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Building Monetary Credibility in a Transforming Economy

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Abstract

This paper uses unique survey data from Bulgaria, a transition economy with a currency board, to examine the following questions: 1) what is the level of confidence in the currency board over various time horizons, 2) how cognizant is the population of the restrictions a currency board imposes on monetary policy, and 3) whether those restrictions enhance agents' confidence in sustained financial stability. The results show that eliminating monetary policy enhances short-term credibility but does not have a significant effect of long-term credibility. Backing the local currency with foreign exchange reserves enhances both short-term and long-term credibility. However, the credibility-enhancing effect of the currency board is restricted to a group of agents who are more directly involved in the economy. The expectations of the remaining large majority of the population are based on political attitudes and various life experiences.

EL Classification: E63; O11
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Building Monetary Credibility in a Transforming Economy

1. Introduction

Programs designed to achieve financial stability in developing countries usually introduce mechanisms that constrain the range of behavior of policymakers. That is not surprising given that financial crises can often be traced to large budget deficits and rapid money growth.[1] Therefore, restricting discretionary control over money supply is thought to generate expectations of sustained financial stability.

There are several reasons why this effect may not attain. First, fiscal deficits financed by money creation may be a symptom of deeper structural problems that contribute to large spending needs and low tax revenues. If that is the case, restricting monetary policy alone would have only a short-term credibility effect as agents recognize that the root causes of high inflation lay somewhere else. That perception may be reinforced by repeated failed stabilization attempts in the past giving grounds for what Calvo (1986) calls expectations for "temporary stabilization". Second, eliminating monetary policy along with fixing the exchange rate may lead to greater output volatility, as the output stabilization options of the government are restricted. If output volatility becomes excessive, the regime will be abandoned. Therefore, as Drazen and Masson (1994) and Obstfeld (1997) point out, tough inflation policies, while restricting money growth and providing for low inflation in the short-term, may leave unchanged or even increase concerns about long-term sustainability in the face of future negative shocks. Third, as a practical matter, it is not clear how significant is the proportion of agents who recognize that the monetary regime restricts monetary discretion and whose expectations are affected by the policy. That is particularly valid in countries with underdeveloped financial markets and only a brief history of market institutions.

Clearly, the credibility consequences of restricting monetary discretion depend on the particular circumstances in a country. The context in which I examine that question is Bulgaria, a transition economy in Southeast Europe. The paper uses unique data obtained from two national consumer surveys conducted in 2000 and 2001, a few years after

[1] Exchange-rate-based stabilization programs are discussed, among others, by Bruno (1993), Calvo and Vegh (1994), Calvo (1986), Fischer (1986), and Sargent (1982).

Bulgaria adopted a currency board. The surveys include questions on the credibility of the currency board as well as questions on agents' perceptions of its operation. The surveys make it possible to answer the following broad questions: 1) what is the level of confidence in the currency board, 2) how cognizant is the population of the restrictions a currency board imposes on monetary policy, 3) whether or not those restrictions enhance agents' confidence in financial stability over various forecast horizons, and 4) are there differences in the effect of policy on expectations among different groups.

The data reveal that confidence in the currency board is not complete. There is a substantial number of agents who expect the currency board to collapse with a large devaluation. Political uncertainty before elections contribute significantly to those expectations although resolving that uncertainty does not produce full credibility.

Restricting monetary discretion enhances short-term credibility but does not have a significant effect of long-term credibility. Backing the local currency with foreign exchange reserves enhances both short-term and long-term credibility. Removing the lender-of-last-resort facilities under the currency board reduces long-term credibility.

There is an interesting heterogeneity among agents regarding these effects. The currency board policies have a credibility enhancing effect for a select group of agents who have greater direct involvement in the economy. For the remaining large majority of the population, expectations are formed primarily on the basis of political attitudes and various life experiences.[2]

The survey data are useful here because, with underdeveloped financial markets, the menu of interest rate data that could be used to measure expectations is very limited, particularly over longer time horizons. The surveys make it possible to observe expectations directly and to differentiate between short and long run effects. In addition, the survey data reveal various demographic and political effects.

