

# **SEIGNIORAGE IN ROMANIA**

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## **CONTENTS**

**Page**

### **1. Introduction**

**3**

- 1.1 The Concept of Seigniorage
- 1.2 Divisions of Seigniorage
- 1.3 The Relevance of Seigniorage

### **2. Explanations Regarding Information Processing**

- 2.1 Regulations in Romania
- 2.2 Specifics about Gold Reserves
- 2.3 Information Processing and Way of Calculation
  - 2.4 Data
  - 2.5 Calculation

### **3. Comparison between the years 1991 - 1994**

- 4. 1991
- 5. 1992
- 6. 1993
- 7. 1994

### **4. International Comparison**

### **5. Conclusions**

### **Literature**

# 1. INTRODUCTION

## 1.1. CONCEPT OF SEIGNIORAGE

Seignorage, (from the French Seigneur: Sir, God, Landlord) denominates the capacity of (state) authorities to finance expenditures by money printing. Regarding measurements there are several definitions that might be used. Here are presented some possibilities:

1. "Inflation tax" after Friedmann:  $\pi m$  ( $\pi$ , inflation rate;  $m$ , real monetary holding); it measures the costs of inflation by which the economic agents that retain money are loaded.

2. The real growth of the monetary mass, such as it is used, for instance in the inflation study done by Cagan:  $\mu m$  ( $\mu$ , growth rate of monetary mass offer); it measures the profits resulted out of money creation.

3. Opportunity costs of monetary action (Phelps/Marty):  $im$  ( $i$ , nominal rate of interest); it measures the expenditures that are created due to the fact that the economic agents cannot make investments out of the detained money mass in other asset values, which bear interest.

By assuming the validity of the quantity equation (for a constant speed of monetary circulation) and of the Fisher equation with perfect foresight, the following relation results:

$$\pi m = (\mu - g_y)m = (i - r)m$$

for slight changes, where  $g$  designates the growth rate GDP and  $r$  the real rate of interest. When  $g_y$ , respectively  $r$  are positive, the measured seignorage for item 2 and 3 exceeds the one measured according to item 1. When  $g_y=r$  is valid, than item 1 and 2 are equivalent.

In case the note issuing bank (NB) is separated from the State, a new difference must be undertaken: Central Bank Seigniorage (CBS) versus Total Government Seigniorage (TGS). CBS corresponds to the profit of NB, which is created by the possibility of insuring tax free credits. TGS is the part of CBS which is distributed to the State. This allocation must not take place by official dividends payment out of the profit, but it can result by preferential credit entries of the State to NB (credit raise with low taxes). In the case in which NB uses part of the profit to create reserves (what once again gives the possibility of large seignorage in the future) and/or also a allocation of profit takes places towards third parties (for instance commercial banks) TGS will be lower than CBS, because parts of the seignorage income will not be distributed to the State. Similarly, at a NB reserves exploitation TGS may exceed, even temporarily CBS. Often, it is added to TGS, leaving this aside, the change of the real indebtedness of the State to NB ("excess monetization") - see Rovelli (1994). This is, however, not included in the

present study. The credit raise of the State might take place by the following three operational methods:

- treasury bonds buys, loans and other such things by NB on the primary market;
- granting of overdraw credits in special created accounts;
- open market operations with State bonds.<sup>1</sup>

## 1.2. DIVISION OF SEIGNIORAGE

We are now taking into consideration the balance sheet of NB. Liabilities of NB contain the cash flow circulation, the minimum reserves of commercial banks, other liabilities (for instance, credits of international organizations) and reserves. The assets of NB contain hard currency stocks and gold holdings, credits to the State, to commercial banks and non-banks. The simplified balance sheet of NB is:

$$F + B + L = R + Cu + En + Rn$$

Where:

F: balance saldo resulting out of foreign debentures and liabilities

B: credits to the State

L: credits in domestic currency for non-State institutions (including banks)

R: debentures of commercial banks, inclusively the minimum reserves

Cu: money circulation

En: proprietary capital of NB

Rn: reserves of NB

By using the principle of opportunity costs, is valid:

$$(1) \text{ CBS (gross) } = i_m [F + B + L]$$

$$(2) \text{ CBS (net) } = \text{CBS (brutto) } - i_r R$$

$$(3) \text{ CBs (net) } = (i_m - i_r)F + (i_m - i_l)L + (i_m - i_b)B + C + (i_r F F + i_l L + i_b B - i_r R - C)$$

where:

$i_x$ : rate of interest for x debentures and liabilities

$i_m$ : rate of market interest

C: total administrative costs of NB

The equation (1) shows the way in which CBS is created. NB may (theoretically) invest their assets at market interest rates. The size of CBS (net) - equation (2) - is obtained when it is taken into consideration that NB must pay for a part of their liabilities - especially the minimum reserves of banks, some interest.

Out of the equation (3), results the allocation of CBS. The first term illustrates the subsidies for foreign countries; the second term the one for the banking sector, and the third towards the State. Added to these, the administrative costs must be met out of the seigniorage incomes.

As residual amount results the real profit, which corresponds to tax incomes minus the interest costs, less administration costs. This profit will be in its turn

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<sup>1</sup> Compare Drazen (1985) for a comprehensive simile of the various measurement concepts.

divided; especially to the State and also to NB itself under the form of reserve increase. TGS results from the sum of advantages which the State deducts from the preferential credit entry to NB (credit raise, or similar things), as well as from the profit share allocated to the State.

On calculations a percentage distribution of CBS (net) is indicated. As a conclusion there must be taken into regard that, for instance, a subsidy for the banking sector makes reference only at the asset part of the National Bank; that is, it can occur when the rate of interest, to which the banks indebted themselves to NB, is lower than the market interest rate. There is no balance sheet formed of bank debentures and liabilities. According to the approach for the simile country - Germany - in all studies regarding the examined countries, there has been deducted the proprietary NB capital up to a value of 10 per cent of the monetary cash flow circulation, regarding the gross CBS calculation (5% reserves, 10% refunds). This value is allocated to the NB, as risk precaution, in order to protect against speculation attacks against the domestic currency<sup>2</sup>. At the allocation of the seigniorage a corresponding sum has been deducted from the position "Other assets". This seems a rather problematical approach, but which, under the circumstances of Romania, because of the very low level of own capital doesn't attract with it huge distortions in case of allocation. NBR cannot exhaust entirely at present this "allowed frame" (1993 in total only 2.8%), so that the Romanian CBS is over-evaluated in comparison to the other countries, because the basis of calculation used for CBS is not diminished in the same measure. If NBR could exhaust the frame, than it would be still unclear if a country such as Romania should not better take higher risk precautions, as a country with a safe currency, as Germany.

### **1.3. RELEVANCE OF SEIGNIORAGE**

The size of seigniorage allocated to the State indicates first of all the relationship between State and NB; the greater it is, the more dependable will be NB to the State. In a country as Austria, NB is independent to the State, and has exclusively the functions of monetary issuing, establishing monetary policies with the aim of maintaining internal and external stability of the currency, and the supervision of commercial banks. When the State has the opportunity of financing its own deficit by non-interest bearing credits (or easier by transfer), this will lead in unfriendly circumstances at an inflation growth, and to devaluation of domestic currency. The same thing happens when other institutions - foreign or domestic- dispose of this possibility. For this reason, it is a significant demand of the Maastricht Treaty to install discipline for the public credit raise, by suitable means.

