

# THE LOGIC OF THE CURRENCY BOARD MONETARY REGIME

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*Abstract: The Currency Board (CB) is a particular monetary regime combining legally set fixed exchange rate and full coverage of domestic currency by highly liquid holdings in a stable reserve currency with an explicit relinquishment of active monetary policy by national monetary authorities aiming at enhancing and making this commitment more credible. It exhibits the theoretical functioning of an automatic mechanism linking the performances of the domestic economy as represented by the balance of payments dynamics providing reserve currency to the Currency Board and the money supply dynamics based on it. In the short-run such a political decision largely contributes to stabilisation policies and exhibits significantly positive results in fighting inflation, reflating economic activity and setting hard budget constraints to all economic agents. Although it is often related as the hardest of all pegs, it is argued here that it is but a mere monetary substitution of external to domestic currency thus breaking the necessary or even vital link provided by the monetary procedure, as a relation between the monetary product and the economic behaviour of economic agents. Therefore the CB introduces a relative-price distortion through a continuous real exchange rate appreciation. It consists therefore in hiding and postponing economic troubles amplified by the necessity of an exit strategy towards discretionary managed monetary policy by the Central Bank or dollarization / euroization and total dependence on foreign discretionary monetary policy.*

*Keywords: Currency Board, monetary procedure, hard peg exchange rate, relative price system distortion.*

*Özet: Para Kurulu yasal olarak sabitlenmiş bir kur ve ulusal paraya tam kapsama getiren bir para rejimidir. Tam kapsama güçlü bir rezerv para birimi cinsinden yüksek miktarda likidite bulundurulması ve ulusal otoritenin aktif para politika uygulamalarını terk etmesini içerir. Bununla amaçlanan güvenilirliği arttırmaktır. Para kurulu ödemeler dengesi dinamikleri ile ifade edilen ulusal ekonominin performan-sının teorik işleyişini göstermektedir. Kısa vadede para kurulu ekonomik dengeleme politikaları, enflasyonla mücadele, ekonomiyi canlandırma ve sıkı bütçe uygulamaları konularında katkı sağlamaktadır. Para kurulu dö-vizin ulusal para ile ikamesini ifade etmekte ve en zor kur çapalardan (peg) birisi olarak kabul edilmektedir. Böylelikle, para kurulu*

*uygulamaları, parasal prosedürler aracılığı ile parasal ürünler ve ekonomik ajanların rasyonel davranışları arasında sağlanan hayati bağı koparmış, engellemiş olur. Sonuç olarak para kurulu sürekli reel kur artışları aracılığıyla bağıl fiyat bozulması (distortion) sağlar. Para kurulu, merkez bankalarının para politikaları sonucunda gizlenen veya ötelenerek ileride daha büyük finansal sorunları veya “dolarlaştırma / avrolaştırma” nedeniyle yabancı para politikalarına bağımlı hale gelmeyi engeller.*

*Anahtar sözcükler: Currency Board, monetary procedure, hard peg exchange rate, relative price system distortion*

## 1. INTRODUCTION

The very definition of money being that of the exchange tool, it is usually studied through a functional approach, that is examining what money does, but the question of its nature is, put differently the question of “what money is”, -what is the tool based on- and the consequent normative questioning “what money should be?” are rarely put forward, and this because of the approach itself.

Thus an inquiry based on the conceptual understanding of the monetary phenomenon is possible and could be expected to shed light on some less exposed and commonly depicted features of money’s complex nature. So to say money is to be understood as a set of common practices, rules and norms that condition and determine human interactions and thus explain and shape social reality.

In this sense, a specific monetary arrangement such as the Currency Board (CB), seen as a formal legally established monetary regime, draws attention to its specific institutional dimensions based on strict and clear rules constituting a radical change from the surrounding and widespread discretion<sup>1</sup> in monetary management practices.

First of all, one has to observe that such an arrangement’s introduction is a result of deliberate political will consisting in reforming the rules of an existing discretion-operating national Central Bank into a Currency Board. It is not a product of what may be characterized as a spontaneous evolution of norms and rules, but rather a radical solution to a critical political and economic situation<sup>2</sup>. Because of this chronological evolution from a discretion-operating Central Bank to a rigidly bound to explicit and transparent behavioural rules Currency Board, a form of a path dependence can be shown as some features of the former Central Bank are present in the CB. Therefore current CBs can be considered as non-orthodox, or also called second generation CBs.