The paper proceeds as follows. After presenting the survey questions in the next section, section 3 offers a background on the Bulgarian economy. Sections 4 and 5 present empirical results. The paper concludes with final remarks in section 6.

[2] Carlson and Valev (2001) show similar heterogeneity at the introduction of the Bulgarian currency board. The inflation expectations of more informed were reduced by the impeding change in the monetary regime to a larger extent compared to less informed agents.

2. Data.

The data used in this paper come from two national surveys conducted by a national polling organization in August 2000 and October 2001. The number of respondents, 1000 consumers, and the demographic structure of the sample are considered representative for the country. The surveys were done by personal interviews.

The surveys asked what was the likelihood that the currency board would collapse and that there would be a sharp devaluation of the local currency in the next 6 months, 12 months, and 5 years? Respondents could choose an answer ranging from "very big" to "none" (zero probability of devaluation) or choose to provide no answer. That question, along with demographics, reveals the level of confidence in the currency board in the short and long run, the evolution of credibility between 2000 and 2001, and differences in credibility among social groups.

The surveys also asked whether respondents strongly agreed, agreed, disagreed or strongly disagreed with each of the following four statements:

Statement 1: Under the currency board, the authorities cannot issue currency at their discretion.

Statement 2: Under the currency board, the executive branch of the government cannot borrow funds from the central bank.

Statement 3: Under the currency board, the leva (domestic currency) in circulation have full coverage by the foreign exchange reserves of the central banks.

Statement 4: Under the currency board, commercial banks cannot receive financing from the central bank.

Agents could also choose to say that they cannot provide an opinion.

An orthodox currency board is a fixed exchange rate regime that operates like a gold standard regime.[3] The authorities forego discretionary control over money supply and replace it with an automatic mechanism that links money supply changes to the balance of payments. The amount of foreign exchange reserves that the currency board stands ready to exchange for domestic money is sufficient to cover the monetary base. The currency board has no responsibilities to finance the budget or to provide liquidity to

[3] Schwartz (1993), Williamson (1995), Kopcke (1999), and Ghosh, Gulde, Schmukler and Serven (2001), and Wolf (1998) discuss the operation and history of currency boards.

commercial banks. In other words, with an orthodox currency board, all four statements presented in the previous section are correct.[4]

The answers regarding the four statements show the extent to which agents recognize the features of the currency board, whether the level of understanding increases over time, and, finally, whether or not those agents who are familiar with the limitations imposed by the currency board have greater confidence in financial stability.

A final question asked respondents how closely they monitor economic developments in Bulgaria. They could answer that they do not monitor economic development, that they monitor developments but only out of general curiosity, that they monitor economic development closely because their job requires it or that they monitor developments closely because of a private interest.

That question allows me to separate agents into two groups, which, for conciseness, from here on I refer to as the group of "managers" and the group of "workers". In the group of "managers" are those who closely monitor economic developments either because of a job requirement or because of a private interest. These are 25 percent of all agents in the 2001 sample and 23 percent of all agents in the 2000 sample. The distinction is necessary because by virtue of their jobs or other private interests, the group of "managers" consists of decision makers whose direct economic impact may be larger compared to the group of "workers". I should point out however, that the group of "managers" is not necessarily a group of "experts". As later sections show, while the percent of informed agents is greater in the group of "managers", in both groups ("managers" and "workers") there are agents who have knowledge about the currency board and agents who do not.

[4] It is important to point out that like most other currency boards in practice, the Bulgarian currency board does not have an orthodox design. Its balance sheet is part of a larger balance sheet which contains various items such as a large deposit by the government and a lender of last resort facility. Through these items the central bank and the government have the ability to influence money supply, which technically makes statements 1 and 4 incorrect. However, no attempts were made to influence money supply and no liquidity was provided to commercial banks in the first years of the currency board. The design and operation of the Bulgarian currency board are discussed in detail in Nenovski and Hristov (2000), Miller (1999), and Gulde (1999). For the balance sheet of the currency board, see Bulgarian National Bank, various years. Kwan, Lui, and Cheng (2000) offer interesting evidence on the credibility of the Hong Kong currency board as it has undergone substantial design changes over the years. The conclusion is that the regime was more credible when its design was more orthodox, i.e. when it allowed less discretion. However, the multiple influences on the Hong Kong economy, particularly in the late 1990's make the results somewhat inconclusive.