This should be done first by avoiding huge deficits and high levels of public credits (Art. 104c), and especially by preventing large monetary issues, that put into question the price stability (Art. 105). Of great importance in this context is the interdiction of privileged access of the State to finance institutions (Art. 104a) and the granting of credits to the State, or other economic agents (for instance, public enterprises).

<sup>2</sup> See Hochreiter, Rovelli, Winckler (1995)

Although some East-European States would like to become EU members, it is not known to what extent the National Banks depend on the State, and whether the practice of NB is according to the Maastricht - Treaty demands. The research of seigniorage is important for the following reasons:

1. The size of the adopted seigniorage indicates in what measure - for given levels of the State expenditures - the taxes should be increased, if the seigniorage should be reduced to a level that is comparable to the one of the developed countries.<sup>3</sup> As it is also described by *De Grauwe* (1994), there are two basic possibilities to finance budget deficits: by taxes or by inflation growth (that is seigniorage).

In order to show this, he starts with the following budgetary restriction:

$G - T + rB = dB/dt + dM/dt$ , where  $G$  is the level of State expenditures,  $T$  the taxes,  $r$  the rate of interest of the State indebtedness  $B$ , and  $M$  the monetary basis. The left part of the equation represents the budgetary deficit, and consists of the primary budgetary deficit ( $G - T$ ) and of the interest payments for the public debt ( $rB$ ). The right part of the equation shows the financing part: expenditures in the issuing of State bonds or money issuing. The theory of the optimum tax policy says that the taxes, respectively the seigniorage, must be chosen such as to have the same social costs margins for both. For countries with a poorly developed tax system, the margin costs of obtaining incomes by seigniorage *ceteris paribus* will be much smaller. But, if the inflation (and also the State indebtedness) must not grow exceed a certain level, these States will have to increase the tax levels. The result will be a loss of welfare. This was an acute issue of South-European States (Greece, Italy, Portugal, Spain), and could become also one for many East-European countries.

2. Seigniorage - above a certain acceptable level- is a comprehensive measurement for monetary misuse of NB, because seigniorage contains incomes out of the "inflation tax", as well as monetary limitations (minimum reserves).

3. A great part of the seigniorage, handed over to the private or the banking sector, might show, that the NB does not function according to the principles of an "open economy with free competition", as it is provided in the Maastricht-Treaty in order to prevent distortions due to competition.

Researches have already been undertaken for Austria, Germany (simile countries), and Hungary. The following are now are calculations for Romania.

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<sup>3</sup> See also Hochreiter, Rovelli, Winckler (1995)

## 2. EXPLANATIONS REGARDING THE INFORMATION PROCESSING

### 2.1 Regulations in Romania

The Law concerning the Statutes of the National Bank of Romania (NBR) imposes very clear and narrow borders, referring to the size of indebtedness of State to NBR (Art. 31). Now it should be researched, to what extent these stipulations are also met.

The National Bank may grant to the budget of the State administration loans for covering the **temporary differences** between incomes and expenditures. The total amount of the loan is not allowed, for any fiscal year, to exceed the equivalent value of 10% of the total approved budget. The loans granted by the National Bank to the State should not exceed the double amount of the capital of the National Bank and of the reserve fund, constituted in accordance to the provisions of Art. 5 and 6.<sup>4</sup> Another excerpt of the law (Art. 29) disposes that “ the National Bank of Romania is not allowed to perceive any fees for the operations undertaken by the State Chamber, and that it will not receive any interest for the reserves.”

### 2.2 Specifics Related To Gold Reserves

Before we enter into the discussion of the various calculations, an important issue related to the allotment of seigniorage must be cleared. It is obvious that institutions which have liabilities regarding the NB, and which are not chargeable, from an economic point of view obtain a subsidy in the amount of the received market rate of interest times the amount of the liability. This is true also with reference to the external foreign assets of NB, such as foreign exchange, hard currency and gold, where for gold the receivers of the subsidies are no particular defined persons or institutions (“the gold market”). It is also evident that, due to changes of the exchange rate, capital gains or losses must **be taken into consideration, as well**. So, obviously, there results no subvention of the National Bank of Romania for the American State, when the first holds 7% taxable treasury bonds, and since the assumed Romanian market interest rate is of 70%, but the Romanian leu in relation to the USD has a 100% devaluation for the considered period of time. A naïve way of calculation will have as result a subvention of 63% of the nominal value of treasury bonds.

This is also true for the gold reserves. Although these carry no interest, exchange rate gains are still possible. If the research is undertaken for a country with relatively reduced gold holdings and a stable currency, it might be possible to ignore the exchange rate gains. **But none of these**

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<sup>4</sup> As one can see from the balance sheet, these demands were not fulfilled in any of the moments of the considered periods of time.

<sup>5</sup> Since the physical gold amount during the considered period has only insignificant increases, it proves to be a good comparison.

**circumstances is true for Romania.** Gold represents more than 90% of the foreign assets of NBR, and also 20% of the total assets. During the survey period, the price of gold increased from 394 lei/gram to 20,873 lei/gram.

**TABLE 1  
GOLD**

Year	1990	1991	1992	1993	1994
Gold reserves in fine ounces (end of year)	2,205,787.78	2,247,588.4	2,305,466.2	2,369,774.9	2,604,501.6
Gold price lei/gram (end of year)	394	1,800	5,000	16,000	20,873
Rate of gold income		3.56	1.78	2.2	0.3
Value of gold in lei (end of the year)	27,059	125,834	358,772	1,179,371	1,690,793
Gold incomes in lei		96,330.04	223,984.52	789,298.4	353,811.3
1 fine ounce = 31,1 gram					

The rate of gold income is the “chargeability” of gold, that is  $(\text{Price year } t - \text{Price year } t - 1) / \text{Price year } t - 1$ . The prices of gold are in accordance with the official evaluation guidelines. The gold incomes were calculated in a simplified manner by multiplying the reserve at the end of the previous year with the income rate.

If the exchange rate gains for the gold reserves are ignored, it results that, for instance, in 1993 24.6 % of the total CBS were absorbed then as subvention for the “gold market” .<sup>6</sup> This outlook seems to me in no way justified, even though the modified method puts into question the comparability with other countries.

By this, the examination of these exchange rate incomes becomes the more interesting and important, since the Romanian State has adopted this in a more or less hidden way to cover the expenditures made. Therefore use was made of a subtle prescription method, which will be presented in the following.

There are three positions on the asset part of the NB balance sheet, out of which results the State indebtedness:

1. **“Credits to government”** where the official established State deficit is registered at the end of each year (as if taken for granted in a certain manner). During the year this position is once again excluded.
2. **“Settlements with the State budget”**. Here it seems to be a sort of extra-budgetary financing of the State. The amount included here seems to be a great deal higher than the official Deficit. Interestingly enough, is this position not aligned as “State Debentures”, but under “Other Assets”.

<sup>6</sup> Excerpt of a preliminary study “A quarter of the CBS is absorbed by the gold, which is in comparison to other countries extremely high”.

