THE WILLIAM DAVIDSON INSTITUTE
AT THE UNIVERSITY OF MICHIGAN

From Prosperity to Depression:
Bulgaria and Romania (1996/97 – 2010)

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Summary:
Bulgaria and Romania are neighbouring countries, which have always been rivals. Following the decision on EU enlargement to include Bulgaria and Romania (late 1999) and with membership negotiations already started (2004), the race between the two countries gained momentum and comparisons of performances in the areas of economy and democracy became a regular practice. Around late 1990s the two countries took different trajectories, although in the direction of EU and market economy. The great divergence is lying primarily in the choice of monetary regime. While Romania continued to pursue and enhance its discretionary monetary policy and since 2005 has moved to inflation targeting, Bulgaria made an abrupt turn in mid-1997 and introduced a currency board arrangement.

In this paper, we investigate how the monetary regimes choice shaped the structure of both economies and the behaviour of the public and private sector, how they modified the mechanisms of adjustments and how they concentrate risks. We discus the institutional compatibility of monetary regimes with EU accession and EU membership using the theoretical insights form Dooley (1997, 2000) insurance model hypothesis. One of the main hypotheses, which we illustrate empirically, says that Currency board concentrate all economic activity and risks in the private sector, hence increasing of the private debt, while discretionary monetary policy leads to greater public debt growth and lower fiscal discipline. EU integration as well as the current crisis has different effects when combination with different monetary regimes.

January/February 2011, Orleans

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From Prosperity to Depression:
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I. Introduction

Bulgaria and Romania are neighbouring countries, which have always been rivals. Their fates have intertwined on many occasions in history as in the time of the Ottoman rule or within the socialist bloc; often at war – sometimes as allies, other times as enemies fighting against each other (during the latest history one vivid example is the Inter-Ally War of 1913, or the two World Wars). Their rivalry, this time in peaceful environment, continued after the disintegration of communism. Initially, it was which of the two would be quicker to depart from the past and which would outdo the other in adopting the institutions and catching up with the standard of living in Western democracies (i.e., which would make "the transition to market economy and democratic world" earlier). At a later stage, in mid-1990s, the competition was about which would be faster and more successful in integrating into the European Union. The very philosophy of EU enlargement, which was the outcome of disintegration of the bipolar world, presupposed the principle of competition and strife between the member-states expected to demonstrate and achieve certain results. It was presumed that this would create incentives for development, discipline and innovation. How successful this philosophy was, is difficult to judge definitely, even more so when taking into account the difficulties of realisation of its alternatives. Alternative in a sense in building transitional forms for erstwhile socialist countries to cooperate and share common monetary, economic and even political to some extent institutions which, as the processes evolved, would "merge into" the European systems[1].

Following the decision on EU enlargement to include Bulgaria and Romania (late 1999) and with membership negotiations already started (2004), the race between the two countries gained momentum and comparisons of performances in the areas of economy and democracy became a regular practice[2]. Since the two countries joined the EU (2007) their rivalry has

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[1] An example of a similar idea is the proposal of Jacques Attali, who in early 1990 advised the creation of a payment union between the former European socialist countries based on the ECU that would help them avoid exchange rate disruptions and smoothly adopt the monetary institutions of the West.

[2] Respectively in February and March 1993 the European Union signed with Romania and Bulgaria, respectively, association agreements, or "European Agreements", as a first step to the membership negotiations,

never stopped, fostered by their aspirations for more influence within EU, in particular for euro funds reception, for admission to the euro area by way of achieving nominal and real convergence, and recently, for overcoming the global crisis.

Having followed relatively similar models of development, around late 1990s, more precisely 1996/1997, the two countries took different trajectories, although in the direction of EU and market economy. The great divergence is lying primarily in the choice of monetary regime. While Romania continued to pursue and enhance its discretionary monetary policy and since 2005 has moved to inflation targeting, Bulgaria made an abrupt turn in mid-1997 and introduced a currency board arrangement. The currency board, which operates to this day, is an extreme orthodox form of monetary regime resembling the gold-exchange standard, a negation in principle of monetary policy[3]. The two radically different monetary regimes were in operation when the two countries gained their EU membership and later on, when the current crisis began. These regimes contributed to shaping the behaviour of economic players, the academia, and the public consciousness, building up and structuring their preferences to such an extent that today it is almost impossible to find a Romanian who would object to the active monetary policy, or a Bulgarian, who would disapprove of the currency board and would rather have a "Romanian" monetary policy conducted instead.

In late 1990s, and especially in early 2000, the two economies witnessed a period of economic upswing and growth, which ended abruptly in the last months of 2008 when it became clear that the initial hopes for decoupling of the European peripheral countries were in vain[4], and that the crisis reached the Balkans.

In our view, the theoretical and practical interest in comparing the two countries and their evolution over the period 2000 – 2010 is unquestionably motivating, especially because it is rarely undertaken. It has relevance for a number of reasons at least.

First, it arouses one's curiosity as to why Bulgaria and Romania chose to operate two radically different regimes in late 1990s despite their similar development at the onset of transition and the fact that they were in for a similar future – EU membership. How was it that

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this only a little more than a year after signing such agreements with Poland, Hungary and Czechoslovakia (December 1991).
[3] See Schuler (2007), Desquibet and Nenovsky (2004).
[4] See Sanfey (2010), Gardo and Martin (2010).

the two regimes penetrated so deep in the mass consciousness so as to shape peculiar *cognitive type models* of how money and monetary authorities function and the way they should function?

Second, it would be interesting to see to what extent the diametrically opposite monetary choices have determined the overall development of the two countries given that the monetary institution is system making and money is at the core of the institutional structure of society[5]. At a more concrete level, the question is about how and by what mechanisms the monetary regime impacts fundamental behaviours such as saving and investment, the correlation between domestic and foreign saving, the condition of public finances, the overall level of debt and the debt structure, credit behaviour and credit structure, etc.? In other words, it would be interesting to investigate whether and to what extent the monetary regime is *neutral* over a long as well as short-term horizon in relation to the achievements and characteristics of the economies, something which is often upheld by one group of economists and just as often challenged by another.

Third, the comparative perspective allows us to see the effects of the two opposite monetary regimes by taking account of the fact that the other characteristics of the two countries in late 1990s, when the choice was made, were relatively the same and an upshot of the communist legacy. To put it otherwise, we are witnessing a kind of a *natural experiment*, whereby it is possible, under certain conditions, of course, to judge about the efficiency and impact of the two opposite monetary regimes: how much these regimes have contributed to the formation of the specific profiles of the two economies; the dynamics and forms of the economic upsurge after 2002, and the extent to which they have moulded resilience and adaptability of the two economies to the current crisis.

The decade, which we have chosen for analysis, namely the period 2000 – 2010, covers both the period of growth and credit upsurge, driven by the low interest rates on the international markets and the expectations for EU membership, as well as the period of loss of discipline following the accession to EU in 2007, coinciding with the start of the global financial crisis, spilled over to the two countries in late 2008. Since then, Bulgaria and Romania have been in the grip of the crisis as reflected in a sharp contraction of the capital inflows and the credit

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[5] See Ball (1999), Maurer (2006), Abdelal (2001).

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crunch, a surge in the risk premia and reduced economic activity. The direction of deteriorating public finances is evident, although less pronounced in Bulgaria. Romania had to sign an two years agreement with IMF (March 2009) and borrow funds from EU, EBRD and the World Bank (the total amount is around EUR 20 billion).

The fourth theoretical point, which could be highlighted by comparing the development of Bulgaria and Romania, and which is often overlooked, is *the institutional complementarity* of the monetary regime with the other economic and political institutions, i.e., their systemic character. The institutional analysis of the economies in transition over the last ten years has achieved significant results; however quantification of institutions and institutional reforms is still rarely performed (on the subject see Coricelli and Maurel, 2010). In this analysis we examine in more detail the compatibility of the monetary regime with the expectations for membership and EU membership itself, as well as how much the currency board (Bulgaria) or the discretionary monetary policy (Romania) fits or conflicts with the process of euro integration, given that the monetary regime and the Euro membership are specific basic social anchors. In other words, we enquire into the nature of the dynamics of *interaction between these two anchors*[6].

And fifth, the period of prosperity and crisis under review, 2000 – 2010, allows us to make some parallels with another decade associated with the years of the Great Depression between the Two World Wars. The years from 1925 to 1940 are strikingly reminiscent of today's developments. In spite of the existing differences, they allow us to explore a range of theoretical and empirical hypotheses, and provide ground for reflection on the existence of certain cyclic recurrence and repeating (not deterministic) patterns of a number of economic behaviours and country preferences. It may as well be a sheer coincidence, but the above decade reveals similar to today's differences between Bulgaria and Romania, more specifically with regard to the preferences for monetary regime and fiscal policy. In spite of the difficulties, Bulgaria steadfastly adhered to the principles of the gold-exchange standard (Bulgaria introduced it de facto in 1926 and de jure in 1928). Romania carried out a monetary and financial stabilisation somewhat later (with some delay); it introduced the gold-exchange standard in 1929 and devalued in 1936 following the devaluation of the French franc. Similarly, today, Bulgaria is obsessed with compliance with fiscal discipline and strictly

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[6] On the subject see an earlier study by Ialnazov and Nenovsky (2011), and Nenovsky (2010)

services its external debt obligations (is perhaps the strictest payer of all countries with reparations), whereas Romania defaulted in 1933. In 1931 the two countries introduced a systematic exchange control, which is often considered as de facto abandoning of the basic principle of the gold-exchange standard, namely the free movement of gold and foreign currency (Wandschneider, 2008, p. 155). Things are much more complex, and the exchange control in the two countries could be interpreted mainly as a temporary safeguard of the gold standard, as a reaction against the devaluation of the British pound and the currencies that followed suit, as a needed protection of the country's gold reserve and manageable servicing of the external debt. The case in point is not about abandoning the principles and philosophy of the gold standard, but rather of negating the principles and philosophy of the floating exchange rate and managed money. Although in these years monetary orthodoxy was still wide spread, as well as a legacy of the pre-war classical period of gold standard and fiscal discipline, we can claim that the views and behaviour of Bulgarian economists and bankers are relatively more orthodox than those of their Romanian counterparts are. On the whole, the ideas of "managed money" (*upravliavana moneta* in Bulgarian and *monede operat* in Romanian) and of different types of industrial policy and protectionism were received much more readily in Romania than in Bulgaria (let us recall the international popularity enjoyed by Mihail Manoilescu's theory on new protectionism). Of course, later on all differences were left to the past with the two countries taking the road of wartime economy and war preparations. Going back in history to the time of the Great Depression makes it possible to discover and explain the recurring economic and political choices of the two countries, if we are disinclined to accept them as curious repetitions of the situation today (part 4).