3. The Bulgarian currency board

Bulgaria introduced a currency board on July 1st 1997 after a severe financial crisis late in 1996 and in the first half of 1997. The crisis lead to a large-scale civil unrest and early parliamentary elections. The currency board was one of the first policies of the new government. Inflation declined very rapidly and within 3-4 months of introducing the currency board was in single digits. As Table 1 shows it has remained low since then.

As many other economies in the former Eastern bloc, Bulgaria was plagued by large spending needs and a significant drop in revenues. Many loss making state-owned enterprises operated on a soft budget constraint leading to continued drain of tax money while the tax base was shrinking and tax evasion was widespread. Stop-and-go privatization policies implemented by frequently changing governments had left Bulgaria one of the laggards in the transition process. Not surprisingly, a policy of tight money and financial stability was difficult to maintain in that environment. Table 1 reveals that until the introduction of the currency board, the government ran large budget deficits (as large as 12.7 percent of GDP in 1996, the year when the crisis erupted), which were generally monetized. Inflation was high and volatile throughout the transition period since 1989.

Budget deficits declined substantially following the introduction of the currency board. That was attributed partly to improved tax collection, accelerated privatization, which generated privatization receipts, and to the hyperinflation episode early in 1997, which wiped out much of the domestic debt of the government. In 1996, interest payments on domestic debt had reached 17 percent of GDP. Two years later, in 1998, they were 1.2 percent of GDP. [5]

Because of those factors, at the time of the surveys, the fiscal position of the government appeared sound. The medium to long-term risks for the budget derived from the end of privatization in the near future and the increasing needs for financing social security, public health, and unemployment benefits programs with an aging population and increasing unemployment. Adding to the problem was the large foreign debt and the fact that, while the currency board is in place, any stimulus to the economy could come

[5] For a discussion of the crises that lead to the introduction of the currency board in Bulgaria, see Balyozov (1999) and Gulde (1999).

only in the form of a fiscal package. Therefore, the medium to long run budget situation could deteriorate unless the economy starts growing rapidly and begins generating tax revenue.

By 1997, it was understood that financial stability is impossible in the long run unless significant reforms that produce robust economic growth took place. It was also understood that the reforms could be painful. The government, which came to power in 1997 and introduced the currency board, was given broad public mandate to implement such reforms. Privatization accelerated and some enterprises were closed down. Evidence for that was the sharp increase in the revenue from privatization around 1997 and 1998 (Table 1) and the increase in the share of the private sector from 45 percent of GDP in 1996 to 70 percent of GDP in 2000.

With privatization and restructuring, unemployment started to increase rapidly and by summer 2000 reached 18 percent. Meanwhile, real incomes of the employed had stagnated. The regional distribution of unemployment was also uneven with some small towns reaching 80 percent unemployment. Those factors contributed to a gloomy perception of the state of the economy and to a belief that the reforms had generated only costs without the promised benefit. At this point it is difficult to judge whether or not this belief is correct but it's widespread appeal became evident when the government that implemented the reforms lost the parliamentary elections in summer 2001 by a very wide margin.[6]

Some of the discontent was directed towards the currency board as the high level of unemployment gave grounds for calls for more flexible policy such as easing credit, lower taxes or increased government spending. Those are difficult to implement while keeping the currency board and maintaining fiscal balance. A view surfaced that there is a tradeoff between the currency board on one hand, and tax cuts, government investment spending, job creation, and growth on the other. The position of the government (both the government that introduced the currency board and the one that replaced it in 2001),

[6]This view was shared by an IMF report in March 2001, which concluded that "Despite the remarkable turnaround since 1997, conditions for self-sustained growth appear not fully to be in place. Aggregate demand growth in recent years has been driven primarily by the rebound from the 1996-97 crisis" (International Monetary Fund, 2001, page 5). Enterprise restructuring, better firm governance, greater transparency, less corruption, and more efficient privatization policies were some of the reforms still needed to improve the business climate in the country.

shared and publicly supported by the IMF, was that the currency board was a policy necessary *for* growth.