3. “**Net unfavour. Differ. From foreign ass. & liab.**” This position with a cryptic denomination obviously represents the State indebtedness.<sup>7</sup> During the year there is a (significant !) increase, but in December, that is by the end of the year, everything is prescribed. This position is also hidden under the heading “Other Assets”.

Position (3) is calculated, partially, against position (1) and (2), which increase in December. But there still remains a difference, which is solved against the passive-position “Deposits from gold and silver revaluation”<sup>8</sup>. This position has also a growth by the end of the year, with the assets position “Gold”, that is at each revaluation of the gold reserves.

In 1993 the following thing happened:

1. Under “Credits to Government”, the State deficit (263 billion lei) was registered in the balance sheet in December 1992. This was prescribed during the year. In December 1993 once again was registered the official deficit (336 billion lei).
2. The position “Settlements with the State budget” was somewhat constant during the year (600 bill. lei); but in December it almost doubled to almost 1.1 bill. lei.
3. “Net unfavor. differ...” had a considerable increase from January to November (from 14 bill. to 1.27 bill. lei), and was prescribed in December. This position was transferred into other accounts, partially against position (1) (336 bill. lei) and (2) (510 bill. lei). The difference was solved against the passive position “Deposits from gold and silver revaluation” (is reduced in December from 434 bill. to 2 bill. lei).

The relevance of these procedures for the seigniorage allotted to the State is the following:

1. All three positions are to be considered as non-interest bearing loans to the State. But, it still remains unclear, if the position “Deposits from gold and silver revaluation” should be understood as non-interest bearing **asset** of the State to NBR. This asset occurs as the exchange rate gains resulting from the gold deposits, are attributed directly to the State already during the year. In this study no considerations will be made regarding the mentioned credits.
2. The amounts registered in the account “Deposits from gold and silver revaluation” represent a hidden dividends payment out of the profit, and must be considered as such. In case the occurring credits of the State have already been deducted from the indebtedness of the State during the year, the interests for this credit (which diminish the seigniorage, according to item (1)), would be added to this hidden dividends payment out of the profit, according to item (2), so that both procedures are finally equivalent for the measurement of the seigniorage distributed to the State.

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<sup>7</sup> Excerpt from the NB - Report 1992:” [...] these unfavorable differences between import exchange rates appeared for some basic economy sectors (for instance, steel) as a result of the exchange rates unification in November 1991.” By all means, the significance of this position is the same up to present.

<sup>8</sup> Silver plays, obviously, no role whatsoever.

The examination of these “tricks” allows for the subvention distributed to the state, which is indirectly financed from the seigniorage of earlier periods (by which the NB could consolidate its gold reserve), to increase significantly<sup>9</sup>.

## 2.3 Data Processing and Calculation Methods

### 2.3.1 Data

The calculations were undertaken for the years 1991 -1994. A comparison with Germany and Austria is possible, by all means (for the time being) only for the years 1991-1993, and for Hungary only for the year 1993 (because the calculations for the other countries are available only in relation to these years). There are also contained some treasury values in the 1994 data.

The starting point was mainly constituted out of the approximated balance sheets and the calculations of the profits and losses of NBR (from annual, quarterly, and monthly reports), as well as out of data resulted from private conversations with collaborators of the National Bank of Romania, and local experts in finance.

All data are represented in the local currency (leu). The foreign positions were recalculated according to the present rate of exchange.<sup>10</sup>

The available data were, mainly, monthly and annual. The average values were calculated (the calculus of twelve monthly average stocks; out of which the average value was obtained) by using three survey periods (December, previous year - December, current year)<sup>11</sup>.

The first annual report (at least the first one published) of the National Bank of Romania is from the year 1991. For all previous years, as well as for certain exact data for the year 1992 (which are not comprised in the annual report), any access is closed. These data are, allegedly, to be found in secret archives. There are also some data for the years 1993 and 1994, which are subject to the same secret regime, and were not published (for instance, the investments made out of interests in foreign currencies or profit distribution). This partially makes the calculus a lot more difficult. The balance sheet data have been rearranged in order to obtain a classification on macro-sectors. The debentures have been distributed to the following sectors: State, financial institutions, gold, and other assets. (Since 1990, NBR has granted credits only directly to banks and to the State. Such credits were never granted for households.)

For the State sector the following positions were added up:

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<sup>9</sup> Allegedly the attempts to explain to the representatives of the IMF the procedures connected to the account “ Net unfavour. ...” have failed.

<sup>10</sup> The exchange rate leu/dollar is decreased from 43,71 (Dec. '90) to 1276 (Dec. '93)

<sup>11</sup> By using geometrical means there result no essential differences; that's why this calculating method has been chosen, which corresponds to the annual reporting procedure.

“State credits”, “Settlements with the State budget”, “Net unfavorable difference from foreign assets and liabilities”.

For the “State credits” account is the indebtedness of the State toward the NB, which corresponds to the officially established deficit registered annually. This one is repaid, usually during the following year. Since June 1994, this account also contains the social insurance credits. Although these positions are officially attributed to the assets for the State, they represent only 20% of what is allocated to the State. The most important position is the one of “net unfavorable difference”, followed by “settlements with the State budget” (see the presentation in paragraph 2.2. in this regard).

To the financial institutions a single aggregate position was added, that is the one of interbanking assets, which mainly consist of refinancing credits of banking institutions. In 1993, there were 14 such institutions which obtained credits from the National Bank. The greatest deal was allotted to State banks. The credits with low interest (10 to 24.5%) have reached their best use in April 1993, when they constituted more than 96% of the total credits. Gold was by far the most important position of foreign assets for the greatest part of the survey period. Only starting with May 1994 NBR disposed of important holdings of hard currency and foreign assets. Other precious metals belong to domestic assets (about 1% of the balance sheet sum). Among the convertible currencies belong hard currencies and foreign assets, as well as deposits of NBR with various foreign institutions (IMF, BIS, FED). Stocks of non-convertible currencies are negligible.

The most important domestic liabilities are the monetary mass of the central bank, public deposits, liabilities to the banks, clearing accounts, and proprietary capital of the NBR. Liabilities to the banks consist mainly of those minimum reserves. Public deposits consist of deposits of the various State funds (for instance, reconstruction funds, house-building funds, and unemployment funds).

The own capital of NBR is composed out of a statutory fund and a reserve fund. The statutory fund has a value of 5 billion lei, and is possessed, according to the law (No. 34/1991, Art. 4) by the State. The reserve fund is composed out of the profit showed in the annual balance sheet, after covering completely the expenditures (according to Art. 6, Law 34).<sup>12</sup>

Foreign liabilities include deposits in lei of IMF, as counter-position to special drawing rights, and deposits of BIS obtained by IMF. The international liabilities are of about 13 -16% of the balance sheet sum.

No losses were calculated for the foreign liabilities, resulting from the exchange rate; as out of the balance sheet notice that these foreign assets were discounted in the domestic currency. This results from the fact that the external liabilities change only when new conventions are concluded with the world institutions. The shares with world institutions (IMF, BIRD, BIS, IFC,

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<sup>12</sup> The proprietary capital of NBR developed as follows: 1991: 1,4%, 1992: 1%, 1993: 0,4%, 1994: 0,6%, of the total balance sheet sum.