Such a situation seems quite paradoxical. While the recent historical record of the complex and complicated relations between political power and monetary authorities shows that the former have taken over the later, the explicit adoption of Currency Board solutions in a number of countries points out an overall tendency to refrain from active State-induced monetary policy. Moreover and despite the harmful experience in Argentina, the continuous assertions of monetary authorities in Singapore and Croatia to follow a monetary behaviour “as if” under a CB, strengthens and broadens the interest and the

<sup>1</sup> It may be argued that despite their formal independence most of the national Central Banks totally lack legitimacy and are therefore ultimately dependant on the political will of democratically elected governments and subject to changes in their statutory situations when necessary.

<sup>2</sup> All Currency Boards set in the 1990’s followed either a deep monetary and financial crisis or other extreme political and economic situation: external debt default, hyperinflation, civil war or dependent state creation.

debate concerning not merely the monetary regime theory but also the more general question of “sound” monetary policy, as for many observers this is to be considered as a solid base for further economic reforms towards a commonly accepted liberalisation of the trade process, economic growth and international integration.

In spite of this overall political tendency aiming at economic openness, the CB arrangement is by definition contrary to a free-market-based selection process of monetary regime. If such a natural, evolutionary monetary regime is to be considered as a theoretical yardstick, the question of what is monetary in a Currency Board arrangement is fully consequent.

This investigation goes through a brief presentation of what can be understood as the institutional nature of money (part 2), before presenting the normative dimension of the CB arrangement in part 3. Then an attempt is made to exhibit the distortions of the trade process under such a regime (part 4) and the systemic limits of this procedure (part 5). Lastly, part 6 draws some normative conclusions and shows alternative ways of understanding the problems of a CB arrangement.

## 2. MONETARY PROCEDURE AND “SOUND” MONEY

The central question here is about what may be called monetary procedure<sup>3</sup>. The monetary phenomenon can be compared to an iceberg, so that the monetary product would be the visible part of the whole, the invisible one is the monetary procedure. In order to simplify our task, it is assumed that a monetary procedure is the set of specific market interactions based on indirect -that is monetary- exchanges between economic agents that puts into motion and enforces the ensemble of formal and informal rules and norms that qualify money as an institution. That is the capacity of money to allow the inter-temporary dynamics of the trade process and the coordination of anonymous individuals in the complexity and uncertainty of the environing world. Put it differently, the focus here is on the quality of money as an explaining variable in the modelled economic world rather than its quantity.

It is to be reminded that a monetary regime is the official, formal part of the broader concepts of monetary institution and monetary procedure. Monetary regimes are thus results of logical construction. They are created or set on the -often loose- basis of pre-existing informal rules and are not spontaneously resulting from a natural selection process of trial and error. Generally, only a deep financial and monetary crisis can induce a regime change, after the unavoidable political bargaining between parties with highest and strongest interests in the issue that are debtors and creditors.

Consequently the regime change illustrates or accounts for a change of the procedure and the institution. The delicate distinction between the monetary procedure and the institution holds on the causal relation between the two. The procedure is the continuous appreciation of the goodness and acceptability of the monetary product illustrated by a series of monetary processes -such as inflation, devaluation, etc.- thus conferring to money its institutional dimension which is the set of rules and norms functioning in an accepted

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<sup>3</sup> The very notion of “monetary procedure” is complex and is the object of a distinct study. Figuratively, it can be seen as the driving vital force of the monetary institution.

by the public in general way. As such it can be qualified as a “social superstructure”<sup>4</sup>. The corollary of this position is that money as a tool has to be “sound”. This is a theoretical yardstick, an ideal, as defined by the Austrian monetary theory where the best one may hope for is money that distorts the less the market process. Beside the fact that in this perspective, money is the product of competition between private issuing banks, the best ever money is defined as that with constant purchase power. However, in a growing economy the only feasible way to keep money purchasing power constant is to increase the quantity of money. This is a very serious dilemma. As a matter of fact, while pursuing the aim of stable purchasing power of money one has to sacrifice the relative price system and thereafter its allocation capacity of factors of production. Thus, money can not be considered as neutral, it necessarily has effects on the economic process. Moreover the existence of entry points -where new money is created and supplied- and monetary channels, put differently patterns of money in the economic network, participates in the overall process of the monetary impact on “real” economy as Nenovsky (2002) provides in-depth details of what can be called the “Cantillon effect”. This correct allocation of resources is thereafter possible if money value evolves with productivity gains (Hayek [1984]).