The political pressure to do something about unemployment may have created concerns that the government would engage in activist policy in the last months before elections in June 2001. There were in fact government proposals for increasing the rate of growth of "broad money" as well as various promises for lowering taxes and increasing spending. In addition, while the public discontent with the party in office was strong the political opposition was very fragmented which created uncertainty about who would be in power after the elections and what would be their intentions. As it happened the new government was formed by a political organization that did not even exist 5 months before elections. Uncertainty about those factors may have heightened expectations of financial instability in the survey of 2000, which was done 10 months before elections. For the most part, the new government continued the policies of the previous one with a strong commitment to the currency board. The reduction in political uncertainty may show in the 2001 survey, which was done three months after elections.

Another factor that may raise concerns about financial stability is the growing current account deficit. By 2001, the current account deficit stood at 6.5 percent of GDP. Despite that, the foreign exchange reserves of the central bank increased as the current account deficit was financed by large Foreign Direct Investment (FDI) inflows. FDI in Bulgaria however is tied primarily to privatization, which will be completed within the next few years. That promises to create a potentially dangerous situation for external balances unless exports grow and green-field FDI increase. Access to large volumes of fresh debt financing is difficult because of the large foreign debt, which stands at about 100 percent of GDP.

The next development with the monetary regime is to occur when Bulgaria joins the euro zone. The stated goal of the government is for Bulgaria to join the European Union by 2007. There is no explicit time-table for joining the euro zone, which is the next step after joining the European Union. Bulgaria is generally perceived as being far from satisfying the criteria required for obtaining a seat at the European Central Bank.

As the questions in the surveys ask about how the currency board works, it is important to note that the monetary regime occupies a fairly substantial part of the

coverage of economic news by the media. There are regular articles about developments in the external sector, changes in money supply, and the fiscal implications of a currency board. Articles about other countries with currency boards such as Argentina, Estonia, and Hong Kong are also available. The Bulgarian National Bank maintains a rich web site that publishes regular reports on monetary and other activity. Thus information about the regime was available. However, the views expressed in the media about the benefits from the currency board and economic policy in general are very polarized along political lines.

Based on the developments in Bulgaria, what hypothesis can one make about the credibility consequences of restricting monetary policy under the currency board? The inflation history in the country until the currency board indicates that the monetary authorities did not enjoy independence in their pursuit of internal and external stability of the domestic currency as prescribed by the legislature. Money creation was repeatedly used to address fiscal problems. Therefore, eliminating discretionary control over money supply appears necessary for financial stability. However, it is clear that financial instability in Bulgaria derives form serious structural problems such as inefficient enterprises and governance, corruption, lack of transparency, and an ad hoc approach to privatization. While some progress has been made, at the time of the surveys it was not evident that the improvements have taken hold. Therefore longer-term concerns about the currency board may be present.

4. Beliefs about the currency board

Table 2a reports respondents' views on the validity of the four statements regarding currency board operations in 2000 and 2001. The results show that agents' beliefs were similar in the two years, which suggests that learning about the operation of the currency board has reached a plateau. As time passes further enhancement in understanding may be smaller.

It appears that a fairly large proportion of agents understood the general implication of a currency board, i.e. that monetary discretion is not possible. In 2001, thirty four percent of the respondents could not offer an opinion on Statement 1. Of those who did, a large majority, 83 percent (81 in 2000), either agreed or strongly agreed that

discretionary money creation is impossible under the currency board. In fact, many agents strongly agreed with that claim.