EBRD, MIGA)<sup>13</sup> are not considered as foreign debentures, and the balance position of the shares and liabilities of these organizations belong to domestic liabilities since these are calculated in lei.

The gain and loss account (G&L) was divided in order to separate as much as possible the expenditures made for the paid liabilities from the incomes generated by the interests obtained for debentures.

Since BNR doesn't obtain, according to the law, any incomes from interests for the debentures towards the State, and it doesn't pay, in its turn, any interests to the State, it was necessary to estimate the debentures only for the other two sectors (foreign organizations and financial institutions). The information for these two sectors is only partially contained in the G&L (incomes from interest); the expenditures in convertible currency are partially subject to secrecy (till 1992); the data for 1993 and 1994 originate in personal conversations with the head of book-keeping department of NBR. For the years 1991 and 1992 it was necessary to estimate them under the premises that the interest rate for foreign currency was the same with the one of the year 1993. Therefore, in order to simplify, all interest incomes and expenditures were attributed in lei to the domestic (banking) sector, and all interest incomes and expenditures in convertible currency to the foreign sector. This procedure seems justifiable, since Romanian banks up to the year 1995 were not obliged to hold any minimum reserves in foreign currency with the NBR (the claim is contained since 1993 in the law, but it was fulfilled *de facto* only since 1995). Out of the balance sheet of the banking sector results that commercial banks do not hold any other type of assets in foreign currency at the NBR. The interest incomes and provisions in convertible currency were of 5% of the total incomes in 1991, of 1.2% in 1992, of 0.7% in 1993, and of 1.8% in 1994.<sup>14</sup>

The distribution of the gross income was very differentiated in the four years. This is important especially for the distribution of the seigniorage. For the year 1991 there are only rudimentary data. According to these, the State obtained more than 61% of the gross income (over 9 bill. lei). The rest supposedly remained with the NB (in the annual report it is written "the rest was used for building up the provisioned funds according to the law").

In 1992 Law 34, regarding the Statutes of the National Bank entered into force, which contains exact stipulations regarding the setting-up of the NB reserves (Art. 5 and 6). Maybe this is the reason why also the gross profit distribution of the years 1992 and 1993 seems to be subject to a somewhat similar regulation. In the year 1992, approximately 10% of the gross profit was distributed for the constitution of the NBR reserve funds and approximately 45% was paid to the State as profit tax. Out of the net income, other 20% were attributed to the NB for covering different expenditures. The remaining 80% were used for general expenditures (Romanian Television and Radio,

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<sup>13</sup> BIS: Bank of International Settlements, IBRD: International Bank for Reconstruction and Development, IFC: International Financial Corporation, MIGA: Multilateral Investment Guaranty Agency

<sup>14</sup> The figures were self-calculated based on data of the G&L.

Bucharest City, Romanian Church, the Romanian Academy of Science etc). Thus, the State received over 80% of the gross income in 1992.

In 1993, only approx. 5% of the gross profit was used for constituting NBR reserve funds (as the level provided by the law had been already attained!), and approx. 48% was paid to the State as profit tax. From the remaining net profit, approx. 20% were again attributed to the NBR for covering different expenditures, and the rest of 80% (87.9 billion lei) were paid to the State, of which 30% were distributed for general expenditures (radio, credit for the Republic of Moldavia etc.). In 1993, the State got more than 84% of the gross profit. From 1994 on, a new regulation would come into force, according to which the State gets 80% as profit tax.

### **2.3.2. Calculations**

A difficulty in calculating seigniorage according to the concept of opportunity costs, is the choice of the right market interest rate. Even if there is an obvious interest rate on a stable monetary market, it can be chosen only if the respective monetary market is so large, as NB may represent only a insignificant participant in the market, that is, its influence on the interest rate is negligible. Should that not be the case, then it can be argued that the NB's action (large-scale purchase of public securities) may influence even the respective seigniorage. If TGS had to present the sum saved by the State by transmitting credits to the NB, instead of placing them on the capital market, then the chosen interest rate must be in accordance with the dominant one, if the State had really issued securities.

In a country like Romania, where the monetary and the capital markets are just appearing, this problem is of the highest importance. For example, the refinancing rate of NB for 1991 was of only 18% p.a. There were undoubtedly several formal and informal rationalizations of credits. A non-rationally granted credit was, of course, related to a considerably higher interest rate. Never had there been granted a credit with coupons of 18%, if the inflation had risen to approx. 200%.

In order to skip this difficulty, Friedmann's definition of seigniorage is accepted as being the tax on inflation. Nevertheless this concept seems less suitable for the given topic of our research than the concept of opportunity costs, as the seigniorage measured in this case does not represent a profit likely to be obtained by NB in reality<sup>15</sup>.

In spite of all this, in the end this seigniorage is distributed. On the other hand, it would be dangerous to deduce, on the basis of the measured seigniorage, how disciplined the monetary policy had been during the previous years, as especially in a transition economy, the inflation development depends not only on the momentary actions of the people responsible for the monetary policy,

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<sup>15</sup> The necessary concrete premise would be that other economic agents benefiting from NB seigniorage may invest in assets whose income may correspond exactly to the inflation rate - a kind of indexed bonds.

but it should be also understood as a result of the necessary reforms (price liberalization releases the accumulated inflation). As will be seen in what follows, the estimated seigniorage depends to a great extent on the inflation development.

For the rest, it is not clear what measures should be used to measure inflation. In 1993, the CPI increase was of 265%, and the GDP deflator was of only 211.7%. As in all other studies, CPI was taken into account. It is clear that the difference between the deflator and CPI increases proportionally with the price range, that is, the more often prices are modified (which, in their turn, bring about demand effects). An over-estimation of seigniorage may be the effect.

In order to quantify CBS all positions of the passive side except external liabilities were multiplied by the inflation rate, from which results CBS, as a gross dimension. In order to obtain the net dimension, the expenditures with the interest in lei were subtracted. Foreign liabilities were taken into consideration only on seigniorage distribution, as at that time an account was set up for foreign debentures only. The same went for the incomes from interests in convertible currencies, including with the interest expenditures, in order to obtain net incomes from interests. To simplify things, the position "Deposits on foreign organizations" was included under "Foreign liabilities".

The net incomes from interests and capital obtained eventually were divided to net debentures in order to calculate specific interest rate for foreign debentures. The interest rate obtained was deducted from the inflation rate and multiplied by the net sum of international debentures, in order to calculate the seigniorage to the foreign organizations (as expected, there results a foreign subvention).

For the state sector, there were added three positions (credits to Government, settlements with the State budget, difference from valuations), and the sum was multiplied by the inflation rate (as NB does not pay interest to the State, neither gets any from it). This constitutes a part of CBS which is distributed to the State.

In the sector of financial institutions, the incomes from interests in lei were divided to debentures to banks, in order to calculate the specific interest rate. This interest rate was in its turn subtracted from the inflation rate, and the difference was multiplied by the bank debentures to calculate that part of CBS which is distributed to the national banking institutions. In the case of gold, there has been calculated an income rate, which was deducted from the inflation rate and multiplied by the total amount of gold (see 2.2.).