An important issue in this perspective is the understanding that “moneyness” does not depend on one’s scheme, but on the interwoven network of numerous individual plans. Money is therefore not only a simple media of exchange, but also – and mainly – a central characteristic of its underlying economy. Herein lays at least part of the institutional dimension of money. In this order of ideas, money as media of exchange, account and ultimately value, has to permit the economic calculus of individuals in the best conditions regarding its own value. This is not neutral money. *A contrario*, this is a reliable transcription tool of individuals’ appreciation of different goods and services. That is subjective or inter-relational values of property rights can be compared and time-projected in a correct way.

The main criterion of quality for any good or service is its price and not surprisingly this holds true for money. Following Mises (1912:101) money price is its exchange rate in goods and services over time, that is interest rate, or space through foreign currencies’ exchange rates, the later being the intensity of relative appreciation concerning the quantity of property rights money contains and its qualitative capacity to transfer those rights in respect with other monetary products. That is, not merely internal but also external monetary stability is at stake. Economic agents are as sensitive to monetary quality in their domestic economy as they are so in respect to the external quality of their national currency.

While searching for monetary quality individuals tend to naturally substitute currencies. As basic economic theory insists, substitutability is only possible between distinct and identifiable goods. Therefore monetary regimes based upon fixed exchange rates can not take into account this process of appreciation of individual preferences. Therefore, as Centi (1984) points out, “the immovable fixity of exchange rates eliminates all reasons for currency substitution” and “the search for money of superior quality is [then] frustrated”.

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4 In order to distinguish the sense of this notion from its widely used Marxist meaning, it is here defined as a set of feed-backs maintaining a coherent and sensible social system and its appearance through a set of psychological configurations permissive of maintaining consistence between distinct social institutions. In this topic, money is no longer part of the Marxist economic “infrastructure”, but the very economic dimension of the social superstructure as defined above.

On the other hand, in the search for a rightful and qualitative monetary procedure, the Currency Board arrangement (CB) draws attention as presumably allowing macroeconomic stabilization and non-discretion, i.e. dissociation of political constraints and market reality. As a CB is a monetary regime based on tight control over money supply through issue rules and quality of money is understood to be subject of its quantity, market forces, that is individual decisions and actions follow consistently different monetary patterns. In this sense, the question that arises is relative to the relation between quantity and quality of money under a CB. Put differently, is CB money “sound” given the modalities of monetary supply under a CB.

### 3. THE CB MONETARY PROCEDURE

The main task of a CB arrangement is the monetary stability qualitatively through a fixed relative price of domestic currency in terms of a widely accepted international one and through limited domestic money supply conditioned by a politically independent economic factor, here the balance of payments dynamics. As mentioned above, this aim is to be obtained through the monetary regime, which is an intellectual construction, and not the result of a spontaneous procedure. Although spontaneous monetary evolution may have similar results, it is conceptually and practically different. Stability here is to be understood in a quantitative sense and there are two different dimensions of stability in a CB to be considered, the first one is the explicit and nominal one, through the exchange rate, the peg of the national currency to the reference currency and the second one -that provides the ground for this nominal stability- are the quantities and dynamics of foreign currency reserves<sup>5</sup>.

So a CB is a particular fixed exchange rate regime in the sense that the relative price of its product, i.e. the national currency's exchange rate, is fixed by law and therefore unchangeable. Therefore no causal relation between the nature and the dynamics of the economic activity and the exchange rate of the national currency exists. While some may consider this as a departure from a given theoretical yardstick of the unhampered market functioning, others may argue that this is a unilateral engagement by the monetary authority to maintain the quality, i.e. the relative price of the national currency, at an agreed-upon level<sup>6</sup>. That is, the issuing authority is supposed to be submitted to market reality. This consists in the first constraint. While at first sight it may easily be agreed it is a qualitative constraint, this opinion can be challenged as long as the price of the product, the exchange rate in this case, is not the result of a free-trade bargaining process. It is by design that through the CB, its product becomes a substitute of the reserve or reference money, that is, the foreign currency it is pegged on. In fact, not only the exchange rate is fixed, but also the monetary authority is obliged by law to convert unconditionally any amount of national currency in the reserve currency at the peg level. Therefore some argue that the perfect substitutability of CB currency, obtained through its fixed unconditional and immediate convertibility, is a gage of quality. This is true, but only by construction. It

<sup>5</sup> This stabilization policy is called “orthodox” because it functions only through the exchange rate.

