Debate about alternative monetary systems –
Silvio Gesell, John Maynard Keynes, Irving Fisher

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Abstract

Due to the instability of current financial and monetary markets worldwide and the dysfunctions of current capitalism, this Master’s thesis studies alternative monetary systems. The objective of this paper is to debate about historical as well as current alternative monetary systems and to evaluate their concept, theory and success.

First of all, the theoretical approaches to the problems of monetary systems of Silvio Gesell, John Maynard Keynes and Irving Fisher will be analyzed. Furthermore, a critical acclaim will be subjected by discussing the advantages and disadvantages of these reforms. Finally, the theories of the three economists will be compared in order to define similarities and differences. In the second main part, this thesis aims out exploring alternative monetary systems which have been implemented into practice. In the course of this analysis two historical case studies as well as seven current ones will be described and evaluated. The historical alternative monetary systems are based on Gesell’s approach and the current systems represent complementary currency systems. The aim of this evaluation is to identify if alternative monetary systems can offer an added value for the economy and society. In the last chapter, this paper also aims out exploring if a global alternative monetary system could be established.

In conclusion, it can be said that all three economists developed alternative monetary systems which could have been very effective at that time. Nowadays, an adaptation of these systems is needed by changing them to complementary currencies instead of replacing the official currencies or by guaranteeing the preservation of national sovereignty for instance. In addition, complementary currency systems can be very successful by stimulating the local economy as well as strengthening the community. Furthermore, they are able to offer a monetary stability, sustainability and reduction of international inequalities. Nevertheless, they have to be managed well and there has to be a democratic decision on the amount of complementary currency that should be issued.

In summary, the introduction of complementary currency systems is recommended, because they are able to strengthen the economy as well as the community. If the economy is weak, these systems will have the potential to support the national currency by stimulating the local economy. Furthermore, these systems do not represent a high risk of financial failure due to low start-up costs.
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1. Introduction

The various financial crises of the past have shown that financial and monetary markets worldwide are not stable and have many problems. The financial crisis of 2007/08 as well as the current Euro crisis indicate that the financial systems are globally linked and that the stability of currencies cannot be guaranteed. Furthermore, the principal of interest rate and the dynamic of compounded interest are leading to an exponential growth of financial assets if the possessors earn more than they spend. In consequence, debts grow also exponentially if the debtors have to pay more interest than they are able to pay. The interest which is not paid will be added to the debts and becomes therefore subject to interest, too. In consequence, if the dysfunctions of current capitalism will not be resolved, financial crises will arise continuously.

Due to these problematic characteristics of the current financial system, the objective of this Master’s thesis is to discuss theoretical approaches of alternative monetary systems and to analyze the practical realization on the basis of historical and current projects. Furthermore, this thesis aims out exploring which advantages and disadvantages exist for the theoretical and practical approaches of alternative monetary systems. Finally, it is the objective of this paper to analyze if a global complementary monetary system could be an alternative to the existing financial system.

Concerning the methodology of this thesis, an extensive literature study has been accomplished in order to define and discuss alternative monetary systems. Furthermore, four interviews with monetary experts have been held and various case studies are presented and analyzed to get inside information and an extensive overview of the debate about alternative monetary systems. In a first step, theoretical approaches of alternative monetary systems of three economists will be described and criticized. Finally, historical as well as current case studies of alternative monetary systems will be analyzed and evaluated.

In the first main part, this paper focuses on Silvio Gesell, John Maynard Keynes and Irving Fisher because they made important contributions in the field of theories of interest and alternative monetary systems.
First of all, Gesell’s approach to the problems of monetary systems will be presented. His theory of interest will be analyzed in order to identify his explanation of interest and its determining factors. Furthermore, his criticism of money as a medium of exchange will be discussed in order to understand the origins of his alternative monetary system. In a second step, his Free Money system will be described. In order to analyze not only a national, but also an international monetary concept of Gesell, his “International Valuta Association” will be examined in order to get an extensive overview of his propositions. Finally, all these approaches will be criticized.

Secondly, this thesis will explore Keynes’s theories for monetary problems. In order to understand his monetary theory, Keynes’s interest rate approach as well as its determining factors will be explained. As Keynes did not develop a national monetary system as Gesell or Fisher, three monetary reforms of him will be analyzed in order to compare the chronological development of his ideas. In a third step, Keynes international monetary system “Bancor Plan” will be investigated. All these subparts have the objective to present a final critical acclaim of Keynes’ theories.

Finally, the monetary approaches of the third economist Irving Fisher are discussed. In order to understand his monetary reforms, the first subpart aims out analyzing his theory of interest. In a second step, his national monetary reforms “Stamp Scrip” as well as the “100% system” will be explained in order to present the practical realization of his theory. In a last subpart, Fisher’s “Compensated Dollar Plan”, an international monetary reform, will be described in order to get an extensive overview of his approaches. Furthermore, these reforms and systems are criticized in order to present a personal opinion.

Finally, this thesis is comparing the theories of interest as well as the national and international monetary reforms of the three economists in order to identify similarities and differences.

In the second main part, this thesis will examine alternative monetary systems which have been implemented into practice.

First of all, two case studies of Gesellian’ monetary reforms of the past (“WÄRA”, “Wörgl”) will be described and compared with Gesell’s theoretical propositions presented in the first main part. The objective of this chapter is to answer the question if a Free Money system could be established nowadays.

The next part is dealing with current complementary currency systems. Initially, a definition of these currencies is being developed. In a second step, the worldwide development is pre-
sented in order to understand the importance of these systems. After having analyzed the theo-
ry, five practical case studies of current complementary currencies will be discussed. Among
these examples are regional currency systems (“Chiemgauer”, “Bremer Roland”), Local Ex-
change Trading Systems (“Graine de Sel”, “WIR- Ring”) and community currencies (“Ithaca
Hours”, “Curitiba”, “Fureai Kippu”). This part aims out to evaluate their concept, theory and
success. Furthermore, all these different types of complementary currency systems are criti-
cized in order to present advantages and disadvantages of these concepts.
Finally, this thesis intends to explore if a global alternative monetary system (“Terra”) can be
established.

1.1 Literature review

On the one hand, the literature selection is based on classical works and theories of Gesell,
Keynes and Fisher. On the other hand, various articles from economic magazines and current
literature have been selected in order to get an extensive overview of the debate about alterna-
tive monetary systems. The major contribution of these authors and references was to point
out that there is a need for alternative and complementary currency systems. However, they
failed to consider Irving Fisher’s and John Maynard Keynes’s work. Yet this paper does not
only deal with Gesellian’ monetary systems, but also analyzes and compares monetary re-
forms of Fisher and Keynes.

Furthermore, four interviews have been held in order to get opinions and information of ex-
erts (cf. appendix 5, 6, 9, 11). Two initiators and executives of regional currency systems in
Germany have been interviewed: Christian Gelleri, the initiator of the most successful region-
al currency in Europe, the “Chiemgauer” and Karl-Heinz von Bestenbostel, the executive of
the “Bremer Roland”, the first regional currency in Germany. Furthermore, Margrit Kennedy,
an economist, book author and monetary expert as well as Bernd Senf, a former professor of
the “Hochschule für Wirtschaft und Recht Berlin” (HWR) and also book author, have been
questioned. These interviews represent an important source for this thesis, because they give
inside information and a personal view of experts concerning current monetary problems,
potential and current alternatives to the existing financial system as well as future outlooks.
2. Theoretical approaches to the problems of monetary systems

The financial crisis of 2007/08 has shown at the latest that a lot of monetary and financial systems are not stable and have various problems. For this reason, the following part of this master’s thesis is dealing with theoretical approaches concerning alternative monetary systems of three economists. Silvio Gesell, John Maynard Keynes and Irving Fisher have been selected, because they made important contributions in the field of alternative monetary systems. First of all, this part aims to examine the economists’ theories of interest. In a second step, the national monetary reforms which had been proposed by Gesell, Keynes and Fisher will be analyzed. Furthermore, in order to present an overview of monetary approaches, their international monetary systems will be examined, too. Finally, the theories and proposals will be criticized and compared.

2.1 Silvio Gesell

Silvio Gesell (March 17, 1862 – March 11, 1930) was a German theoretical economist. He was founder of “Free Economy” (“Freiwirtschaft”) and discoverer of the significance of hoarding money and of “Free Money” (“Freigeld”) (cf. Thomas Betz, 2012, p. 25). In Argentina, where Gesell lived during several years, he was confronted with a highly unstable currency and Gesell was convinced that there have to be money and land reforms in order to solve the problems of capitalism. In 1891, he stated that the velocity of money represents an important factor in determining the level of prices (cf. Bernard A. Lietaer, 2001, p. 150).

2.1.1 Silvio Gesell’s theory of interest

In contrast to Orthodox and Marxian economists who believe that interest has a connection with private ownership of the means of production and that the origin of interest can be found in the factory or, at least, in the separation of the workers from the means of production, Silvio Gesell was of the opinion that the nature of interest can be analyzed by investigating money (cf. Silvio Gesell, 1929, p. 302). He acted on the assumption that the existing monetary system at that time was the origin for crises and instability.
Gesell did not develop an own theory of interest, but he opposed interest rates in general. On the one hand, he believed that interest is “unnatural” and on the other hand he thought that interest leads to a concentration of wealth (ibidem, pp. 189) (cf. appendix 1).

Gesell’s criticism concerning interest rates refers to the interest on “real” capital (houses for example) and the money-interest. Money-interest is the product of an independent capital and is not influenced by interest on real capital. However, the interest on real capital is influenced by money-interest. According to Gesell, the gross interest (rate of interest) has three components: the basic interest, a premium for risk and a hausse-premium. Gesell defined the interest on money as “basic interest” (“Urzins”) (ibid., pp. 316). The basic interest is a part of the interest rate which is raised unjustifiable because of the exceptional position of money compared to goods on the market. Interest on real capital depends on the basic interest. Gesell’s intention was to let the basic interest disappear in order that borrowers of money will no longer pay interest.

The premium for risk is an insurance against risks and the hausse-premium is “the share of the profit from an expected rise of prices (Hausse) falling to the giver of money” (ibid., p. 356). Gesell was of the opinion that the interest on real capital and the basic interest are the two components which represent the price for money. The premium for risk and the hausse-premium should be minimized by Gesell’s monetary reform, in order for money to become less expensive.

Gesell was of the opinion that interest is a result of the blockage of the money-goods-cycle due to the hoarding of money. According to the quantity theory of money, the creation of a price level (P) in a national economy depends on: the existing amount of money (M), its velocity of circulation (V) and the real value of all the transactions (Q) (cf. Ulrich Blum, 1987, p. 242).

\[ M \times V = P \times Q \]

If a price level has been created and market participants who possess money do not spend the money but hoard it, then the velocity of circulation decreases respectively the real amount of money. In consequence, the amount of transactions or the price level of the national economy has to decrease. If the amount of transactions decreases in the national economy, fewer prod-
ucts will be sold. The result is a stagnation of the market in the macroeconomic cycle. If the price level falls down there could emerge a deflation spiral (cf. Norbert Rost, 2003, pp. 20).

Gesell was of the opinion that the interest rate is an unreliable instrument for money circulation. During some phases of economic development, the interest rate is not able to bring the hoarded money back to the capital market. With an increasing national income for instance a higher percentage rate of money, which will not be consumed but hoarded, remains. This mechanism is disrupting the macroeconomic cycle. In order to avoid a macroeconomic demand deficit, there have to be more investments. Nevertheless, investments cannot be increased discretionary without affecting the return. Gesell emanated from a decreasing return when the volume of investments is increasing (cf. Norbert Rost, 2003, pp. 20).

In consequence, if the return on investment is decreasing in the long term, investments with a return below the market interest cannot be realized anymore. In addition, the demand for credit from the enterprises will go down and the market interest will fall down. In consequence, banks will pay less interest for savings. This situation is unfavorable for savers and they will rather hoard their money instead of investing it on the capital market. The more money is hoarded, the less money is on the capital market. In consequence, there will be disruptions in the macroeconomic cycle which can lead to economic crises (mass unemployment, recession) (cf. Bernd Senf, 2007, pp. 117).

According to Gesell, there are no investments made if the general market interest is below 3%. This amount of money would instead be held liquid for speculative purposes. In order to be sure, that money with a negative interest is being invested, Gesell introduced an “anti-hoarding fee”, because he was of the opinion that such crises can be avoided when the circulation of money is secured.

Silvio Gesell’s criticism of money as a medium of exchange

Silvio Gesell discovered that money fulfills two functions at the same time: it is a medium of exchange and a store of purchasing power. These two functions come into conflict with each other, because in contrast to money, goods can decay, they are subject to expensive storage or they can lose value (cf. Gesell, 1991, pp. 304). The only protection for an owner against losses is to sell the goods. In consequence, the owner of goods is dependent on a possibly fast sale. Money is not affected by such problems because it can be retained by hoarding. In consequence, the possessor of money is protected against losses and he is not forced to sell his
property. This situation is unnatural. Money has a supreme advantage over all goods. According to Gesell, money has to lose this monopoly and has to be treated as goods. Due to this advantage of money over goods, money creates an added value. Gesell was of the opinion that this surplus value results from the “capitalistic quality of money” (Gesell, 1929, p. 305). This characteristic is based on the following four characteristics of money:

1. Money is the essential condition of a highly developed division of labor.
2. It can be withdrawn indefinitely from the market without material cost of storage.
3. The merchant can force the possessors of goods to make him a special payment and he can prevent the exchange of goods by holding back his money.
4. Interest on commercial capital is composed of this regular payment. According to Gesell the basic interest represents about 4 or 5% per annum of the capital sum involved (ibid., p. 305).

The pressure which results from these characteristics of money provokes that a special payment (interest) can be asked in order to force the money possessor to spend his fortune instead of hoarding it.

For Gesell, the solution for the problem of hoarding money consists of an “oxidizing banknote” (“rostende Banknote”). In consequence, money would become perishable like goods and its privilege would disappear. The advantage of the money holder against the goods owner has to be removed. Money should only be a medium of exchange and not being hoarded (cf. Günther Bartsch, 1994, p. 17). The only way they give up their liquidity and emit money into circulation is against interest; the basic interest. If money is hoarded, fewer products are bought, which results in stagnation. The results are unemployment and insufficient distribution. With a new legal system, Gesell wanted money to become a neutral medium of exchange. He proposed to punish the hoarding of money by increasing the demurrage amounts (“Durchhaltekosten”) of money (cf. Elmar Altvater, 2004, p. 20). When somebody is hoarding money he has to pay the basic interest (cf. chapter 2.1.2.1). This mechanism also applies when loaning money in order to invest. In consequence, the market interest rate and the marginal efficiency of real capital would decrease gradually towards zero. The interest would not be abolished, but it would oscillate near zero (cf. Betz, 2005, p. 14).
Silvio Gesell wanted to replace the existing monetary system (at his time a two-stage banking system with a central bank and commercial banks) by a system in which a national authority (“Reichswährungsamt”) passes demurrage in circulation. The granting of credit can be realized on the basis of this demurrage (cf. Gesell, 1991, pp. 105).

2.1.2 Free Money System

2.1.2.1 Description of Free Money

From a regulative point of view Gesell’s monetary system can be described as a “market economy without capitalism”. In consequence, it represents a double alternative: on the one hand, it is an alternative to the capitalistic market economy which is amongst others based on Adam Smith and the neoclassical economy in the Western world and on the other hand, it is an alternative to the central managed economy which resulted from Karl Marx and his adherents in the Eastern world (cf. Werner Onken, 1999, p. 8).

In his book “The Natural Economic Order”, Silvio Gesell described the traditional form of money as an inefficient instrument of exchange, because it is “a form of money that necessarily withdraws when there is lack of it, and floods the market when it is already in excess”. (Gesell, 1929, p. 211). In addition, he asked for the abolishment of the gold backing which was at that time widespread in the whole world. Gesell was of the opinion that there is only a limited amount of gold available for the money flow whereas an economy can nearly grow indefinitely. Furthermore, a surplus of gold could cause a destabilized inflation and a lack of gold could provoke deflationary conditions.

Gesell’s Free Money approach is partially based on the analysis of the French economist and sociologist Pierre-Joseph Proudhon (January 15, 1809 – January 19, 1865). Proudhon hypothesized that money has a privilege over goods because goods lose their value in contrast to money. In consequence, money can exact an additional price and the possessor of money rips the owner of goods. His solution consisted of the equalization of money and goods which cannot decay thanks to banks which trade with goods. In 1849, Proudhon developed the concept of a popular bank (“Banque du people”) which envisaged that everybody could exchange wares against wares or interest-free credits. In those banks money is replaced by vouchers
“bons d’échange”). These vouchers were given to people who delivered real goods or services to the bank (cf. Christian Grüner, 1999, p. 2).

