) from December 1995 through March 1997 are shown in the table below.[147]

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[145] As mentioned in Section 3.2.2, the revised State Law of December 12 also provided for the extension of a BGL115 billion direct credit from the BNB, to help finance the deficit.

[146] See Georgiou (1991) and Section 3.3.3 of this paper

[147] This presentation borrows from Balyozov (1999)

Table 10: Growth in Money Supply and Money Multiplication, January 1996-March 1997

	Broad Money	Lev Component	Foreign Currency Component	Dollarization Ratio	Reserve Money (Lev Only)	Money Multiplier (Lev Only)
Jan-96	-1.3%	-2.9%	3.1%	27.4%	-10.2%	3.754
Feb-96	1.1%	1.8%	-0.7%	26.9%	-0.8%	3.852
Mar-96	0.0%	-0.2%	0.7%	27.1%	-3.0%	3.960
Apr-96	3.6%	1.2%	9.8%	28.8%	4.4%	3.841
May-96	13.1%	2.0%	40.6%	35.8%	3.3%	3.794
Jun-96	1.1%	1.5%	0.3%	35.5%	11.7%	3.448
Jul-96	9.0%	4.0%	18.1%	38.4%	8.7%	3.300
Aug-96	6.6%	4.9%	9.3%	39.4%	13.7%	3.045
Sep-96	1.3%	-1.1%	5.0%	40.9%	3.9%	2.897
Oct-96	2.3%	5.1%	-1.7%	39.2%	-0.8%	3.069
Nov-96	19.1%	7.6%	37.0%	45.1%	14.7%	2.879
Dec-96	28.5%	21.3%	37.4%	48.2%	26.1%	2.769
Jan-97	50.9%	1.9%	103.6%	65.1%	20.9%	2.332
Feb-97	72.8%	32.8%	94.3%	73.2%	34.8%	2.298
Mar-97	-9.0%	20.0%	-19.6%	64.6%	23.7%	2.228

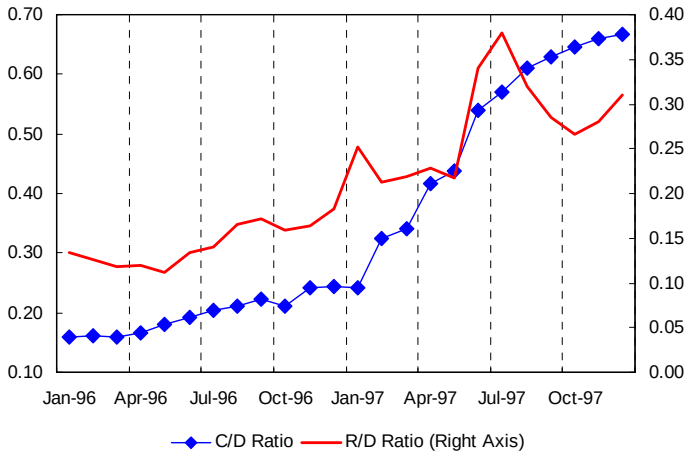
All numbers are monthly growth rate, except the dollarization ratio, which is the ratio of foreign currency deposits to broad money including foreign currency deposits.

Source: BNB Data, *http://www.bnb.bg*

In the first three quarters of 1996, the growth of broad money was relatively subdued, apart from the two-digit increase of May and the near-two digit increase of July, both associated with large exchange rate movements. The moderate growth of broad money early in the year can be attributed to the rapid depletion of foreign exchange reserves during that period: as highlighted by the monetary approach to the balance-of-payments, the BNB absorbed the liquidity it had injected as lender-of-last-resort by running down its foreign exchange reserves (see Section 3.3.1).

Concentrating on the Lev component of broad money, the acceleration of reserve money growth in June (+11.7 percent), and in the following months, was largely offset by reductions in the money multiplier resulting from increases in the currency-deposit ratio (associated with large deposit withdrawals) and increased reserve requirements, as illustrated in the chart below.[148]

Figure 19: Currency-to-Deposits and Reserves-to-Deposits Ratio, Lev Only, 1996-1997



From November 1996 through February 1997, however, both the domestic and foreign currency components of broad money grew at an accelerating rate. The growth in the foreign currency component reflected changes in the exchange rate (during that period, as explained earlier, the dollar value of foreign currency deposits

[148] The increase in the currency-deposit ratio was relatively subdued through 1996, suggesting that a large portion of withdrawn bank deposits were converted directly into foreign cash. The ratio increased steadily through most of 1997, as did the reserves-to-deposit ratio. The former reflected continued distrust in the banking system and general preference for cash, the latter a more conservative lending policy pursued by commercial banks (BNB, Annual Report 1997).

actually shrank). The growth in the Lev component resulted from sustained growth in high-powered money, which more than offset the continued erosion of the multiplier.