<sup>6</sup> Although the peg is set to reflect the best the real exchange rate between the national and the hard currencies, it is also a question of political and symbolic appreciation. Nenovsky (2007) reports that the peg of HK\$7.8 per US\$ is due to the fact that economists were hesitating between two ratios, 7:1 and 8:1 without finding a consensual level.

does not automatically mean that national currency gains peg-currency's quality. The inflationary inertia and the interest rate spread witness that "perfect" substitutability is not an automatic way of gaining quality. Also quality of CB currency is based on discretionary chosen gage, which is itself, discretionary issued by another Central Bank, thus displacing the quality of national money problem abroad.

In the case of CB produced money, one should rather speak of confounding and not of substitutability. Therefore, in the case of a monopolistic organisation of money supply, the pretended substitutability means in fact homogenisation of money. The only result one can expect is a progressive destruction of the CB currency functions, *i.e.* a generally accepted medium of exchange.

The designed fixity of the exchange rate is actually possible to implement and maintain only through the rule of 100% coverage of the monetary base with reserve-currency denominated highly liquid assets. In a sense, the core of a CB lays herein. No such a monetary arrangement is possible without a full coverage of the basic monetary aggregate - although the Argentinean Currency Board required only for 66% of reserve currency coverage. In this sense money issuing is tightly linked to trade balance dynamics. This relationship, close to the Gold Exchange Standard<sup>7</sup> issue rule, makes money supply under CB look as if endogenous. Many critiques can be addressed to which aggregate should be covered, only the narrowest one, the monetary base, or a broader one like M1 or M2, which would be consistent with the dynamics of the economic activity. Although this is a very important issue, opinion should not rely on technical but institutional understanding of money.

It is first commonly considered, that in a monetary system characterised by a hierarchical structure with a monopolist Central Bank and second level commercial banks internal money, money deposits, check accounts, etc. are perfect substitutes of fiat money, *i.e.* the monetary base of banknotes and coins issued by the state monopoly. Under a CB arrangement, the monetary multiplier supposedly provides the link between the two. That is, the chain of causality is from the money supply towards the "real" economy. The CB stands as the only link between international trade, which indicates for the strength of economic activity, and private banking activity, credit creating and loan distribution, based on expected future economic activity. Put differently the CB has to exhibit a strong link between the dynamics of the balance of payments as an explaining variable of the foreign currency reserves and subsequently the dynamics of money supply. Either strong positive trade balance or a significant inflow of direct foreign investments or both contribute to a positive balance of payments thus allowing for accumulation of foreign reserves and increase in domestic money supply. Therefore, a CB is expected to offer a truly endogenous hard-constraints money supply, based upon the fundamental link between external economic performances and available foreign reserves. Herein the genetic links of the CB with the "Currency Principle" become apparent and consistent with it though the complete backing of the CB currency with the reserve currency and their interwoven dynamics which are seen to be the gage of monetary quality. However this does not mean that a CB works as a genuine Gold Standard or even a Gold-Exchange Standard, because one should keep in mind the presence and role of monetary authorities as monopolistic money suppliers. Not only an arbitrarily created and chosen fiat money and not gold, *i.e.* a tangible good with an independent nonmonetary value as under the Gold Standard and

7 The parallel between the Gold Exchange Standard and the CB is tempting but untrue. Nenovsky and Desquilbet (2004) argue that one should rather speak of Gold Exchange Standards, because of their multiplicity, and this holds true for the CB, as each one is consistently different compared to the first generation CBs, if these can be considered as a theoretical yardstick.

related first-generation Currency Boards – where the backing currency, historically the sterling pound, was itself backed by gold – but also specific features of second-generation CBs such as fiscal reserves held with the Board or discretionary set levels of compulsory reserves participate to loosen if not break the link between balance of payments, currency reserves and monetary supply.

As quality in CB is result of the fixed exchange rate, its backing with 100% external reserves, *i.e.* claims on foreign economies, is the quantitative dimension enforcing and enhancing quality. That is an unconditional peg and a supposed automatic mechanism of creation and destruction of national currency depending the balance of payments dynamics are about to provide with stable and predictable economic conditions.