Silvio Gesell adhered to the idea of Proudhon that goods and money are not equal. Nevertheless, the proposition of Gesell was not to solve the discrepancy of goods’ decay and stable currency with goods, but to give money a limited “life time”.

Due to the negative characteristics of traditional money, Gesell developed his own monetary system: “Free Money system”. The core idea of Silvio Gesell’s Free Money concept is to encourage people to circulate money faster and to equalize the position of goods and money by having no interest rates. With a steady circulation of money which is not interrupted, the amount of money can be batched in such a way that the purchasing power of currencies can be stabilized (cf. Onken, 1999, p. 7).

In order to increase the money circulation and to secure that investments will be made Gesell proposed to introduce an anti-hoarding fee (“demurrage”). Hoarding of money would be expensive and spending money on the market would become economically attractive. The banknotes of this system typically should have 12 boxes (one for each month) where a stamp could be affixed. The stamp has to be up to date otherwise the banknote would not remain valid (cf. Lietaer, 2001, p. 151). Gesell proposed that the banknotes would lose one-thousandth (0.1%) of its face value weekly (about 5.2% annually) at the expense of the holder if the stamp is not up to date. With this concept the circulation of money is under pressure and according to Gesell everyone will pay cash, repay debts and bring the surplus funds to a bank. At the end of each year the fully-stamped banknotes will be exchanged for new ones. Through the loss in value of 5.2% annually, the currency notes in circulation would decrease (200-300 million Mark per annum at that time). In consequence, the currency office always has to replace these millions by new banknotes in order to avoid lack of money. As the sale of the currency stamps creates regular annual revenue for the currency office, the disposal of this revenue will be specially provided for by law (cf. Gesell, 1929, pp. 217).

In the Free Money system the Banks of Issue are not allowed to issue banknotes. They are replaced by the national currency office which has to satisfy the daily demand for money. The currency office is bound to adapt the spending of money to the market in such a way that the price level remains stable. In consequence, when the prices of goods tend to fall the currency office will issue more money and when the prices tend to increase the office will withdraw
money, because the prices only depend on the amount of money offered for the existing stock of goods. The currency office does not carry on banking business and it has no relations to private persons.

Concerning the international trade in the Free Money system Silvio Gesell thought that there should be an international agreement in order to stabilize the international exchanges (fixed exchange rates).

Referred to Silvio Gesell, Free Money has on the one hand impacts on trade and on the other hand on capital, work and wages. Concerning trade, the Free Money system enables for example the circulation of money, an unlimited sale of goods, the elimination of stock exchange speculation and the removal of instable market conditions. Concerning capital, work and wages, Free Money facilitates for instance the elimination of unemployment, a gradually decrease of the interest on capital (which will be zero if the Free Money system is introduced worldwide), a step by step wage increase and the conversion of all the surplus funds in production facilities and apartments. In addition, money will be equal to goods and work (ibid., pp. 218).

### 2.1.2.2 Description of Free Land

According to Silvio Gesell, there exist two monopolies which have to be broken in order to answer the social question – the money monopoly through a money reform and the land monopoly through Free Land. Silvio Gesell was of the opinion that there exist two causes why a land reform is necessary. On the one hand, he wanted to avoid that people invest too much in property values after the realization of a monetary reform. On the other hand, he was of the mind that land should not be an object of trade and speculation (cf. Onken, 1999, p. 8). If the Free Money system would be introduced without stabilizing and accompanying measures the hoarding of money would be transferred to real estate speculation. In consequence, Gesell always considered his reform as a combined money and land reform. Only with the help of these two reforms, humanity would be released from economic crises and wars (cf. Bartsch, 1994, p. 21).

Like Pierre-Joseph Proudhon, who thought that property is “incomprehensible, contradictory, impossible, and absurd” (Pierre-Joseph Proudhon, 1966, p. 457), Silvio Gesell was of the opinion that unlimited sovereign power and private land holding of counts for example are
reasons for war. In consequence, he proposed to abolish special private or public rights over land. The land has to be property of the nation and it is leased to the cultivators by public auctions for terms of one, five, ten years, or for life, to the highest bidders. Every inhabitant, without exception, can participate in these auctions. The lease received goes to the public treasury. It is distributed monthly in equal shares to mothers and depends on the number of their young children. Furthermore, the parcelling of the land is governed entirely by the needs of the cultivators (for example small land for small families and bigger land for bigger families).

In order to abolish private land holding, the state has to purchase all private property (agricultural land, forests, building sites, mines, gravel-pits, water-power) and compensates the landowners in return. The state is able to pay the landowners with the rent of the land, which flows into the public treasury (cf. Gesell, 1929, pp. 56).

In practice, after the land has been nationalized it will be divided according to requirements of housing, agriculture and industry, and leased by public auction. The leaseholders will be given certain securities by guaranteeing minimum prices for their manufactures or by reduction of the rent in case of a general rise of wages (ibid., pp. 60).

In conclusion, it can be said that according to Silvio Gesell the land reform is a necessary reform with regard to the Free Money system, but it cannot solve the social problems. Free Land influences the distribution of the product. However, unemployment and economic crises are not problems of distribution, but problems of exchange or trade. In consequence, the land reform has to be combined with a money reform.

### 2.1.3 International Valuta Association

In his book “The Natural Economic Order” Silvio Gesell proposed an international union, the “International Valuta Association” (IVA) in order to stabilize the international exchanges (prices, foreign exchange rates) and to regulate both the currency standard and the exchanges. This union should act as a central bank which is superior to all the other central banks.

In all the states which want to participate in this association, the new currency “IVA” (paper-money) would be issued and the notes are delivered for a bill of exchange. The international currency should constitute about 20% of the national money supply. The monetary policy of the IVA-states is national but attuned to the IVA-standards (ibid., p. 292). If the national
amount of money in circulation increases for example, the inflation rate increases which leads to higher prices and to a lower competitiveness concerning the sale of domestic products and vice versa. This results in a deficit on current account which provokes a higher flow of IVA-notes. In consequence, every increase or decrease of prices in the participating states would lead to a flow or inflow of IVA-notes in these countries, which would result in an adjustment of the price level. However, in a situation in which an increase of the national money supply “disperses” the IVA-notes in a country, the balance of trade cannot be equalized anymore. In consequence, the IVA-administration only issues new IVA-notes in this country against an additional charge (agio). This implicates a withdrawal of the national money supply and leads to a decrease of prices and to an equalized balance of trade (cf. Edoardo Beretta, 2012, p. 16).

In the following, a concrete example of two IVA-countries (A, B) will be shown. Country A and B will produce 100 units (U_A, U_B) each. There are no exchange rates and according to Silvio Gesell each country will get IVA-notes (IVA_A, IVA_B) in the amount of 20% of the national money supply. In consequence, the money stocks (MS_A, MS_B) of the two countries are composed of:

\[
\begin{align*}
MS_A &= 100 U_A + 20 IVA_A \\
MS_B &= 100 U_B + 20 IVA_B
\end{align*}
\]

Furthermore, the price levels (P_A, P_B) of the two countries depend on their money stocks (MS_A, MS_B).

If country A exports more than country B, it will get more IVA-notes than country B. In this example, country A exports 50% more than country B and gets half of the IVA-stock of country B. This results in a higher money supply for country A:

\[
\begin{align*}
MS_A &= 100 U_A + 30 IVA_A \\
MS_B &= 100 U_B + 10 IVA_B
\end{align*}
\]

In consequence, according to the quantity theory of money, there will be a price increase in country A and price decrease in country B. In consequence, country A will lose its competitiveness due to the increased prices and country B will export more. Finally, the two balances of trade will be equalized.
To summarize, it can be said that the stabilization of international exchanges should not be caused by an internationalization of the whole money supply but by giving a limited amount of banknotes (20%) international validity.

2.1.4 Critical acclaim

Silvio Gesell’s interest rate criticism is comprehensible. He was of the opinion that money has a supreme advantage over goods. Nevertheless, his description of the basic interest (“Urzins”) is not clear especially when he explained the transfer of the basic interest on wares. In consequence, there has to be a more detailed analysis of the basic interest in the free economy literature. Furthermore, Gesell did not develop an own theory of interest, but was more criticizing the characteristics of money and the existence of interest rates in general.

Even if Keynes appreciated Gesell’s work by saying: “I believe that the future will learn more from the spirit of Gesell than from that of Marx” (John Maynard Keynes, 1973, p. 355), he was of the opinion that there is a great deficiency in Gesell’s theory. According to Keynes, Gesell only constructed half a theory of interest rate, because he overlooked the notion of liquidity-preference (cf. Keynes, 1973, p. 356).

In the 73rd edition of the magazine “Zeitschrift für Sozialökonomie” (ZfSÖ) Hansjörg Herr criticized Gesell’s proposition of an unregulated monetary economy. According to Herr, such an economy is not compatible with a zero interest rate. If the collapse of the monetary system shall be avoided in an unregulated monetary economy, the social demand has to be restricted in such a way that the social supply will not be exceeded permanently. On the market, the restriction of demand is normally achieved by a positive interest rate. In consequence, a positive interest becomes an inhibitor of inflation in an unregulated monetary economy. A zero interest rate and a stable price level on the market contradict each other (cf. Hansjörg Herr, 1987, p. 13).

The theory of Gesell is a pure monetary analysis. His theory is based on the characteristics of money as a store of purchasing power and instrument of payment. From my point of view, he could have integrated other aspects as employment and investment in order to have a general analysis of the economy. Besides, according to Friedrich August von Hayek, money can never be neutral, because it always has an influence on relative prices (cf. Friedrich A. von Hayek, 1977, pp. 77).
In his analyses, Gesell was criticizing capitalism. Important characteristics of capitalism are the distribution and property of the means of production and the allocation and distribution of the production factors work, capital and land. Gesell’s theory criticizes only money and the interest rate mechanism. According to the free economy, it is money as a store of purchasing power which causes unemployment and social injustice. The other aspects of capitalism are not taken into consideration. It is correct that capitalism is not possible without money, but it is not possible to consider the monetary system detached from the production level. In consequence, the free economy literature should also discuss the other factors of capitalism.

Furthermore, Gesell is considered to be a representative of a liberal free market economy. Nevertheless, there exists a contradiction in his theory and the politico-economic consequences. On the one hand, his argumentation is based on strong market liberalism where the state does not intervene a lot. On the other hand, his Free Money system is strongly linked to governmental institutions like the “national currency office”. (Cf. chapter 2.1.2.1). In consequence, he was more in favor of a managed system instead of a laissez-faire economy.

According to Gesell, Free Money should provide more welfare to the citizens by increasing the production and the consumption. Money has to circulate faster in order to avoid anti-hoarding fees. Furthermore, the creation of real capital is necessary in order to decrease the interest near to zero. In my opinion, it is doubtful where such an increasing production will end and it is not sustainable from today’s point of view.

Assuming that a Free Money system would be introduced in one country, speculations at foreign stock exchange markets for instance could be possible. Which problems would occur if more and more money would be invested in foreign stock-exchange markets or in direct company shares? According to Bernd Senf these possible capital gains could lead to growing social differences (cf. Senf, 2007, pp. 126). Nevertheless, Senf said in an interview that the advantages of Gesell’s theory overweight the disadvantages and that other popular economic theories have more serious blind spots (cf. appendix 5).

Gesell’s main problem concerning the monetary system was the hoarding of money and the following deflationary consequences. The idea to introduce a demurrage fee could be very efficient in times of economic crises. Furthermore, at the time of the gold standard there was no other possibility to create new money besides the discovery of gold for example. Today, it is the European Central Bank (from a European point of view) which is able to generate money. When there is money scarcity for example, the European Central Bank has the possibility
to regulate the amount of money by open-market policies. In consequence, the hoarding of money is not the main problem in today’s monetary systems. Furthermore, a Free Money system can be successful in regions, but not in a whole country, because nowadays globalization is too present in the economy. From a legal point of view, legislation in most countries would not accept the abolishment of the official currency.

Gesell’s International Valuta Association which is based on the quantity theory of money would have been realizable at that time. Nowadays, the introduction of two different currencies in one country could provoke the depression of the national currency. The development of the exchange rate is dependent on individual expectations concerning the economic situation. In consequence, if the citizens of one country expect that their domestic currency will decrease in value, they could convert their assets into the other currency. In consequence, the domestic currency will be depressed.

In conclusion, it can be said that Silvio Gesell’s interest rate and monetary criticism is comprehensible. Furthermore, at the time of the gold standard, the hoarding of money was a main problem of the monetary system in economic difficult periods. The introduction of a demurrage fee would improve the circulation of money and the economy. It would be recommendable to adapt and refine the Free Money system to today’s circumstances. The Free Money system should not replace, but complement the existing financial system. Nowadays, citizens want to have savings in order to build a house for example. Furthermore, from a legal point of view it would not be possible in most countries to abolish the official currency and to introduce a new system. In consequence, complementary currencies are more effective than the pure Free Money system (cf. chapter 5). The International Valuta Association could provoke positive effects to the economy, but it is not probable that such a system could be introduced nowadays, because a second currency could provoke the depression of the national currency.

2.2 John Maynard Keynes

John Maynard Keynes (June 5, 1883 – April 21, 1946) was a British economist. He was one of the founders of modern macroeconomics. With the publication of his book “The General Theory of Employment, Interest and Money” (1936) he became the most influential economist of the 20th century. One of his most revolutionary theses is that aggregate demand determines the overall level of economic activity. Furthermore, he suggested that if entrepreneurs
do not invest enough, the state has to invest in order to leverage the economy. In order to create additional demand, public authorities have to take out loans and finance additional investments as schools, airports and infrastructure for example.

2.2.1 John Maynard Keynes’s theory of interest

Keynes turned away from the classical quantity theory of money and centered the importance and functionality of money in his analysis (cf. Hajo Riese, 2001, p. 300). This fundamental difference to the classical and neoclassical economics is the basis of Keynes’ newly created economic model. For Keynes, the sphere of money is not a disruptive factor of a theoretically adopted real economy but a “center of control” (Michael Heine/Hansjörg Herr, 2013, pp. 339). In addition, he did not emanate from a merchandise market, but from an economic system which is controlled by the financial market. In consequence, there exists a monetary system, because the sphere of money dominates the sphere of goods (cf. Riese, 2001, p. 78). Like Gesell, Keynes also observed that most assets lose value over time, in contrast to money. The return of money is zero, its storage costs are unremarkable, but its liquidity premium is remarkable (cf. Keynes, 2009, p. 190). Furthermore, he was of the opinion that the existing monetary system at that time was one of the origins for crises and instability.

In his analysis John Maynard Keynes centered the factor “uncertainty”. According to him, “the fact that our knowledge of the future is fluctuating, vague and uncertain, renders Wealth a peculiarly unsuitable subject for the methods of the classical economic theory” (Keynes, 1937, p. 213). With the factor uncertainty Keynes meant for example the rate of interest twenty years hence or the obsolescence of a new invention; situations with no scientific basis in order to calculate the probability (“We simply do not know”) (ibid., p. 214). Expectations are not based on objective economic fundamentals and are not stable (cf. Hansjörg Herr/Milka Kazandziska, 2011, p. 8). In consequence, in an uncertain world money plays an important role and wealth owners keep their money in order to protect themselves against uncertain future situations.

According to Keynes, economic agents think that the hoarding of liquidity represents a benefit for them (“liquidity-preference”) (cf. Curt Philipp Lorber, 2009, p. 127). Money will be held liquid, because the risk of losing value in contrast to portfolio investments for instance is minimal. In addition, economic agents can speculate for better future investments when holding
liquidity (cf. Gerhard Wilke, 2002, p. 92). Referred to Keynes, the liquidity-preference is determining the monetary interest rate which determines in turn the profit rate. Furthermore, the liquidity preference is depending on investments and represents a subjective interest rate (cf. Riese, 1986, p. 53). In consequence, the interest is only a recompense for the give-up of liquidity. With the power of control over money concerning the decision of hoarding or investing money, the monetary capital is dominating the whole economic process. Variations in the affection for hoarding money determine the liquidity premium and consequently the rate of interest to be applied (cf. Betz, 2012, pp. 25). In consequence, it is an expression for the psychological propensity to save.

Keynes thought that if the propensity to hoard or the state of liquidity-preference changes, then the rate of interest is affected and not prices.