In this study, after exposing the history of Bulgarian and Romanian monetary regimes (part 2) we attempt to build analytical framework first theoretically, where we put forward our hypotheses, then empirically by illustrating them with statistical data and examples from the political economy of the two countries (Part 3). In this way, we seek to contribute to the development of the larger discussion of the differences across economic systems, in the case of the Balkan countries, the post-communist economies, or capitalism in general. As well as indirectly – to the analysis and explanation of the diversity and variety within the European Union, their forms, causes and implications for the overall European economic and monetary policy. From a much broader perspective, our study elaborates the meeting point between the general theoretical explanation and formalisation on the one hand, and the historical concrete and contextual manifestation, on the other.

II. The battle of monetary regimes: Currency board versus Monetary policy

As was already pointed out above, our focus is on the two opposite monetary regimes chosen by Bulgaria and Romania in late 1990s. The debate about the choice of monetary regimes, and their relative efficiency according to the countries' characteristics, the interrelation between credibility and flexibility, the types of shocks, etc. is old and publications are numerous. So very numerous in fact that as one Arab scholar from the past once said: "Oh Allah, help me from drowning in so many names". In order to avoid drowning in the sea of names, we will give a brief overview of the history of monetary regimes in Bulgaria and Romania, without discussing in details the major achievements of the theory of monetary regimes.

After around a seven-year period of active discretionary monetary policy (1989-1996/97) in *Bulgaria* and an extremely deep financial, monetary and subsequently political crisis, in late 1996 and early 1997 a decision was taken for the introduction of a currency board arrangement. Although debates as to who initiated Currency board continues to the present day. Since the beginning was clear that it was IMF and the country's major creditors (which is where the loans for building a start-up foreign reserve of the currency board initially came from), who wished to see a stable and credible monetary regime in place as well as a country able to service its external debt (currency boards have a high propensity to accumulate foreign reserves). The new arrangement agreed with the desires of the poor and middle strata of the population who lost money in the hyperinflation and the failure of banks. From a macroeconomic and institutional perspective, Bulgaria needed a break from the prolonged developments of bandit transition in which through the banking system and the central bank losses were monetised and assets and liabilities, legacy from planned economy, were illegally and unfairly redistributed[7]. Bulgarian economy was in a non-cooperative game equilibrium, similar to prisoner dilemma (Ialnazov and Nenovsky, 2011).

As is known, a currency board is an extremely restrictive monetary system in which the monetary policy is practically eliminated with the exception of statutory reserve management and regulation of the banking system. Law fixes the exchange rate, and monetary base is fully

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[7] For details see Dobrinsky (2000), Nenovsky and Rizopoulos (2003), Berlemann and Nenovsky (2004) and Vucheva (2005), on post Currency board period Minea and Rault (2009).

covered by highly liquid foreign asset, the coverage being made public weekly through the release of the Currency Board balance sheet. The LOLR function in Bulgaria has been reduced to specified situations of systemic risk, as determined by means of defined levels of the condition of the payment system, and within the surplus of the foreign reserves over the liabilities of Issue Department. The essential here is to remember that on the asset side of the currency board's balance sheet there are no domestic assets, no securities of the Bulgarian government, or claims on the banking sector. This makes monetary policy as we know it (open market operations, etc.) impossible[8]. The currency board is similar to (as well as different from) the gold-exchange standard, relying on the two major effects – credibility and discipline[9].

It is worth noting that the currency board was introduced after a deep crisis (according to some calculations, one of the severest crisis in terms of cumulative GDP loss), so population and elite alike accepted readily the new system, which very quickly (almost within weeks) became a major cognitive model and an way of thinking about economy and money. We can definitely say that the currency board, which subsequently outlived the Russian and the Asian crises as well as the collapse of the currency board in Argentina (curiously, even in this critical for currency board arrangements time, in Bulgaria the system received the public's unreserved support and unfailing confidence), became the leading anchor[10]. The anchor pulled the country out of the critical situation of corruption and banditism and steered it to years of prosperity and successful EU membership. Subsequently, after some wavering regarding the economic and legal compatibility of the currency board with Bulgaria's membership in EU, and the adoption of the exchange-rate mechanism in particular, the European institutions decided in favour of its compatibility although it remained a unilateral responsibility of the country operating it. Today, Bulgaria and Lithuania continue to operate their currency boards, while Estonia is the only Currency board country that joined the euro area following the beginning of the financial and debt crisis in Europe (as of 1 January 2011). The issue of whether the currency board today is of disadvantage or of benefit to Bulgaria in the current crisis is open to dispute. However, the facts show that the Bulgarian public continues to

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[8] For details, see Gulde al. (2008); Nenovsky and Hristov (2002), Schuler (2005).
[9] See Desquibet and Nenovsky (2004), Raybaut and Torre (2005).
[10] An anchor has a range of functionalities, but its prime merit is that it makes it possible to coordinate the expectations in a given direction and improves predictability and cooperation as a whole. For details, see Ialnazov and Nenovsky (2011).

regard it as a major institutionally proven anchor, although with the time passing the social memory about 1996/97 crisis begins to weaken (Mudd and al. 2010).

Unlike Bulgaria, *Romania* has never given up its discretionary policy and its central bank has always held the full range of tools typical for any contemporary and modern bank. Even after Bulgaria made its choice to operate a currency board and somewhat later when the currency boards, and corner solutions in general gained wide popularity, Romania never hesitated to continue its path of active monetary policy and exchange rate management. It should be mentioned that Romania too experienced a similar in character, while not in depth, crisis in 1996, followed by political elections won by the rightists (with all conventionalities) (similar to the elections in Bulgaria in June 1997)[11]. In 2005, after lengthy discussions and having declared its wish to join the group of countries from Central Europe (Poland, the Czech Republic and Hungary), Romania introduced flexible inflation targeting (see Isarescu, 2003). Despite the new monetary regime announced, the central bank of Romania has virtually never abandoned the exchange rate management (crawling peg to basket, or ….), as most vividly evidenced by the foreign exchange market intervention in the initial periods of operation of this regime. These interventions received the obvious support of Governor Mugur Isarescu as evidenced in his statements in the period 2005-2008 (Isarescu, 2009, p. 26)[12], and still earlier, of Deputy Governor Christian Popa (Popa, 2003). It is also worthy of note that even in previous periods when non-intervention in the forex market and floating exchange rate were proclaimed, the bank de facto interfered, according to the calculations of Frommel and Shobert (2006). It should also be mentioned that inflation targeting implies a floating exchange rate because it is controversial (not to say impossible) for a central bank to employ two anchors at the same time, in this particular case nominal exchange rate and inflation[13].

After it became clear that Romania would not be bypassed by the crisis, its central bank started reducing the interest rates (4% cumulative reduction since the beginning of 2009), as well as the statutory reserves, pursuing a policy of monetary easing (IMF, 2010). The decision to increase VAT by 5 % (despite the 25% reduction of public sector wages and 15% reduction of social transfers) led to an automatic surge of inflation in mid-2010. This compelled the central bank to temporarily stop the trend of interest rate reduction and breaching of the price

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[11] For detailed account of the evolution of the Bulgarian political system from 1878 to present, see Todorov (2010).
[12] Isarescu speaks of cultural conditions for the adoption of inflation targeting (Isarescu, 2009, pp. 19-20).
[13] On departures from inflation targeting in the new member-states, see …

target (which was 3,5% $\pm$ 1, with 7-8% inflation as of end-2010) (see IMF, 2010, NBR, 2010).

For the purposes of this analysis it would be important to note that the active monetary and exchange rate policy play a major role not only in the practice of Romanian monetary authorities, but also in the studies and analyses of Romanian economic researchers[14]. Apart form the research studies of the economists at the Central of Bank of Romania, who for institutional reasons support and propagandize the benefits of this type of active management of money, of inflation targeting, etc., it can be seen that in Romania exists, to put it that way, a full monopoly of theoretical and empirical publications, which eulogize this type of policy. The criticism is saved for particular decisions or technical details of conducting it. The opponents of the principle of discretionary monetary policy, let alone currency board adherents, are only a few, not to say none. Whenever a currency board arrangement is mentioned, it is strongly criticised and often ridiculed at as a primitive system applied to underdeveloped nations incapable of managing their own affairs[15].

Thus, both in Romania and in Bulgaria, two dominating models of conducting monetary policy as well as thinking of money and money management emerged. In Bulgaria, this philosophy is passive, extremely conservative and externally delegated. In Romania, it is active, discretionary and science-based, relying on a range of econometric and statistically measured elasticities between interest rate, inflation, etc. The publications of Bulgarian and Romanian economists also have their focus on different areas: while the majority of Bulgarian economists reject modelling and complex models (or, where they do employ them, they are aware that such models are rarely used), their Romanian counterparts publish numerous research studies on modelling the complex and multiple relations of active money management.

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[14] See, for example, Pelinescu and Cariani (2006), Daianu and Kallai (2008), Daianu and Luncu (2007).

[15] One of us had the chance to work over a longer period 1996 – 2008 with the Central Bank of Bulgaria, and he remembers well the contrasting views, generally ideologised and often sarcastic, held by Bulgarian and Romanian economists at different positions in and outside the Bank. Bulgarian economists, faced with an empty picture, argued that under a currency board everything was automatic and there was no need to do anything, and Romanian economists, faced with gigantic schemes of countless boxes and arrows showed how complicated and elaborate the relations were, adding that these were however controllable and manageable.

Why this polarization and what is is the role of the radically different choices of monetary regimes for the overall dynamics of the economies of Bulgaria and Romania in the years of economic upswing, EU membership and crisis?

In an earlier study, one of us argues that post-communist countries in general are divisible into two groups, according to the type of monetary regime operated at the onset of transition (Nenovsky, 2009). The successful countries are the ones that started the transition with fixed exchange rates and strict monetary policies, part of which subsequently moved to a floating exchange rate (Central Europe), while others preserved it (the Baltic countries). This model is a winning one, because the fixed exchange rate regime gives more possibilities for overcoming the bandit and crony transition, and in general indicates willingness for integration into the European world, which is the new geostrategic choice. The group of losing countries includes those of the countries that started the transition with a floating rate, whose fluctuations provided a rich soil for manipulations and numerous embezzlement and bandit schemes. Romania and Bulgaria fell under the second group of countries.