#### 4. THE CB AND THE PRICE DISTORTIONS

As shown above, the theoretical base of a CB arrangement is to be found in the Quantitative Theory of Money (QTM) and the “Currency Principle” in particular. However under a CB structure the quantity of domestic money in the economy should be understood as a function of the quantity of foreign reserves, which in turn depend on balance of payments dynamics, which stands for a proxy of “real” economic activity, that is to say that the money supply is seen as endogenous, but a-political – not a result of a conscious economic monetary policy as such.

Assuming a working automatic mechanism, that is no discretionary policy, there is only one valuable reason for a modification of the price level. Prices should change only as a consequence of trade imbalances in order to compensate for external trade deficit or surplus, as taught by the QTM. In this specific case then, an initial modification of the monetary price level can only occur if the amount of foreign reserves has changed. This is possible because of a “real” shock, changes in productivity and competitiveness, production techniques or external demand. In this case only “real” phenomena are at the origin of the general price level modification.

Then two phenomena need to be explained; these are the inflationary inertia and the interest rate spread. Under a CB, these are relevant only when compared to inflation and interest rate levels in the reference economy. When comparing inflation and interest rates in Argentina, Bulgaria, Estonia and Lithuania, comparatively to the USA and Germany (Euro zone since 1999), despite the stabilising effects of the CBs, inflation persists and interest rates in national currency are often way above reserve economies credit conditions. Of course, one may argue that price convergence towards the reference economy conditions takes time, this is in many ways obvious; the point here is that this convergence, if true, has little to do with “sound” money reality.

The main reason for continuously increasing prices in a CB is believed to be complex. As a matter of fact two possible explanations can be set. While the first one can be characterised as somehow mechanistic, macroeconomic, the second one is subjective or microeconomic.

On the one hand, because of the stabilised and improving macroeconomic, monetary and financial conditions one can observe a significant capital inflow comparatively to the pre-crisis period. In such stabilised environment these capital investments are attracted by the privatisation of state-owned industries and the liberalisation of regulated or monopoly

markets. This implies a structural deficit in the trade balance due to the increased import of capital goods with high added value and, on the other hand, because the crisis creates a forced saving situation<sup>8</sup>. Also the overall tendency of price convergence towards the reference economy's higher prices, doubled with increased exposition to foreign trade – that is international prices condition domestic prices, is a reason for continuously increasing prices.

Because inflation in the reference economy is lower – that is why its money is chosen as an anchor – and the definition of the equilibrium exchange rate as the one allowing purchase power equalization in the concerned economies, driven by price convergence the overall price level in the CB economy will be continuously rising and necessarily result in “real” terms overvaluation of the national currency. Put differently CB economy's domestic production buys more from the reference economy than it should at the equilibrium rate.

An important explanation is due here. The sense of “over-valuing” is somehow troubling. In order to explain the best the monetary phenomena under CB one should explain the “overvaluation” phenomenon and its relation with inflationary inertia. Suppose a rise in prices in the CB economy because of say improvement in domestic demand after monetary stabilization. This results in loss of purchasing power of the reserve currency on the CB economy markets and of course of the CB currency. However, the later does not lose its purchasing power *vis-à-vis* the reference economy because of the unconditional peg. This is a relative price distortion, which means that goods of the CB economy become more expensive in respect of goods in the reference economy without a consequent adjustment of the exchange rate. That is “real” exchange rate is over-valuated in respect to the nominal peg. Given the nominal exchange rate, the CB currency purchases relatively more foreign goods than the reserve currency in the CB economy. This eases imports and tends to deepen the already existing capital inflow sustained trade deficits.

So this “real” exchange rate distortion results in an additional inflationary inertia and a loss of price competitiveness, as a by-product. Here one should insist on the circular or mutually-fed logic of these phenomena.

As a matter of fact this situation interferes with the functioning of the CB's automatic mechanism, that is the circular or bi-univocal link, and needs more precision. Literature distinguishes three different analytical cases exist: a strong and a weak form of the automatic mechanism and an adjustment through discretion. A loss of price competitiveness for a CB economy with a working automatic mechanism in its strong form – a correlation between balance of payments dynamics and money supply dynamics, can be dramatic. Because of its structure, usually transition or developing economy, and its monetary procedure, it has in no ways the capacity to overcome this shock by productivity gains. The resulting contraction of monetary base and consequent deflation, if not abandon of the peg is the only logically possible and economically acceptable adjusting mechanism.