Growth in domestic credit (Lev and foreign currency components)[149], and growth in central bank refinancing are shown in the table below. The table illustrates two important developments in domestic claims: a sustained growth in the refinancing of commercial banks through the period (although most of the nominal growth after November was due to the depreciation of the Lev); and an acceleration of central bank credit to the government from November 1996 through January 1997 (note that the Lev component of BNB claims on the government budget increased by about 30 percent *each month*, during that period).

[149] Growth in the Lev component of domestic credit is shown in Table A-7, in the Appendices

Table 11: Growth in Domestic Credit and Central Bank Refinancing, January 1996-March 1997

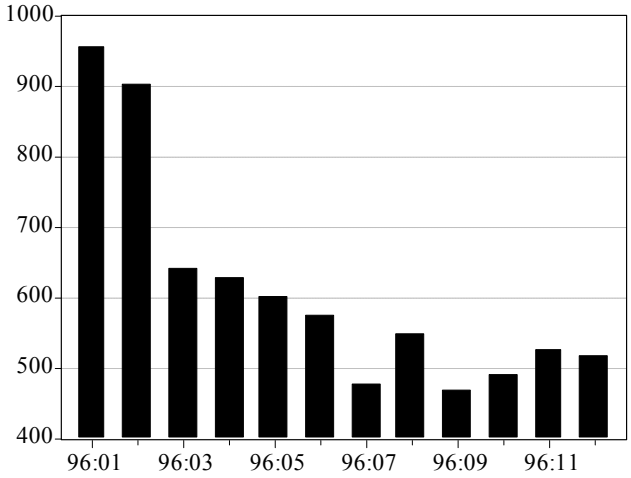
	Commercial Banks Claims on Government Budget	Commercial Banks Claims on Non-Government Sector	BNB Claims on Commercial Banks (Refinancing)	BNB Claims on Government Budget
Jan-96	4.3%	4.3%	2.5%	10.4%
Feb-96	3.5%	1.8%	16.2%	-3.9%
Mar-96	-0.3%	2.0%	12.8%	6.4%
Apr-96	2.3%	5.8%	16.1%	-10.3%
May-96	3.8%	29.0%	39.1%	4.2%
Jun-96	19.9%	3.5%	11.8%	7.7%
Jul-96	14.5%	13.3%	13.2%	58.1%
Aug-96	0.4%	6.3%	-1.3%	8.0%
Sep-96	6.7%	7.1%	12.9%	10.6%
Oct-96	3.8%	2.3%	15.5%	-1.6%
Nov-96	30.4%	26.8%	20.8%	42.8%
Dec-96	21.3%	23.4%	29.0%	46.9%
Jan-97	62.6%	80.1%	51.1%	48.0%
Feb-97	81.1%	85.6%	60.9%	48.0%
Mar-97	-20.2%	-27.9%	-16.1%	-13.0%

All numbers are monthly growth rate

Source: BNB Data, *http://www.bnb.bg*

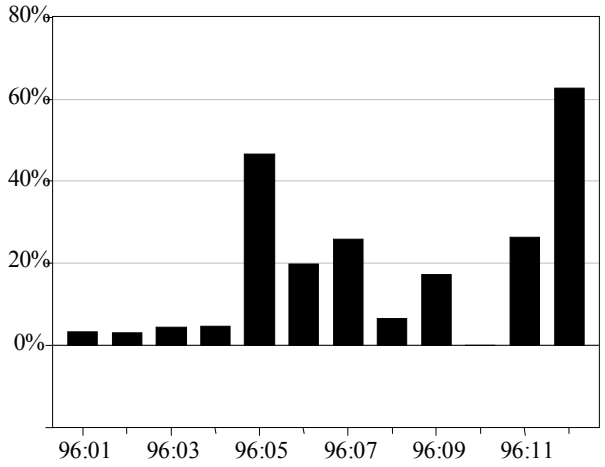
Over the year, foreign exchange reserves fell by more than $750 million, with a reduction of $662 million in the first half of 1996 alone. As discussed in Section 3.2.3, the decline of international reserves resulted primarily from large foreign debt payments, the quasi-absence of foreign financing, and above all, repeated sales of foreign currency by the central bank, in a desperate attempt to defend the exchange rate. These interventions stopped in May (early June) 1996, when the reserves fell below $600 million (representing about two months worth of imports). Foreign exchange reserves remained more or less constant through the rest of the year (apart from a peak in August, reflecting funds received from the European Community), as illustrated in the chart below.

Figure 20: BNB Gross Foreign Exchange Reserves, 1996



As BNB interventions stopped in May, the domestic currency instantly lost more than 60 percent of its value. The depletion of foreign exchange reserves early in the year had an adverse effect on investors (households)' expectations during the summer and the fall, adding pressure to the foreign exchange market. Between September and December 1996, the domestic currency depreciated by another 110 percent against the U.S. dollar. As shown in the chart below, monthly Lev depreciation was close to 20 percent in all months between June and November, except in August (when, again, Bulgaria received a loan from the European Community) and October, after a new policy course initiated by the central bank in late September.