In order to explain the behaviour of the two countries in the last ten years, as well as answer the above questions, we need to systematise what we have so far presented into a theoretical framework.

III. Theoretical hypotheses and empirical illustrations

At this stage of the analysis it would be appropriate to formulate the following theoretical hypotheses, or theoretical assertions, which could subsequently be illustrated (we avoid using the term "proved") by statistical data and empirical examples from the practice of the two countries.[16].

Hypothesis 1: The choice of monetary regime is largely decided by the *initial situation* of the economies, which on their part are conditioned by the last years of planned economy and the first years of transition.

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[16] Empirical illustrations are, of course, one of the possibilities of at least a relative verification of the hypothesis, along with the verification of the logic and the cause-and-effect relations.

According to this hypothesis, the choice of monetary regime is derivative of current basic characteristics of the economies of Bulgaria and Romania, as well as the initial years of transition, the inherited characteristics of the planned economy period and the characteristics of the two regimes, especially in the period of 1980s. It might be presumed that the initial conditions of the transition in Bulgaria, the high external debt above all, the strongly open character of the Bulgarian economy (as well as the strong dependence on the COMECOM) (see chart 1, 2 and tables 1 to 4). Respectively, relatively lower than Romania propensity to save, coupled with the higher rates of consumption and growth in the last years of communism, and conditioned the significantly deeper crisis in Bulgaria in 1996/97 compared with the crisis in Romania in 1996. Romania started the transition with an external debt of very low, a period of forced saving and consumption constraints during Nicolae Ceausescu's regime, a much more closed and larger economy, more resources and possibilities for export and attraction of foreign savings. There are also definite reasons to believe that the inclination of Romanians to follow good examples and the influence from the West is more pronounced as compared to the scepticism and nihilism typical of Bulgarians. This applies not only to the two countries' elites, but to the majority of their population as well.

Although there is every reason to assert that during the first six-seven years of the transition in the two countries the processes had much in common economically and politically, this legacy is in our view fundamental for the depth of the crisis and the ensuing choice of monetary regime. *The crisis* is an important factor for institutional change and most importantly for a change in the preferences and expectations with regard to a monetary regime. The crisis in Bulgaria was very severe and systemic (it was political too); the population accepted unconditionally the radical change, while in Romania it was less severe, and the elections won by the reformists (reformist forces) preceded the crisis. Not only two monetary models of policy emerged – active and national (Romania) and passive and delegated abroad (Bulgaria), but also two cognitive models, two ideologies of thinking on money and developing economic and financial practices in general. The first model could conditionally be referred to as discretionary and Keynesian, while the second – as orthodox and conservative (and under certain conditionality – as liberal).

Chart 1 Foreign debt in Bulgaria and Romania (1985 – 1998)
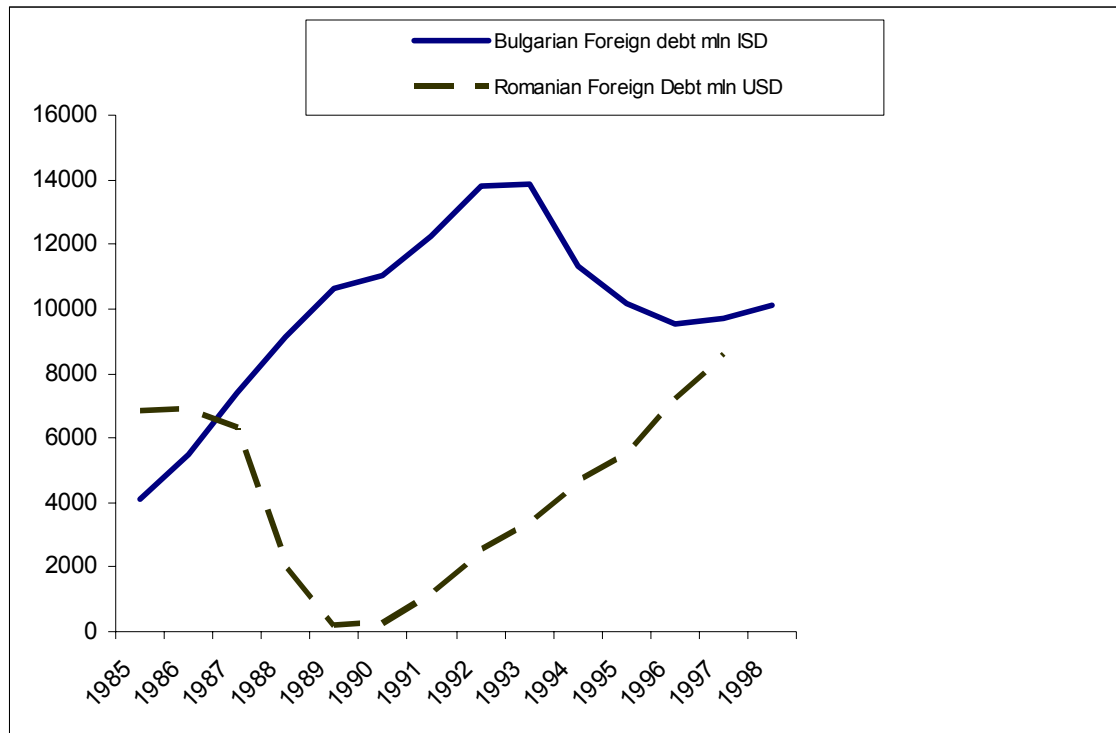
Source: National Bank of Romania Annual Report (1998); Vachkov and al. (2009)

Chart 2 Romania: foreign debt, foreign reserve and budget balance (1985-1998)
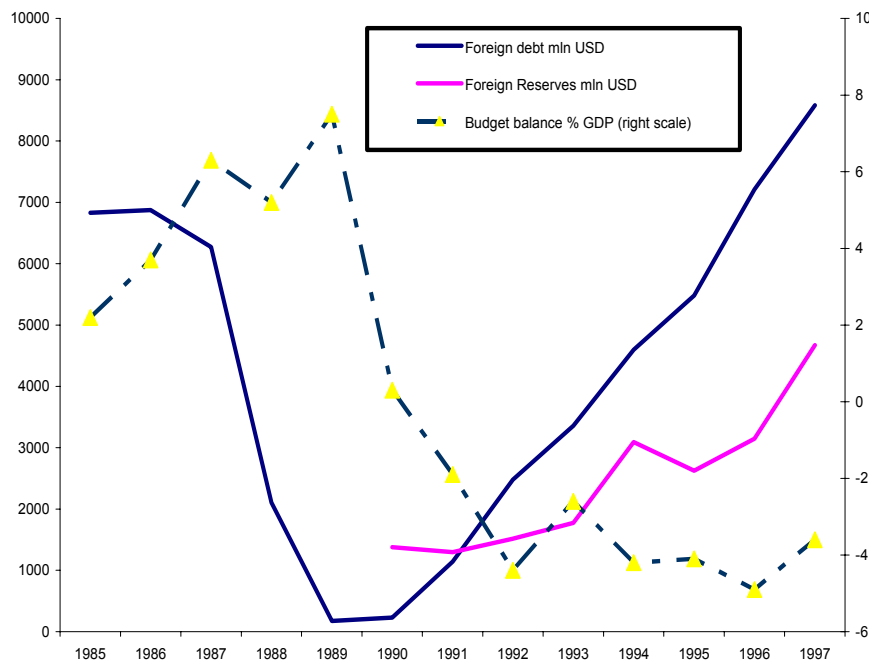
Source: National Bank of Romania Annual Report (1998); Vachkov and al. (2009)

Table 1 Import elasticity to Income

		COMECOM	Developed countries	Developing countries
Bulgaria	1966-1970	1.18	0.85	1.97
	1971-1975	2.46	3.67	2.98
	1981-1983	1.05	-0.35	6.29
	1984-1986	1.94	3.47	4.44
	1987-1989	-3.45	-0.84	3.18
	1990-1992	2.61	-1.78	-0.41
	1993-1995	-7.86	-0.19	10.13
Romania	1966-1970	1.18	2.26	2.30
	1971-1975	1.06	3.65	3.96
	1981-1983	-1.26	Na	Na
	1984-1986	-10.66	Na	Na
	1987-1989	Na	Na	Na
	1990-1992	1.00	-5.83	0.69
	1993-1995	3.56	5.57	2.11

Source: Slim (1997), p. 65; p. 70

Table 2 Part trade with EU in the export and import of Bulgaria and Romania

	1990	1991	1992	1993	1994	1995
Bulgaria Export	5.57	15.65	31.46	29.96	37.64	37.25
Romania Export	33.84	36.94	35.16	41.36	48.20	53.17
Bulgaria Import	11.51	26.08	35.51	32.81	37.50	38.05
Romania Import	21.78	28.72	41.27	45.31	48.21	49.58

Source: Slim (1997), p. 72

Table 3
Gross national/domestic product or income per capita in Bulgaria and Romania in historical perspective

	1938 GNP (Bairoch, in 1960 US$)	1937 NI (Berend, Ranki)	1937 GDP (Maddison in Geary – Khamis $)	1989 GNP (WB Atlas)	2005 GNI (WB Atlas)	2005 GNI (PPP)	FDI (million USD)	
Bulgaria	420	75	1567	2680	3450	8949	1989-1991	56
							1992-1993	82
Romania	343	81	1130	1730	3910	9056	1989-1991	55
							1992-1993	170

Source: see different sources in Petrovic (2008), p.128

Table 4
Political and economic transition in Bulgaria and Romania

	Democratization 1999-2000	Democratization 2006	Economic Transition 1999	Economic Transition 2006	Real GDP Level 1998 (1989 = 100)	Real GDP Level 2004 (1989 = 100)	Cumulative FDI per capita (US$) 1989-2004
Bulgaria	3.58	2.93	2.8	3.5	66	88	1050
Romania	3.54	3.39	2.8	3.3	76	99	746

Source: see different sources in Petrovic (2008), p.132

Hypothesis 2 is closely related to the first one. It could be argued that choosing a diametrically opposite monetary regime *radically changed* the characteristics of the countries at least for the past 15 years. Owing to its systemic importance, the choice of monetary regime concentrated the economic activity, as well as the risks, in different ways in the two economies and shaped their basic macro characteristics.