If the automatic mechanism works in its weak form, a correlation only between balance of payments dynamics and reserve money dynamics, the price competitiveness loss can be postponed or smoothed over time, its consequences should not be immediately visible. It follows that the country's trade imbalances deepen and the overvaluing of the CB currency

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<sup>8</sup> It can be argued that there are many and in some case divergent definitions of the concept of “forced saving”. According to Mises (1912), it can be seen as a full-employment situation with excess credit supply. Here the term is used in a more microeconomic, agent level understanding, where overall consumption limitation is due to shortages or availability of poor quality local goods consecutively to import-substitution economic policy.



is greater. This is a standard illustration of what one can call a distorted resource allocation.

This holds true for a CB with no working automatic mechanism but “adjustment through discretion”. In this case the CB functioning does not exhibit a significant correlation between the dynamics of the country’s balance of payments and the domestic monetary supply or the foreign currency reserves held by the national central bank. Also, especially in the case of Bulgaria, the domestic economy faces strong structural trade deficits. In parallel because the dynamics of the GDP are calculated on aggregated tax incomes based on value added tax, as long as inflationary inertia persists, with national currency “overvaluation”, and the automatic mechanism of adjustment does not work, *i.e.* trade deficits are maintained, there is no doubt that the GDP grows, as tax base is broader and more goods are sold at a higher price in reserve currency terms. Where many see wealth growth, what really is to be seen is only inflation and economic disease.

Another parallel and compatible explanation may consist in the operating of a supposed *concertina effect* coupled with what can be considered as “malinvestment”.

As a matter of fact the CB in Bulgaria exhibits a situation where the national trade deficit is due to sustained imports of capital goods and therefore not truly alarmed as consequent creation of wealth should occur. Nevertheless, it is an important departure from the CB norms and consists in a deeper and more significant distortion of the relative prices structure without any correction possibilities because the very production structure becomes inappropriate. In some way it reminds the *forward run* of structural budgetary deficits in a demand driven growth which has proved to be so disastrous in the past.

Given these considerations, all productivity gains are engaged in a persisting process of labour reduction. This may explain the relatively high levels of unemployment in Argentina during the 1990’s or in Bulgaria during the first decade of the XXI<sup>th</sup> century despite the significant and continuous GDP growth level.

Micro-economic considerations of inflationary inertia point out another troubling phenomenon. The continuity of inflation can be explained by the lack of credibility of the monetary regime, as shown by Dupuy (2001) in an original econometric study of the CB credibility and inflationary inertia in Argentina. Because of recent monetary and economic distress or collapse, domestic populations are guarded and doubtful in respect to the new monetary regime of the CB. This is easily understandable as one considers that private deposits in national currency will be immediately affected by a collapse of the regime. Such expectations can explain the importance of large US dollars bills hoarding in Argentina during the CB regime. This lack of credibility results in the classical Gresham’s law, a run, or a shunning -that is a continuous move away- from the national currency. Here one can find a supplementary explanation of the increase in internal demand and the resulting trade deficits.

An attentive observer should therefore take in account the “overshooting” of foreign capital flows towards the CB economy. A CB arrangement, through its radical stabilisation effect, is often viewed as very suitable for international investors and so it can attract considerable amounts of foreign capitals. However, one should not forget that fundamental economic conditions in the CB economy do not improve as quickly as monetary conditions and such huge fluctuations in the balance of payments dynamics can be extremely disturbing in the case of an exchange peg. As Raybaut and Torre (2004) point out, the CB allows an “explosion” of foreign debt because of the easiness of money renting, as foreign lenders do not clearly see the risks hidden “behind the acceptability of the currency in

which the loan is libelled". Consequently two different microeconomic phenomena with distinct and somehow opposite reasons join up forces in maintaining inflationary inertia.

The question of persisting interest rate spread also needs answering. The first argument to put forward is that the persistence of the spread translates the existence of an exchange risk premium, a default risk premium or both. Because the monetary authorities can not, by design, manage the interest rate, thus "cooling" or "boosting" the economy, a well-known and broadly accepted mean of monetary discretionary policy, it has to be understood as a product of the inter-bank liquidity market. An attentive examination in this field should focus on the whole interest rates curve in comparison with the one in the reference economy. Of course economic conditions between the two national and reference economies, are different. The spread in itself is not so interesting as the level and the dynamics of the CB interest rates seen through the lending conditions and regulations. With interest rates fixed by the market, those tend to incorporate the relative scarcity of money due to irregular money supply, and often, in adjustment through discretion cases, the lack of economic logic in it. Put differently, the absence of a clear and predictable process of monetary supply if the CB does not operate in its strong form. Such a situation leads to the development of alternative channels of refunding by private banks with the use of collaterals and the consequent increase of private debt of CB economy banks.