Upon CBS distribution, there has to be taken into account the fact that the total seigniorage cannot be distributed. Part of it is used for covering the NB costs. Basically, there are the operational costs (costs resulted from money expenses, personnel costs, and other administrative costs).

Another part of CBS is retained by the NB itself in view of constituting reserve funds or for other reasons. Thus, the NB's own capital increases. The result is that from seigniorage may benefit not other the macro-sectors, but also the NB. Still, the majority of NB's profits is given to the State as income tax or as a simple profit distribution. All these were taken into account upon seigniorage distribution. The necessary data were provided from the profit distribution.

### **3. Comparison between the years 1991-1994**

The calculations were made for the years 1991-1994. In the following the results are presented and commented upon. The conclusion will be a comparison between each of these years, and also a quantification of the seigniorage, as well as a comparison regarding the distribution of the seigniorage for the various macro-sectors.

#### **3.1. 1991**

The year 1991 was a very important year for the reform of the Romanian banking sector. In March 1991, two laws regarding the banking system were enforced: the law regarding the banking activity (No. 33) and the law about the Statutes of the Romanian National Bank (No. 34), by which the legal basis for a multileveled banking system was created in Romania for the first time. The first steps had been undertaken already by the end of the year 1990, as the newly-established Romanian Commercial Bank took over the entire commercial activity of the NB, and as the first commercial banks with private capital were founded, and the representations of the foreign banks were integrated in the domestic banking activity.

According to Law No. 34, the NB assumes as main functions the monetary issuing (Section 1, Art. 9 - Art. 18), the determination and administration of the *"Money and credit policy within the frame of the State economic and financial policy, viewing to maintain the stability of the domestic currency"* (Art. 1) and the *"approval and supervision of all units, which function in Romania as financial institutions"*. (Art. 26).

The commercial banks hold the statute of trading companies, and are subject to the regulations provided in Law 31/1990 and 33/1991. At the end of 1991, there were in Romania five banks with state-owned capital, and five subsidiaries of foreign banks.<sup>16</sup> The approval policy of NBR regarding the new banking institutions was rather restrictive, as NB (supposedly) considered as much more important that the existing banks should function on "a sane basis", and that new banks should be founded only when they have met all

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<sup>16</sup> Today there is a total of 27 commercial banks in Romania, out of which five are state-owned, nine have joint-venture capital (state and private), six are private banks, and seven are functioning as subsidiaries of foreign banks. Even though state banks are no longer the majority, they still dispose of over more than 70% of the total capital.

stipulations, and when they respect all regulations, since many new small-sized banks with low capital endowment could lead to malfunctions and mistrust.

An important task of NB for the year 1991, as well as for the coming years, had been the increase of the foreign exchange reserves, in order to cover the imports. The huge deficit of the commercial balance sheet in the year 1990 (1.8 billion USD) had used a lot of the country reserves. Consequently, in the second half of the year 1990, negotiations with the IWF took place, which were concluded with a "Standby agreement" for 12 months. The agreement was signed in April 1991. In the timeframe March-November 1991, the NB had operated six foreign exchange purchases with a total value of 565.8 billion SDR (772.2 billion USD), based on this agreement. This also explains why, at the end of the respective year, the foreign exchange amounts of the NB were a lot higher, even when compared with the next two years.

Even if the deficit of the commercial balance sheet in 1991 was smaller than the one of 1990, it still remained considerable (1.4 billion USD). The responsibility was therefore attributed to the trade collapse with the former East European partners, and to the embargo imposed on Iraq.

Another task of the NB consists in maintaining control over the inflation. The inflation had a steep increase after the year 1990. The reasons are to be found in the domestic price-liberalization, and in the depreciation of the domestic currency, in relation to the prevailing foreign currencies.<sup>17</sup>

On the 11<sup>th</sup> of November 1991, the official rate was the first time brought into line with the rate of the exchange offices (real exchange rate).

The price liberalization was undertaken in several stages in consideration of the social circumstances, and it lasted for more than 18 months.

An important objective of the NB, in order to prevent inflation, was the use of real positive interest rates. To this end, the refinancing interest rate of NB was increased from 3% at the end of the year 1990, to 18% starting with the 15<sup>th</sup> of September 1991. The interest rates remained significantly under the inflation level, but one could presume that interest rates of 200 to 300% would have represented a significant shock for the domestic economy.

Correlated to the high inflation, also the monetary basis increased with more than 100%, from 513.5 bill. lei, at the end of 1990, to 1.0247 bill lei at the end of 1991; it results that the increase was obviously overtaken by the development of the inflation. The monetary rotation speed had increased from 1.67, at the end of 1990, to a rotation of 2.13, at the end of 1991. During 1991, the monetary expansion was maintained under control, in order to diminish the inflation pressure. Starting with October 1991 the credits granted for the privates increased dramatically. This increase was responsible for 77.5% of the total annual growth.

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<sup>17</sup> The inflation rate increased from 1,5% at the end of 1990 to 174,5 at the end of 1991, and the exchange rate decreased from 34,71 to 189 lei/USD.

Regarding the real economic development, the GDP had diminished in 1991 with approx. 13.7%; it is the fourth year in a series when it continued to decrease (the BIP of 1991 represented only 74.9% of the BIP of 1987).

The total State deficit was of 1.5% from the GDP. The deficit of the central administration, as well as the take over of “bad” debts, and the losses in the account of the public debt, were re-balanced with a new valuation of the gold and silver reserves. (see 2.2).

The important structural changes in relation to the activities of the NB are mirrored also in the balance sheet. The balance sheet sum, on the 31<sup>st</sup> of December 1991 was of 917 bill. lei, so with approx. 105% higher than the one of the previous year. Of special importance are:

- an increase of the refinancing credits for commercial banks, that is of only 8% (to 390 billion lei), as a sign that the NB lost the monopoly position in the administration of cash flows;
  - an increase of the “Unfavorable differences...” to 160 billion lei;
  - the circulation of cash increased under the joint influence of inflation and recess to 84 bill lei (+91%);
  - the personnel costs of the NB represented only 5.3% of the total costs.
- According to the annual report the NB had appealed to a prudent payment policy, without going over the level established by the State, in order to avoid additional tax loads.

**TABLE 2**  
**ROMANIA'S CBS IN 1991 (Average data)**

Money rotation	124,160.17	
Clearing accounts	25,938.46	
Public deposits	47,138.79	
Liabilities to banks	148,844.21	
Other liabilities to banks	389.95	
Other liabilities T+C	367,469.46	
<b>Inflation rate</b>	1.75	
<b>Gross CBS</b>	<b>641,234.21</b>	<b>Gross CBS % GDP 29.1</b>
<b>Net CBS =</b>	<b>633,150.11</b>	<b>Net CBS % GDP 28.73</b>
Gross CBS - Interest payments		

**TABLE 3**  
**CBS DISTRIBUTION IN ROMANIA, 1991**

	Million lei	Beneficiary	% of CBS (net)	Million lei
Gross CBS	641,234.21	State	20.97	132,791.74
		Banking system	74.2	469,788.4
		Abroad	- 18.43	- 116,702.8
		Gold opportunity costs	- 7.77	- 49,216.78
		Other opportunity costs	4.54	28,744.95
		Administrative costs	0.28	1,768.1
		Retained profit	0.83	5,249.5
		State payments	1.5	9,500
		Taxable payments	15.31	96,957.91
		Other incomes	- 0.08	- 491.7
Interest payments	- 8,084.1	Statistic difference	8.65	54,760.79
Net CBS	633,150.11	Net CBS	100	633,150.11

These figures enlighten that, most of all, in the year 1991, the NB was still the leading institution in the banking sector. According to this, the subvention of the banks was high. In that year, the opportunity costs for gold were negative, since the development of the gold-price overtook the inflation rate.