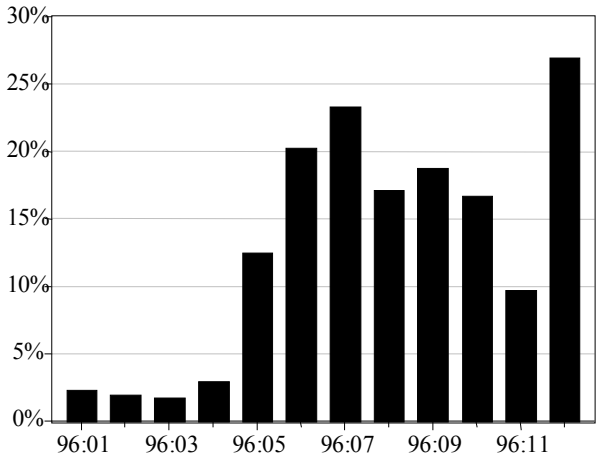
Figure 21: Rate of Depreciation of the Lev, 1996



As the Lev was crumbling in the foreign exchange market, domestic prices surged. The figure below illustrates how inflation accelerated after the end of BNB's interventions in May. Strong inflation, averaging 15 percent per month, continued through the end of the year. It accelerated in December, to exceed 25 percent. The large inflation rates of mid-to-late 1996 have been attributed to a variety of factors including strong inflationary expectations generated by developments in the foreign exchange market, bottlenecks in the economy, distortions in relative prices created by price controls, and large administered price increases for key commodities (including electricity, power, heat, fuel, and wheat).[150]

[150] BNB, Annual Report 1996

Figure 22: Consumer Price Inflation, 1996



Supply-side inflation was probably important through the year. In 1996, real Gross Domestic Product shrank by more than 10 percent, its most dramatic fall since 1991. The fall in production was a direct result of the banking crisis and the associated "credit crunch" in the real sector. The increase in nominal interest rates and in other production costs (due to the depreciation of the Lev, in particular) also contributed to the contraction of economic activity during the year.

3.4.1 From Banking to Currency Crisis

Although the banking and currency crises were largely intertwined, the sequencing of events suggests the following relationships:

- Tensions in the foreign exchange market occurred first, as early as August 1995. These tensions had been brought forward by the combined effect of interest rate reductions, forthcoming payments on foreign debt (and the associated decline in foreign exchange reserves) and cost-push price adjustments. They caused limited

shifts in the portfolio composition of Bulgarian households and enterprises, in the fall of 1995.

- Independently from these early developments, concerns about the state of the banking system precipitated relatively large withdrawals of both domestic currency and foreign currency deposits, in late 1995 and early 1996. Bank runs built up in the spring of 1996 and later in the fall. To avoid losing purchasing power, households were converting the proceeds of withdrawn deposits into foreign currency, adding to the pressures in the foreign exchange market. Large reductions in Lev time deposits (after accounting for interest earnings, and as a proportion of total Lev deposits) suggest that the crisis was driven primarily by household behavior (households held more than 90 percent of time deposits in 1996).
- As it did in the past, the BNB increased its basic interest rate repeatedly during 1996 to sustain the Lev, especially after running out of foreign exchange reserves in May. The increase was ineffective in stopping the outflow of capital (out of the financial system) but considerably burdened the government budget by increasing the servicing of domestic debt (indexed on BNB's basic rate).
- The lack of adequate legal framework for handling distressed commercial banks, and the central bank's legal responsibility to act as lender-of-last-resort to the banking system, led to significant liquidity injections through most of the year, fueling the withdrawal of deposits and the "attack" on the Lev.
- Difficulties in the banking system prevented the government from using non-inflationary forms of budget finance. Commercial banks' claims on the government budget (holding of Treasury bills) grew during the year but only after

large liquidity injections by the Central Bank (refinancing) occurred, tantamount to "printing money." A growing distrust in the government, continued deposit withdrawals, and poor foreign financing eventually prompted the central bank to extend large credits to the Government, fueling monetary growth.

- The principal channel through which financing of the budget deficit became inflationary was not the large credits granted by the BNB (as no money was truly created) but, rather, the use of these credits to pay interests on bonds held by commercial banks, i.e., pay interests on outstanding deposits, and the later conversion of these interest earnings into goods or foreign currency.

To summarize, the banking crisis impacted developments in the foreign exchange market in three important ways: i) by making foreign cash the only available hedge against inflation; ii) through its effect on the government budget and government budget financing, and iii) by making an important stabilization tool (the basic interest rate) largely ineffective.

3.4.2 An Acute Political Crisis

As explained in the introduction, the collapse of the domestic currency and the economy unfolded in the midst of a deep political crisis, marked by social unrest, strikes and acts of violence. The political crisis originated from the Socialists' attempt to appoint a new cabinet after the resignation of Prime Minister Videnov, defeated in the Presidential elections of late 1996. Day-to-day depreciation rates, along with key political developments from early January to mid-February 1997, are shown in the table below.[151]

[151] Daily depreciation rates were calculated between two exchange rate quotations (whenever available) and may span over more than one day.