Because the currency board is a discipline-inducing and conservative mechanism, he gives the private sector more space and restricts the behaviour of the government. The economic activity and all risks concentrated in the private sector and the individuals (such as demand for credit, investments, etc.). The private sector is the one, which has to adjust to the hard budget constraints, to develop equilibrating mechanisms. The public sector and public finances follow by themselves the basic principles of behaviour of the private sector, i.e., the aim is about the two keeping a constant equilibrium and even generating net savings (budget surplus) (chart 3) . The requirement for the private sector adjustments, under fixed exchange rate and lack of monetary policy, leads to lower unit labour cots and wage flexibility (chart 4 to 9)

The situation in Romania counter-mirrors that in Bulgaria. Here, the public sector has no such restriction: it can always rely on the central bank, which in turn holds up its reformation and leads to deficits and accumulation of public debt. Hence, the debt structure tends to follow a relatively higher level of the public debt at the cost of the private one, whereas in Bulgaria the propensity of the private sector to incur debt is considerably higher than that of the public sector. This applies equally to the external and the internal debt. Moreover, the currency board, by reducing the foreign exchange risk, leads to moderation of the overall level of risk in the country and lowers the interest rate levels to those abroad, opening the economy and therefore increasing the country's exposure to external shocks. National economy follows passively global economy developments.

Thus, in general, the Currency board, due to its system-making and "pulling" importance, leads to deep changes in the other leading institutions and characteristics of the economy, either slower or quicker. The essential thing is that it creates conditions for the formation of

habits and discipline, and certain barriers to banditism and corruption, and all sorts of crony practices.

Therefore, we logically arrive at the third hypothesis, which is related with the processes of EU accession and membership, and partly with the possibility of joining the euro area.

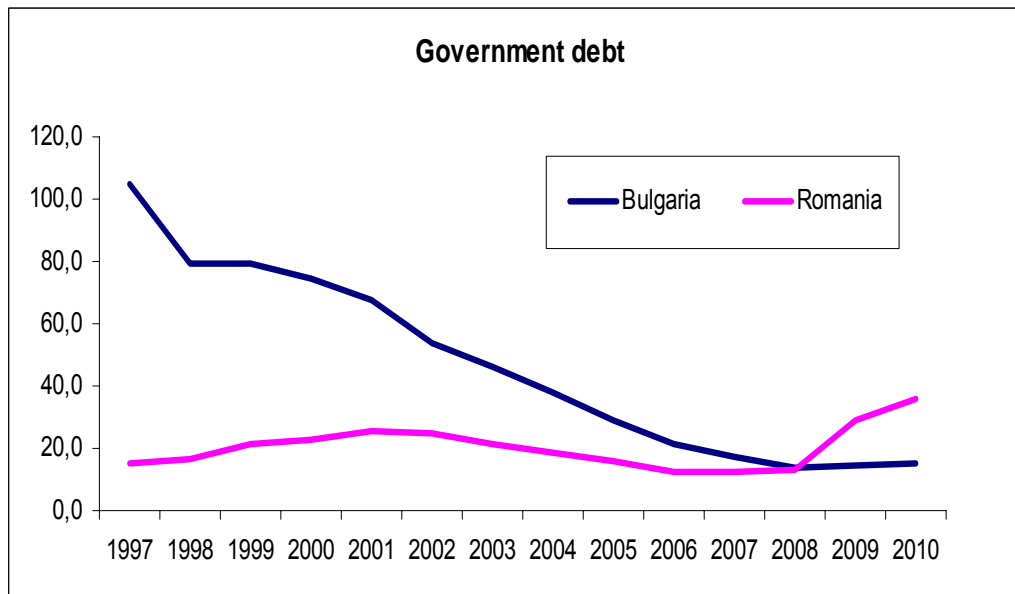Chart 3 Public balances in Bulgaria and Romania

Surplus/deficit (% of GDP)
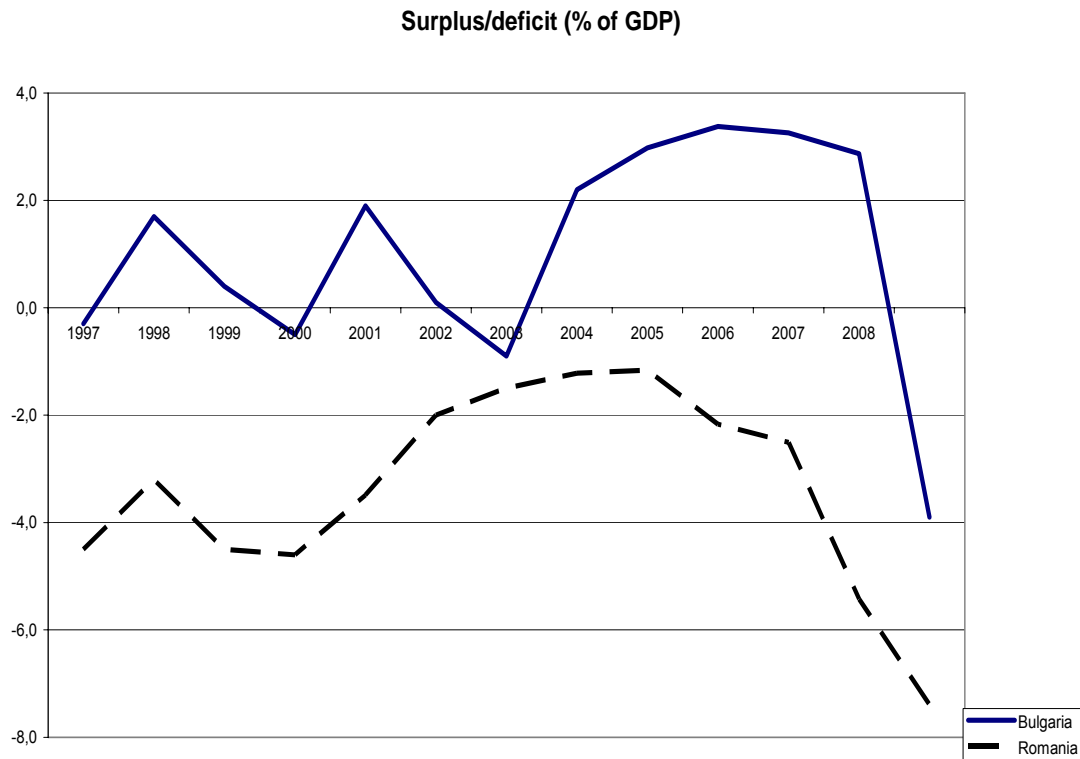
Source: National Bank of Romania, Bulgarian National Bank

Chart 4 External Private Debt/ GDP in Bulgaria and Romania (1997 – 2010)
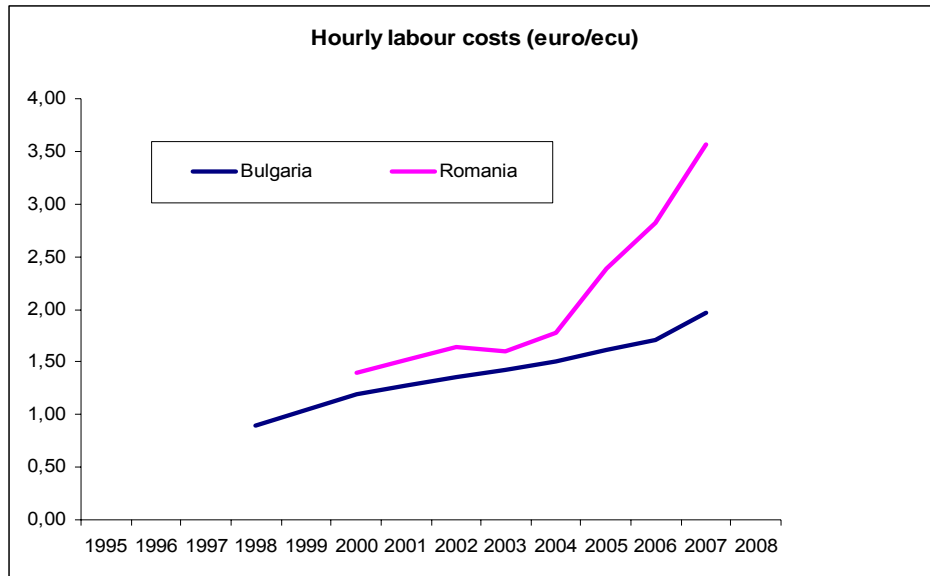
External private debt to GDP, %
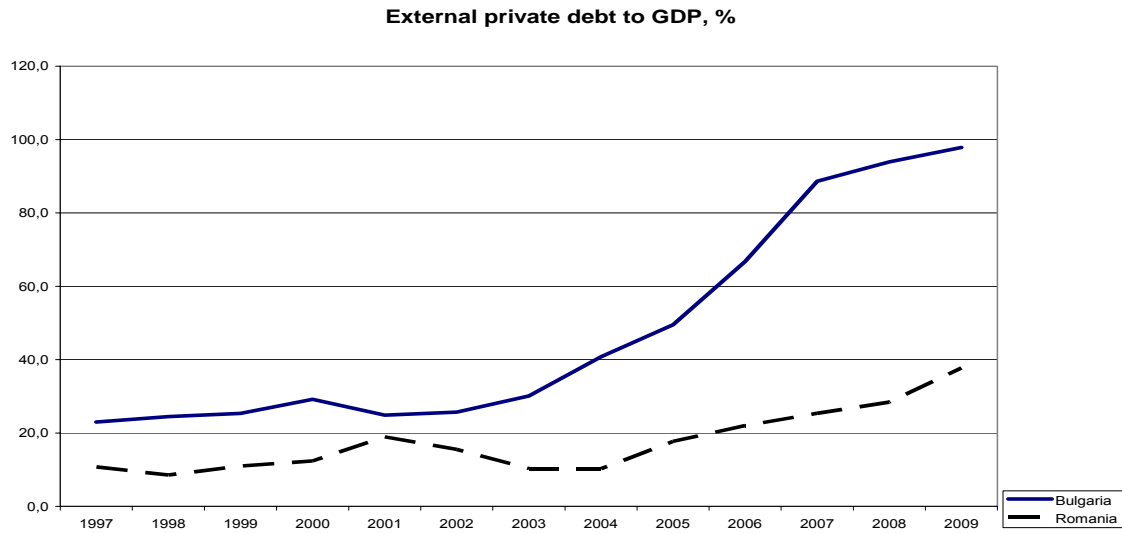
Source: National Bank of Romania, Bulgarian National Bank

Chart 5   Government debt/ GDP in Bulgaria and Romania (1997 – 2010)