“The rate of interest obviously measures […] the premium which has to be offered to induce people to hold their wealth in some form other than hoarded money. The quantity of money and the amount of it required in the active circulation for the transaction of current business (mainly depending on the level of money-income) determine how much is available for inactive balances, i.e. for hoards. The rate of interest is the factor which adjusts at the margin the demand for hoards to the supply of hoards.” (Keynes, 1937, pp. 216).

Concerning the determination of interest Keynes was of the opinion that the quantity of money in conjunction with liquidity-preference determines the actual rate of interest under given circumstances. When the rate of interest is given, liquidity-preference is a functional tendency which fixes the amount of money which the wealth owners will hold. In consequence, if $M$ is the quantity of money, $L$ the function of liquidity-preference and $r$ the rate of interest (Keynes, 1973, p. 168):

$$M=L(r).$$

The missed benefit of interest income will be balanced by the benefit of liquidity. The demand for liquid assets is reacting to an interest rate change and the amount of hoarded money depends on the power of liquidity-preference (cf. Andreas Paulsen, 1972, p. 209). Furthermore, “the schedule of liquidity-preference relating the quantity of money to the rate of inter-
Interest is given by a smooth curve which shows the rate of interest falling as the quantity of money is increased.” (Keynes, 1973, p. 171).

In his book “The General Theory of Employment, Interest and Money” Keynes described “if the rate of interest were lower, [...] the aggregate amount of cash which the public would wish to hold would exceed the available supply, and that if the rate of interest were raised, there would be a surplus of cash which no one would be willing to hold.” (Ibid., p. 167). In consequence, the factor uncertainty with reference to future interest income became more and more important in Keynes’s theory. According to him, the only reasonable explanation for liquidity-preference (in this case: hoarded money) represents the uncertainty of the future interest rate trend (ibid., pp. 168). Furthermore, as the liquidity-preference is a kind of uncertainty, Keynes was of the opinion that “the rate of interest is a highly psychological phenomenon.” (Ibid., p. 202).

In addition to the interest rate which depends on central banks, John Maynard Keynes developed the theory of interest rates which depends on the propensity to consume. In the classical economics it is the interest on capital which determines the interest on money. In Keynes’ theory it is the interest on capital which dominates. The interest rate is referring to the money market and to the demand for liquidity. In consequence, if the market interest rate is falling, there will be more liquid money due to situations of uncertainty and speculation. On the one hand, Keynes was of the opinion that the state (with help of the central banks) could influence the interest policy. With buying of securities central banks could cause a decline in interest rates. In consequence, investments would also be influenced (cf. Wilke, 2002, pp. 94). On the other hand, Keynes thought that the impacts of the state could be ineffective. If the level of interest is very low, it is probable that interests will increase. In consequence, an increase in the amount of money would cause an increase in hoarded money. In Keynesian economics this phenomenon is called “liquidity trap”. In a situation of this liquidity trap, the effect of additional savings on the capital market and the interest rate level is zero (cf. Peter Bofinger, 2011, p. 402).

Concerning the factors savings and investments, Keynes was of the mind that they are determined by the interest rate, the propensity to consume and the marginal efficiency of capital. According to Keynes, “the marginal efficiency of capital is, in itself, a different thing from the ruling rate of interest. The schedule of the marginal efficiency of capital may be said to govern the terms on which loanable funds are demanded for the purpose of new investment;
whilst the rate of interest governs the terms on which funds are being currently supplied.” (Keynes, 1973, p. 165). Furthermore, the interest rate limits investments and effective demand. For this reason, the rate of interest has an impact on the level of employment and represents the minimum level of the necessary minimum profit.

In conclusion, it can be said that Keynes centered the factors uncertainty and liquidity preference in his theory of interest. Furthermore, he recommended a low interest rate in the long term and envisaged an augmentation in the production of investment goods due to a reduction of interest rates.

2.2.2 Keynes’s monetary reforms

In contrast to Silvio Gesell and Irving Fisher, Keynes did not develop an alternative national monetary system as the “Free Money” or “Stamp Scrip” system for example. Nevertheless, he proposed a lot of monetary reforms amongst others for his native country Great Britain. In the following, three proposals of Keynes for monetary reforms will be presented in order to demonstrate the chronological development of Keynes’s monetary theories.

A Tract on Monetary Reform

In 1923, Keynes published “A Tract on Monetary Reform”. In this book, Keynes criticized the post First World War deflation policies. He recommended that countries should avoid deflation even if they had to depreciate their currency and they should target stability of domestic prices. The proper objective is internal price stability because it encourages saving and, thus, increases investment (cf. Keynes, 2013a, pp. 125).

In his opinion, the gold standard could bring countries to continue with their deflationary policies at the time when they had to undertake expansionary measures in order to address rising unemployment. Instead of deflationary policies, Keynes was of the mind that the depreciation of Sterling would be an efficient measure in order to boost jobs by making British ex-
ports more affordable. Furthermore, he recommended that the government could create jobs by spending on public works (cf. Keynes, 2013a, p. 116).

According to Keynes, the gold standard was not an effective system for the regulation of an economy based on bank money. In order to disengage the domestic money supply from gold, he recommended that the discount rate should be aimed at credit control: “Thus the tendency of today – rightly I think – is to watch and to control the creation of credit and to let the creation of currency follow suit, rather than, as formerly, to watch and to control the creation of currency and to let the creation of credit follow suit.” (Ibid., p. 146).

Keynes’s suggested policies are similar to Irving Fisher’s or Milton Friedman’s propositions: spend money to construct a good price index, and then tune monetary policy in order to stabilize internal prices. As Keynes wrote in his preface: “We leave saving to the private investor […]. We leave the responsibility for setting production in motion to the business man […]. Those who are not in favour of drastic changes in the existing organisation of society believe that these arrangements, being in accord with human nature, have great advantages. But they cannot work properly if the money, which they assume as a stable measuring-rod, is undependable.” (Ibid., p. xiv). In consequence, if the value of money is dependable then leaving saving to the private investors and investment to business will work well. Furthermore, Keynes was convinced that society can reduce the variability of investment and real income by increasing price stability.

**A Treatise on Money**

This view plays an important role in “A Treatise on Money” first published in 1930 by Keynes. In this book he dealt with policies in order to maintain price stability as a means of achieving economic stability (cf. Keynes, 1971, pp. 47). One of the main goals of this book is the stability of money values. Keynes showed for example that the price level depends on factors other than the quantity of money: changes in the relative prices of investment, labor and output. Furthermore, he wanted to reduce fluctuations in investment, income and employment which result from a slow adjustment of real wages or other relative prices. Changes in price and quantity on merchandise and labor markets exist because the interest rate mechanism fails to coordinate capital spending and savings activity. This thought of Keynes played not only an important role in the “General Theory of Employment, Interest and Money” but already in “A Treatise on Money”.
In this book Keynes moved away from the quantity theory of money, which he supported in “A Tract on Monetary Reform”. The development of the price level is not determined by the cash management (given exogenous amount of money), but by the relation of investment and savings. Money is seen as result of the creation of credit of the central banks. Furthermore, Keynes recognized that the intertemporal coordination between investment and savings does not happen automatically by the classical interest rate mechanism. In consequence, an increase in savings due to defaults of running demand can cause negative cycle effects on the national income. Furthermore, he saw the liquidity preference as an interest rate determining factor (ibid., pp. 156).

Keynes recommended two types of restriction on foreign lending. First of all, the Bank of England should have the power to prohibit all dealing in fixed income securities. Secondly, Keynes favored the Bank to have power to change interest rates on foreign loans in order to reduce short-term capital movements. As a supplement to these two propositions Keynes recommended that the central bank has to vary the difference between buying and selling prices as a means of attracting or discouraging gold flows (ibid., pp. 290). In consequence, the central banks would be able to widen or narrow the spread between domestic and foreign interest rates (cf. Allan H. Meltzer, 1983, pp. 7). This domestically managed system is seen as an improvement by Keynes in comparison to the gold standard. Nevertheless, he favored a world central bank (cf. chapter 2.2.3).

The General Theory of Employment, Interest and Money

Between “A Treatise on Money” and the “General Theory of Employment, Interest and Money” (first published in 1936) exists an important difference: The analysis of 1930 dealt with the explanation of variations in the price level in disequilibrium. In the General Theory the determination of the social product and the evidence of the existence of macroeconomic equilibriums with underemployment played an important role (cf. Hans-Michael Trautwein, 2013, p. 2). One of Keynes’s central arguments is that the level of employment is determined by the spending of money (aggregate demand) and not by the price of labor as in neoclassical economics.

Furthermore, Keynes was of the opinion that the average level of aggregate incomes is affected by the variability of income and investment. He arrived to the conclusion that there has to
be state intervention in order to direct investment and to control capital movements (cf. Meltzer, 1983, p. 2).

The General Theory does not deal a lot with issues like national and international monetary reforms because it discusses a closed economy. One exception is Keynes’s discussion of mercantilism where he rejected the laissez-faire economy and favored a managed monetary system. In his opinion, he has shown "the inadequacy of the theoretical foundations of the laissez-faire doctrine." (Keynes, 1973, p. 339). Like in A Treatise on Money he was in favor of a managed system and in his opinion all countries would benefit from the establishment of an international monetary institution (cf. Meltzer, 1983, pp. 12).

To sum up, Keynes did not change his monetary theories and approaches radically. He was for instance always in favor of abolishing the gold standard. In the course of time, he was convinced that a managed economic system and state intervention are necessary for macroeconomic success.

2.2.3 Bancor Plan

During the Bretton Woods conference in 1944, John Maynard Keynes proposed the establishment of an “International Clearing Union” (the “Bancor Plan”). This union is “based on international bank money, called (let us say) bancor, fixed (but not unalterable) in terms of gold and accepted as the equivalent of gold by the British Commonwealth and the United States and all members of the Union for the purpose of settling international balances.” (Keynes, 2013c, p. 72).

One purpose of Keynes’s plan was “starting off every country after the war with a stock of reserves appropriate to its importance in world commerce” (I. De Vegh, 1943, pp. 537). The Bancor should be used as an international reserve which should be emitted from an International Clearing Union (ICU). The reserves should be used by the central banks as currency reserves. The generation of the Bancor should be adapted to liquidity needs of the global economy. Furthermore, payments between central banks and exchange reserves should no longer being realized in national currencies, but in Bancor units (cf. Heine/ Herr, 2013, pp. 751).
The Bancor should have a fixed exchange relationship with the participating currencies and cannot be used as an instrument of payment. The exchange rates will be discussed with the Governing Board of the ICU and can only vary slightly or with the permission of the Board. The participating countries should hold accounts at the ICU which allow them to adjust their trade balances (in Bancor units) among themselves. Countries which export more than they import (positive trade balance) get a Bancor credit at the ICU and can lend money. Countries with a negative trade balance would get a negative Bancor deposit and have the possibility to borrow from the ICU.

In addition, Keynes defined in his plan that each member country will have a maximal allowed debit balance (“quota”) at the ICU. This quota should be the sum of exports and imports over the past three years in average. Nevertheless, other calculations can be used for countries where this formula might be inappropriate. Besides, the quota should be reviewed and adapted regularly.

If the annual average balance of a country exceeds (surplus or debit) one quarter of its quota, 1% of the remaining amount should be paid to the Reserve Fund of the ICU. If the balance exceeds half of its quota, the charge will be 2% (cf. Keynes, 2013c, pp. 173). These regulations would work against an unlimited build-up of assets and debts. Agreements can be made in order to avoid these fees of debit or surplus countries. A debtor can for example borrow money from a surplus country. In consequence, both parties (debtor and creditor) would avoid paying fees to the ICU. Furthermore, the interests for loans would be below 1% (respectively 2%), because the debtors would not pay more as they had to pay to the ICU. This mechanism would also satisfy the creditors because they do not had to pay fees to the ICU, but they get interest payments. In consequence, they would agree on interests near 0%. It is also possible that they would occasionally accept negative interests in order to avoid the fees from the Clearing Union. Therefore, it is a “stabilizing mechanism to exert pressure on countries whose payments tend to become unbalanced” (De Vegh, 1943, pp. 537).

Keynes wanted to avoid the creation of high balances on current account, because they are not only economically but also politically dangerous. Such imbalances between countries represent no danger for a certain time period. However, if the burden of debt is becoming too big and the confidence in the market is becoming smaller, there will be abrupt capital movements and a corresponding economic regression (cf. Sebastian Dullien/ Hansjörg Herr/ Christian Kellermann, 2009, p. 17). Current situations, where the United States has very high current
account deficits whereas China for example accumulates currency reserves due to high current account surpluses, had not been possible in Keynes’ Bancor Plan (cf. Gerald Braunberger, 2009, pp. 193).

With an ICU the power of deregulated financial markets would be highly reduced and the global economy would become considerably more stable thanks to fixed exchange rates and a mechanism which sanctions surplus and debit countries (cf. Betz, 2010, p. 43).

Countries which are not members of the ICU can have clearing accounts at the Union, but they are not allowed to have overdrafts. Besides, they do not have voting rights in the Governing Board.

In conclusion, it can be said that the ICU is an institution which organizes barter trading and which renounces on monetary transactions. Furthermore, it is a “bank” which is always solvent, with a non-convertible currency unit and no liquidity problems (cf. Betz, 2005, p. 18).

2.2.4 Critical acclaim

The theory of Keynes is not only a pure monetary analysis, but he also dealt with employment, investment and output for instance. In consequence, his analysis is extensive. Nevertheless, a weakness of the analysis in the “General Theory” and “A Treatise on Money” (in contrast to “A Tract on Monetary Reform”) is that Keynes was not able to clearly distinguish between real and nominal interest rates from the point of view of modern economy (cf. John Smithin, 2012, p. 13).

Besides the theory of an interest rate which is determined by the central bank, Keynes developed an interest rate theory which is determined by the propensity to consume. Furthermore, Keynes expected that the propensity to consume will go down and he regarded the amount of new possibilities to invest and new innovations with suspicion. In my opinion, there was no evidence for a decrease in consumption and today there is more consumption than decades before. Furthermore, there are new investment possibilities and innovations due to new markets and technical developments. Nevertheless, Keynes pessimistic future outlook is comprehensible due to the general zeitgeist which was affected by the First and Second World War. Furthermore, I agree with Keynes’s idea of policy of low interest rates. Such a policy can stimulate growth and investments in certain situations. In consequence, there could be more employment and welfare.
Keynes was of the opinion that uncertainty and liquidity-preference play an important role concerning the determination of the interest rate. In my opinion, this theory is comprehensible, because in an uncertain economic world money plays an important role and wealth owners keep their money in order to protect themselves against uncertain future situations. This phenomenon could be observed in Cyprus in 2013. The fear of losing their financial assets due to the financial crisis in Cyprus led to a bank run, which was only minimized because the state closed the banks for several days.

In contrast to Gesell, Keynes did not want to abolish the existing monetary system, but he wanted to establish a new spending policy. For Keynes, the hoarding of money is a sign of uncertainty about economic developments. Concerning the politico-economic consequences, Keynes was of the opinion that there has to be democratic regulation and control of the market concerning the protection of demand in order to avoid economic crises. There has to be state intervention in order to direct investment and to control capital movements. In my opinion, this approach could be more effective concerning the avoidance of economic crises than the approach of a laissez-faire economy.

Keynes Bancor Plan provides a global framework which could settle international balances. It is a system which applies pressure on surplus countries and which relieves pressure on debit countries. In my opinion, on the one hand the system could be successful, because the global economy would become more stable thanks to fixed exchange rates and a mechanism which sanctions surplus and debit countries. On the other hand, it is not very probable that the Bancor Plan could be introduced into practice, because local governments will lose a lot of their power as it will be transferred to the ICU. China for instance would probably not agree to such a plan, because they have a high export surplus. Furthermore, if countries generate surpluses the governments as legitimate representatives of their nation should not act against the well-being of their country. In consequence, the Chinese or German government for instance would be acting in a disadvantageous way for their nations if they let their surpluses be regulated voluntary. In consequence, the Bancor Plan could only function if there existed an approximate economic balance between the participants. Nevertheless, it is imaginable that the introduction of this plan could work after a war, which matches Keynes’ original intention.

In conclusion, it can be said that John Maynard Keynes’s interest rate and monetary theory is comprehensible and that the factors uncertainty and liquidity-preference are interest rate de-
termining factors. The Bancor Plan has a lot of advantages. Nevertheless, it is not probable that this plan could be introduced into practice, because of the loss of national sovereignty. A better solution for a global currency could represent the “Terra” concept (cf. chapter 6).