Table 12: Day-to-Day Depreciation of the Lev and Political Developments, January and February 1997

Date	Official Exchange Rate BGL/USD	Daily Depreciation Rate	Comments
January 4	558	12.5%	Socialist prime minister resigned on Dec. 21, 1996
January 6	582	4.4%	Extraordinary sitting of the Parliament on Jan. 3
January 10	643	10.5%	Socialist police minister nominated new Prime Minister on Jan. 8; Opposition supporters ransacked Parliament building on Jan. 10; more than 200 persons wounded.
January 17	682	6.1%	General strike on Jan. 15; President Stoyanov sworn in on Jan. 17; Declared "*corrupt politicians has caused the country's economic collapse."*
January 21	732	7.3%	
January 27	814	11.2%	
January 30	1,022	25.6%	Socialists announced formation of new government on Jan. 28; General strike on Jan. 29, major roads blocked.
February 4	1,638	60.3%	Socialists appointed new cabinet on Feb. 3; President Stoyanov called for meeting of Consultative National Security Council (CNSC) on Feb. 4; Council denied Socialists right to form government; Parliamentary elections to be held in April; Socialists boycotted Parliament on Feb. 6
February 7	2,608	59.3%	
February 12	2,937	12.6%	
February 17	2,920	-0.6%	Appointment of caretaker government and announcement of emergency economic measures
February 20	2,595	-11.1%	
February 25	2,194	-15.4%	
February 28	2,046	-6.8%	

Source: BNB data reported on *http://www.online.bg*; Bulgarian Telegraph Agency

From the table, it appears that the peak of the currency crash coincided with considerable political uncertainty, marking possibly the peak of the political crisis. The large depreciation of early February (more than 60 percent between February 4 and January 30), occurred precisely after the announcement by the Socialists that they would form a new government in spite of popular discontent, and coincided with the decision by newly President elect Stoyanov to call for a meeting of the Bulgarian Security Council, opening the way to a constitutional crisis.

The literature on financial crises (and second and third-generation models in particular) has stressed how "bad equilibria" are possible in a crisis zone. It has been argued in particular that, when a government becomes illiquid, actions or

statements that might otherwise be inconsequential may end up as "turning points."[152] Bulgaria was clearly in a crisis zone in late 1996, with virtually no foreign exchange reserves and large domestic and foreign debt commitments. Although the crisis appears to be primarily of the canonical type (with fiscal slippages leading first to a rapid depletion of central bank's reserves, and second to large price and exchange rate adjustments), "animal spirits" may help explain the abrupt collapse of early 1997.

3.4.3 A Short Period of Hyperinflation

In January and February 1997, the country experienced a short period of hyperinflation (or near-hyperinflation) with most commodity prices surging by over 40 percent in January, and by nearly 250 percent in February alone.[153] Over the first quarter of the year, consumer prices increased by more than 450 percent.

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[152] As stressed by Jeanne (1997), however, the presence of correlation between political news and speculation is difficult to interpret, as it may either imply that political variables are part of the fundamentals (traditionalist view) or that they act as sunspot variables coordinating the expectations of speculators (self-fulfilling view), page 284.

[153] According to Cagan's 1956 definition, hyperinflation begins when monthly inflation exceeds 50 percent. It ends in the month in which inflation last exceeds 50 percent, and is followed by 12 months of less-than-50-percent inflation.

Table 13: Price of Selected Items, January 1997-June 1997

December 1996=100	Jan-97	Feb-97	Mar-97	Apr-97	May-97	Jun-97
Foods	145.8	541.2	580.5	560.5	612.4	606.1
Spirits	136.5	564.4	629.0	604.8	632.8	694.9
Tobacco	152.4	645.7	658.6	569.7	556.7	578.3
Housing	154.5	533.1	597.9	604.9	601.7	630.5
Household Energy	131.1	173.3	440.7	588.6	611.5	623.8
Furniture, Household Equipment	152.7	596.9	506.2	477.5	459.8	470.6
Clothing, Footwear & Toiletries	143.6	558.4	507.9	478.7	477.3	488.7
Hygiene & Health Care	140.4	605.1	622.9	599.5	615.8	634.9
Education & Recreation	140.0	326.2	328.9	395.5	431.6	454.4
Transport & Communication	136.1	348.3	550.5	530.2	538.8	548.5
Others	131.1	271.0	342.7	568.4	685.2	752.2
All Commodities	143.5	491.9	552.3	548.4	579.4	584.2
Monthly Inflation Rate	43.5%	242.8%	12.3%	-0.7%	5.7%	0.8%
Quarterly Inflation Rate	452.3%			5.78%		

Source: National Statistical Institute

The rapid acceleration of inflation can be explained by at least three factors: i) the supply-side effects of shortages and strikes (cost-push inflation); ii) the speculative behavior of retailers and wholesalers; and iii) the loss of confidence in, and depreciation of the Lev.