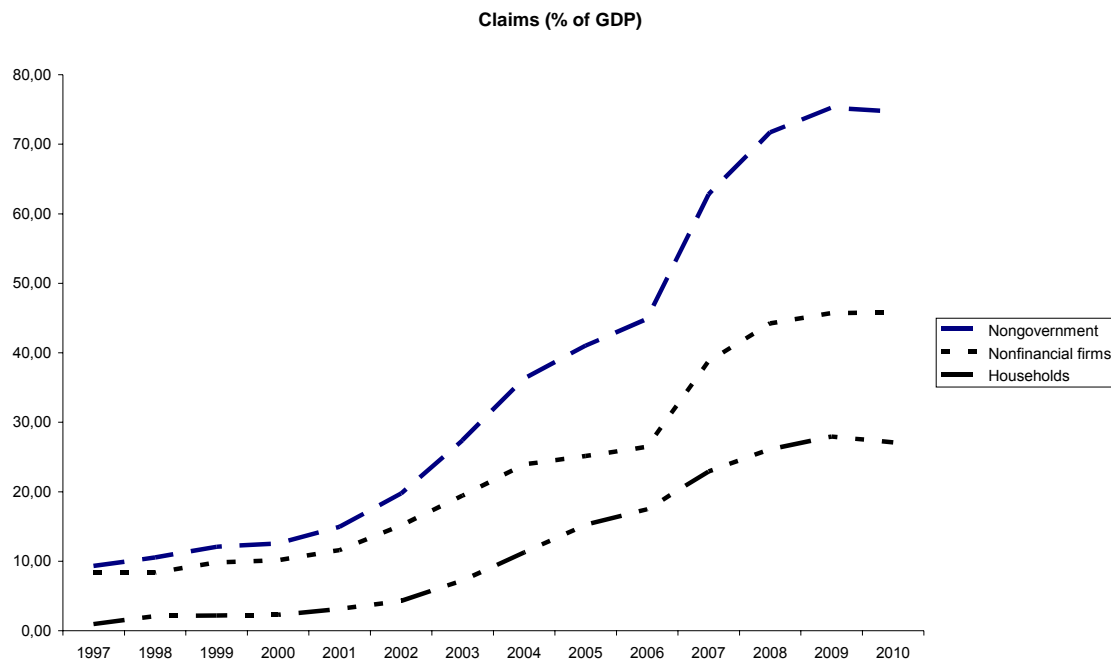Source: National Bank of Romania, Bulgarian National Bank

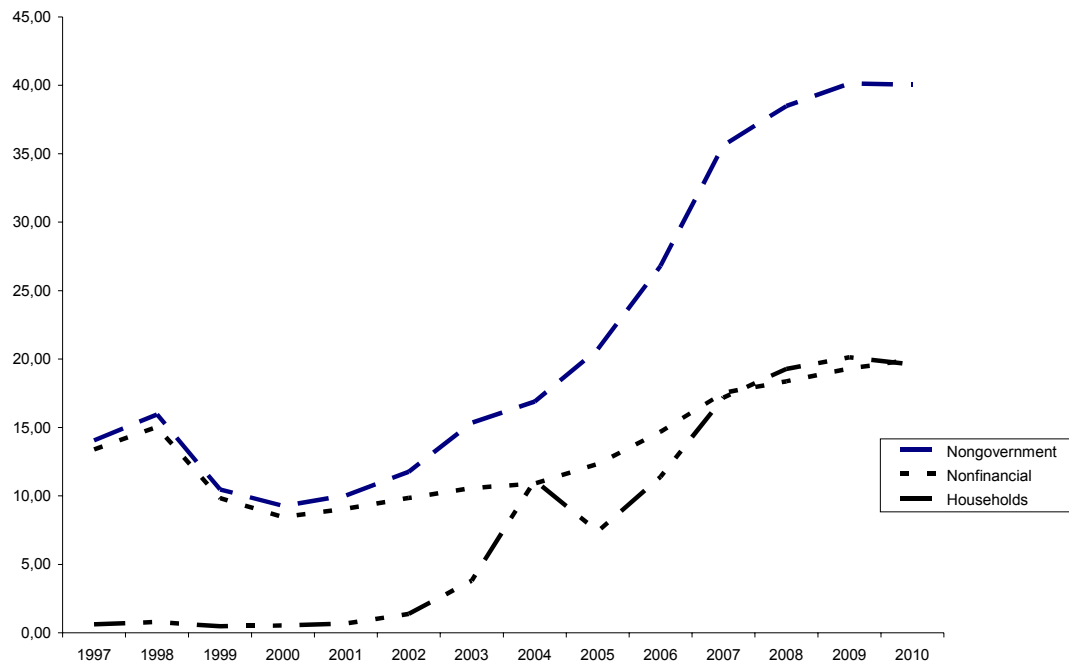Chart 6 Unit labour costs in Bulgaria and Romania (1997- 2007)

Hourly labour costs (euro/ecu)

Source:

Chart 7 Bulgaria: credit dynamics (1997- 2010)
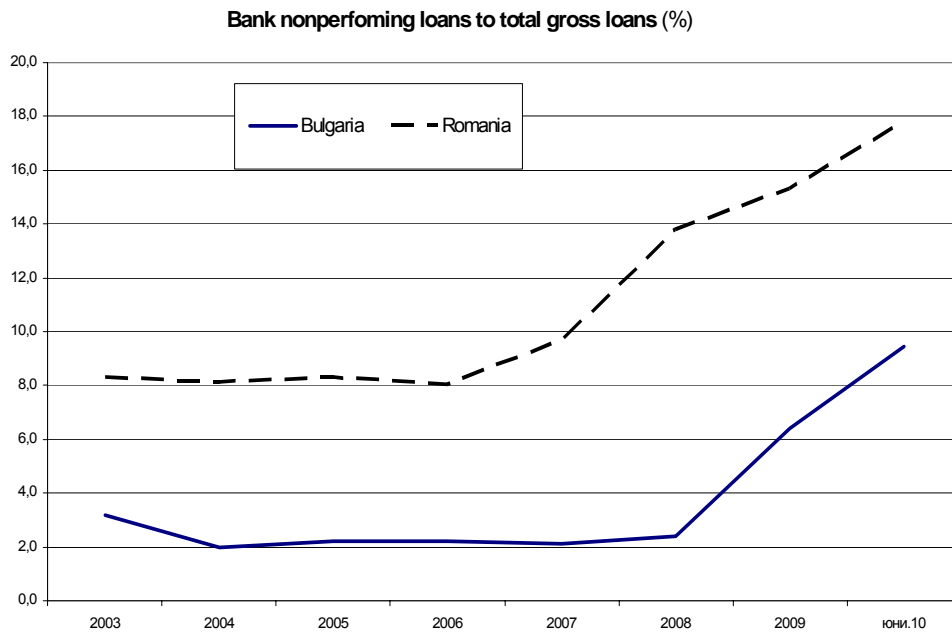
Claims (% of GDP)

Source: Bulgarian National Bank
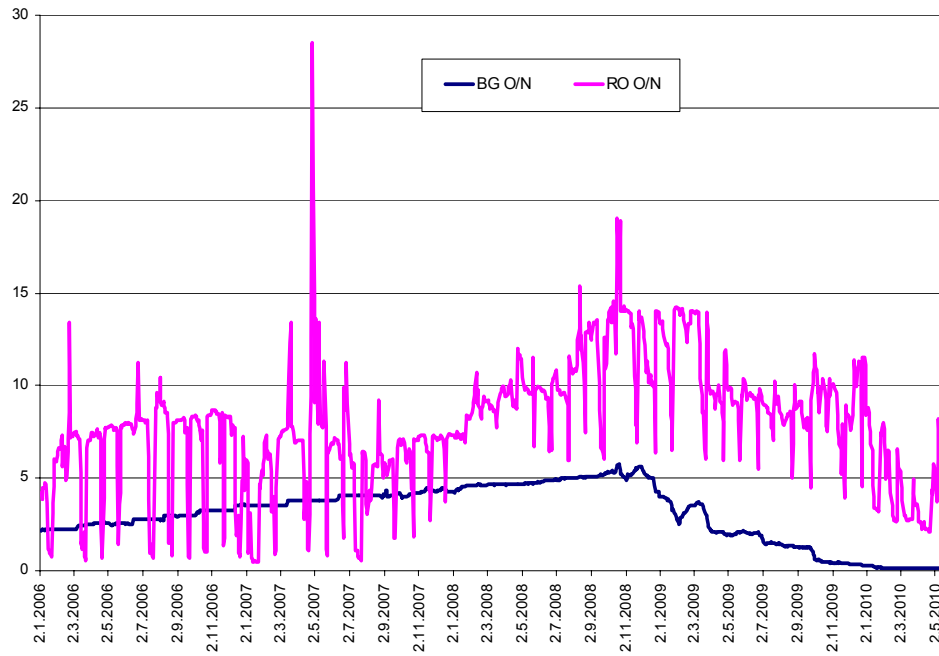
Chart 8 Romania: credit dynamics (2002- 2010)

Source: National Bank of Romania

Chart 9 Nonperforming loans in Bulgaria and Romania (1997- 2010)

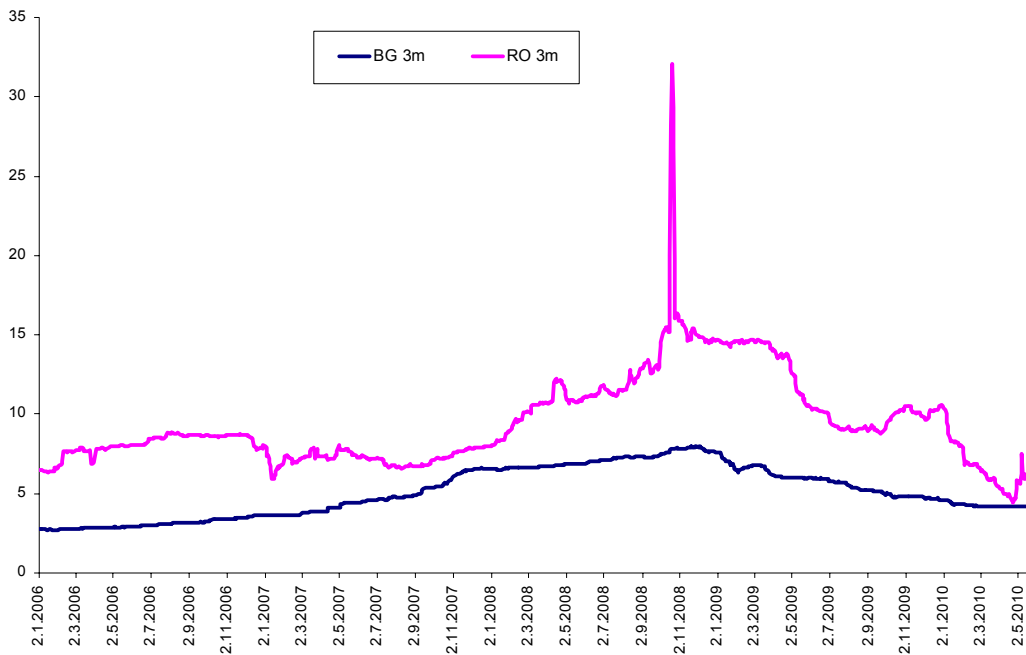**Bank nonperfoming loans to total gross loans** (%)