Also, the interest rate differential may be due to investment capabilities of local financial markets. That is, an opportunity cost relative to shallow and inefficient financial markets. While studying the bank-firm relations under the CB in Bulgaria, Nenovsky, Peev and Yalamov (2003) point out the role of insecure property rights, low degree of creditors protection, lax application of contractual law, lack of independence of the judiciary and other extra-monetary reasons explaining the interest rate spread between deposit and lending. Although these reasons have little to do with money proper, it is not less true that those factors are intimately related to the notion of monetary procedure mentioned above and the overall viability of the monetary institution. That is, as a monetary contract can not be set in optimal rational terms, the quality of money is necessarily lessened.

One should not understand the "real" exchange rate distortion as only proper to the CB, but to any monetary regime without clear and working market-driven adjustment mechanism. As shown above, the lack of such an adjustment is not by default, but due to the architecture of a given CB. That is, the construction does not match the theoretical logic and so it does not function as expected. Still, such a critique focusing on deviations from the pure form of CB arrangements does not answer this inquiry. As "real" exchange rate distortions are proper to any peg, the CB functioning draws attention to a number of supplementary systemic limits threading the aimed economic stability and susceptible to trigger deep and sudden financial and economic crises in the CB country.

## 5. SYSTEMIC LIMITS AND CONSTRUCTION ERRORS

Although simple by design, an operating CB introduces in the domestic economy price distortions that ultimately erode the monetary stability. A parallel with a Gold-Exchange Regime is tempting but not correct, first because a CB is not an international but a local, national regime. Secondly, it is backed by a specific fiat currency, not a broadly tradable good with an intrinsic value. It can be argued that the reserve currency's markets are broad enough to consider a CB as an international regime and also that the reserve currency's

home economy is usually the main trade partner of the CB economy<sup>9</sup>. However, the reserve currency is a supplementary link between the national currency and the international markets and is itself subject to fluctuations irrelevant with changes and evolutions in the CB economy fundamentals in respect to external economic conditions. There is an asymmetric shock situation as external conditions modify the CB environment through the reserve currency, but the opposite is not true in the same degree because CB country's economic fundamentals do not modify international conditions of reserve currency trade.

Moreover, as pointed out by Nenovsky, Hristov and Mihailov (2001), second generation CBs come after discretionary central banking and on the international ground they are physically and intellectually surrounded by a number of Central Banks, therefore a kind of path dependence in the functioning of the domestic national central bank can be observed. In this order of ideas, systemic limits are related with discretionary power of the monetary authorities of the CB. Conceptually two channels of discretion are retained: traditional and new ones as studied Nenovsky & Hristov (2002).

In the first case are required reserves as a prudential rule for the overall stability of the domestic financial and banking sector. Under a CB however the domestic central bank is given the prerogative to manage their level, that is operate an active role in bank supervising. This is the first channel of discretion in second generation CBs. As a matter of fact, the CB maintains some of the functions of the Central Bank commonly known as lender of last resort. As long as the monetary authorities are able to deliberately set the level of required reserves, it is a serious departure from the rule of non-discretion. Not only is the level of required reserves externally set with no respect for economic reality, it is not the product of each private bank management knowledge and capacities, but it maintains in function the very problem the CB is supposed to solve namely the discretionary central banking.

Excess reserves constitute another channel of discretion as long as it is supposed to belong to the monetary authorities to decide of their use and by so it creates room for some, nevertheless limited, monetary policy. Although, these excess reserves if constituted by return on investment in foreign securities can be seen as compensating the loss of seigniorage, it should be noted that it is their use that is at stake more than their origin.