The index of industrial production fell by over 35 percent in February. The repeated strikes and road blockades, in late January, also helped create shortages of basic commodities such as food and gasoline, as reported in the Press. In the absence of more precise information, however, it is difficult to assess, the extent to which these shortages led to significant price increases.

The Bulgarian central bank has reported instances where announcements of future hikes in energy prices caused immediate increases in retail and wholesale prices, and precipitated a surge in general inflation.[154] In the same spirit, the anticipation of a future depreciation of the Lev, given the low level of foreign

[154] As discussed in Section 3.1.3

exchange reserves, the well-publicized collapse of the banking system, and the political crisis, might have pushed retailers and wholesalers to increase their prices, for no other reason (historically, large exchange rate adjustments had been associated with large price movements). The resulting acceleration of inflation might have encouraged residents to exchange domestic for foreign currency, precipitating the collapse of the exchange rate, in a sort of self-fulfilling way. This explanation, however, fails to recognize that the general public probably had the same expectations as wholesalers and retailers, trying to "flee for quality" (shifting from Lev to foreign currency holding) even prior to the posting of retailers' inflated prices. All in all, the speculative behavior of retailers and wholesalers *by itself* probably had a limited impact on the overall price level.

The relationship between exchange rate movements and the price level is complex, particularly so in crisis situations. All models of currency crisis assume $P = E$, where P is the price level and E the exchange rate.[155] This approximation is probably valid for Bulgaria although i) the economy went through periods when the exchange rate was relatively stable, not the price level; and ii) overall, the exchange rate experienced much more dramatic variations than the price level (with periods of relative calm followed by large realignments, partly as a consequence of BNB's interventions in the foreign exchange market). Table 13, below, illustrates the relationship between exchange rate and consumer price movements between January 1996 and March 1997. Through most of the crisis, changes in the consumer price index lagged behind changes in the exchange rate, except between August and October 1996, and in February 1997.

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[155] More precisely, $P=E.P^*$ (purchasing power parity), with $P^*=1$

Table 14: Exchange Rate and Price Movements through the Crisis

	Exchange Rate (End-of-Month)		Exchange Rate (Average)		Consumer Price Monthly Chain Index	
Jan-96	73.9	4%	72.5	3%	102.3	2%
Feb-96	76.1	3%	74.6	3%	101.9	2%
Mar-96	78.8	4%	77.9	4%	101.7	2%
Apr-96	89.4	13%	81.5	5%	102.9	3%
May-96	147.0	64%	119.5	47%	112.5	12%
Jun-96	155.5	6%	143.1	20%	120.2	20%
Jul-96	187.1	20%	180.1	26%	123.3	23%
Aug-96	202.0	8%	191.8	6%	117.1	17%
Sep-96	230.0	14%	224.6	17%	118.8	19%
Oct-96	239.6	4%	224.3	0%	116.7	17%
Nov-96	349.9	46%	283.4	26%	109.7	10%
Dec-96	487.4	39%	461.2	63%	126.9	27%
Jan-97	1,021.9	110%	698.7	51%	143.5	44%
Feb-97	2,045.5	100%	2,387.2	242%	342.7	243%
Mar-97	1,588.7	-22%	1,660.1	-30%	112.3	12%
Whole Period	**N/A**	**2,147%**	**N/A**	**2,189%**	**N/A**	**2,119%**

Source: BNB Annual Reports, Exchange rate in BGL per $

Exchange rate movements were relatively subdued between August and October 1996, possibly as a result of actual and future expected foreign financing, and a return of confidence associated with the policy package of September. Price setters did not respond to these policy changes in the same way, probably reflecting the inertia in price setting. The near equality of the inflation rate (243 percent) and depreciation rate (242 percent) of February 1997 is striking. During the first two weeks of February, as prices and the exchange rate were moving rapidly, both sellers and buyers of domestic goods most likely used the exchange rate as a yardstick for adjusting their (reservation) prices.[156] In addition, a number of goods and services were priced directly in dollars at that time.

[156] In February 1997, retailers reportedly adjusted their prices to changes in the exchange rate *throughout the day*.

An immediate question comes to mind when dealing with hyperinflation (or near-hyperinflation, as in the present case): was the short period of hyperinflation truly "explosive," or was it the mere consequence of repeated monetary injections? Alternatively, was it entirely driven by speculation in the foreign exchange market, and a continued flight from the Lev?[157] As explained by Patinkin, *"most hyperinflation episodes have been marked by continuously increasing injections of new money (...) Individuals may anticipate further price increases but in the absence of adequate real money they just do not have the means by which they can indefinitely increase their demands in accordance with their expectations"* (page 311). Given Patinkin's argument, what happens when the acceleration of inflation is combined with a run on banks? Note that the run on banks can certainly explain part of the flight away from (domestic) money, namely bank deposits, but it cannot account for a sustained flight from (domestic) cash.

3.5 Stabilization and the Currency Board

Most hyperinflation episodes end with a political change. Bulgaria was no exception. As explained earlier, the tensions in the foreign exchange market subsided rapidly after the appointment of the caretaker cabinet, and the announcement of parliamentary elections, in mid-February. Similarly, the monthly inflation rate fell abruptly in the second quarter of 1997, as evidenced by data provided in the previous sections.