A bigger percentage, approximately half of the respondents could not provide an opinion on Statements 2, 3, and 4. That is not surprising given that these statements refer to more specific technical features of the currency board. Of the agents that gave an opinion, 72 percent (69 in 2000) either agreed or strongly agreed that the executive branch cannot borrow funds from the central bank (Statement 2). Seventy nine percent (65 in 200) of the agents who gave an answer either agreed or strongly agreed that the domestic currency has full coverage with foreign exchange reserves at the central bank (Statement 3). Seventy-one percent (65 in 2000) of the ones that gave an opinion either agreed or strongly agreed that the central bank cannot provide liquidity to commercial banks (Statement 4).[7]

Table 2b reports the beliefs about the currency board for two groups of agents defined in section 2 – the group of "managers" and the group of "workers". There are differences between the two groups. The "managers" are more likely to give an opinion and to venture a "strongly agree" answer. It is interesting to note however that 1) there are many agents in the group of "managers" who cannot provide an opinion about the currency board,[8] 2) while present, differences between the two groups are not very large, and 3) a relatively small number of agents in both groups gave an "incorrect" answer of disagree or strongly disagree. It appears that agents with less information are more likely to not provide an opinion or to provide a less confident opinion ("agree") but not necessarily a "wrong" opinion (disagree or strongly disagree). Thus lack of information does not lead to a dispersion of opinions as much as to absence of such.

[7] It is interesting to note that most agents in Bulgaria perceive their currency board as an orthodox one even though technically, as section 3 explains, statements 1 and 4 are incorrect. That suggests that the actual operation of the currency board rather than its institutional design has shaped perceptions.

[8] Within the group of "managers" the beliefs of those who monitor economic developments because of a job requirement are very similar to the beliefs of those who do so because of a private interest.

5. Credibility of the Bulgarian currency board

Table 3a report agents' expectations of the currency board collapsing with a large devaluation from the two surveys in 2000 and 2001. Table 3b reports expectations for the group of "managers" and the group of "workers". There are several interesting observations.

First, it is clear that confidence in the currency board is not complete. In both years the proportion of agents who believed that the probability of a large devaluation is zero was fairly small (thirty percent or less over all time horizons) and the proportion of agents who though that the probability of devaluation is big or very big is not negligible. As the forecast horizon lengthens, confidence in the currency board decreases.

Second, confidence in the currency board was greater in 2001 compared to 2000 suggesting that the political uncertainty around election time contributed to heightened expectations of devaluation. Both short and long-term confidence increased in 2001 although the increase in short-term confidence was greater than the increase in long-term confidence. For example, the percent of agents who though that the probability of the currency board collapsing in the next six months is big or very big declined by 16.1 percentage points (from 31.3 percent in 2000 to 15.2 in 2001). With a five-year horizon, the decline was smaller, 9.3 percentage points (from 39.0 in 2000 to 29.7 in 2001). Greater short-term credibility did not translate fully into greater long-term credibility.

Table 3b shows that the expectations of the two groups of agents defined earlier – "managers" and "workers" are not largely different although in 2000 the group of "managers" had somewhat greater expectations of devaluation than the group of "workers". Both groups exhibit an increase in confidence between 2000 and 2001 with one interesting difference. The increase in confidence for "managers" has similar size for short and long-term expectations. The percent of "managers" who expected devaluation in six months decreased by 21.3 percentage points (35.9-14.6), which is similar to the 19 percentage point decrease (44.4-25.4) with a five year horizon. The percent of "workers" who expected devaluation in six months decreased by 14.3 percentage points (29.7-15.4) which is greater than the 6.2 percentage point decrease (37.2-31.0) decrease with a five year horizon. If one can visualize the relationship between the length of the forecast horizon and expected devaluation as an upward-sloping line, for "managers" the increase

in credibility between 2000 and 2001 was more like a decrease in the intercept while for "workers" it was a decrease in the intercept along with an increase in the slope.

6. The credibility effect of beliefs about the currency board

How do differences in beliefs about the currency board map into differences in expectations among agents? To examine that question, I created two variables: S_i_Agree (SA_i) equal to one if a respondent strongly agreed with Statement i where $i = 1, 2, 3, 4$ and zero otherwise, and the variable $S_i\_Disagree$ (SD_i) equal to one if a respondent strongly disagreed with Statement i, zero otherwise.[9] These two variables were used to explain agents' confidence in the currency board using an ordered probit procedure. The dependent variable *Expected Devaluation* (*ED*) is ordered from 0 to 4 taking a value 0 if an agent thinks that the probability of devaluation is zero and a value 4 if she/he thinks the probability of devaluation is very large.