Source: National Bank of Romania, Bulgarian National Bank

Chart 10 O/N interest rate in Bulgaria and Romania (2006- 2010)
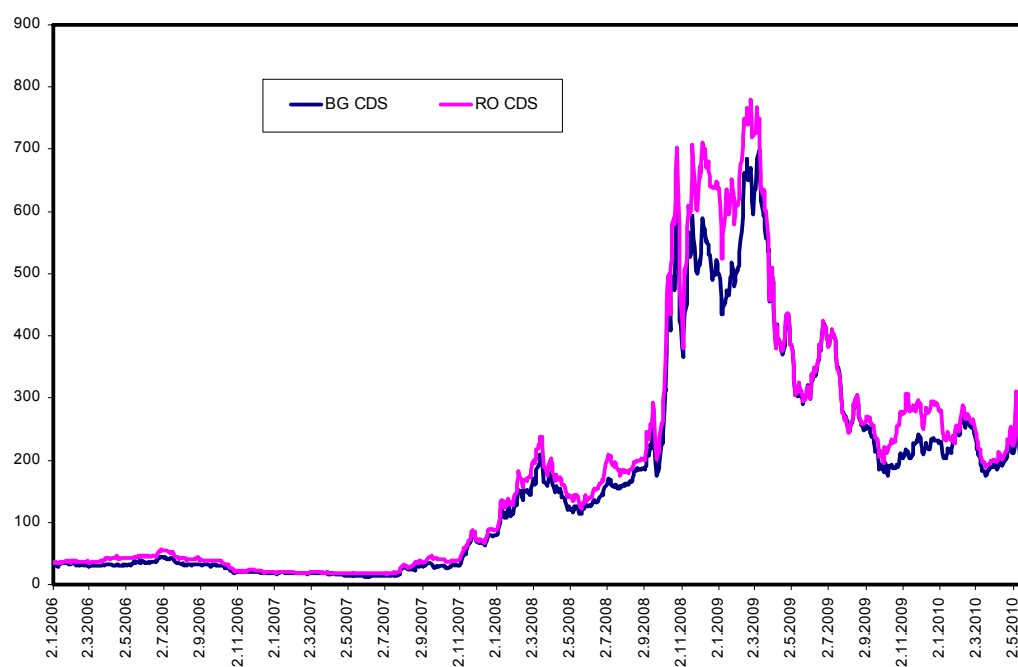

Source: Bloomberg

Chart 11 3M interest rate in Bulgaria and Romania (2006- 2010)

Source: Bloomberg

Chart 12 Sovereign debt CDSs in Bulgaria and Romania (2006- 2010)

Source: Bloomberg

Hypothesis 3: We can assume and logically derive the relationship, according to which the EU membership as a second external anchor reinforces or weakens the influence of the monetary anchor (monetary regime), and the magnitude of this strengthening or weakening effect has to do with the type of the monetary regime. This could be analysed within the theoretical framework of insurance game model proposed in different context by Dolley (1997, 2000) or simply as a moral hazard dynamics[17].

Theoretically, the case in point is the compatibility or complementarity of two basic institutions, of two major social anchors, which form and coordinate the expectations of economic actors. There is every reason to assume that the monetary regimes and the EU anchor are in conflict, since the EU membership triggers behaviour, which clashes with the principles of behaviour under a currency board arrangement. This happens primarily after a country gains full membership in terms of loosening constraints, slackening discipline and increasing moral hazard.

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[17] The entire model is exposed in Nenovsky (2010), graphical interpretation in Nenovsky and Villieu (2011). Empirical illustration of the original Dolley's model is given in Chinn and al. (1999).

The logic of this moral hazard (or insurance game a la Dolley) could be shortly exposed in a following way (for formal presentation see appendix). When government foreign assets became bigger that its foreign liabilities, the difference became to be viewed as collateral (free insurance) for private sector liabilities. This inflow of capital starts and the private debt, mainly foreign, but not only, start to rise. In fact, at the beginning the EU anchor and monetary anchor are rather compatible, because the EU credibility is reinforced by the discipline effect, but once membership realised these two effects start to contradict each other. The discipline is lost and the credibility effect has perverse effects. Our observation is in the close accord with Luengnaruemitchai and Schadler (2007) study of so-called EU halo effect on New members sovereign bond yields that became lower than can explained by fundamental, "A poor reason would be if markets mistakenly perceived EU mmebersgip as providing some sort of implicit guarantee against sovereign risk" (p. 20).

Because of raising government collateral the moral hazard, take form as either *private driven* (in the case of Bulgaria, because of Currency board) or *public driven* (in the case of Romania, because of discretionary monetary policy)[18]. One of the proof of this behaviour is the growth of non performing loans taking speed with the time (chart 9), another one, as in the case in Romania is the loosening of the fiscal discipline (chart 5 and 6). Charts 14 and 15 also provides good illustration about the moral hazard (or insurance game) hypothesis. It is clear form the both graphic that the EU moment (somewhere between 2003 and 2005), was the starting point of the insurance game.
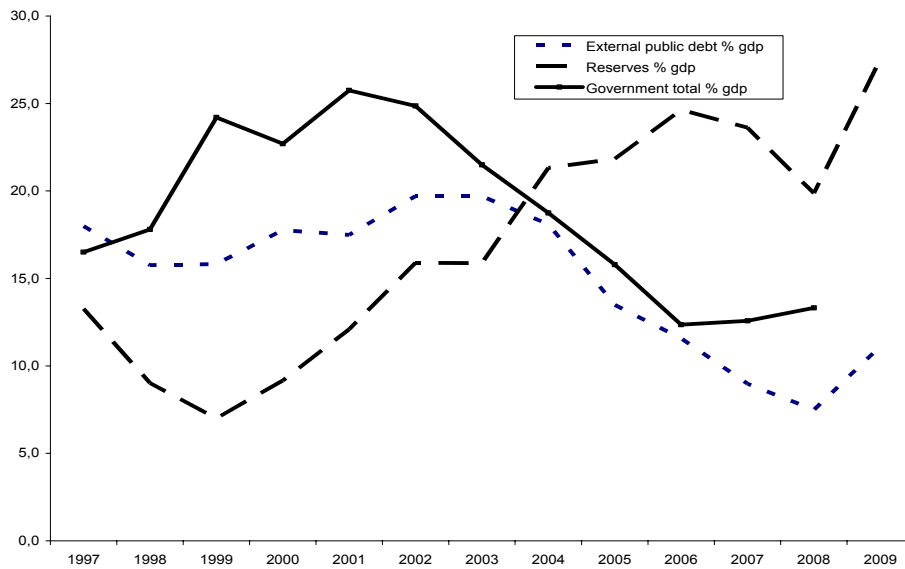
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[18] For some inspiring idea about crises classification, see Marzinotto and al. (2010).

Chart 14 Bulgaria public debt and foreign reserves
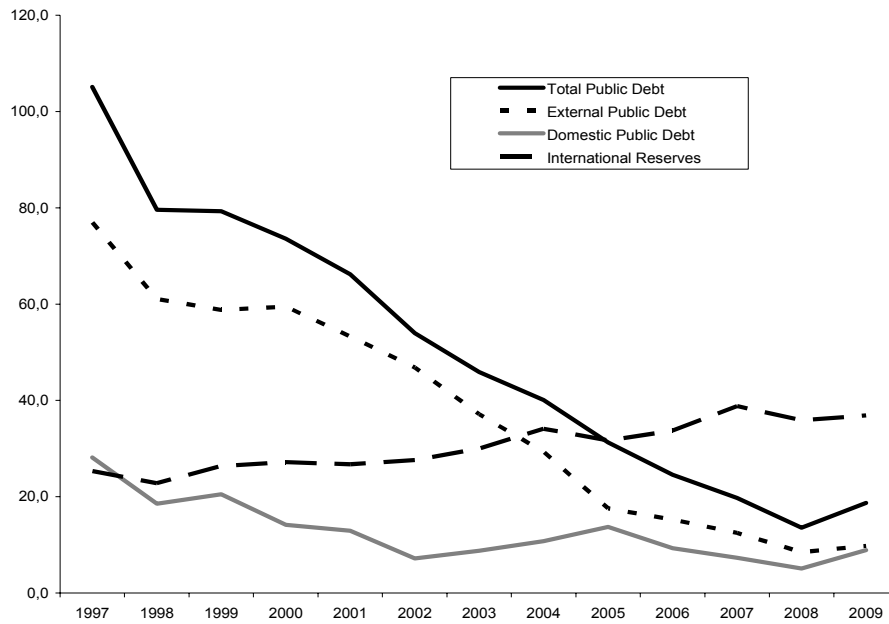
Source: Bulgarian National Bank, Bulgarian Ministry of Finance

Chart 15 Romania public debt and foreign reserves

Source: National Bank of Romania, Romanian Ministry of Finance

In sum, the monetary regime together with the EU effect, running through all phases of the current crisis, determines the concrete forms of manifestation of the crisis, the concentration and manifestation of risks in the different economies, the mechanisms and transmission channels of the crisis, the possibilities for reactions and the potential implications for the future.

Of all said so far, we could derive one additional assertion when we look at another similar, although distant in time economic past, namely the years of the Great Depression of 1930s. Our point here is that within certain frames the current comparative history of Bulgaria and Romania repeats the comparative history of the Great Depression period.

IV. Back to the history (1925-1940)

Overall, the economic and political development of Bulgaria and Romania in the inter-war period did not differ substantially as evidenced by the key economic indicators, which although with some conditionality, were quite close, not to say the same. For political and geostrategic reasons the two countries found themselves in opposite camps during World War I, which had important economic implications for their choice of economic and financial policy.