In addition, the presence of fiscal reserves in the CB is another disturbing point. The mere fact that fiscal reserves are present in the balance sheet of the CB as a liability covered by reserve money affects money supply dynamics and thus appears to be unacceptable from an economic point of view. In fact, concerning the Bulgarian CB, as Petrov (2000) shows, movements in government deposits with the CB create asymmetric shocks on local interbank interest rates. Such a departure from basic CB architecture, which is the inclusion of government reserves on the liability side of the CB balance sheet, compensates free capital mobility and can offset the supposed consequent interest rate volatility and reserve money dynamics. It can even be argued that specially designed fiscal policy operations may contribute to stabilise interest rates in presence of exogenous shocks. Such a position can however be challenged. First, because it constitutes a departure from the initial aim of the CB arrangement, this is namely the dissociation of political considerations affecting the money supply. Second, it is inconsistent with the idea of "sound" money as stated above. Finally, yet most importantly, this is an extra factor for

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<sup>9</sup> This was not the case in Argentina where the peso was pegged to the US dollar, but its largest trade partners are the EU and Brazil, importance of trade with the US coming at third place.

further relative-price distortion and by so “real” exchange rate deviations thus leading to further threading the monetary and economic stability initially aimed.

Lastly, it should be considered that the CB acts as unique foreign currency reserve and therefore adds extra monetary and financial risks. This problem is not proper to CBs as virtually all Central Banks appear to be and behave as unique foreign currency reserves. What is omitted in the CB case is that the peg being unalterable, channels to foreign currency liquidities are easier to set and more accessible, as international financial integration seems irreversible and secured. It is the weight and the discretionary power of the CB on the local financial and monetary markets that has to be considered as a disturbing force.

## 6. NORMATIVE CONCLUSIONS AND ALTERNATIVES

The CB regime provides a specific monetary procedure characterised by a significant contraction of political discretionary power in money management. It is meant by design to provide a clear rule of money supply in an attempt to gain quality and macro-economic stability by reduce monetary uncertainty. However, as pointed above it produces specific distortions due to its rigidity and hardly matches the ideal of what one can qualify as “sound” money.

The quantitative automatic control of money supply does not provide quality. The real distortion lays is the fact that behind the apparent monetary stability of such a regime microeconomic rational economic behaviour is trapped in a slow and destructive process of economic misguidance. Therefore it appears clear that a CB could not provide to last long. As a radical solution to extreme and critical situations it should be viewed only as a step towards a market-regulated money supply. A CB is then to be seen as suitable for a temporary money management in the process of discharging political power with monetary production and overall economic policy. If it is to last, then its initial virtues may bring unexpected and undesirable results.

The apparent lack of flexibility of this monetary regime which is illustrated by the disconnection between monetary dynamics and “real” economic activity<sup>10</sup> calls for propositions of alternative rules-based monetary regimes. For instance, Oppers (2000) elaborates a dual CB model, backed on two currencies, *i.e.* the US dollar and the Euro. It is argued that such a CB structure will avoid the problem of national currency’s “overvaluation”. This appears to be possible through a dynamic currency reserves management as function of crossed exchange rates between the reserve currencies. What is omitted in such a proposition is the fact that in virtue to the Gresham’s law and the rational arbitrage practices of the individuals, the backing currency will always be the depreciated one, this means a persistence of inflationary inertia and a supplementary source of instability.

Of course, the return to deliberate monetary management is a possible way, but it is hardly suitable if the initial efforts were to lessen – understand avoid – economic and

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<sup>10</sup> This dichotomy of monetary and “real” phenomena in economics is by many ways only conceptually didactic that is pedagogic, but irrelevant from a scientific viewpoint.

monetary policy discretion and provide for clear and comprehensive rules of monetary creation.

Another interesting proposition is that of a Banking Board made by Le Maux (2006), where the author sets the bases of a mixed, public-private monetary regime with competing public and private currencies under the supervision of a state-owned Central Bank with lender of last resort function maintaining a hierarchical banking system. However the structure of incentives under such a monetary regime would not secure a private banker from disrespecting the needed monetary discipline and thus sacrifice profits as long as monetary authorities act as supervisors of the system and securing it. Because of highly possible moral hazard problems, such a monetary regime would provide increased monetary instability.

CBs create good conditions for an alternative market-based monetary management. None can neglect or deny the opportunity to introduce private currencies in such a strict and non-discretionary monetary environment. In this sense the vows of monetary sovereignty are respected, as the State may still dispose of a proper banker. That is, a temporary, if ever necessary, coexistence of the former Central Bank functioning under true CB rules and emerging private, local currency issuers. There is no need of lender of last resort in such a system, as the main intentions are the market to correct, reward or disqualify money producers as it is in any other industry. Monetary discipline is then not only strengthened, it is then self-generated and imposed on monetary producers public or private.

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