Also included in the equation is agent's age measured by a variable *Age* equal to 1 if a respondent is less than 23 years of age, zero otherwise. The definition of the variable intends to capture those agents who have spent their post-high school life under the currency board.[10] The equation also controls for agents' gender (*Female* (*F*) equal to 1 if a respondent is a female, zero otherwise) and political attitudes measured by a variable *Vote* (*V*) equal to 1 if a respondent voted for the party that won the last elections.

The ordered probit procedure assigns a value v to each observation:

(1) $$v = b_1 SA_i + b_2 SD_i + b_3 Age + b_4 F + b_5 V$$

Let u be a standard normal variable. Define the probabilities:

(2) $$\Pr[ED = 0 \mid SA_i, SD_i, Age, F, V] = \Pr(v + u < k_1) = \Pr(u < k_1 - v)$$

(3) $$\Pr[ED = j \mid SA_i, SD_i, Age, F, V] = \Pr(k_j < v + u < k_{j+1}) = \Pr(k_j - v < u < k_{j+1} - v), \quad \text{for } j = 1,2,3$$

(4) $$\Pr[ED = 4 \mid SA_i, SD_i, Age, F, V] = \Pr(k_4 < v + u) = \Pr(k_4 - v < u)$$

The maximum likelihood estimates of the b coefficients show the effect of the explanatory variables on expectations and can be used, along with the "cut-point"

[9] All estimations were also performed using a second set of variables: S_i_agree if a respondent answered agree or strongly agree and S_i_disagree if a respondent answered disagree or strongly disagree. The variables used to generate the results reported in the text have significantly better fit.

[10] Other definitions were tried as well but this variable provides the best fit and is intuitively appealing.

parameters k_1 through k_4, to calculate the probability that an agent with particular characteristics would provide a certain answer.

Table 4 reports the estimates of equation (1) using six-month and five-year expectations and beliefs regarding statements 1 and 3. Statement 1 claims that discretionary control over money supply is eliminated under the currency board and statement 3 claims that the domestic money has full coverage in terms of foreign exchange reserves. Those two statements capture the two essential features of a currency board. The data used are from the 2001 survey.[11]

The table reveals that restricting monetary flexibility (Statement 1) enhances short-term credibility but does not have a significant effect on long run credibility. The backing of local currency with foreign exchange reserves (Statement 3) enhances both short and long-term credibility, although as the time horizon lengthens, the size of the effect diminishes.

In the short term political attitudes play a role with those who vote for the current government (which is committed to the currency board) expect it to last longer. Age is also an important factor. Agents who have lived all of their post high school lives under the currency board expect it to last longer.[12] Finally, female respondents have greater confidence in the currency board in the long run, which is difficult to explain.

6.1 Managers and workers.

Re-estimating the same equations separately for the group of "managers" and the group of "workers" reveals substantial differences in the factors that affect credibility in the two groups.[13] In the group of "managers", differences in expectations are explained by differences in beliefs regarding the currency board while the effect of the demographic variables (age, gender and political affiliation) is not significant. In the group of "workers" expectations are explained only by the demographic factors and are not significantly influenced by beliefs regarding the currency board. In other words, the

[11] Quantitatively similar results were obtained using the 2000 survey.
[12] In the 2000 survey, older agents (those 50 years of age or older) also have greater confidence in the currency board. That effect arises possibly because of their experience with stable prices under socialism. Thus, the youngest and the oldest segment of the population have, for two different reasons, greater confidence in sustained financial stability.
[13] Results available upon request.

expectations of "managers" are driven more by policy factors and the expectations of "workers" are driven more by political and life experience factors.

6.2 The credibility effect of beliefs regarding borrowing by the executive branch and liquidity for commercial banks.

Agents' beliefs about whether or not the executive branch of the government can borrow funds from the central bank (Statement 2) do not seem to influence credibility. Whether or not the central bank can provide liquidity to commercial banks (Statement 4) however influences expectations in the group of "managers". Agents in that group who believed that such provision is not possible under that currency board had significantly less confidence in financial stability in the long-term (5 years). That may be explained by the fact that the 1996-97 crisis was largely a banking crisis and that concerns over commercial banks persisted.