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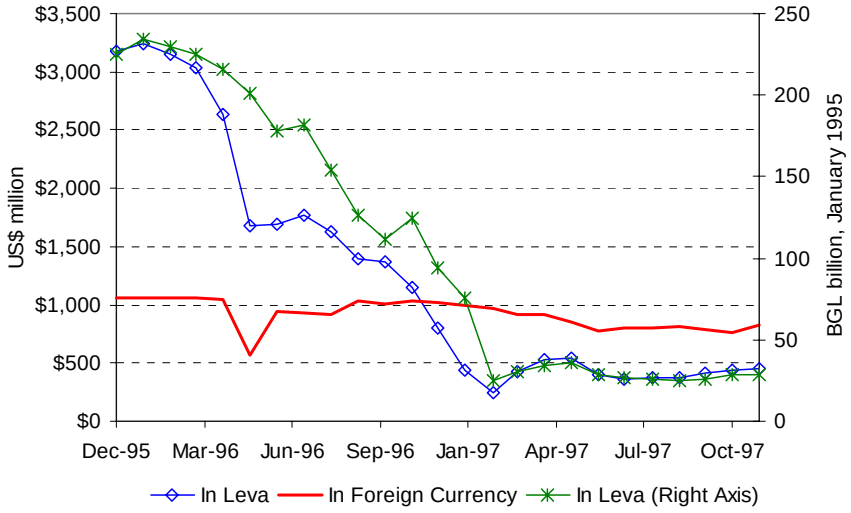
[157] According to econometric analysis reported by the BNB, over the period January 1993-May 1997, inflation had a propensity to auto-subside, within roughly a month.

The stabilization of the economy was also greatly facilitated by the short hyperinflation episode of early 1997 (and the large price increases of late 1996). The burst of inflation considerably reduced the real value of outstanding domestic debt, as shown in the chart below (right axis). The accompanying depreciation of the Lev also shrank the *dollar* value of *domestic* currency denominated debt. [158]

Figure 23: Real Value of Government Domestic Debt



With most of the domestic debt inflated away, the government's need to recourse to money printing shrank, and inflationary pressures receded. To understand why, consider the financial constraint of the consolidated government (government plus central bank):

$$\dot{B} + \dot{M} = G + i.B$$

[158] The description of the currency board presented in this section borrows from Gulde (1999).

Where G is the primary budget deficit, B the net [159] stock of domestic debt in nominal terms, and i, the nominal interest rate on government securities. Note that while G may grow with general inflation, B, as a stock, remains constant in nominal terms, and falls in real terms, with general inflation. Rearranging, with price level P, and assuming $\dot{B} = 0$ (because of banking sector difficulties):

$$\dot{M} = P.g + i.B$$

$$\dot{M} / P = g + i.B / P$$

Where $\dot{M} / P$ represents the government's seignorage earnings; assuming no primary deficit ($g = 0$):

$$\dot{M} / P = i.B / P$$

The decline in the real value of domestic debt due to inflation is conceptually equivalent to a reduction in government's real purchase of goods and services, reducing the need for seignorage earnings.[160]

The boost of inflation also helped improve the state of the banking system. It devalued commercial banks' domestic-currency-denominated liabilities, while the *real* value of their dollar-denominated bonds was preserved by the concomitant depreciation of the Lev. In other words, it is the mere holding of dollar denominated assets that made most banks profitable after February.[161] The chart below illustrates the relative change in the dollar value of commercial banks' liabilities, and assets

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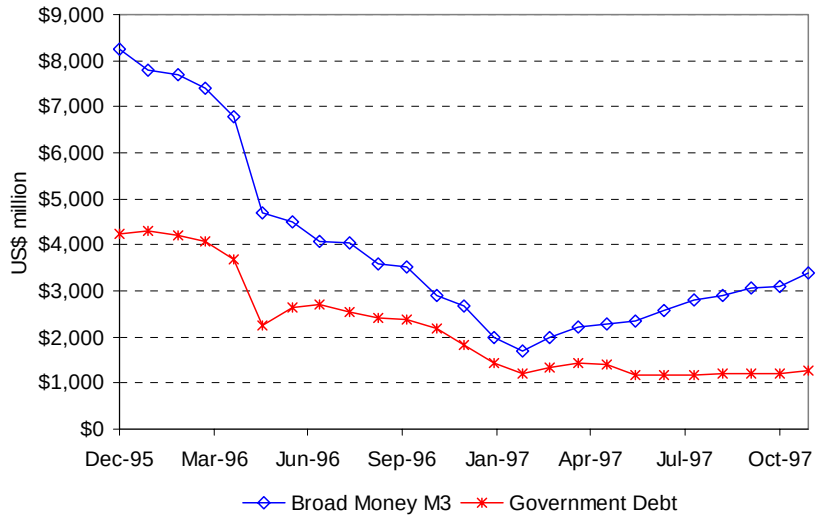
[159] Excluding government bonds held by the central bank

[160] Hyperinflation was probably the most efficient way to "distribute" (and eliminate) the large losses inherited from the pre-reform era, and carried over as enterprise, banks and eventually, public debt.