### 3.2. 1992

In the year 1992, the Romanian economy had the following development:

The payments balance sheet presented a deficit of 1.522 bill USD, the necessity of foreign finances persisted, and the money depreciation still remained at a very high level due to the development of the structural inflation (210.9% at the end of 1992).

Also in the year 1992, the NBR aimed at obtaining real positive interest rates. During the year the refinancing rate of the NBR was modified very often. The rate increased from 18% in December 1991, to 80% at the beginning of the year 1992. On the 1<sup>st</sup> of December 1992, due to the anticipated weakening of the inflation, the BNR reduced the refinancing rate to 70%. The interest rates were partially real positive in the third quarter. The struggle against inflation suffered considerably due to the large number of credits granted with low interest rates. The financing with favorable credits of the NB represented 99% of the total credits granted by NB.

The money offer increased by 74.8% to 1.806 bill lei at the end of December 1992. Even though this increase went over the expectations of the first half of the year, it still was under the growth rate of the nominal BIP (158.3%). It results that the money rotation speed increased from 1.67% at the end of 1991 to 3.02% at the end of 1992.

The cash outside banks increased with about 133.3% and reached, at the end of December 1992 a value of about 411.7 billion lei. The reason was the high demand of cash for current transactions, due to the circumstances arisen by the prices and salaries increase<sup>18</sup>.

The exchange rate continued its decline from 189 to 460 lei/USD. The mistrust in the domestic currency is mirrored in the fact that the deposits in foreign currency increased several times.

In the year 1991, the mechanism of minimum reserves was introduced as means of indirect tax for the cash flow. Since March 1992, the reserve debentures were of 10%. State, interbank and household deposits were excepted from this regulation. In March 1992 the total sum of minimum reserves was of 60 bill. lei; if one takes into consideration the money offer multiplier, the potential growth of the money offer would be decreased with about 150 bill. lei. As result of the considerable increase of cash, at the end of 1992, the household deposits were also due to contribute to the minimum reserves, starting with the 1<sup>st</sup> of December 1992. In conclusion, these reserves grew with more than 40 billion lei.

The progresses, compared to the previous year were insignificant, for instance: labor productivity in industry decreased by “only” 13.8% as compared to the previous year (-16%). The import covering by export increased to 78.9%, as compared to 72.3% the year before (1991). Especially in the last months of the year one could notice a certain improvement in the industrial and agricultural output, as well as in the labor productivity. Leaving this aside, the official data do not contain any mentions about the more and more self-developing shadow economy.

The GDP actually decreased by 15.4% (for the fifth consecutive year).

The State deficit was of 263 billion lei, which corresponded to 4.8% of the BIP.<sup>19</sup>

The general negative economic development in the year 1992 is mirrored also in the level of the seigniorage. The results for the calculations of the gross and net seigniorage, as well as the allocations of the year 1992, are presented in the following exhibits.

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<sup>18</sup> The absence of modern payment means, such as credit cards, and the infrequent use of cheques led to an especially high demand of cash in Romania.

<sup>19</sup> Above this, a part of the State expenditures were financed from non-budgetary sources, so that the real total deficit was of 5.2% of the GDP.

CBS was, according to the high inflation rate much higher. In that year as well, the “gold dividends” were of importance; also, the official allocation of the seigniorage to the State was on increase. The subventions by supranational institutions were also significant. For the first time there resulted, after considering the exchange gains, positive opportunity costs of the gold amounts (the gold incomes were under the inflation rate).

**TABLE 4**  
**CBS IN ROMANIA, 1992 (Average data in million lei)**

Money rotation	284,221		
Clearing accounts	5,295		
Public deposits	158,300		
Liabilities to banks	260,225		
Other bank liabilities	3,563		
Other liabilities	131,454		
T+C	843,058		
Inflation rate	2,11		
<b>Gross CBS</b>	<b>1,778,009.32</b>	<b>Gross CBS % GDP</b>	<b>29.72</b>
<b>Net CBS</b>	<b>1,727,532.88</b>	<b>Net CBS % GDP</b>	<b>28.88</b>

**TABLE 5**  
**CBS DISTRIBUTION IN ROMANIA, 1992**

	Million lei	Beneficiary	Million lei	% CBS
Gross CBS	1,778,009.32	State	967,347.68	56
		Banking system	655,661.31	37.95
		Abroad	- 469,209.29	- 27.16
		Gold opportunity costs	41,452.74	2.34
		Other opportunity costs	96,828.41	5.61
		Administrative costs	8,829.34	0.51
		Retained profit	14,300	0.83
		Payments to State	24,000	1.39
		Taxable payments	224,145.38	12.97
		Other payments	20,348.4	1.18
		Other incomes	- 1,969.12	- 0.11
		Statistic Difference	145,798.03	8.49
		Net CBS	1,727,532.88	100

### 3.3. 1993

In 1993, for the first time, BIP no longer continued to decrease (+1%). The industrial output increased with 1.3%, and the agricultural one by 12,4%.

The deficit of the payments balance sheet was still of 1.17 billion USD. The inflation rate maintained a high level (end of 1993 it was of 256.1%, according to the annual basis), one of the highest in the countries in transition, since only the states of the former Soviet Union had an even higher depreciation of the monetary value. The fact that, in spite of all monetary and financial restrictions, the monthly values of inflation were higher than 12%, shows that the corrective inflation changed into a structural one.

The price liberalization was concluded with the abolition of the last subventions, for some consumer goods, and with the introduction of the value added tax.

Even if the NB refinancing rate of 70% had not changed, its practical importance was negligible, due to the permanent high volumes of the preferential credits. In April 1993, the credits with preferential interest (10 to 24,5%) represented 96% of the total credits. In the last months of the year, the NB changed its credit policy. The tender credits (with a significantly higher interests) increased from an average level of 132 bill. lei in September 1993 to 573 bill. lei in December 1993.

The exchange rate continued a steep decline from 460 at the end of 1992, to 1276 lei/USD at the end of 1993. The official used exchange rate of the year 1993, influenced further an overvaluation of the domestic currency, which determined also a undervaluation of the external components of the total production. During the entire year 1993, the leu was under evaluated on the "parallel markets" (exchange offices, "black market", "gray market") as compared to the banking markets; in the same time, the leu development was favored by a new stipulation, according to which the economic agents were allowed to keep entirely all incomes in foreign exchange they obtained from export. At the beginning of the year the official exchange rate was of 469 lei/USD, and on the parallel markets of 700-800 lei/USD; at the end of December (official exchange rate 1276 lei/USD), it was already of 2000 lei/USD. The NBR had tried to control the inflation by an overvaluation of the domestic currency, but it seems that this had proven to be an ineffective way.