2.3 Irving Fisher

Irving Fisher (February 27, 1867 – April 29, 1947) was an American mathematical economist. He is one of the representatives of neoclassical economy. Furthermore, Fisher is well known for his theory of interest, because he was the first economist who distinguished clearly between real and nominal interest rates. Some concepts like the “Fisher effect” and the “Fisher equation” are named after him. With his principles and concepts of money and prices the school of macroeconomic thought known as "monetarism" was founded (cf. J. Bradford de Long, 2000, pp. 83).

2.3.1 Irving Fisher’s theory of interest

In his book “The Theory of Interest” first published in 1930, Irving Fisher described the rate of interest as “the percentage premium on present goods over future goods of the same kind” (Irving Fisher, 1930, p. 36). In Fisher’s theory of interest, the interest rate is on the one hand based on a subjective element: the marginal preference for present over future goods, which is called “time preference”. On the other hand, the premium on the exchange between present and future goods (rate of interest) is mainly based on an objective element: “investment opportunity” (ibid., p. 62). In consequence, Fisher observed that it is not only the amount of goods and services owned or exchanged, but also the moment in time when they are bought which determines subjective economic value. A present good which is available now has a different value than a future same good which is available at a later point in time. In consequence, value is dependent on a quantity and a time dimension. In addition, he was of the opinion that the relative price of future goods, in terms of goods sacrifices now, is determined by the rate of interest (cf. Paul A. Samuelson et al., 1991, p. 12). Concerning the quantity theory of money, Fisher developed the “equation of exchange” which is presented in his book “The Purchasing Power of Money”. This equation is a mathematical statement of the total transactions effected during a certain period in a given society. When
adding together these equations for all individual transactions, the total equation of exchange is obtained. Fisher was explaining this equation with the following example: “Suppose, for instance, that a person buys 10 pounds of sugar at 7 cents per pound. This is an exchange transaction, in which 10 pounds of sugar have been regarded as equal to 70 cents, and this fact may be expressed thus: 70 cents = 10 pounds of sugar multiplied by 7 cents a pound. Every other sale and purchase may be expressed similarly, and by adding them all together we get the equation of exchange for a certain period in a given community.” (Fisher, 1997b, p. 16).

This equation contains on the money side: the quantity of money (M), the velocity of circulation of money (V) and on the goods side: the prices of goods (P) and the quantities of goods exchanged using money (T). Later economists replaced T by the real output Y (or Q). (cf. chapter 2.1.1).

\[ M \times V = P \times T \]

The price level (P) varies directly as the quantity of money in circulation (M), directly as the velocity of its circulation (V) and inversely as the volume of trade done by it (T).

In consequence, the quantity theory of money defined that if the number of dollars is increased, prices will be increased in the same proportion. “It is the number, and not the weight, that is essential. […] It is a fact which differentiates money from all other goods and explains the peculiar manner in which its purchasing power is related to other goods.” (Ibid., p. 32). Money has no power to satisfy human needs except a power to purchase things which do have such power.

Concerning the composition of interest rate, Fisher developed the “Fisher equation”. This equation is describing the relation between nominal interest, real interest and the expected inflation rate. According to Fisher, the nominal interest is approximately equal to the sum of real interest and the expected inflation rate. In this equation \( i_t \) represents the nominal interest in the current period \( t \), \( r_t \) the real interest and \( \pi_{t+1}^e \) is the expected inflation rate for the future period \( t+1 \) (Fisher, 1896, pp. 88).

\[ i_t \sim r_t + \pi_{t+1}^e \]

\[ r_t \sim i_t - \pi_{t+1}^e \]
Fisher was of the opinion that the nominal interest rate of financial assets does not correspond necessarily to the increase of purchasing power.

In 1933, Irving Fisher published the article „The debt-deflation theory of great depressions“ in the magazine Econometrica. In this article he analyzed the reasons, the development and the mechanism of the Great Depression in the 1930s. Two circumstances have to be given: Firstly, a great indebtedness (or debt overload) and secondly decreasing prices of goods and services. In such a situation, consumers and businesses will try to repay their debts. This potential decline of spending leads to a decreasing demand and to more and more decreasing prices. Such a scenario can be described as a downward spiral with negative consequences. Fisher was describing nine events which occur during a state of debt deflation when the debt bubble bursts. With regard to interest rates, he was of the opinion that there will be “[…] complicated disturbances in the rates of interest, in particular, a fall in the nominal, or money, rates and a rise in the real, or commodity, rates of interest” (Fisher, 1933b, p. 342). According to Fisher, the solution of debt deflation is “scientific medication (reflation)” (ibid., p. 349) which returns the price level to the level before the deflation. In consequence, the prices will regain their stability and the vicious circle of debt deflation would come to an end.

2.3.2 Stamp Scrip

According to Fisher, a monetary policy should have as objective the stabilization of the domestic price level; a stable value of money. He was in favor of a fixed currency and not of an exchange rate policy. In consequence, Fisher developed two money reforms: the Compensated Dollar Plan in 1911 (cf. chapter 2.3.3) and the Stamp Scrip in 1933.

Concerning the Stamp Scrip mechanism, Silvio Gesell had a huge influence on Irving Fisher. John Maynard Keynes described in his book “The General Theory of Employment, Interest and Money” that since the death of Gesell in 1930, the main strength of stamped money is lying in the United States at that time, “where Professor Irving Fisher, alone amongst academic economists, has recognized its significance” (Keynes, 1973, p. 355).

In his book “Stamp Scrip” Fisher was describing this alternative currency as “a temporary substitute for a part of the regular currency” (Fisher, 1933a, p. 8). First of all, this currency is
like money, because it can be spent, invested or banked. Secondly, it is not like money, because “it cannot be hoarded” (ibid.).

After one year of circulation, Stamp Scrip has to be redeemed in money. Its circulation will be local. The next step is that the municipality has to get the agreement amongst others of the merchants that they accept the additional currency. The bill has a row of 52 spaces (for 52 weeks per year) which have to be stamped in order to remain valid. The stamps are sold for 2 cents each. At the end of the year, the scrip returns to the city treasury for redemption and the value of the stamps are about $1.04 (52 x 2 cents). The city can use this value in order to pay the printing of the stamps and the administration. In consequence, the scrip is “self-liquidating” (ibid., p. 12). In order to escape the 2 cent stamp tax which a possessor of Stamp Scrip has to pay when hoarding the money, he buys so far as possible, in the intervals between stamping days. In depression times this concept represents a benefit for the whole economy because normally everyone is afraid to spend real money during this period.

Referred to Fisher, the Stamp Scrip is a tax which the taxing authority wants to see avoided by a lot of people, because by passing the tax to the next person the scrip will be speeded and this mechanism is the main objective. Furthermore, the more the scrip is speeded, the more the costs per capita are divided without diminishing the return to the city.

In addition, Fisher was of the opinion that the “efficiency of money is its volume multiplied by its speed” (ibid., p. 14). As the average scrip will be unloaded twice a week, the alternative currency will have a speed which is four times the speed of an average dollar. In times when there is a long-term downturn in economic activity and the dollar circulates only a third as fast as usual, the scrip circulates twelve times the depression average for conventional money. In consequence, the stamp is a tax which punishes the hoarding of money.

According to Fisher, the Stamp Scrip mechanism will offer a high benefit for the collective. At the end of one year, the community could have a new infrastructure, new buildings and other community assets for example, paid for through the stamps by the citizens who used the scrip. Given the fact that the citizens use the new streets, everybody wins. The stamps cost the citizens approximately one third of one per cent on mostly new business. The municipality does not pay anything for the new streets. In consequence, the citizens have bought “a new street out of a self imposed tax on mostly new business, and it was a tax less heavy and more spread out than any other tax they ever paid” (ibid., p. 16).
Each store in the community which is accepting and circulating Stamp Scrip is automatically a “member of the exchange” (ibid., p. 84). All the stores and wholesalers which are members of this alternative monetary system will buy their goods and services from the manufactories which accept Stamp Scrip. In consequence, they promote the regional and local economy. According to Fisher, one of the main advantages of this mechanism is that only a very small sum of initial capital is needed in order to introduce the system. Most of the capital is probably not necessary to be paid out and can remain instead in a bank on deposit for the case there are any premature redemption requests. Furthermore, the initial capital can be paid back successively to the lenders, because the citizens pay for stamps (cf. ibid, p. 85).

John Maynard Keynes appreciates the concept of Stamp Scrip by saying that “the idea behind stamped money is sound” (Keynes, 1973, p. 357).

In conclusion, it can be said that the Stamp Scrip concept of Irving Fisher is similar to the Free Money system of Silvio Gesell. Nevertheless, there exists an important difference between the two systems, in Gesell’s system Free Money should become a legal instrument of payment. In the Stamp Scrip system in contrast, the currency represents a temporary substitute for a part of the regular currency. In consequence, Fisher did not want to abolish the existing financial system, but he wanted to introduce Stamp Scrip as a complement to the official currency in small communities.

Fisher’s 100% system

In the following, another monetary reform of Fisher, the “100% system” will be presented. The system, also known as the “Chicago Plan” was developed amongst others by professor Henry Simons of the University of Chicago in the 1930s. Fisher summarized and explained the system in his book “100% money”. The objective of this system is to separate monetary and credit functions of the banking system and to raise reserve requirements (cf. Fisher, 1997a, pp. 27). First of all, 100% of money issued by the government has to be backed of deposits and secondly new bank credits can only be financed through earnings that have been retained in the form of government-issued money, or by borrowing existing government-issued money from non-banks. The financing of new bank credits cannot take place through the “creation of new deposits, ex nihilo, by banks” (Jaromir Benes/ Michael Kumhof, 2012, p. 4).
According to Fisher, another key feature of the proposal is to make money independent of loans. In consequence, the business of banking would no longer determine both the process of creating and destroying money. As a result, the banking would become safer and more profitable. Furthermore, great booms and depressions could be prevented by “ending the chronic inflations and deflations which have ever been the great economic curse of mankind and which have sprung largely from banking” (Fisher, 1997a, p. 33). The main problem of the banking system is that the state does not have the exclusive right to produce and create the public good “money”. Commercial banks cannot produce central bank money, but they can offer the claim for receiving central bank money to the borrower through the granting of credit. In consequence, the borrower could transfer his claim for credit to somebody else by a simple bank transfer for example. The main part of payment instruments (according to Fisher 90%) is created by the private commercial banks and not the state. In consequence, there exists currently a 10% system where 10% of the central bank money is lent ninefold (cf. Betz, 2009, pp. 59). Fisher was convinced that “without stable money, the private profit system will some day go. This means that the bankers, as long as they insist on operating […] their 10% system, will be playing with fire. The best available safeguard against the overthrow of capitalism is the 100% system, combined with money management, to give us a stable dollar.” (Fisher, 1997a, p. 259).

Like Fisher, Joseph Huber, the author of “Vollgeld”, asks for a reform of the money creation. According to Huber, the 100% system reform would prevent excessive speculation on the financial markets (cf. Joseph Huber, 2004, pp. 19).

Fisher’s proposal envisaged that the government creates a “Currency Commission” which turns into cash enough of the assets of every commercial bank in order to increase the cash reserve of each bank up to 100% of its checking deposits. In consequence, the check-book money would have actual money (pocket-book money) as reserve (cf. Fisher, 1997a, p. 49). After the completion of this substitution, the banks have to maintain the 100% cash reserve. According to Fisher, there are several advantages of this proposal. First of all, business cycle fluctuations can be controlled in a better way and great inflations and deflations would be eliminated. Secondly, there would be no more runs on commercial banks, because 100% of the depositors’ money would be available in the bank (ibid., p. 51). Furthermore, the (net) public debt and private debt would be reduced dramatically, because the creation of money
does no longer require simultaneous debt creation (cf. Benes/ Kumhof, 2012, p. 4). Finally, banking and the monetary system would be simplified.

2.3.3 Compensated Dollar Plan

Even so Fisher criticized the gold standard in his book „the Purchasing Power of Money“, he was not yet in favor of abolishing the standard. He proposed instead a modified gold standard: the compensated dollar. Fisher was of the opinion that the level of prices depends on five factors: “the quantity of money in circulation, its velocity of circulation, the quantity of deposits subject to check, its velocity, and the volume of trade” (Fisher, 1997b, p. 363).

From a practical point of view, Fisher thought that the main problems of the purchasing power of money are its stability and dependability. First of all, it fluctuates up and down with credit cycles and secondly, it varies according to the incidents of industrial changes. The first problem is linked to the banking system and the second depends on the money metal (ibid., p. 365).

In order to solve these problems of the purchasing power of money, Irving Fisher proposed a plan which is combining the tabular standard with the principles of the gold-exchange standard. The tabular standard is a system first developed by Joseph Lowe (1822), then by G. Poulett Scrope (1833) (cf. William Stanley Jevons, 1983, pp. 328). This system envisaged that monetary contracts should include an indexation clause. If the level of prices, which is measured by an index number, will increase for example, there would be a proportional adjustment. In this case, a proportional addition to the debt of a certain amount of dollars would be made in order to keep the value of the debt the same as at the beginning of the lending. The main objective of this system is to avoid inflation and deflation.

Referred to Fisher, the gold-exchange standard is a system of redemption, or partial redemption in gold of the native coin. Furthermore, in the gold standard system the dollar is fixed concerning its weight, but variable in its purchasing power. Fisher wanted to have a system where the dollar is fixed in its value of money and variable in its metallic weight (cf. Fisher, 1997b, pp. 381).

With the combination of the tabular standard and the gold-exchange standard, price changes of a basket of gold can be avoided by modifying the weight in gold of the dollar and by adapting it once a month. In consequence, the dollar is adapted to the volatility of the gold price
and the price level can be maintained stable. According to Fisher, this concept will stabilize the purchasing power of money (the level of prices), because the dollar will be variable in its metallic weight, but fixed in his value of money (cf. Claude Million, 2007, p. 5). In consequence, Fisher sought to stabilize the value of the dollar and not the purchasing power of gold.

Silvio Gesell appreciated the Compensated Dollar Plan by saying: „We embrace this proposition as a further step to the introduction of a pure paper currency and as a good propaganda campaign for our purposes. […] The time will come where the view will be accepted that fixed prices of goods and fixed exchange rates will only be unified due to a paper currency whose national administration will be guided by valid international principles.” (Gesell, 1990, pp. 197).

Even if the system is an international monetary reform, the world’s currencies do not have to be changed. The participating countries only have to assemble already existing operations: calculating index numbers, buying and selling exchange and gold and they have to readjust the gold pars periodically. This adjustment does not require any changes in the circulating medium (cf. Fisher, 1997b, pp. 388). In consequence, the countries can keep their currencies (for example gold, silver or paper money) and the citizens will not notice any change. If a country has a commodity as exchange medium which is less variable than commodities in general, the government had less adjustments and less buying or selling of that commodity to do.

According to Fisher this plan has the advantage that it would be free from individual mismanagement. Furthermore, it would be safe from legislation which causes inflation for instance, because no individual country has the possibility to inflate the currency without withdrawing from the international arrangement and isolating itself (ibid., p. 390).

Not only Silvio Gesell, but also John Maynard Keynes appreciated Fisher’s Compensated Dollar Plan by saying: “In particular, the proposals of Professor Irving Fisher for a compensated dollar amounted, unless all countries adopted the same plan, to putting into practice a preference for stability of internal price level over stability of external exchange” (Keynes, 2013b, p. 171).

The theory of the Compensated Dollar Plan sees the dollar as a unit of account. In order to illustrate the theory, an example will be described in the following. The accounting price (dol-
lar) of a barrel of carbon ($P_C$) and the dollar price of an ounce of gold ($P_G$) are used for this example. The gold price of the barrel of carbon ($P_{C,G}$) is equal to the ratio of the dollar price of the barrel of carbon ($P_C$) and the dollar price of the ounce of gold ($P_G$) (Jérôme de Boyer des Roches/ Rebeca Gomez Betancourt, 2012, pp. 5).

$$P_{C,G} = \frac{P_C}{P_G}$$

The amount of carbon exchanged is noted as $C$ and the amount of gold circulating as $G$. The velocity of circulation of gold is noted as $V$. In consequence, the equation of exchange is:

$$P_G \times G \times V = P_C \times C$$

$$G \times V = P_{C,G} \times C$$

If the prices are supposed to be: $P_{C,G} = 0.5$ ounce of gold per one barrel of carbon, $P_G = $100 per ounce of gold, the dollar price of a barrel of carbon $P_C$ is equal to:

$$P_C = P_{C,G} \times P_G$$

$$P_C = 0.5 \text{ ounces of gold per one barrel of carbon} \times $100 \text{ per ounce of gold}$$

$$P_C = $50 \text{ per one barrel of carbon}$$

In this equation, the gold price of the barrel of carbon ($P_{C,G}$) corresponds to an amount of gold per one barrel of carbon (0.5). On the contrary, the dollar price of a barrel of carbon ($P_C$) corresponds to an amount of dollars per one barrel of carbon (50). In the Compensated Dollar Plan, Fisher wanted to stabilize the dollar price (in this example: $P_C$).