[161] By the end of 1996 (even prior to the collapse of January-February 1997), net revenue from valuation adjustments for the entire banking system amounted to BGL 545 billion, resulting in a net profit of BGL 157 billion in December!

(limited here to the holding of government debt) from December 1995 through December 1997.

Figure 24: Hyperinflation and Commercial Banks Balance Sheets



The return to calm was also greatly facilitated by the announcement, and the later introduction by law, of a new monetary regime.[162] By eliminating the possibility of inflationary finance, the currency board acted, in particular, as a signal that the Bulgarian government would follow a strict anti-inflationary policy, helping restore the confidence in the domestic currency and the economy.

Under a currency board, the entire stock of monetary liabilities must be backed by foreign exchange (and gold) reserves. At any time, residents have the

[162] Discussions with the IMF about the possible introduction of a currency board started in November 1996; the fixed exchange rate level (BGL 1000 for DM 1) was announced on June 5, 1997; the currency board was implemented on July 1, 1997.

ability to exchange domestic money for a major foreign currency, at a fixed rate.[163] Under an *orthodox* currency board, there is no growth in monetary base besides that originating from an inflow of international reserves; i.e., the central bank commits to *zero* domestic credit expansion.

Bulgaria's currency board has been described as a "second-generation currency board," allowing for more (some) monetary discretion, and preserving central banks' lender of last resort function. It led to a reorganization of the BNB into two separate departments:[164] the Issue Department, holding BNB's monetary liabilities and assets in foreign exchange and gold; and the Banking Department, holding excess coverage (foreign exchange in excess of the foreign currency value of BNB's monetary liabilities), to be used as collateralized loans to the banking system in case of acute liquidity crisis.[165]

The law on the currency board came with a series of structural reforms and measures designed to help stabilize the economy and facilitate the transition to the new regime. To improve confidence in the banking system, the BNB authorized a $300 million rescue package (available through the Banking Department), and took measures to strengthen liquidity regulations and improve the supervision of commercial banks. To limit the destabilizing effects of government deficit financing (real payments on domestic debt, though considerably reduced by hyperinflation, were still sizeable) and help restore the credibility of the government, the new BNB law

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[163] Automatic convertibility eliminates, in particular, the "position-in-the-queue" problem highlighted by Goldfajn and Valdés (1997).

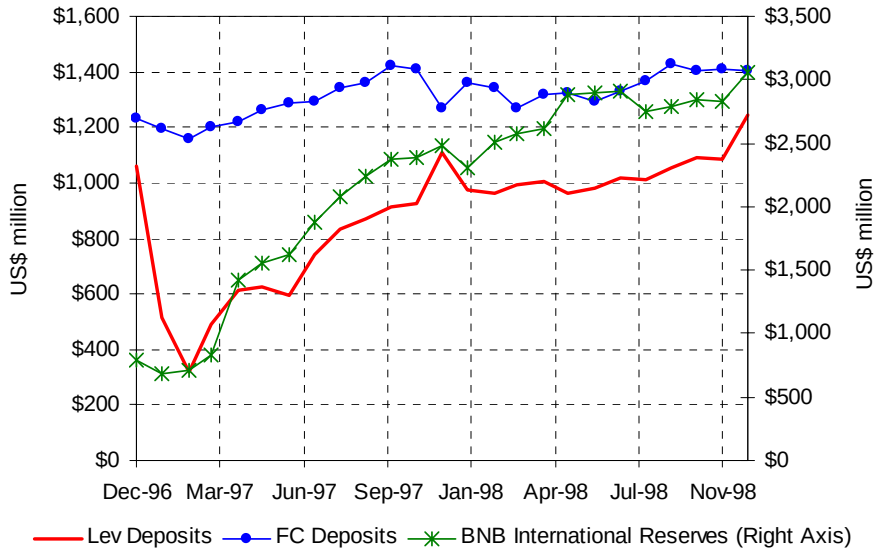
[164] Following the "Bank of England Model," see Gulde (1999) page 10

[165] For more details on the structure and functioning of Bulgaria's currency board, see Gulde (1999) or Berlemann, Hristov and Nenovsky (2002)

also allowed for the temporary use of IMF funds to help finance the budget and provided for the creation of a Fiscal Reserve Account, where funds available to the government (and their balance in foreign exchange) could be seen at all times.

The implementation of the currency board, and the broader stabilization program adopted by the government, were remarkably successful in restoring the confidence in the Lev and the economy. They led to large capital inflows (residents' capital inflows and capital inflows from abroad), to a rapid repletion of BNB's foreign exchange reserves (see chart below), and to a spectacular reduction in inflation (stabilizing below 1 percent per month by the end of 1998). The currency board also allowed a dramatic reduction in nominal interest rates (the annual basic interest rate of the BNB fell below 6 percent in late 1997), allowing for a further relief on government budget financing.