The monetary basis increased during 1993 by 141%, so that it reached 4.47 bill. lei on the 31<sup>st</sup> of December 1993. The money rotation speed increased further, as result of the mistrust of the economic agents in the domestic currency, and of the continuous elimination of the monetary carry-over. At the end of 1992 it was of 3.22 rotations/year, and at the end of 1993 of 4.21 rotations/year.

The money amount outside the banking system increased by approximately 154.9%, up to 1.05 bill. lei. The contribution at the entire monetary basis increased by this from 22.2% to 23.4%. Together with the unchanged

unavailable modern means of payment, a more predominantly underground economy might be responsible as well.

The increase of the lei deposits (246.1%) was only slightly smaller than the money depreciation, which could have been a result of the interest rate growth. The deposits of private households increased, in comparison, by only 55.7%, due to the fact that the interests offered by CEC were way under the inflation. The deposits in foreign currencies multiplied almost four times.

The international reserves increased from 337,3 to 1.151.4 bill. lei. To a great extent this is still the result of the depreciation of the domestic currency, which also led to several revaluations of the gold reserves. The foreign exchange reserves of the entire banking system increased from 879.5 billion dollars to 1.05 billion dollars. Out of this amount, only 42.3 billion dollars were deposited at the NB at the end of December 1993, as compared with the 89.8 billion dollars in the previous year.

The foreign debts increased further in 1993 (+35.4% to 3.36 bill. USD). Although the dynamics of the indebtedness was alarming, the degree of indebtedness was much smaller than in the most other countries in transition.

The mechanism of the minimum reserves had not changed during the year. The effective level of minimum reserves increased from 105.3 (in January) to 168 bill. lei (in December), as result of the monetary basis growth. In the assets of the commercial banks the part of minimum reserves decreased from 2.5% to 1.7%. First by the end of the year the BN decided to change the mechanism of the minimum reserves. The changes were the following:

In the calculation basis of the minimum reserves the foreign exchange deposits of the locals were also included (except the deposits of natural persons). The rate was established at 10%, in order to discredit the tendency of "dollarcracy" of economy. To stimulate the constitution of lei deposits, the rates of minimum reserves were reduced to 5% for the extra deposits in lei. For speeding-up the process of discount between banks, also their clearing accounts had to contribute compulsory to the minimum reserves.

The (officially recognized) unemployment rate reached 10,2% (from 3% at the end of 1991, and 8.4% at the end of 1992).

The State budget had a deficit of 336.6 bill. lei (1.8% of BIP).

In spite of the negative developments, a slight improvement can be noticed in 1993, which is reflected also in the level of the seigniorage.

One can see that the subvention for the banking sector had significantly diminished in the percentage of CBS in 1993. The reason lies in the changes occurred in the credit policy of NBR and enlightens the aim of leaving much more freedom to the banks.

The subvention to the State also increased significantly in that year.

Mention still should be made of the “excess monetization” in the year 1993, which had a strong negative trend (about 8% BIP). If we had also included in this study the changes of the State indebtedness to the NB, with reference to the nominal BIP, it would have resulted a much smaller TGS for this year.

**TABLE 6**  
**CBS IN ROMANIA , 1993 (Average data in million lei)**

Money rotation	689,019		
Clearing accounts	9,520		
Public deposits	485,194		
Liabilities to banks	665,563		
Other bank liabilities	16,894		
Other liabilities	326,424		
T+C	2,192,614		
Inflation rate	2.55		
Gross CBS	5,595,550.93	Gross CBS % GDP	<b>29.71</b>
Net CBS	<b>5,511,502.93</b>	Net CBS % GDP	<b>29.26</b>

**TABLE 7**  
**CBS DISTRIBUTION IN ROMANIA, 1993**

		Beneficiary	Million lei	% of CBS
Gross CBS	5,595,550.93	State	3,895,508.06	70.68
		Banking apparatus	1,890,260.66	34.3
		Abroad	- 2,226,544.76	- 40.4
		Gold opportunity costs	126,991.8	2.3
		Other opportunity costs	386,809.19	7.02
		Administrative costs	27,377.68	0.5
		Retained profit	62,950	1.14
		State dividends	235,850	4.28
		Hidden dividends	788,711.64	14.31
		Other dividends	24,230	0.44
		Other incomes	- 3,864	- 0.07
		Statistic difference	303,222.66	5.5
		Net CBS	5,511,502.93	100

### 3.4. 1994

The year 1994 brought along an improvement of the entire economic activity. The industrial output, the labor productivity, the real average salaries, and the

exports increased considerably, whereas the payments balance sheet deficit and the unemployment decreased a great deal.

The inflation hit the lowest level since the liberalization process (the average monthly inflation rate decreased from 6,1% in the first, to 4,6% in the second, to 2.4%, in the third, and up to 2.1% in the fourth quarter).<sup>20</sup> The inflation rate was under the average refinancing rate of NB and led to real positive interest rates. The interest rates for credit lines with preferential interests had been increased from 10 to 30%. In general, the result was a significant decrease of refinancing of the NB.

The money amount enlarged further, and the money outside the banking system slightly increased as well. The deposits in foreign currency increased in their turn, on one hand as a result of the real deposits growth, and on the other hand as a consequence of the domestic currency depreciation. In the second half of the year, the growth of the monetary variables was above the inflation rate, which can be considered as a sign of the remonetization of the economy, of the growing money demand, and of the restoration of confidence in the domestic economy.

The depreciation of the domestic currency was under the inflation rate. By the introduction of a regular foreign currency market (1<sup>st</sup> of August 1994), it was done away with the difference between the official and unofficial exchange rate. An important reason for the real revaluation of the domestic currency was the improvement of the trade balance deficit, as well as the high real interest rates<sup>21</sup>.

By this, the international reserves also increased considerably.

The severe monetary policy in 1994 led to the restoration of the macro-economic balance, the money demand grew, the “dollarcracy” of the economy had been slowed down, the exports increased as well, which resulted into an improved credit location.

These positive developments were defeated with the signing of a new “standby agreement” with the International Monetary Fund. Other important agreements with the World Bank and the G-24 were concluded as well. The foreign exchange position of Romania improved considerably, and contributed to a greater confidence on the side of the foreign investors.

In spite of all this encouraging progress, it is still too early to assume that the Romanian economy is on the way of an irreversible, favorable development process.

In the year 1994, the situation had somewhat changed. The subventions for the banking sector decreased significantly, which must be related to a considerable harshening of the credits policy of NBR. The new agreements with IMF, continued to lay emphasis on the subventions of the external sector.

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<sup>20</sup> In March 1995 it was only of 0.9%.

<sup>21</sup> Already in spring there took place a revaluation of the leu from 2100 lei/USD to 1677 lei/USD on the black market.

The subventions to the State decreased significantly, as well as the “hidden dividends payment” (according to the lower gold incomes).

Per total, the CBS as percentage of BIP decreased significantly.