If the amount of gold in circulation ($G$) increases, the gold price of the barrel of carbon ($P_{C,G}$) and the dollar price of the barrel of carbon ($P_C$) are increasing too, because the dollar price of ounces of gold ($P_G$) is fixed. If the amount of gold in circulation is decreasing, the value of the dollar is falling too. In order to stabilize the price level of goods, Fisher wanted to increase the dollar price of the ounce of gold ($P_G$) in the same proportion as the price increase in gold of the goods ($P_C$). In consequence, the monetary authority adjusts this price in response to price level variations. In order to keep the general price level constant, the authority has to
offset movements in the gold price of goods with compensating adjustments in the dollar price of gold. Nevertheless, Fisher was of the opinion that his system would operate on the price level through money stock. In consequence, the physical amount as well as the nominal valuation of a country’s stock of monetary gold has to be changed. If there were a gold inflation which raises the dollar price of goods, the authority had to lower the official buying and selling of gold (cf. Thomas M. Humphrey, 1997, p. 86).

2.3.4 Critical acclaim

In general, Fisher’s interest rate theory is comprehensible. He was of the opinion that the interest rate is on the one hand based on a subjective element: time preference and on the other hand on an objective element: investment opportunity. Nevertheless, Harry G. Brown criticized for instance that “this impatience or time preference theory of interest […] is at fault […] because it makes all determining influences, including productivity, act upon interest only by first acting on impatience.” (Harry G. Brown, 1913, p. 633). In consequence, Fisher could have integrated other determining factors of the interest rate in his theory.

Concerning Fisher’s alternative monetary system Stamp Scrip, Fisher did not want to abolish the existing financial system, but he wanted to introduce Stamp Scrip as a complement to the official currency in small communities. In consequence, it is a complementary currency and it is similar to current regional currencies which have been implemented into practice with success (cf. chapter 5.1). A disadvantage of this system are its high administration costs (even if they are paid by the stamps) if considering today’s possibilities of electronic payments. In consequence, the Stamp Scrip system should be adapted by introducing electronic currencies for instance.

Another monetary system is Fisher’s 100% system. According to him, this system could reduce business cycle volatility, it would eliminate bank runs, and it could lead to a reduction of government and private debt. However, if a government calls at par the legal tender and a new government credit that only exists for the use of repaying outstanding bank loans, individuals could simply dump the loans at a discount in order to obtain the former. In consequence, banks run could occur. Furthermore, it is not probable that this system will be introduced, because it would destroy bank profits and cause a deflationary crisis. In addition, nowadays
banks are already being forced to increase their reserves by EU rules and Basel III rules, for instance.

Concerning Fisher’s Compensated Dollar Plan, this system could be effective, because it would be free from individual mismanagement and different national legislations. Furthermore, there would be no changes in the circulating medium. Nevertheless, it is not very likely that this plan could be introduced into practice. In the Compensated Dollar Plan, Fisher argued that the money stock of an open economy is determined exogenously by the given state of the balance of payments which results from the given foreign price level. However, in modern economics the money stock of an open economy is determined endogenously by the requirement that domestic price levels are similar to foreign ones in order to maintain equilibrium in the balance of payments (ibid., p. 76).

To sum up, it can be said that Irving Fisher’s interest rate and monetary theory is comprehensible, but he could have integrated other determining factors. His alternative monetary system Stamp Scrip represents an effective concept of complementary currencies, because it does not want to abolish, but to support the existing financial system. Considering today’s technological possibilities, the system should integrate electronic currencies in order to avoid high administration costs.

Finally, the Compensated Dollar Plan has great advantages, but it is not likely that such a system would be introducible nowadays because in modern economics the money stock of an open economy is determined endogenously.

2.4 Comparison

Concerning the theories of interest, Silvio Gesell and Irving Fisher emanated from the quantity theory of money (M×V=P×T), but they arrive at a different conclusion. Gesell saw interest as result of the blockage of the money-goods-cycle due to the hoarding of money. Fisher observed that the interest rate is based on the time preference and the investment opportunity. Gesell did not develop an own theory of interest, but his criticism of money and interest is similar to Keynes’s theory, because both were of the opinion that the hoarding of money represented a main problem of the monetary system at that time. John Maynard Keynes was of the opinion that it is the quantity of money in conjunction with liquidity-preference which
determine the interest rate \( (M=L(r)) \). Furthermore, in Keynes’s analysis the factor uncertainty is emphasized and the interest rate is described as a highly psychological phenomenon.

Concerning the analysis of crises, Gesell and Keynes acted on the assumption that the existing monetary system at that time was the origin for crises and instability. In Fisher’s theory of interest he did not deal a lot with the characteristics of money whereas Gesell and Keynes were of the opinion that money has a supreme advantage over goods, because most assets lose value over time in contrast to money. Furthermore, Keynes and Gesell were in favor of the end of the gold standard whereas Fisher was not yet in favor of abolishing the standard. Concerning the politico-economic consequences, Silvio Gesell wanted to replace the existing monetary system. Keynes and Fisher in contrast sought to change the system. In addition, Gesell, Keynes and Fisher were of the opinion that there has to be an intervention by the state in order to regulate and control the monetary system.

The national monetary reforms “Free Money” and “Stamp Scrip” of Gesell and Fisher are similar. The key idea is to encourage people to circulate money by introducing an anti-hoarding fee. Nevertheless, there exists an important difference between the two systems, Free Money was developed with the intention to become a legal instrument of payment, Fisher in contrast wanted Stamp Scrip to become a complement to the official currency. Keynes in contrast did not develop a comparable system. Nevertheless, he appreciated the idea of stamped money.

With reference to the international monetary reform proposals, Gesell’s International Valuta Association and Keynes’s Bancor Plan are comparable. They envisaged both the introduction of a new currency (IVA, Bancor) and a new institution (International Valuta Association, International Clearing Union). The objective of these two systems was, amongst others, the stabilization of international exchanges. Furthermore, Gesell wanted to have a quota of the new international currency of 20% of the national money supply. Keynes was of the opinion that each member country should have a maximal allowed debit balance that equals the sum of exports and imports over the past three years in average. The objective of Fisher’s Compensated Dollar Plan was to stabilize the purchasing power of money. The main difference to Gesell’s IVA and Keynes’s Bancor Plan is, that in Fisher’s plan the world’s currencies would
remain unchanged. The governments of the participating countries only had to make adjustments.

In summary, Gesell, Keynes and Fisher have some common ideas and approaches, but it is important to emphasize that they arrive at different conclusions and politico-economic consequences.

3. Case studies of Gesellian’ monetary systems in the past

As the objective of this thesis was to debate about alternative monetary systems, this chapter will deal with two historical case studies where alternative financial systems were implemented. As presented in the previous chapter, Keynes did not develop an own national monetary system and Fisher’s Stamp Scrip is based on Gesell’s Free Money system. Furthermore, there exists no popular example of Stamp Scrip which was realized into practice. In consequence, the practical realization of Gesell’s Free Money system will be analyzed in the following. Finally, it will be discussed if the Free Money system could be established nowadays.

3.1 WÄRA – a demurrage-charged currency

By 1923 the German currency “Reichsmark” was out of control. On 18 November 1923, one dollar bought 4.2 trillion marks (postage stamps cost billions…).

In 1929, Hans Timm and Helmut Rödiger established the “WÄRA-Tauschgesellschaft“. The objective of this „exchange society“ was to fight against unemployment and stagnation of the market. Over 1,000 companies in Germany started to use the “WÄRA”. The circulation of the WÄRA notes between these companies and private persons started. The notes were charged with a demurrage of 1% per month (12% p.a.) in order to avoid the hoarding of money and to promote the circulation of money within a community. As Gesell envisaged, on the back of each note were 12 boxes on which a stamp had to be affixed (1% face value). Each month, the participants of this system had to buy stamps according to 1% of the WÄRA amount they possessed in order to maintain the full face value of the notes for the next month (cf. Onken, 1997, pp. 38) (cf. appendix 3).
In 1930, the WÄRA became very popular thanks to the WÄRA experiment in the small town Schwanenkirchen. Dr. Max Hebecker who was an owner of a coal mine started to pay his employees 90% in WÄRA backed by the coal they were extracting and 10% in Reichsmark. The WÄRA was a piece of paper fully backed by the coal inventory and it also had a small monthly stamp fee in order to cover the storage costs. The local economy in Schwanenkirchen gained momentum and the unemployment was reduced. Furthermore, the WÄRA notes allowed for a steady sales volume of goods. This complementary currency became a centerpiece of the free economy movement whose theory was based on Silvio Gesell’s works. Despite the success of this currency and the fact that it would not become inflationary (because its value was tied to the value of coal), the Finance Minister H. Dietrich prohibited the use of alternative currencies like the WÄRA in October 1931 (cf. Lietaer, 2001, pp. 151).

3.2 Wörgl – a free economy experiment

Another well-known Free Money experiment took place in Wörgl, a small town in Austria in 1932. The community of Wörgl had 4,200 inhabitants at that time. The major of this town, Michael Unterguggenberger, knew the works of Silvio Gesell and heard about the success of the WÄRA experiment in Schwanenkirchen. In Wörgl, the unemployment rate was extremely high, the economy slowed down and the tax revenues of the community were very low at that time. In order to ameliorate the local economy, Unterguggenberger convinced business men and the administration to start a money experiment like it was proposed in Gesell’s “Natural Economic Order” (cf. Onken, 1997, pp. 42). The money in circulation (which was nearly free from interest) was paid to the employees of the municipal administration. Furthermore, various companies participated in this experiment and many local shops took this money as instrument of payment. In a short period of time this currency was accepted by the majority of inhabitants and became a general payment instrument. For the issued Free Money an equivalent amount of Austrian Shilling was collected and deposited respectively. Concerning the practical realization of this experiment, a stamp needed to be applied each month (cf. appendix 4). After the end of the month the bill only kept its value of 100 and was only accepted if a stamp of 1% of the face value was fixed on the corresponding box. If an inhabitant hoarded a bill during 12 months, he only could bring the bill back in circulation if he would buy
stamps for all the 12 boxes. In consequence, the hoarding of 100 Shillings during 12 months would have cost a fee of 12 Shillings (12%) (cf. Senf, 2007, p. 123). Furthermore, the fee for re-exchanging the Wörgl stamp into Schilling added up to 2%.

In consequence, everybody who was paid with the Stamp Scrip (“Arbeitswertschein”) spent it quickly, automatically providing work for other inhabitants. The residents even paid their taxes earlier in order to avoid the fees. During one year the unemployment rate in Wörgl was reduced by 25% whereas it was increased by 10% in the rest of Austria. In addition, a lot of projects like the rebuilding of the water system were accomplished. The notes which were in circulation had an approximate value of 5,500 Shillings (1.3 Shilling per inhabitant). 1 Shilling at that time has today’s value of EUR 1.72. During the experiment additional investments with a value of EUR 460,000 were made. This amount corresponds to a 5% increase of the social product (cf. Tobias Schneegans, 2003, pp. 44).

Various other towns in Austria copied this complementary currency system, but the Central Bank of Austria was frightened to lose its monopoly and in November 1933 alternative currencies were prohibited in Austria (cf. Lietaer, 2001, p. 153). A lot of economists studied this project. Irving Fisher for example recommended the introduction of such a demurrage-charged currency in some articles (cf. Schneegans, 2003, p. 46) and published his book “Stamp Scrip” in 1933.

### 3.3 Free Money – realizable in practice nowadays?

As the WÄRA and Wörgl experiments have shown, the Free Money system can stimulate the economy. With this system demand can be increased, income can be generated, production can be charged to capacity for instance (cf. Jörg Gude, 2007, p. 23). Bernd Senf argued in an interview (cf. appendix 5) that the example of Wörgl was an impressive model of a regional revival of business, in the middle of the world economic crisis, which got a lot of international attention. With the current crises tendencies, similar and further developed models of regional currencies or parallel currencies will gain importance.

Nevertheless, the Free Money system should, according to Gesell, abolish the existing financial system. Nowadays, we live, however, in an extremely globalized world. Therefore, it is not probable at all that a country or region would isolate themselves from the rest of the world by abolishing their traditional monetary system and by introducing a Free Money system. The
experiments WÄRA and Wörgl were also complementary currencies based on Gesell’s system and not pure Free Money systems, because they did not abolish the official currency. Over all in times of economic crises, complementary currencies charged with a demurrage fee can stimulate the economy.

From a legal point of view, legislation of most countries would not accept the abolishment of the official currency. Another disadvantage of the Free Money system are high administration costs. Furthermore, there has to be a democratic decision on the amount of currency that should be issued and the rate of the demurrage fee that should be chosen.

Besides, as Keynes already observed in his analysis, uncertainty plays an important role. Citizens want to make savings in order to overcome uncertain personal or economic situations for instance. In consequence, the pure Free Money system of Gesell is in my opinion not realizable today. Nevertheless, there exist a lot of complementary currency systems which do not want to abolish, but to complement the existing financial system. Some of these systems, like the regional currency “Chiemgauer”, are based on Gesell’s Free Money system. As Margrit Kennedy clarified in an interview (cf. appendix 6), these currencies are not in competition with the Euro, but they function as complements. This characteristic is its biggest strength because it would create benefits for the present system by stabilizing the economy.

Complementary currencies were very successful in the past. They did not disappear because of their failure or because they were replaced by a better system. They were mostly suppressed by a central power that wanted to maintain its own currency system in order to control the economy of the region in a better way. In many cases the central currencies were introduced by military force. In my opinion, complementary currencies that are based on the Free Money system can be established with a high likelihood of success – in contrast to the pure Free Money system. Therefore, it is the objective of the following chapter do define complementary currencies and to analyze their worldwide development.

4. Complementary currency systems

Most market economies suffer from considerable deficits of their monetary transaction systems. Without these deficits the system would be not only more effective, but also more fair and social (cf. Dieter Suhr, 1994, p. 3). Complementary currencies represent an effective pos-
sibility to strengthen the economy by stabilizing the financial system. In the following, the definition and worldwide development of complementary currencies will be presented.

4.1 Definition of complementary currencies

A complementary currency refers to a common agreement within a community to accept a non-national currency as an instrument of payment for the exchange of goods and services. These alternative currencies do not replace the official legal means of payment, but ought to be used in parallel with the national currency and to perform social functions. They also are called “community currencies”, “local currencies” or “common tender” (cf. Kennedy/ Lietaer, 2004, p. 69).

![Figure 1: Comparison of official and complementary currencies](cf. Lietaer, 2001, p. 147)

First of all, the objective of complementary currencies is to support the official currency by accepting those responsibilities which the conventional currencies are not able to fulfill. The system of today’s standard currencies (fiat currencies as the USD or the EUR for instance) has created a global financial market and provided a big capital stock. Nevertheless, this system is destructing the social system and it generates high income differences. Those negative aspects
cannot be corrected within the system. Complementary currencies which are based on different principles (no interest rates, regional organization structure and facilitation of the social capital) can stabilize the existing monetary system (cf. Kennedy/ Lietaer, 2004, p. 74). Both systems could work in symbiosis with each other. Other goals of complementary currencies are amongst others the strengthening of social capital, local economy and the protection of the environment.

Current literature does not provide a comprehensive, general or scientific typology of complementary currencies. Some authors categorize these currencies concerning their business relationships (B2B, B2C), management, introduction strategies and/ or environment. In the context of this thesis, the objective of the definition of complementary currencies is not to present a typology, but to differentiate some definition levels. As various types of complementary currencies exist (cf. appendix 7), three different definition levels based on the systematization of Gernot Jochum-Müller and Margrit Kennedy (2011, p.1) will be presented in the following. Each definition level is explained in detail and analyzed with the help of practical case studies in chapter 5.

The first definition level comprises complementary currencies with a geographical reference (cf. Jochum-Müller/ Kennedy, 2011, p. 1). These currencies are called regional or local currencies. Most of these currencies are paper currencies and charged with a demurrage fee. In addition, they do no bear interest rates.