Figure 25: Stabilization, Real Money Holding and BNB Reserves



3.6 Conclusions

Developments in the banking sector, the foreign exchange market, and the market for government debt led Bulgarian households to the conclusion that the Socialist government would not be able to satisfy immediate and future domestic payment obligations without a massive recourse to the printing press. In our view, it is the rapid deterioration of the financial position of the government (resulting primarily from the banking crisis) that led to the collapse of the economy in early 1997.

Through 1996, developments in the foreign exchange market and the banking sector were largely intertwined, with drops in foreign exchange reserves associated with intensified deposit outflows. Some of the most severe deposit runs occurred in May 1996, precisely when the foreign exchange reserves of the BNB hit the psychological $600 - $700 million threshold. Renewed pressures on commercial banks appeared after July 1996, when large foreign debt payments were due, and when foreign exchange reserves fell below $500 million, for the first time since the inception of market reforms in 1991. This association suggests that the level of foreign exchange reserves was important in the formation of Bulgarians' expectations regarding the ability of the government to act as Lender of Last Resort in the banking crisis,[166] and to fend-off potential speculative attacks against the Lev. The causality, as suggested in this chapter, may also run in the opposite direction, with withdrawn domestic currency deposits being converted into foreign cash to hedge against accelerating inflation (precisely when foreign exchange reserves approached the critical mark), precipitating the fall of reserves.

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[166] As suggested by Sachs (1998) or Berlemann, Hristov and Nenovsky (2002)

All in all, variations in foreign exchange reserves were a key factor in the timing and magnitude of the crisis. This does not imply, however, that the crisis originated in the foreign exchange market. As explained in this chapter, we believe that the crisis originated in the banking sector, and rapidly spread into the foreign exchange market and the market for government debt. In particular, contrary to the March 1994 currency crash when foreign currency deposits grew through most of the crisis, both domestic and foreign currency deposits were being withdrawn in the spring of 1996. The concomitant reduction of both domestic and foreign currency deposits indicates that depository institutions were the primary source of concerns, at least initially. This is consistent with news reports and statistics on the emergence and spreading of the bank runs, first concentrated on the most vulnerable institutions, or those thought to be so. If the crisis had originated in the foreign exchange market and if bank deposits had been withdrawn primarily for running on the Lev then, early on, all depository institutions would have suffered deposit losses (including, say, the State Saving Bank, which experienced deposit losses only late in the crisis).

The *core* of the banking crisis was brought to an end in November 1996, after the closure of nine of the weakest banks in September, and few sporadic runs in October. At that time, there were no insolvent banks left in the system (confidence in depository institutions, though, had been considerably shaken). Official interventions came to an end in December: remaining banks were left on their own to restructure and stabilize. As discussed in Section 3.5, the banking sector ended 1996 with an overall profit of over BGL 150 billion (due largely to exchange rate valuations).

The banking sector was stabilized (i.e., purged of its most vulnerable elements) in late 1996. The foreign exchange reserves of the BNB had been

stagnating between $500 and $600 million since May 1996,[167] thus bringing an end to possible BNB interventions and Bulgaria's managed exchange rate regime. Yet, the most dramatic depreciation of the Lev was yet to come. Why?

As documented in this chapter, the banking crisis had spread over into the government debt market in mid-1996, through three principal channels: i) a severe reduction in domestic currency deposits ("money demand") and liquidity available to commercial banks for investing in government bonds; ii) commercial banks' increased preference for cash, to avoid future liquidity shortages; and iii) a dramatic increase in the supply of bonds associated with the fiscalization of deposit insurance costs (bonds for the state protection of deposits), and increasing interest payments on outstanding debt (bonds for deficit financing). Towards year-end, the mounting fiscal crisis led the central bank to purchase large quantities of bonds in the open market and, eventually, to grant direct credits to the government budget. We further hypothesized that most of the excess (and inflationary) money creation occurring at that time took place through the large interest payments made on outstanding debt with commercial banks, and eventually bank deposits.

The rapid growth in monetary aggregates and acceleration of inflation led to a flight for quality, further pressures in the foreign exchange market, and possibly, expectations that the government would have to inflate its growing domestic debt away. The political stalemate, strikes, demonstrations and violence of early 1997 (through January and in the first week of February) further eroded Bulgarians'

[167] The impact of foreign debt payments was partly offset by loans from the IMF and the European Community, respectively in July and August 1996.

confidence in the Lev and the government, and brought the country on the verge of hyperinflation.

Note that overall, the principal link between the banking crisis and the currency crash (i.e., the rapid depreciation of early 1997) is indirect: most of the costs of the banking crisis were fiscalized in a first step, buying few months; the mounting domestic debt became unsustainable in a crisis environment (with considerable political uncertainty, fragile depository institutions, and limited foreign – IMF – support), leading to a rapid deterioration of expectations, an acceleration of money printing, and a burst of inflation and depreciation.