6. Conclusion

In 1996, Domingo Cavallo, a former Minister of Economy and Public Works of Argentina wrote regarding the 1991 introduction of a currency board in Argentina: "The main lesson of the Argentine stabilization experience is that the elimination of inflation is possible even when the economy has been flogged by that disease for decades." And further: " the reduction and the elimination of budget deficits are the keys to stabilization after decades of instability, the origins of which are mainly found in the monetary financing of persistent fiscal deficits." In 2002, the Argentine currency board was abandoned and the peso was devalued. Clearly restricting the flexibility of monetary policy was not sufficient to prevent a financial crisis in Argentina. The survey data presented in this paper show that removing monetary discretion in a country that has had erratic inflation history reduces short-term expectations of devaluation. However, long-term credibility is a function of a broader set of achievements, which include but are not limited to a change in the monetary regime.

The surveys also show that the features of the monetary regime directly influence the expectations of agents who are more closely involved in economic affairs, which is important because those agents have greater direct influence on the economy. The

expectations of the majority of consumers are influenced by other factors such as the number of years an agent has lived under financial stability and whether or not the party they vote for supports the currency board. The beliefs of those agents are important because any major policy change (such as abandoning the currency board) is a political decision. The view that restricting monetary policy is not essential for maintaining financial stability may at some point, under pressure to alleviate unemployment, translate into political support for a more flexible monetary regime.

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Table 1
Macroeconomic developments. Bulgaria 1992 – 2000

Year	CPI inflation (percentage change in the CPI)	Budget balance as percent of GDP (- deficit)	Percentage change in M2	Real GDP growth (percentage change)	Unemploy-ment rate	Privatiza-tion revenue (percent of GDP)
1992	79.2	-2.9	53.7	-7.3	15.3	
1993	63.9	-8.7	54.5	-1.5	16.4	0.4
1994	121.9	-3.9	76.8	1.8	12.8	1.5
1995	32.9	-6.3	39.3	2.1	11.1	0.9
1996	310.8	-12.7	117.8	-10.1	12.5	2.9
1997	578.6	-2.5	345.0	-7.0	13.7	5.6
1998	1.0	1.5	11.5	3.5	12.2	5.3
1999	6.2	-1.0	11.8	2.4	15.9	
2000	11.4	-1.5	28.8	5.8	18.0	

Sources: European Bank for Reconstruction and Development, *Transition Report*, various years; Bulgarian National Bank, *Annual Report*, various years.

Table 2a
Beliefs about the operation of the currency board, Bulgaria,
August 2000 and October 2001.
All numbers are in percent of the total.

	Statement 1		Statement 2		Statement 3		Statement 4	
	August 2000	October 2001	August 2000	October 2001	August 2000	October 2001	August 2000	October 2001
Strongly agree	38.5	35.7	20.6	19.9	19.3	21.2	19.6	12.8
Agree	18.2	19.0	13.5	16.5	17.2	24.3	10.0	17.7
Disagree	8.8	6.5	10.5	8.1	12.2	6.4	11.7	8.0
Strongly disagree	4.8	4.9	4.6	5.7	7.2	5.1	4.0	4.5
Uncertain	29.7	33.9	50.8	49.8	43.9	43.0	54.6	57.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Do you strongly agree…strongly disagree with each of the following statements:

Statement 1: Under the currency board, the authorities cannot issue currency at their discretion.

Statement 2: Under the currency board, the executive branch cannot borrow funds from the central bank.

Statement 3: Under the currency board, the leva (domestic money) in circulation have full coverage by the foreign exchange reserves of the central banks.

Statement 4: Under the currency board, commercial banks cannot receive financing from the central bank.

Table 2b
Beliefs about the operation of the currency board,
Bulgaria, October 2001.
All numbers are in percent of the total.