Another definition level of complementary currencies are financing models like savings and borrowing associations which help to realize projects without interest rates and with minimal costs. These models can have a regional as well as a sectoral reference (cf. Jochum-Müller/ Kennedy, 2011, p. 1). An example of these systems is for instance a Local Exchange Trading System (LETS). Among the LET systems, there also exist economic circles which can be defined as mutual credit systems (cf. Lietaer, 2001, p. 160). Economic circles bear no or very low interest rates and are mostly electronic currencies.

Furthermore, there are alternative currencies with a factual and objective reference (which also can have a regional reference) (cf. Jochum-Müller/ Kennedy, 2011, p. 1). In general, these currencies are called community currencies. Among these currencies exist health currencies, which facilitate a change in behavior and a reduction of costs. Secondly, there are educational currencies which allow for a new value creation in the knowledge society. Finally, en-
ergy currencies which accelerate the structural change in the energy sector are among these currencies. These currencies are in general electronic currencies and no paper money is being issued.

In conclusion, it can be said that there exist various different models and forms of complementary currencies. It depends on the type of necessity of a region which form would best improve the local economy, educational or energy sector for instance.

4.2 Development of complementary currencies

In the 1980s, there existed about 100 complementary currency systems worldwide. During the last two decades, these systems grew dramatically. When comparing the 1980s with the 1990s, these systems increased by a factor of twenty (cf. Lietaer, 2001, pp.159) and by a factor of forty compared to 2003.

Figure 2: Development of complementary currencies worldwide (1984-2003) (cf. Kennedy/Lietaer, 2004, p.73)
In 2003, there existed about 4,100 complementary currencies worldwide. Complementary currencies based in Europe comprise the biggest number of these systems.

In general, all the regions listed in Figure 2 developed more and more complementary currency systems over all in the 1990s. In European countries as Italy, France, Germany, Benelux, and the United Kingdom, there exist more and more complementary currency systems. In South America, the concept of alternative monetary systems is not very popular yet. Nevertheless, the development of these systems is growing continuously in Argentina. Also in Japan where complementary currencies have a great tradition, the systems are more and more appreciated and facilitated. Japan is currently representing the country with the most complementary currency systems worldwide. In New Zealand, Australia, the United States and Canada, where the LET systems were reinvented, the development is increasing, too.

The annual growth of the number of complementary currencies also increased a lot during the last twenty years. Currently, about 230 new alternative monetary systems worldwide are developed and realized into practice each year. Among these systems are regional currencies, local exchange trading systems and community currencies for instance.

![Annual growth of complementary currency systems worldwide (1993-2012)](image)

Figure 3: Annual growth of complementary currency systems worldwide (1993-2012) (cf. Complementary Currency, 2012, p. 1)
In 1993, the annual growth rate of complementary currency systems was about 24 each year. In consequence, the growth rate increased by 858% to 230 new systems each year in 2012 worldwide.

The presented figures demonstrate that complementary currency systems gain more and more importance in society worldwide. This success was not foreseeable for financial experts. In 2006 for instance, a working paper of the German Central Bank entitled “Regional currencies in Germany – Local competition for the Euro?” did conclude that these alternative currencies are not very successful. According to the author Gerhard Rösl, regional currencies are concerning their economically importance widely behind the official currency. Furthermore, the working paper estimated that regional currencies take a “marginal place” in the area of other unofficial private money (as Payback systems or bonus programs of airlines) (cf. Gerhard Rösl, 2006, p. 3). Nowadays, this estimation should have changed. Nevertheless, the question should not be if regional currencies or complementary currencies are in competition to the Euro, because the objective of these systems is not to abolish but to support the Euro by strengthening the local economy.

To sum up, it can be said, that the ideational importance of complementary currencies is increasing worldwide. From an economic point of view, the number of complementary currencies as well as their growth rate p.a. is also increasing in the whole world.

5. Current case studies of complementary currencies

The aim of this paper was to discuss alternative monetary systems. In consequence, this chapter will deal with seven current case studies of complementary currency systems. As already presented in the definition (cf. chapter 4.1), there exist three levels of such alternative monetary systems. For this reason, the following chapter will deal with practical examples of regional currencies, LET systems and community currencies in order to analyze their functioning, development and advantages as well as disadvantages. Furthermore, it will be analyzed if regional currencies are (partially) based on Silvio Gesell’s Free Money system.
5.1 Regional currencies

A regional currency is a form of complementary currency. The objective of this alternative instrument of payment is to fulfill regional needs and to strengthen the local economy. These systems have a larger scope of application than local currencies (as LET systems or community currencies) (cf. Kennedy/ Lietaer, 2004, p. 77). The free economy literature assumes that the critical number of participants for a regional currency system represents 2,000 members and it can have up to 1 Million. In local currency systems in contrast up to 1,000 persons could take part. In the following, two German regional currency systems: the “Chiemgauer” and the “Bremer Roland” are analyzed in order to evaluate their concept, theory and success.

5.1.1 Chiemgauer

The „Chiemgauer“ is a German regional currency charged with a demurrage fee. The project started in 2003 and was issued by the “Chiemgau Regional – Verein für nachhaltiges Wirtschaften”. The currency was developed by pupils of the “Waldorfschule Chiemgau” and their teacher Christian Gelleri. The objective of this complementary currency is a cooperation oriented subsistence strategy which aims balancing globalization and regionalization. They decided to develop a “coupon system”. This paper currency was created on the basis of the Stamp Scrip of Wörgl. In consequence, the form of the Chiemgauer is connected with Silvio Gesell’s propositions. As presented in chapter 2.1.2.1, Gesell’s Free Money system envisaged a weekly devaluation of 0.1% (5.2% p.a.) which should be realized by the purchase and pasting of stamps. The system of Wörgl (cf. chapter 3.2) envisaged a devaluation of 1% monthly (12% p.a.). The Chiemgauer in contrast looses 2% of its value quarterly (8% p.a.). The devaluation is being equalized by the purchase and pasting of stamps. In consequence, the person who changes Euro into Chiemgauer, should spend it during three months. This mechanism increases the velocity of circulation and the consumers only change as much as Euro into Chiemgauer as they need for the next two to four weeks (cf. Christian Gelleri, 2006, p. 4). In an interview with Christian Gelleri (cf. appendix 9), he clarified that there exists an important difference between the Chiemgauer and Gesell’s Free Money system. Gesell’s Free Money system is state- oriented. He wanted that Free Money becomes a legal instrument of payment. The Chiemgauer in contrast is not a Free Money system, but a complementary cur-
rency and does not want to abolish the Euro. For this reason, the adherents of Gesell refuse the Chiemgauer, because it is “only” a complementary currency. Furthermore, Gesell was more a world economist and did not focus on regional economy. The Chiemgauer is a regional complementary currency and is focused on one region (cf. appendix 8). Nevertheless, with its demurrage fee and no interest rates, it is partially based on Gesell’s system.

The Chiemgauer is charged 1:1 against the Euro and can be re-exchanged in Euro for a fee of 5% of the amount of money that will be re-exchanged (cf. van Putten, 2005, p. 5). In Wörgl, the fee of re-exchange added up to 2%.

Furthermore, a bonus of 3% is used within the Chiemgauer’s system in order to facilitate predefined activities (educational establishments, social projects or sports clubs). The consumer can chose an association/club, which will get 3% of the exchanged amount. These 3% are paid by the participating companies. With the payment of Chiemgauer an association is being promoted without generating more costs for the consumers. In consequence, an added value is created for the consumers when paying with Chiemgauer, because a good cause is being financially sponsored. In consequence, this bonus represents one of the success factors of the Chiemgauer’s system. Besides, the currency is facilitating small businesses with micro credits which do not bear interest.

Since 2006, the participating companies have the possibility to do cashless payments. With the electronic Chiemgauer (eChiemgauer) the accounting of high amounts, the automated clearing and the cooperation with banks has been simplified. The rules for eChiemgauer are the same as for the coupons. With this measure, administration costs are reduced and the system is attracting more potential members.

The Board of Directors of the “Chiemgau Regional” is deciding democratically on the amount of Chiemgauer which will be issued.

According to Margit Kennedy, the value of the Chiemgauer will be stable in the long-term, because there is no inflation without interest rates. Nevertheless, the Chiemgauer is linked to the Euro. In consequence, if the Euro is inflated, the Chiemgauer is as well. In the case of a hyperinflation there exists only one measure for the Chiemgauer: it has to disconnect from the Euro by choosing another reference value as for instance the value of a cubic meter of water or of an average hour of work. This possibility is integrated in all the statues of regional currencies which are known by Kennedy (cf. Kennedy, 2010, pp. 18).
According to the Chiemgauer’s statistic the velocity of circulation of the complementary currency is approximately three times faster than the Euro.

Figure 4: Development of the velocity of circulation of the Chiemgauer and the Euro (own figuration, data from Gelleri, 2013, p. 1)

The velocity of circulation of the currency is calculated by dividing the economic performance by the amount of money. Figure 2 demonstrates that the development of the velocity of circulation of the Chiemgauer is volatile, especially in 2006/07 it was very high. This development is not much surprising, because in the first years, when a new system is introduced, there are always volatilities until a system is fully established. In 2006/07 the electronic Chiemgauer (eChiemgauer) was introduced for instance. Furthermore, according to Gelleri, the “Chiemgau Regional” had problems to meet the demand and to print enough Chiemgauer. In the last years, the system calmed down and the development became more stable (cf. appendix 9).

The biggest advantage of the Chiemgauer with its demurrage fee is that it is offering stability for private persons and especially for companies. At first glance, private persons are psychologically deterred from the demurrage fee. But when they participate in the system, they re-
mark that they only have minimal costs and that the system is offering a lot of advantages. In a long time perspective, these positive aspects are more and more remarked and appreciated. The velocity of circulation of the Euro or the Yen decrease continuously and they are not stable in contrast to the Chiemgauer (cf. appendix 9).

In 2012, 3,454 members participated in the Chiemgauer’s system including 2,573 consumers, 633 acceptance locations and 248 clubs/ municipalities/ projects. Since the beginning of this initiative in 2003, the number of members increased every year.

![Graph](attachment:development_of_chiemgauer_membership.png)

**Figure 5: Development of Chiemgauer’s membership (2003-2012) (own figuration, data from Gelleri, 2013, p. 1)**

The number of memberships is still growing. Currently, there are 20 new members each month participating in the system. In consequence, the growth is very stable. The growth rate in contrast is decreasing because it is also limited, as the Chiemgauer is focused on a single region. Nevertheless, the popularity of the Chiemgauer is still very high (cf. appendix 9).
Concerning economic and financial facts, the turnover of all the participating companies in Chiemgauer increased every year.

![Figure 6: Development of all member companies’ turnover in Chiemgauer (2003-2012) (own figuration, data from Gelleri, 2013, p. 1)](image)

The turnover of the Chiemgauer is composed as follows: exchange of Euro into Chiemgauer in cash + exchange of Euro into electronic Chiemgauer + transfer of cash Chiemgauer of businesses to other businesses + transfer of eChiemgauer to other businesses and employees for instance (cf. Gelleri, 2013, p. 2).

According to Gelleri, the volume of the Chiemgauer is, compared to the whole region, relatively small. Nevertheless, the participating businesses report that the Chiemgauer is offering stability for them and especially customer loyalty.

Furthermore, some companies would not exist without the Chiemgauer, because the currency is facilitating small businesses with micro credits. As there is currently no economic crisis in the region, it is difficult to estimate the economical improvement for the region.

In a social context, the Chiemgauer is strengthening the community and the facilitation of educational establishments, social projects or sports clubs. A gym for instance has been creat-
ed, which would not have been built without the Chiemgauer and its 3% bonus. The 3% bonus is also offering free available money for the projects and does not, like a lot of other sponsorships, envisage a pre-defined objective (cf. appendix 9).

In conclusion, it can be said that the Chiemgauer has successfully been created and established. The system is partially based on Gesell’s Free Money system, because the currency is charged with a demurrage fee and offers interest-free micro credits to small businesses. Thanks to the demurrage fee, the Chiemgauer is circulating approximately three times faster than the Euro. In consequence, the Chiemgauer is offering stability for private persons and businesses and it is strengthening the community. The membership as well as the turnover of the Chiemgauer is continuously increasing. Furthermore, the 3% bonus represents an incentive for participating in this system. In the case of a hyperinflation, the Chiemgauer could disconnect from the Euro and maintain the value of the currency.

5.1.2 Bremer Roland

The Roland (ROL) is a regional currency charged with a demurrage fee in Germany. This paper currency exists since 2001 and is accepted in participating businesses in Bremen and environments. The Roland is a kind of “check coupon” (“Scheckgutschein”) (cf. appendix 10). A member who wants to pay in ROL has to fill out the check with the respective amount and signs it. He/ she hands the check over to the participating business which has to give the check to the Roland administration. Afterwards, the amount is removed from the member’s account and booked to the business’s account.

Due to a demurrage fee, the account of each member loses 1% of its value per month (12% p.a.). In consequence, this system is similar to the system of WÄRA and Wörgl which also had a demurrage fee of 12% annually. With these revenues, the “ROLAND-Regional Verein für nachhaltiges Wirtschaften e. V.” has the possibility to pay administration costs and to give interest free credits (particularly to organic farmers and health-food shops) (cf. Roland Regional, 2013, p. 1). According to Karl-Heinz von Bestenbostel, who is a member of the Board of Directors of Roland-Regional, the demurrage fee is rarely noticed by the participants. In contrast to normal bank accounts with account fees and interest paid on overdraft, the amount for the demurrage fee in the system of the Bremer Roland is minimal. Furthermore, special conditions for some businesses are offered.
In theory, this regional currency is based on Silvio Gesell’s Free Money system, because the currency is charged with a demurrage fee and there are no interest rates. Nevertheless, the association does not see themselves as “Freiwirtschaftler” (cf. appendix 11). Furthermore, like the Chiemgauer, the Roland is a complementary currency to the Euro and does not seek to become a legal instrument of payment (as envisaged in Gesell’s Free Money system).

If members want to remit ROL to an account in the Euro area, they have to pay a fee of 1% of the transfer amount (cf. Roland Regional, 2012, p. 1).

The Board of Directors of the “Bremer Roland” is deciding democratically on the amount of Roland that should be issued.

260 participants (including 130 vendors) build the community (cf. appendix 11). Since the beginning of the project in 2001, the number of members increased every year.

![Development of Bremer Roland's membership (2001-2013)](image)

Figure 7: Development of Bremer Roland’s membership (2001-2013) (own figuration, data from Bremer Roland, 2013, appendix 11)

The increase of the number of membership is very constant of about 25 per year.
Concerning the financial development, the transaction volume per annum is about ROL 500,000 (1 ROL = 1 EUR) in 2012 (cf. appendix 11).

Figure 8: Development of all participating companies’ turnover in ROL (2001-2013) (own figuration, data from Bremer Roland, 2013, appendix 11)

With the exception of 2011, the turnover in ROL of all participating companies did increase every year. Furthermore, the businesses which accept the Roland as instrument of payment profit from a loyal client base, because the participants buy their goods and services in stores which accept the ROL.

With currently 260 participants the Bremer Roland does not reach the critical number of participants of 1,000 for local or 2,000 for regional currency systems. According to the free economy literature, only if this aspect is fulfilled stable and closed cycles can be established. Margrit Kennedy is of the opinion that the Bremer Roland is not as successful as the Chiemgauer, because it does not have the same active team as the Chiemgauer and it focuses mainly on the facilitation of the biodynamic agriculture (cf. appendix 11).
The association Roland Regional is of the opinion that it has to put its legal basis on another level. They focus on the situation of organic farmers. Nevertheless, it does not succeed yet to present this as an advantage for the consumers. Currently, they work on two alternatives in order to become more successful. First of all, they think about how they can finance projects of the members without being a bank. Secondly, they debate about the acquisition of productive capital which they can provide to the members so that the results represent a direct benefit for the members. The conceptual questions are well developed, but they have to clarify the legal questions in order to develop an effective concept with an appropriate security (cf. appendix 11).

To summarize, it can be said that the Bremer Roland has a high potential. It is a complementary currency with a demurrage fee and in consequence, the regional currency circulates faster. Furthermore, the system has no interest rates. In order to become more successful, the association of the Roland has to clarify legal aspects. In my opinion, it has to enlarge their scope of activity. The facilitation of the biodynamic agriculture is very important, but if they would facilitate other sectors, as educational establishments or sport clubs, the potential network of participants would become bigger. In addition, it is necessary to integrate the community in order to gain popularity. If they would take into account the introduction of a percentage bonus (like in the Chiemgauer system) in order to facilitate associations, they could gain a lot of participants.