Being on the losing side in the war, Bulgaria lost territories and had to pay huge reparations as compared to its budget and wealth. Curiously, part of these reparations had to go to the Balkan countries, Romania including. France's claims on Bulgaria were about 26 per cent of the total Bulgarian debt. Next in the creditors' list were Italy at 25 per cent, Greece at 12.7 per cent and Romania at 10.55 per cent.

The country's foreign reserves were depleted; it faced harsh budget deficits and onerous external debts. Following the general principles of return to pre-war gold standard rules and the need for financial and monetary stabilisation, raised at the monetary conferences in 1920s, Bulgaria successfully carried out its own stabilisation (*de facto* in 1924 and *de jure* in 1926/28). This was achieved at a new exchange rate of the lev to the dollar (the gold) and with the help of the stabilisation loans under the auspices of the newly established League of Nations (1926 and 1928), which ensured the foreign reserves needed for the coverage of the currency in circulation. The public finances were brought to balance mainly by restricting expenditures and the Central Bank conducted deflationary policy and a policy of high

discount rate. Overall, this policy did not differ from that of the other countries, neither in terms of philosophy, nor of practice. What actually became, over time, a distinctive feature of Bulgaria's economic and financial politics, which subsequently came to prevail, was its orthodoxality and adherence to the principles of the gold standard, the fiscal discipline, and a strict and almost "martyr's" servicing of the huge external obligations. Although Bulgarian politicians and economists repeated over and over again how huge and unfair the obligations were, as these truly were, Bulgaria continued to remit amounts due under various reparation debts. Governments fell one after another because of the difficulties to refund these debts, with the signing of new loan agreements, but payments never stopped.

Bulgaria is among the few countries, perhaps the only one on the Balkans, which never defaulted. Due to its political isolation after WWI, however, its endeavours as a good payer were not recognised and it had to shoulder its liabilities with almost no relief (Ivanov, 2001, 2004). In his speech marking the BNB's 50th anniversary, then-prime minister Andrey Lyapchev said, "one would be hard put to find quite such a young nation in quite such exacerbated circumstances as ours these past fifty years, yet one which can boast that it has ever occupied the position of an exemplary payer to its foreign creditors" (BNB, 2001,135).

Bulgaria is among the few countries that never abandoned the gold standard, and especially the fixed exchange rate. Bulgaria, like most other countries, introduced exchange control in 1931, but unlike them, it never devalued. Although often argued that this type of exchange control is de facto abandoning one of the basic principles of the gold standard, there are a number of arguments to think otherwise. Because not only is it unclear why the exchange control in Bulgaria, as well as that in Romania, were so very different from the exchange control in England, or even France, for instance, it is also unclear when Bulgaria and Romania became full members of the bloc of countries running exchange control.

Certainly, like today, the choice of an orthodox monetary regime in Bulgaria was initially dictated primarily by the condition of debt and public finances.

As already mentioned, Bulgaria was a debtor country which considered debt service a key priority. In fact, Bulgaria was an extremely diligent payer who pursued to preserve its reputation through debt service. With respect to structure, Bulgaria's debt was denominated in gold backed leva and was mostly owed to non-devaluing countries. According to the Royal

Institute of International Affairs, "in Bulgaria it is almost certain that the transfer question has predominated" (1936, 98) and the purpose of maintaining the currency on a gold basis "has presumably been to avoid an increase in the costs of the foreign debt service" (1936, 129). Even before reparation payments began in October 1923, foreign debt service reached the amount of 112 million gold francs in 1918 to 1922: 16.3 per cent of budget expenditure. Reparations under the Treaty of Neuilly were added to this, coming to 2250 million gold francs at 5 per cent annual interest over 37 years, plus occupation expenses. This represented a quarter of the national wealth. Sterling devaluation offered some relief to Bulgaria since its debt was predominantly in pounds. Debt service now accounted for 11 per cent of budget expenditure; there was no great BNB asset loss since a comparably small amount of assets was denominated in sterling (the Royal Institute of International Affairs, 1936). Summarising the opinions of many economists at the time, a hypothetical devaluation would certainly increase national debt burden, while any possible advantages would be marginal.

Later, the balance of payments constraints were particularly tight, and not only as regards foreign debt service. The prices of agricultural products, which accounted for the major part of Bulgarian exports, fell sharply on international markets and aggravated terms of trade. The September 1932 Stresa Conference which focused on possible assistance to Southern European countries (a major part of the so-called 'agrarian bloc') noted that the price drop reached 70 per cent (Bonnet, 1933, 21). A fund concentrating revenue from the sale of agricultural products to developed countries was proposed to be used as partial debt service (the United Kingdom vetoed it).

Systematic exchange control could be interpreted as a defence against restrictions introduced by Bulgaria's trading partners. The farming price drop was combined with a number of restrictions on the import of agrarian products to Germany and France with a view to protecting indigenous farmers through economic and political means (Raupach, 1969). Turkey, an important Bulgarian trading neighbour, also introduced some limitations on Bulgarian imports. In April 1932 the drachma joined the devaluers' club and Bulgaria lost its competitive and long-standing positions on the Greek market.

Let us now turn to *Romania*[19], which although, as was mentioned earlier, followed the trends common, first, for all countries, and second, for the Balkan and peripheral economies, it nevertheless had some important differences. Again, of significance was the initial debt situation. Being in the winners' camp, Romania happened to be the recipient of reparations and became Bulgaria's creditor (10% of Bulgarian reparations were du to Romania). Its monetary and financial stabilisation was carried out relatively later, slower and with more difficulty.

What is evident from the monetary developments and discussions in Romania of that period as compared to those in Bulgaria is the much more pronounced wavering of Romanian economists and politicians with regard to the monetary stabilisation, as well as their inclination to use external loans to develop their economy, rather than regularly service their obligations[20].

After the Wars, Romania's economy followed similar developments as those in Bulgaria. The leu was slow to stabilise and lagged by a few years behind the stabilisation of the Bulgarian lev: the leu stabilised *de jure* only in 1929 (by a Monetary act of 7 February 1929), and on 18 May 1932 – by a radical introduction of a foreign exchange control, leaving the fixed exchange rate as the only trait from the gold standard. Of course, similar developments were witnessed in Bulgaria as well, and unlike Greece, neither Bulgaria nor Romania followed the devaluation of the pound. It would be interesting to note that Romania too had a problem with the initial foreign reserves as it was victimised by the Bolshevik authorities who confiscated its gold reserve (in early 1918) and refused to give back the gold deposited with the Russian Central Bank during World War I (December 1916). It might also be interesting to mention the role of a remarkable personality, the Bolshevik leader Christian Rakovsky (Bulgarian by origin, Romanian by citizenship, and revolutionary by vocation) who was a key figure in the story with the gold deposit. The gold had for a long time been accounted for in the balance sheet of the National Bank of Romania (unlike the National

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[19] See Madgearu (1939), Muresan and Muresan (2003), Blejan and al. (2008, 2009; 2010), For an overview of the economic situation on the Balkans during the Thirties, see Royal Institute of International Affairs (1936).

[20] In this period Romania is probably the most corrupted of all countries on the Balkans (Ahtik, 2009, p. 12). "Their society was deeply marked by the years under the corrupt Ottoman rule. Romanians had a saying: "The fish grows rotten from the head". In Romania, almost everything was for sale: offices, licences, passports. Indeed, a foreign journalist who once tried to change money legally instead of on the black market was thrown into jail by a police officer who thought he might be involved in a particularly clever swindle." (MacMillan, 2003, [2001], p. 129.

Bank of Bulgaria, it was 90% owned by private shareholders) and was included in the coverage of the currency circulation only in 1929 during the legal stabilisation of the leu. As compensation, and following the liquidation of the Austro-Hungarian Bank, already in February 1922 the Ministry of Finance gave a portion to the Central Bank, which Romania received as indemnity along with war compensations (for details see Blejan and al., 2008; 2010).

In the case of Romania, a crucial role for retaining the fixed exchange rate and furthering stabilisation was played by the French economists and bankers (Charles Rist in particular). Rist was the head of the monetary mission to Bucharest and amid tough negotiations, he insisted on using the 7.5% loan of 1931 for stabilisation purposes contrary to what the Romanian economists wanted; i.e. for developing the economy (railways and funding of current costs). The story of the negotiations is analysed by Costache et al. (2009). They where clearly show the polarisation between the French economists (proponents of gold standard and stable money, and monetarists in general) and the Romanian economists whose primary concern was the development of the industry and the real economy, and who were not convinced about the necessity and efficiency of stabilisation, or of the need of regular servicing of foreign loans.

Romania was much more productive and original in developing corporate and protectionist theories and one of the most remarkable economists, Mihail Manoilescu (1891-1950), who was in that period Governor of the Bank of Romania and who started as liberal economist, developed his groundbreaking protectionist theory applied to catching-up agrarian economies (for details see Bobulescu, 2003). Manoilescu's book, which was initially published in French in 1929, was quickly translated into the main western languages, while in Bulgaria he was regarded as economist of international statue along with Werner Sombart. The translations of his books, the articles dedicated to him, as well as his visit to Bulgaria in 1933 unequivocally show the time lag, with which Bulgarian economists embraced the views questioning the principles of classical political economy, including in monetary theory and practice (for details see Nenovsky, 2010).

Third, already at the time of introducing the exchange control a fluctuation of the exchange rate within the band of 5%-15% occurred, and later on an exchange premium between the official exchange rate and the exchange rate on the black market. In November 1936

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(following the devaluation of the French franc), de facto devaluation was realized by revaluing the gold reserves. Practically all foreign reserves of Romania are in gold). This devaluation is around 38% according to Blejan et al. (2009, p. 14) and 27.6% according to official records of the League of Nations (LN, 1938, p. 51)[21]

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[21] The Table attached (as at end-1938) shows that of the countries with exchange controls only Bulgaria from the Balkan countries did not devalue. Other countries from the group of non-devaluing countries are Hungary, Poland and Germany.