**TABLE 8**  
**CBS IN ROMANIA, 1994 (Average data in million lei)**

Money rotation	1,414,053		
Clearing accounts	13,308		
Public deposits	1,225,692		
Liabilities to banks	1,437,108		
Other bank liabilities	203		
Other liabilities	1,245,698		
<b>T+C</b>	<b>5,336,062</b>		
<b>Inflation rate</b>	<b>0.65</b>		
<b>Gross CBS</b>	<b>3,477,511.61</b>	<b>Gross CBS</b>	<b>7.32</b>
<b>Net CBS</b>	<b>3,106,586.61</b>	<b>Net CBS</b>	<b>6.54</b>

It is obvious that the development of CBS is strongly correlated to the inflation rate

**TABLE 9**  
**CBS DISTRIBUTION IN ROMANIA, 1994 (Average data in million lei)**

	Million lei	Beneficiary	Million lei	% of the CBS
Gross CBS	3,477,511.61	State	1,720,463.24	55.38
		Banking apparatus	235,878.99	7.59
		Abroad	- 1,019,453.24	- 32.82
		Gold opportunity costs	409,554.15	13.18
		Other opportunity costs	457,145.39	14.72
		Administrative costs	103,960	3.35
		Retained profit	198,733.8	6.4
		State dividends	794,935.2	25.59
		Hidden dividends	359,166.85	11.56
		Other incomes	- 19,576	- 0.63
Interest payments	- 370,925	Statistic difference	- 134,221.77	- 4.32
Net CBS	3,106,586.61	Net CBS	3,106,586.61	100

#### 4. International Comparison

For the years 1991 - 1993, there was possible a comparison of the gross seigniorage in % of the BIP of Austria, Germany, and Romania. For the year 1993, there was undertaken also a comparison of the net seigniorage in % of the BIP, and of the distribution of the net seigniorage. In this year Hungary was included as well.

**TABLE 10**

Year	Gross seigniorage % BIP Austria	Gross seigniorage % BIP Germany	Gross seigniorage % BIP Romania	Market interest rate Austria	Market interest rate Germany	Inflation rate Romania
1991	1.27	0.95	29.09	0.091	0.088	1.745
1992	1.31	1.00	29.72	0.094	0.094	2.109
1993	1.05	0.83	29.71	0.072	0.075	2.552

As expected, the seigniorage in Romania is considerably higher than the one of the sample countries for these considerations. But one must emphasize that the calculations of the gross seigniorage for Austria and Germany were realized in accordance with the concept of opportunity costs, and not according to the concept of inflation as is the situation of Romania. Sensitivity analysis were also undertaken: with a market interest rate such as in Germany, a somewhat similar level of the gross seigniorage is obtained for Romania as well. In the year 1993, a certain improvement could be sensed, even if the inflation rate was higher than the one of the year 1992.

**TABLE 11  
COMPARISON GERMANY - AUSTRIA - ROMANIA - HUNGARY, 1993**

	GERMANY	AUSTRIA	ROMANIA	HUNGARY
T&C	346.03	306.9	1,190.11	2,192.61
Market interest rate	0.08	0.07	0.15	2.55 <sup>1</sup>
Gross seigniorage BIP	25.95	22.1	177.33	5,595.54
T&C 100% BIP	11.14	14.55	33.98	11.64
Gross seigniorage 100% BIP	0.84	1.05	5.06	29.71
Interest payment	- 1.45	- 0.57	- 26.53	- 84.05
Net seigniorage	24.5	21.53	150.8	5,511.49
Net seigniorage 100% BIP	0.79	1.02	4.31	29.26
<sup>1</sup> Inflation rate				

Net Seigniorage in % of BIP, comparison among Germany, Austria, Hungary, Romania.

If for Hungary one had used the inflation rate (22,5%) instead of the market interest rate (15%), the gross seigniorage would have been higher (7.65%). With a market interest rate as in Hungary (15%), one would obtain a much

lower level of the net seigniorage for Romania (1.43%; comparable with the one in Germany). As one can see from the exhibit, the central bank money/BIP rate is rather low in Romania, especially as compared with Hungary. Consequently, the high seigniorage results out of the extremely high inflation rate.

**TABLE 12**  
**DISTRIBUTION OF NET SEIGNIORAGE IN % OF THE CBS, 1993**  
**COMPARISON GERMANY - AUSTRIA - HUNGARY - ROMANIA**

	GERMANY	AUSTRIA	HUNGARY	ROMANIA
Subventions to the State	2.2	5.9	142.45	70.68
Subventions to the banking apparatus	4.5	3.5	4.81	34.3
Subventions to external institutions	- 2.7	- 2.85	- 46.53	- 40.4
Opportunity costs of gold	4.2	12.3	0.37	2.3
Opportunity costs of currency	4.3	2.2		
Opportunity costs of other assets	2.7	- 2.8	7.97	7.02
Administrative costs and others	11.4	11.3	3.53	0.5
Included profit	2.4	17.6	1.71	1.14
Dividends, taxes and dividend payment	74.6	46.4	6.8	4.7
Hidden dividend payment				14.31
Other incomes	- 0.4	0.3	- 8.16	- 0.07
Statistic difference	- 3.2	6.1	- 12.95	5.52
Total CBS	100	100	100	100

The comparability of the seigniorage allocation is distorted by the practice chosen by me, that is taking into account the exchange rate gains for the gold amounts. By all means, it should be taken into consideration that for Germany and Austria these gains could not have been very high (presumably negative), and in Hungary gold obviously plays no role.

As expected, the distribution of seigniorage to the State in Germany and Hungary takes place in the frame of official dividends payment from the profit, and not due to a preferential access of the State to the credits, or due to other more obscure practices. The subvention for the financial institutions is of higher importance only in Romania as proof of the fact that the NB has not lost the monopoly function in credit-granting yet. First in the year 1994 one could remark a harshening of the NBR credit policy, and as a consequence the subventions diminished significantly.

The subvention due to foreign institutions is, of course, higher than in Austria or Germany, but still lower than in Hungary. For the rest, one must appeal to a similar calculation for these assets as in the case of gold; in a period of hyperinflation, real estates are for sure a lot more valuable. This aspect has not been so much emphasized here, partially because the necessary data were not available, and partially because one can presume that these incomes are not significantly high.

The administrative costs of the NBR, which contain mainly money issuing costs and personnel costs, are very low in Romania, as compared to the other countries. This one can relate especially to the low personnel costs.

The rather slight statistical difference in Romania is, of course, satisfactory.

## **5. Conclusions**

The estimation of the height and allocation of the seigniorage in Romania was correlated with some difficulties. Not all relevant data were accessible; still, the annual reports of the National Bank of Romania are rather transparently organized. The comparison of the commentaries contained in these reports, for every year, indicate a progressive emancipation from the State authorities. Even the peculiar procedure on the evaluation of the gold reserves is mentioned - even if it is done only at an initial stage. The further politic development will be for sure decisive, if this process is to be continued. The same thing is valid for the development of seigniorage. In the year 1994, a slight economic growth trend could be felt, which BNR had used for the sharpening of its policy. A new weakening could endanger the reform once again.

I hope that with the present paper about my native country, I could offer a useful contribution to the research project over the seigniorage in Eastern Europe, and more than this, I could deliver an increased volume of information about Romania, which still leaves much to be desired.