5.2 Local Exchange Trading Systems

Local Exchange Trading Systems (LETS) are the most frequently used complementary currency systems in the world. Such a system represents an organized clearing system which facilitates the cashless exchange of services and goods between private persons, organizations and small businesses on a local plain (cf. PaySys Consultancy GmbH, 2007, p. 7).

In the majority of cases, services and goods are exchanged between private persons. In consequence, the field of activity of a LET system is typically limited to a township, city or region. LET systems can also be defined as mutual credit currencies, because a transaction is being made between the participants themselves by creating a simultaneous debit and credit (cf. Lietaer, 2001, p. 160).
In the following, a French and a Swiss LET system: the “Graine de sel” and the “WIR” are analyzed in order to evaluate their concept, theory and success.

5.2.1 Graine de sel

In 1983, Michael Linton established the first LETS in Cornox Valley, Canada (cf. Kennedy, 1995, p. 116). The functioning of a LET system will be explained in the following by analyzing the example of “Graine de sel”. Graine de sel is one of currently 350 LETS in France. These systems emerged in times of insecurity and high unemployment. Graine de sel was developed in 2009. It does not only allow the participants to exchange goods such as bread and fruits, but also to negotiate services such as plumber work or German lessons, to be paid only in the local currency. Each participant has an account with administrative costs of about 1€ each month. The exchanges between the members are valued with the help of the unit called “Pelote” which is the official unit of the system. The standard rate for one hour of work is currently amounting to 60 Pelotes. In contrast to most regional currencies, this system does not offer the possibility to change Euro into Pelote or Pelote into Euro (the Pelotes are not convertible). This LET system is an electronic currency and there is no paper money in circulation. The value of each transaction is resulting from an agreement of two participants. A member is never forced to accept a transaction. Each participant starts with an account of 180 Pelotes. There exists no penalty if the account becomes negative. It is in contrast necessary for the effective functioning of the system. The General Board of the LET system is fixing a limit for the allowed surplus and debit of the accounts. The limit is currently of 2,000 Pelotes (approximately 33 hours of work). The Board can exceptionally authorize a participant to pass over this limit to a bigger one for a pre-defined time period and for a defined objective (cf. Graine de sel, 2011, pp. 1). This currency does not bear interest in contrast to the fiat currencies (familiar national money system) (cf. Lietaer, 2001, p. 160).

The Graine de sel system has a blog which is continuously updated with the offers and demands of the persons who want to exchange goods and services. Furthermore, events are organized in order to offer the possibility of meeting the other members.

The principle of this LET system is based on the fact that each individual possesses means, competencies or time he/she can exchange with other people. Examples for goods and services offered in this system are: go shopping, walk a dog, take care of plants during holidays,
borrow material, baby-sit, plumber work, teach crocheting and exchange fruits (cf. Graine de sel, 2011, pp. 1).

To sum up, Graine de sel is an effective complementary currency system. With this system, the exchange between participants is simplified, there exist no additional costs or interest rates and it is strengthening the community. Furthermore, it does not represent high start-up costs or a risk of financial failure.

5.2.2 WIR – Wirtschaftsring

The WIR Bank, (formerly the Wirtschaftsring-Genossenschaft) is an independent bank in Switzerland which issues the complementary currency WIR. It was founded in 1934 by 16 members and it represents the oldest continuous complementary currency system in the Western world (cf. Lietaer, 2001, pp. 168). The system has grown continuously; currently more than 60,000 members participate in the WIR economic circle (cf. WIR Bank, 2013a, p. 6).

When a member wants to obtain WIR, he/she can either sell goods or services to another member or he/she can obtain a WIR credit from the coordinating centre. In this LET system, these credits have very low interest rates (for example 1% p.a. during five years for the “ecological credit”) (cf. WIR Bank, 2013b, p. 2). In practice, such credits are often guaranteed by real estate or other assets (cf. Lietaer, 2001, pp. 168).

The WIR System is similar to a regional currency for Switzerland. It also has characteristics of a sectoral currency, because it mainly facilitates economically small companies. Nevertheless, it is not a paper, but an electronic currency and it has no demurrage fee.

In the 1930s, many companies did not receive credits from banks anymore due to the world financial crisis. In the “Wirtschaftsring” (economic circle), they helped each other with WIR, an own parallel currency and recovered their businesses (cf. Helmut Creutz, 2001, pp. 589). Nowadays, approximately 20% of all small and medium-sized enterprises in Switzerland participate in the system (cf. Kennedy, 2010, p. 13). There exist check accounts and combined credit carts which accept WIR and Swiss francs.
At the beginning of the system, the concept was created according to Silvio Gesell’s theory of Free Money. During the first years, the currency was charged with a demurrage fee. Due to the pressure of the Swiss Financial Supervision the system had to be changed. Today, the currency has no demurrage fee, but WIR credits can be obtained interest rate free or at very low rates of interest (ibid., 2010, p. 14). In consequence, the system is optimizing the function of money as a medium of exchange, because credits can be obtained at low interest rates and savings do not receive interest. The hoarding of money does not make sense in this system, because the payment can only be made in WIR if the businesses belong to the system. In consequence, a demurrage fee is not necessarily needed in this system.

The WIR as a complementary currency to the Swiss franc is acting in a balancing way concerning the economy. During economically successful periods, the WIR return decreases and during economically difficult periods the return increases. In 2012, the annual WIR return reached 1.46 billion Swiss francs (1CHF = 1 WIR). Compared to 2011, the return decreased by 6%. The reason for this decrease is that Switzerland had a strong domestic economy in 2012. In consequence, the WIR as instrument of payment was not the focus of small companies in contrast to recession periods. Furthermore, the traditional attractiveness of the WIR was reduced due to the small interest rates for credits in Switzerland (cf. WIR Bank, 2012, p. 14). This mechanism is comprehensible, because a company does not need WIR if it can sell its goods on the market. If the economy slows down, a company is satisfied if it can sell its products on the market by the WIR system, or get a low priced credit. In this context the WIR system is supporting the politics of the Central Bank which should operate anti-cyclical. If the economy is strong, interest will be increased in order to avoid the overheating of the economy. If the economy slows down, interest will be decreased in order to strengthen the economy. In consequence, the WIR system is also acting in a sustainable way (cf. Kennedy, 2010, p. 14).

In conclusion, it can be said that the WIR system is since a lot of decades an effective measure for strengthening the regional economy in Switzerland. In periods where the economy is weak, the system is offering a buffer against exterior shocks, such as economic crises or a sudden increase in the interest rate of the official currency (cf. Lietaer, 2001, pp. 168). One of the biggest advantages of the WIR system is that it is offering a pre-screened and loyal client
base for participating companies. Furthermore, the credits which can be obtained are given for a much lower interest rate by the WIR Bank in contrast to national banks.

5.3 Community currencies

The third type of complementary currency presented in this Master’s thesis is the community currency. A community currency tries to handle the problems in elderly and child care, education, reduction of criminality, and the improvement of the general quality of life (cf. Lietaer, 2001, p. 179). These currencies are often used in a local environment where they try to allow localities and regions to create wealth in their local economy by matching the unmet needs with underutilized resources (cf. Gwendolyn Hallsmith/ Lietaer, 2006, p.2). Furthermore, this type of alternative currency encourages participatory democratic processes and they do not bear interest rates. In the following, one American, one Brazilian and one Japanese community currency system: “Ithaca hours”, “Curitiba” and “Fureai Kippu” is analyzed in order to evaluate its concept, theory and success.

5.3.1 Ithaca hours

Ithaca hours is the oldest and largest local community currency system in the U.S. used in the small town of Ithaca (New York). In 1991, Paul Glover developed this system. One Ithaca hour is equivalent to $10 which represents approximately one hour of work (average hourly wage in the region). Bills are being issued with the value of two, one, one half, one quarter, one eighth and one tenth of hour (cf. appendix 12).

The association of Ithaca hours is issuing the bimonthly tabloid-style newspaper “HOURS Directory” where offers of products and services of people and businesses accepting Ithaca hours are listed. In addition, the offers are listed on a website which is continuously updated with the offers and demands of the persons who want to exchange goods and services. Each provider pays $10 for a single listing in the newspaper and in return receives two Ithaca hours ($20). About 1,200 listings exist, including more than 200 businesses which publish their offers in the newspaper (cf. Lietaer, 2001, pp. 192). In consequence, the participants can search for an offer in the newspaper which matches their needs.
When a participant wants to publish an offer, the first aspect he/she has to consider is what rate of hours he/she will accept for purchases or services. Some businesses accept 100% hours, but the majority of businesses limit the hours by writing that they accept one half of an Ithaca hour maximum, for instance. In consequence, an advertiser should calculate a rate of hours that is proportional to his ability to put them back into the local economy (cf. Ithaca hours, 2013, p. 1). The businesses can also accept a quote which combines two currencies, Ithaca hours and the official currency US dollars. For example, a craftsman advertises that he wants $10 per hour for plumber works and that he accepts a payment composed of 70% in Ithaca hours and 30% in regular US dollars.

Since the start of the project in 1991, hours in the value of several million dollars have been traded. Over one thousand citizens and 500 businesses accept this complementary currency (cf. Lietaer, 2001, pp. 192).

The Ithaca hour system is very sustainable, because it is promoting local economic development. Businesses and private persons who receive Ithaca hours must spend them on local goods and services. Furthermore, the Board of Directors is giving interest-free loans of Ithaca hours to local businesses and grants to local non-profit organizations which perform various tasks for the community (cf. Ithaca hours, 2013, p. 2).

At first sight, Ithaca hours might be similar to the LET system of “Graine de Sel”. The importance difference between these two currencies is that the French system is a cashless system, whereas Ithaca hours are bills that are printed and issued. Furthermore, it is not a regional or local currency, because in the system of Ithaca hours not only businesses, but also private persons can offer services. Furthermore, Ithaca hours are not charged with a demurrage fee.

All in all, the Ithaca hour system is a successful model with very low start-up costs. However, the system requires an authority which decides centrally how much currency to issue. In this case, it is done democratically by the “Ithaca Reserve Board” (cf. Lietaer, 2001, pp. 192).

A similar system to the Ithaca hours is the “Time dollars” system which is currently applied in several hundred communities in the US. This system represents an agreement within a community to use something (goods or services) as a means of payment. For example, a citizen needs somebody who takes care of his dog for two hours. Another person accepts this offer.
In consequence, he gets a credit for two hours, while the person who initiated this agreement gets a two-hour debit. Afterwards the two-hour credit can be used in the community (for example to buy fruits) and the two-hour debit can be worked off (for example two hours work in the community garden). The different participants do not need to have matching demands and resources to complete the transaction which differentiate them from barter. The Time dollars transactions are also tax free (cf. Lietaer, 2001, pp. 189).

5.3.2 Curitiba

This case of complementary currency is different in comparison with the systems presented previously. At first sight, the reference to currencies is not evident, because it is more about a system which tried to solve problems of poverty and pollution. Nevertheless, it can be defined as a complementary currency system which will be analyzed and explained in the following.

Curitiba is a city in Brazil (state of Paraná) with currently 1.8 Mio inhabitants. The city had major problems with environmental pollution, garbage and poverty during the 1970s and 80s. Many of the residents lived for example in favelas where the streets are not big enough for garbage collection trucks. In consequence, the inhabitants had to live in a polluted environment and there were a lot of diseases which broke out.

Jamie Lerner, who became major of Curitiba in 1971, had no financial resources for infrastructural projects, like to build new streets, for instance. Furthermore, other possibilities as raising higher taxes were no option, because of the poverty of the citizens. In consequence, Lerner wanted to use surplus resources which existed already. Due to the favorable climate, the city had a lot of fruits and vegetables. In addition, there was a municipal bus system which was underutilized, because many inhabitants of the favelas could not afford the price for a bus ticket. In order to resolve the problems of the city, Lerner used these local resources (cf. Lietaer, 2010, p. 1).

First of all, big bins were installed in the favelas of Curitiba. All the citizens who brought a bag with pre-sorted garbage received a bus ticket in return. With this measure two problems were solved: the garbage was reduced dramatically and the bus system was no more underutilized. Furthermore, those people who had no money before to utilize the transportation system could go from the favelas into the city and find jobs. Another measure comprised that those who collected paper and cartons received a plastic token exchangeable for fruits and vegeta-
bles. Furthermore, schools of Curitiba developed a garbage collection program by which poorer students could be supplied with notebooks.

The bus and plastic tokens were soon accepted at local markets in exchange for food. In consequence, the system of Curitiba is a complementary currency, because bus and plastic tokens are used as a medium of exchange and they represent a complement to the official Brazilian currency Real. This system acted from necessity and the initial objective was not to create a complementary currency.

Approximately more than 70% of Curitiban households were/are involved in the programs. Over 60 poorer neighborhoods alone collected 11,000 tons of garbage and received a million bus tickets and 1,200 tons of food in return. Furthermore, other programs were created in order to create parks and housing.

Concerning economic facts, the Gross Domestic Product (GDP) of Curitiba increased 75% faster than its parent state Paraná and 48% faster than the GDP of Brazil (from 1975 to 1995). The average income in Curitiba was about 3.3 times higher than in the rest of the country (cf. Kennedy/ Lietaer, 2004, p. 49).

To summarize, it can be said that this system is a successful solution for the transportation problem, the pollution and a reduction of unemployment (cf. Kennedy/ Lietaer, 2004, pp. 46). Furthermore, there were barely costs for the city in order to introduce the system. It represents a win-win solution for the inhabitants as well as the city of Curitiba. The system also became a lot of rewards. In 1990 for example, Curitiba was honored with the United Nations’ highest environmental award, granted by the United Nations Environment Program (UNEP) (cf. Lietaer, 2010, p. 2). It is also considered as one of the best models of urban planning in the world.

5.3.3 Fureai Kippu

Japan is currently the country with the most complementary currency systems worldwide. Furthermore, the variety of those systems is very high. There are two main reasons for these facts. On the one hand, there exist less legal barriers and restrictions concerning the introduction of alternative monetary systems as in Germany and Europe for instance. On the other hand, complementary currency systems were installed already in the past (over all from 1603-1867) and are promoted and supported by the Japanese government. In the following, the
complementary currency system “Fureai Kippu” will be analyzed. Fureai Kippu can be translated into “Caring Relationship Tickets”. This system is a community currency with a sectoral reference which exists in parallel to the official Japanese currency Yen. In 1995, the Fureai Kippu system was created by the “Sawayaka Welfare Foundation” which was founded by Tsutomu Hotta (cf. Kennedy/ Lietaer, 2004, pp 169).

The objective of this system is to help elderly persons and to improve the health care system in Japan. One hour of service to an elderly individual represents the basic unit of account of this currency. The units of account exist only electronically, there are no paper bills. The system is organized in a decentralized way with computers.

The hours which a volunteer spends helping elderly or handicapped people are credited to the volunteer’s time account. This account is similar to a savings account, but the volunteers can only accumulate hours of service instead of Yen. The credits of these time accounts can be used to complement official health insurance programs. A volunteer can either utilize the credits himself or he can transfer the credits to a person of his choice (e.g. for his family). Therefore, two clearing houses exist which enable the volunteers to transfer their credits to a person of their choice.

Examples for possible services to elderly or handicapped people are help in shopping or food preparation or reading to blind people.

There exist three different models concerning the way of “payment”. As the system is decentralized and there exist various local Fureai Kippu systems, each system can decide on its concept. First of all, it can be a 100% time currency. In this model, only hours of time will be credited to the volunteers’ time accounts (comparable to the Ithaca hours, cf. chapter 5.3.1).

Secondly, the volunteers can chose between the payment of the official currency Yen and a credit of time hours. If they chose the payment in Yen, the remuneration is below the minimum wage of the region. The volunteers themselves or the persons in need of care can chose the remuneration. There exist also systems which pay cash when the volunteers have more than 200 or 300 hours of credit on their accounts. It is important to notice that cash is not a compensation for provided services but a possibility to show gratefulness. In Japan, due to cultural values it is not appreciated if a person who does not belong to the family is helping somebody without being paid. For this reason, a little remuneration is culturally appreciated.

The last model of the Fureai Kippu system envisages pre-defined quotes. In consequence, the local organization itself decides which percentage rate of the provided service is credited in
time and in cash. In the majority of cases, 10-50% are credited in hours of time (cf. Kennedy, 2005, p. 23) and the rest in cash.