Table 5
Population and income levels in Bulgaria and Romania

	Population in 1920 (000s)	Population in 1939 (000s)	% population in agriculture 1930-1934	Population growth rate 1920-34	Illiteracy rate % of 7-10 year olds 1930-34	GDN per capita in 1929 (US 1960 dollars)
Bulgaria	4 847	6 305	75	1.30	31.4	306
Romania	15 635	20 045	72	1.27	42.0	331

Source: Adcroft (2006), p.5

Table 6
Indicators for Bulgaria and Romania

	Indices of Agriculture Productivity in Calorie Units (average 1931-35, Europe = 100) Per person dependent on agriculture	Indices of Agriculture Productivity in Calorie Units (average 1931-35, Europe = 100) Per male engaged un agriculture	Indices of Agriculture Productivity in Calorie Units (average 1931-35, Europe = 100) Per hectare of agricultural land	Surplus' Agricultural Population Assuming Existing Production and European Average Per capita Level (circa 1930) %	Rural Population (circa early 1930s)	Urban Population (circa early 1930s)	Infrastructure Levels Based on Five Components (transport, communication, housing supply, health care, educational and cultural services) Score (Rank 1920)	Infrastructure Levels Based on Five Components (transport, communication, housing supply, health care, educational and cultural services) Score (Rank 1937)
Bulgaria	47	55	80	53	78.6	21.4	14.2 (25)	13.9 (25)
Romania	48	53	69	51.4	79.8	20.2	10.8 (26)	13.5 (26)

Source: Adcroft (2006), pp.6-7, p.12, p.14. Infrastructure Levels Based on Five Components: for 1920: Denmark 75.3 (1); for 1937: USA 83.5 (1).

Table 7

Germany's share in the foreign trade in Bulgaria and in Romania,
1933-1939

		1933	1937	1938	1939
Export	Bulgaria	38.0	43.1	63.5	71.1
	Romania	16.6	19.2	37.1	43.1
Import	Bulgaria	38.2	54.8	57.8	69.5
	Romania	18.6	28.9	49.4	56.1

Source: Raupach, 1969, p.85

V. Concluding remarks

At a first glance, Bulgaria and Romania are countries, which do not differ much (aside form their Slavic and Latin origin, also debatable), which follow equal patterns of development and differ in the details. This article has attempted to prove that actually this is not so, and that there are essential differences, especially in the recent ten to fifteen years.

We have offered an analytical model for the purpose, which mainly relates to the choice of monetary regime in 1996/97 when Bulgaria and Romania started on completely different trajectories. Bulgaria choosing a currency board arrangement – an extremely orthodox monetary system, which effectively eliminates the country's monetary autonomy and Romania for its part continuing on the track of modern trends by following a discretionary monetary policy and even introducing inflation targeting. This difference, which in our view is dictated by the initial conditions of the two countries' external debts (a large debt with Bulgaria and a small one with Romania), runs throughout the overall economic system of the two countries and their economic policy. Bulgaria being more in the direction of the "private sector", concentrating both the economic activity as well as the whole range of shocks, response mechanisms and self-equilibrium, while in Romania, in contrast, it was the state and the public finances that played a significant role by being both a reason for and a response mechanism to imbalances.

The polarity of choices of the monetary regimes shaped the ways of thinking of the economists and politicians of the two countries. While in Bulgaria, eulogy of static monetary regimes of the past prevailed and any form of activism was denied, it was quite the opposite in Romania where the economists vied with each other in constructing models and describing the complex mechanisms of inflation targeting and monetary policy. A look back at the inter-war period reveals – perhaps accidentally or perhaps not – some recurring patterns of the behaviour of the two countries, which were then associated with monetary stabilisation and monetary regime.

The EU membership plus excess liquidity globally, coupled with the difference in their monetary regimes, has led to two relatively diverging configurations of moral hazard behaviour. In Bulgaria, moral hazard and the insurance game after Dooley's game model,

which we regard as appropriate explanatory theoretical miniature models, were concentrated in the private sector and the strong growth of private debt. In Romania, while not disregarding the indebtedness of the public sector, the public sector, public finances and public debt reacted much more quickly, thus leading to problems in 2009 and to the signing of an agreement with IMF.

Today (early 2011), the future of the two countries is not clear, just as it is not clear how the present crisis will evolve. As an African saying goes, "When you don't know where you are going to, better know where you are coming from".

The theoretical issue presented here about the role of the monetary regime as an economic anchor and its complementarity with the external (geo) political anchor, in this particular case EU is promising topic and deserves new theoretical and empirical analyses.

Appendices:
Formalization of insurance model (hypotheses 3)

The model could be presented using the following functional relations (see for more details Nenovsky, 2010; and for graphical presentation see Nenovsky and Villieu, 2011):

(1) $d^d = a_0 + a_1(r - r^*) - a_2\alpha$
(2) $\alpha = \alpha_0 - \alpha_1 F$
(3) $F = \beta_0 + \beta_1 \lambda_1$

Where equation (1) (the only one that we borrow from Dooley) shows demand for deposits by non-residents d^d as a function of real interest rates on deposits r, risk-free real interest rates abroad r^*, and additional return α, which non-residents would require in case of a lack of insurance. Demand for deposits grows with the increase of interest rates spread and declines with the increase of insurance premium. We introduce the equations (2) and (3) that capture the logic of our model extension. Equation (2) shows the negative link between this premium α and the collateral, in this case approximated with net external assets of the government, or even closer with foreign reserves F. Finally, equation (3) indicates the supposedly positive connection between the collateral's dynamics, F, and the power of the anchor's credibility (in this case the monetary regime) λ_1.

We are examining three periods, of course with all conditionalities. The first period, $T1$, covers the time before the start of negotiations for EU membership. The second period, $T2$, after start of negotiations until accession, and the third period, $T3$, is the period after the official entry. While the first period is characterised by the existence of one anchor, in this case λ_1, which reflects the monetary regime (either exchange rate target or inflation target), in the second and third period a second, already external, anchor emerges (EU membership), λ_2. While in $T1$ this anchor plays a mobilizing, stimulating and disciplining role for the countries heading for membership, and overall both anchors – internal and external – move in a single direction and act in synchrony.

Thus in $T2$:

(1) $d^d = a_0 + a_1(r - r^*) - a_2\alpha$
(2) $\alpha = \alpha_0 - \alpha_1 F$
(3) $F = \beta_0 + \beta_1\lambda_1$
(4) $\lambda_1 = \gamma_0 + \gamma_1\lambda_2$

The equation (4) describes the amplifying effect of the second anchor on the first anchor $(+\gamma_1)$.

And in $T3$:

(1) $d^d = a_0 + a_1(r - r^*) - a_2\alpha$
(2) $\alpha = \alpha_0 - \alpha_1 F$
(3) $F = \beta_0 + \beta_1\lambda_1 + \beta_2\lambda_2$
(4) $\lambda_1 = \gamma_0 - \gamma_1\lambda_2$

In this period $T3$ there is every logical and empirical evidence to assume that the second, external anchor – EU membership – brings detriment to and undermines the credibility of the monetary regime anchor $(-\gamma_1)$. Besides, in equation (3), we add the second anchor λ_2 in explaining foreign reserves dynamics. Of course, at first approximation, the functional

correlations are taken as linear, which is clearly a simplification, because non-linear dependences could be surmised[22].

In $T1$, after transformations, we arrive at the following dependence between insurance premium and anchor credibility: $\alpha = \alpha_0 - \alpha_1(\beta_0 + \beta_1\lambda_1) = \alpha_0 - \alpha_1\beta_0 - \alpha_1\beta_1\lambda_1$.

From where it follows that $\dfrac{d\alpha}{d\lambda_1} = -\alpha_1\beta_1 < 0$, and the elasticity of demand for deposits in relation to the anchor is $\dfrac{dd^d}{d\lambda_1} = a_2\alpha_1\beta_1 > 0$.

In $T2$ we obtain: $\lambda_2 = -\dfrac{\gamma_0}{\gamma_1} + \dfrac{\lambda_1}{\gamma_1}$, therefore $\alpha = \alpha_0 - \alpha_1\beta_0 - \alpha_1\beta_1 + \dfrac{\alpha_1\beta_2\gamma_0}{\gamma_1} - \dfrac{\alpha_1\beta_2}{\gamma_1}\lambda_1$

whence $\dfrac{d\alpha}{d\lambda_1} = -\dfrac{\alpha_1\beta_2}{\gamma_1} < 0$ and $\dfrac{dd^d}{d\lambda_1} = \dfrac{a_2\alpha_1\beta_2}{\gamma_1} > 0$.

Besides, $\dfrac{\alpha_1\beta_2}{\gamma_1} > \alpha_1\beta_1$, because $\gamma_1 < 1$, i.e. the sensitivity of the premium to the credibility of the new anchor is growing, which is logical since the external anchor amplifies the internal one. This, however, is not the case with period $T3$, where the new anchor disables the first one and cannot offset it. After the transformation, we have: $\lambda_2 = \dfrac{\gamma_0}{\gamma_1} - \dfrac{\lambda_1}{\gamma_1}$ and consequently

$$\alpha = \alpha_0 - \alpha_1\beta_0 - \alpha_1\beta_1\lambda_1 - \frac{\alpha_1\beta_2\gamma_0}{\gamma_1} + \frac{\alpha_1\beta_2}{\gamma_1}\lambda_1 = \alpha_0 - \alpha_1\beta_0 - \frac{\alpha_1\beta_2\gamma_0}{\gamma_1} + \left(\frac{\alpha_1\beta_2}{\gamma_1} - \alpha_1\beta_1\right)\lambda_1.$$

Thus we derive $\dfrac{d\alpha}{d\lambda_1} = \dfrac{\alpha_1\beta_2}{\gamma_1} - \alpha_1\beta_1 > 0$ and $\dfrac{dd^d}{d\lambda_1} = a_2\left(\dfrac{\alpha_1\beta_2}{\gamma_1} - \alpha_1\beta_1\right) < 0$.

It is clear that while in the first two periods deposit demand is magnified first by one, then by both anchors through reducing the risk premium, at $T3$ a reversal occurs with non-residents starting to withdraw their deposits, or at worst, the inflow quickly subsides. Chart 16 shows the presumable relations between anchor λ_1 and insurance premium α in the examined periods $T1$, $T2$ and $T3$.

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[22] We could presume for example that the premium movement depends not only on the level, but also on the rate of growth of foreign reserves $\alpha = \alpha_0 - \alpha_1 F - \alpha_2 \dfrac{dF}{dt}$.

Chart 16 Anchors dynamics and insurance premium in *T*1, *T*2 and *T*3
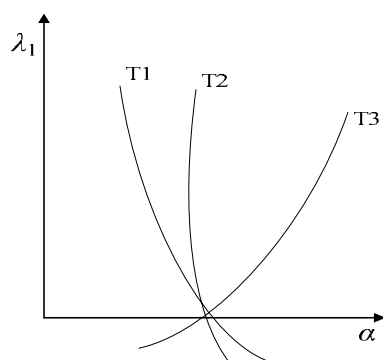
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