	Statement 1		Statement 2		Statement 3		Statement 4	
	Managers	Workers	Managers	Workers	Managers	Workers	Managers	Workers
Strongly agree	55.8	29.0	31.9	15.8	33.6	17.1	21.2	10.5
Agree	13.8	20.8	19.8	15.3	27.8	23.1	20.4	16.8
Disagree	6.9	6.4	10.5	7.3	8.6	5.7	11.4	6.9
Strongly disagree	8.5	3.8	8.1	5.0	5.7	4.9	5.3	4.2
Uncertain	15.0	40.0	29.7	56.6	24.3	49.2	41.7	61.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

For Statements, see the notes of Table 2a.
Managers and Workers: See text for definitions.

Table 3a
What is the likelihood that the currency board will collapse in the next 6 months, 12 months, and 5 years and there will be a sharp devaluation of the local currency? Bulgaria, August 2000 and October 2001.
Percent of respondents by type of response.

	6 months		12 months		5 years	
	August 2000	October 2001	August 2000	October 2001	August 2000	October 2001
Very big	12.3	5.5	12.4	4.7	13.3	7.4
Big	19.0	9.7	24.0	14.4	25.7	22.3
Small	29.7	28.3	28.7	31.6	30.4	29.3
Very small	13.5	23.2	15.2	24.6	12.0	20.4
None	20.6	30.7	15.3	21.7	12.9	16.8
No answer	4.8	2.6	4.5	3.0	5.7	3.8
Total	100.0	100.0	100.0	100.0	100.0	100.0

Table 3b
What is the likelihood that the currency board will collapse in the next 6 months, 12 months, 5 years or 10 years and there will be a sharp devaluation of the local currency? Bulgaria, October 2001.
Percent of respondents by type of response.

	6 months				5 years			
	August 2000		October 2001		August 2000		October 2001	
	Capital ists	Workers	Capital ists	Workers	Capital ists	Workers	Capital ists	Workers
Big or very big	35.9	29.7	14.6	15.4	44.4	37.2	25.4	31.0
Small or very small	43.3	43.5	52.2	51.1	44.1	41.9	55.4	47.6
None	18.7	21.4	31.9	30.2	9.1	14.4	16.6	16.8
No answer	2.1	5.4	1.3	3.3	2.5	6.5	2.6	4.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table 4
Beliefs about the currency board and expected devaluation,
Bulgaria, October 2001

	Dependent variable: *Expected Devaluation* (reported likelihood of devaluation over the next 6 months and 5 years). Variable is ordered from 0 to 4 with 0 indicating zero probability of devaluation.			
	Statement 1		Statement 3	
	Six months	Five years	Six months	Five years
	(1)	(2)	(3)	(4)
S_i_Agree (1 if strongly agrees with Statement i, 0 otherwise)[a]	-0.18** (0.07)	0.02 (0.07)	-0.22*** (0.08)	-0.14* (0.08)
S_i_Disagree (1 if strongly disagrees with Statement i, 0 otherwise)[a]	0.22 (0.15)	-0.05 (0.15)	0.31** (0.15)	-0.01 (0.15)
Female (1 if female)	0.05 (0.06)	-0.12* (0.06)	0.05 (0.06)	-0.13* (0.06)
Age (if less than 23 years old)	-0.27** (0.12)	-0.29** (0.12)	-0.25** (0.12)	-0.29** (0.12)
Vote (1 if voted for current government)	-0.16 (0.08)	-0.01 (0.08)	-0.16** (0.08)	-0.001 (0.08)
k_1 k_2 k_3 k_4	-0.58 0.04 0.92 1.50	-1.02 -0.37 0.41 1.35	-0.55 0.07 0.95 1.53	-1.06 -0.41 0.37 1.31
Chi (2, 5) Number of observations	20.38 962	9.22 949	22.50 962	12.61 949

Notes: Ordered Probit Procedure. Standard errors in parentheses. *(**,***) significant at the 1(5, 10) percent level

[a]Statement 1: Under the currency board, the authorities cannot issue currency at their discretion.

[a]Statement 3: Under the currency board, the leva (domestic money) in circulation have full coverage by the foreign exchange reserves of the central banks.