In conclusion, the Fureai Kippu system is a very successful and cost effective system for both government and elderly people. It has the potential to reduce the costs of elderly care to the society dramatically. Furthermore, it is offering a better quality of life of elderly or handicapped persons, because they can for instance stay longer in their own houses and do not have to live in retirement homes. Elderly people prefer the services provided by volunteers of the Fureai Kippu system over regular services paid in Yen, because the personal connection is better and more appreciated.

5.4 Critical acclaim

Three different forms of complementary currency systems have been analyzed in the previous chapter. Regional currencies with a demurrage fee which are partially based on Silvio Gesell’s Free Money system have a high potential to strengthen the regional economy over all in times of crises. Nevertheless, these systems have to be managed well and there has to be a democratic decision on the amount of complementary currency that should be issued. In order to reduce the administration costs, it would be recommendable to change the paper currencies into electronic currencies or to offer both types of currencies (as the Chiemgauer did, cf. chapter 5.1.1). Another challenge is to determine the rate of the demurrage fee. If the fee is too high, it will be difficult to convince individuals and businesses to participate in the system. If the demurrage is too low, there is no more stimulation to spend money before maturity of the fee. Furthermore, these systems should have a number of more than 1,000 or 2,000 participants in order to show positive effects on the local economy. If the system is well organized and managed, it can generate great positive effects on the regional economy.

LET systems can be very successful and effective concerning the strengthening of the local economy as well as the community. These systems are in general easier to establish as regional currencies, because paper money is not issued. Nevertheless, theses systems have a smaller geographical scope as regional currencies. In consequence, they effect less the economy than regional currencies, but they can strengthen more the community and social aspects. One ex-
ception is economic circles like the WIR (cf. chapter 5.2.2), which can potentially have a lot of participants and facilitate the local economy. Furthermore, as these currencies are not paper but electronic currencies, time and effort have to be used in order to establish and maintain the technology.

The third type of complementary currency is the community currency. These systems have the advantage that they can be introduced for the improvement of a lot of sectors, for instance the educational, energy or health care sector. Problems like unemployment, healthcare and other social problems can be effectively mitigated by using these systems. Furthermore, they strengthen these sectors in a local environment without having high start-up costs. Nevertheless, they have to be managed in an organized way. As LET systems, community currencies have a smaller geographical scope as regional currencies and most of these currencies are electronic currencies. In consequence, the technical setup and maintenance has to be secured. Nevertheless, it has to be said that electronic currencies have in general less administration costs, work and expenses as paper currencies.

Concerning the economical evaluation of complementary currencies, they make sense for businesses with low marginal costs, because the added value should be higher for a company than the costs for an additional consumer. Cinemas for instance, have no marginal costs (if the cinema is not completely booked). An additional client does not create expenditures, because all the costs are fixed (salaries, heating costs, etc.). In consequence, a cinema could accept a client who pays 90% with a complementary currency and is more successful afterwards. They gain earnings with the official currency (10%) even so if the cinema is not using the complementary currency received from the additional client afterwards (cf. Kennedy/ Lietaer, 2004, p. 70).

All in all, complementary currencies can be very successful in order to stimulate the local economy as well as to improve various sectors and to strengthen the community. In times of economic crises, they represent an effective measure in order to stimulate the economy by reducing the volatility of business cycles. They can offer a monetary stability as well as sustainability and they can reduce international inequalities.
Furthermore, the implementation of such systems does not require high costs for the government or for the participants. They do not represent a high risk of failure. Nevertheless, they have to be managed in an organized and democratic way. Complementary currencies should be implemented, because they can balance the weakness of official currencies, facilitate social capital and democratic decisions.

6. Could a global alternative monetary system be established?

As one intention of this thesis was to explore if a global alternative monetary system can be established, this chapter is presenting and analyzing the “Terra” concept. In general, a global currency should be stable, represent an international standard of value and balance the uncertainties of the business cycle. Furthermore, it should be a complementary currency in order to support the national currencies.

In 1933, the concept of “Terra” was first introduced in the French magazine “Le Fédériste”. In 1999, the Belgian economist Bernard Lietaer rediscovered this idea (cf. Unterguggenberger Institut, 2006, p. 1). He strongly supports this concept since that time. The Terra Trade Reference Currency (“Terra”) is a supra-national complementary currency initiative which would work in parallel with the existing international currencies and systems (cf. Lietaer, 2004, p. 1). This complementary currency with the unit account Terra would be privately issued by the non-governmental initiative “Terra Alliance”. The setup of this Alliance is similar to that of a Visa credit card system. Terra would be issued as an inventory receipt for the value of the commodities (that are components of the Terra basket) that members sell to the Alliance. As the Alliance is a private organization, it does not require governmental negotiation or agreements (cf. Lietaer, 2004, p. 6).

Furthermore, Terra is a trade reference currency. In consequence, it is backed by a standardized basket of important commodities and services globally traded. The basket only consists of physical commodities which represent thus security, robustness and stability for the international trade (cf. Lietaer, 2004, p. 6).

Another characteristic of Terra is its demurrage charge as envisaged in Gesell’s Free Money system. The costs for hoarding this currency are estimated at 3.5-4% of the hoarded amount.
per annum. The objective of this fee is to let Terra circulate faster in order to stimulate commercial exchanges and investments.

Besides, Terra is constructed as a currency resistant to inflation. Inflation can be defined as “the changes in value of a standardized basket of goods and services” (cf. Lietaer, 2004, p. 6). The Terra aims to be resistant against inflation by selecting the appropriate commodities and services as for example one barrel of oil, five bushels of wheat, ten pounds of copper, three pounds of tin, one tenth ounce of gold, one Carbon Emissions Right, etc. for 100 Terras.

In the following, the mechanism of this complementary currency is described (cf. appendix 13). The first step is the creation of Terra which begins with the sale of excess commodities to the Terra Alliance by one of its members (e.g., ten bushels of wheat). The value of this commodity is calculated by the Alliance at the current market price and the sum of each of the commodities in the Terra basket (Terra unit value) (cf. Lietaer, 2004, p. 7):

\[
\text{Commodity value per unit } \times \text{number of units} = \text{Terra unit value}
\]

In consequence, the Alliance credits the calculated number of Terras to the wheat producer. In a second step, the Terras are in circulation and can be used by the wheat producer to pay its suppliers partially or completely with Terras. When the currency is created and in circulation, a demurrage fee is in effect. The wheat producer for instance would have to pay the demurrage fee proportionally to the time period he held Terra. The fee is estimated at 3.5-4% per year. As Terra is not a paper, but an electronic currency, the members have an exact overview of the time period between the creation of Terra and the transfer to another member. The complementary currency is charged with a demurrage fee in order to stimulate the circulation and to cover the operational costs (e.g., administrative costs, transaction fees) (cf. Lietaer, 2004, p. 9). With this mechanism interest rate can be avoided and a stable global currency which is 100% hedged on goods can be created.

The fourth step can represent the Terra cash-in. In this scenario, a user decides to cash in part or all of its Terras (e.g. to pay its taxes in official currency). In consequence, the circulation of a particular Terra ends and the member has to pay a transaction fee. This fee is similar to the re-exchange fee of the Chiemgauer and the Bremer Roland where the participants have to pay a certain fee when they want to re-exchange their regional currency into Euros (cf. chap-
In the Terra system the fee amounts to 2% of the amount of Terras re-exchanged in the official currency. This fee is charged in order to keep the Terras circulating and to facilitate the beneficial effects. When a member decides to cash-in its Terras, they can be converted to the national currency or he gets a volume of Terra commodities (determined by the user) to the amount equal to the value of the Terras cashed in minus the transaction fee.

Once the mechanism of the Terra reference currency is functioning and the currency is known as an international standard, two potential members will not have problems to operate transactions with Terra as (partial) currency (cf. Lietaer, 2004, p. 10).

The objective of Terra is to create a reliable, stable and international standard of value. In contrast to the gold standard, which was backed by only one commodity (gold), Terra is backed by various (e.g., twelve) commodities and services. In consequence, it is more stable and reliable than the gold standard.

Concerning the implementation into practice of the Terra system, political barriers could cause a problem. Due to political differences between nations, it could be difficult to implement a common currency, because they could think that the currency would lead to a loss in political sovereignty. In my opinion, the organization of the Terra Alliance has to be clarified in order to provide confidence. Who is controlling all the transactions? What happens if two members have a conflict? These questions have to be answered amongst others in order to attract potential participants.

Other critics say that the realization of this system would be too complex. However, the system could be introduced by few international companies as a pilot scheme. In consequence, if the test is successful it can be spread. Margrit Kennedy is of the opinion that this system is easily introducible, because nowadays one third of the global trade is being operated by countertrade transactions due to big currency volatilities. In consequence, the Terry system is replacing the direct barter trade by a new international alternative monetary system (cf. appendix 6). From a legal point of view the Terra means a standardization of countertrade. Legislation for countertrade already exists in most nations around the world (cf. Lietaer, 2004, p. 6).

Terra is a global currency which would facilitate the international exchange of the most important goods and services worldwide. Furthermore, it is about an alliance of big companies which use their delivery receipts as instruments of payment. In consequence, they are always
100% hedged on goods. If the global economy overheats, then the wares are needed, but there is less money. Due to the scarcity of money the overheating will go down. And the opposite way around: If the worldwide trade is slowing down, fewer goods are needed and with the means which became free the economy can be leveraged. Furthermore, it is an inflation-resistant currency, because more than ten appropriate commodities and services are selected for the basket.

In the past, a lot of economists proposed commodity-basket currencies. There were not implemented, because of a technical problem or because the concept was too complex (cf. Lietaer, 2004, p. 15). The main problem was that these proposals wanted to replace the existing monetary system. The Terra system in contrast is a complementary system and would balance and improve the current problems of the existing financial system. Gernot Nerb, a recognized international expert on the business cycle is of the opinion that: “The Terra mechanism would provide an automatic counter-cyclical stimulus to the world economy, thereby dampening the depth of recessions as well as reduce the risk of inflationary booms. Such a tool could be particularly useful in a period of a simultaneous recession of the three major world economies as we are currently engaged in.” (Cf. Lietaer, 2004, p. 2).

To sum up, it can be said that the Terra system represents a concept of a global currency which is inflation-resistant and charged with a demurrage fee. This complementary system has a high potential, because companies are already using countertrade transactions. In consequence, the realization into practice of Terra is possible and should be tested by big companies in a pilot scheme. Nevertheless, aspects as the control of the transactions have to be clarified in order to provide stable frame conditions and confidence for the potential members.
7. Conclusion

Alternative monetary systems gained importance during the last two decades due to the instability and crises of the existing financial system. For this reason the objective of the presented Master’s thesis was to debate about historical and current alternative monetary systems in order to identify and evaluate their concept, theory and success.

In the first main part of this paper the theories of interest and alternative monetary approaches of Silvio Gesell, John Maynard Keynes and Irving Fisher were analyzed. Furthermore, a critical acclaim of their theories as well as their proposed systems has been subjected. The main outcome of this criticism was that all three economists developed alternative monetary systems and reforms which could have been very effective at that time. Nowadays, these systems have to be adapted by being complementary currencies instead of replacing the official currencies or by guaranteeing the preservation of national sovereignty for instance.

Finally, the approaches and theories of the three economists have been compared in order to present the most significant similarities and differences. In summary, Gesell, Keynes and Fisher have some common ideas and approaches, but it is important to emphasize that they arrive at different conclusions. Concerning the politico-economic consequences, Gesell wanted to replace the existing monetary system whereas Keynes and Fisher sought to change the system.

One aim of this thesis to analyze historical alternative monetary systems was reached in the third chapter. It had been noticed that two practical examples of monetary systems based on Gesell’s Free Money system (WÄRA, Wörgl) were very successful in the past, because they stimulated the economy. Nevertheless, the pure Free Money system cannot be realized nowadays, because it aimed to abolish the existing financial system. However, in a globalized economy this approach is impractical, because countries cannot afford to exclude themselves from worldwide trade and agreements. Furthermore, from a legal point of view countries would not accept the abolishing of their official currency. For this reason, alternative monetary systems have to represent a complement to existing official currencies.

In consequence, a definition of complementary currencies has been developed in the fourth chapter which indicated that these non-national currencies are used in parallel with official currencies based upon a common agreement within a community and that they perform social
functions. Furthermore, the development of these systems has been presented with the outcome that they gain more and more importance worldwide.

Another objective of this thesis, to analyze and evaluate the success of current complementary currencies has been reached in the next chapter. Two German regional currencies have been analyzed: the Chiemgauer and the Bremer Roland are partially based on the Free Money system of Silvio Gesell, because they are charged with a demurrage fee and there are no interest rates. The Chiemgauer has been successfully established and the number of members is continuously increasing. The Bremer Roland is a regional currency with a high potential, but is not very successful yet, because its scope of activity is limited. In consequence, its association has to enlarge their concept.

Furthermore, two Local Exchange Trading Systems, the French Graine de sel system and the Swiss WIR Ring, have been evaluated. The French system is an effective complementary system, because it simplifies the exchange between participants without taking interest rates or additional costs. The WIR Ring is able to strengthen the local economy in times of weak economy, because it is offering a buffer against exterior shocks.

Finally, the community currency systems: Ithaca hours in the U.S., Curitiba in Brazil as well as the Fureai Kippu in Japan have been presented and analyzed. For the community, the Ithaca hour system represents a successful model with low start-up costs, but it requires an authority which has to decide about the amount of currency that should be issued. The Curitiba system in Brazil is a win-win situation for the inhabitants as well as for the city, because it resolved the problems of unemployment, pollution and the transportation problem. In Japan, the Fureai Kippu system represents a benefit for the government as well as the society due to the cost reduction of elderly care and the better quality of life which is reached thanks to this community currency.

Finally, all these current complementary currency systems have been criticized. It can be concluded that these systems can be very successful in order to stimulate the local economy as well as to strengthen the community. Furthermore, they are able to offer a monetary stability, sustainability and reduction of international inequalities. Nevertheless, they have to be managed well and there has to be a democratic decision on the amount of complementary currency to issue.

The last chapter of this Master’s thesis dealt with the question whether a global alternative monetary system could be introduced or not. It had been noticed that the Terra concept repre-
sents a global complementary currency which is inflation-resistant and charged with a demurrage fee. In consequence, it has a high potential to become an international standard of value. This system could be put into practice, but it has to be tested by big companies. Furthermore, aspects as the control of the system have to be clarified in order to provide stable frame conditions for the potential members.

All in all, it can be accentuated that the presented Master’s thesis dealt with theoretical as well as practical approaches and systems of alternative monetary systems. Three economists and nine case studies of historical complementary currencies as well as current ones have been analyzed and evaluated. Furthermore, quantitative as well as qualitative facts have been used in order to analyze and evaluate these systems. In consequence, the results and statements of this paper are significant. Nevertheless, there exists a further need of analysis and research. It would be recommendable to analyze if economic circles as the WIR Ring are more efficient when charging the currency with a demurrage fee for instance. Furthermore, smartphones can be used as instruments of payment nowadays. The loss in value of credit on cell phones due to the consumption of time represents a standard of today’s payments of cell phone bills. Therefore, it would be interesting to create a system based on the Free Money or Stamp Scrip system which would function with such a digital clearance. The credit just had to be universally applicable and accepted. In consequence, the administration costs would be reduced significantly and the system would attract more potential participants.

In summary, the introduction of complementary currency systems is recommended, because they have the potential to strengthen the economy as well as the community. Over all, in times of weak economy, these systems can support the national currency by stimulating the local economy. Furthermore, they do not represent a high risk of financial failure due to low start-up costs.
8. Appendix

Appendix 1: Concentration of wealth

Only a minimal part of society benefits from the dynamic of the compounded interest rate. In Germany, 80% of the population is paying in average more than the double of interest (for credits or hidden interest rate in prices as rent, electricity) than they receive. Only 10% of the population has a positive interest balance (cf. Kennedy, 2011, pp. 29).
Appendix 2: Increasing volume of investments brings a decreasing return

(Senf, 2007, p. 119)

The consequence of increasing investments is a decreasing return. If the return falls under the interest rate, a crisis breaks out. The X-Axis on the graph represents the volume of investment and the Y-Axis represents the interest rate. In the presented case, the capital interest rate is equal to 6. If the return falls under the capital interest (6), the appropriate investments stop. The consequence is a macroeconomic crisis (represented by the flash).
Appendix 3: WÄRA stamps

(Deutsche Geldschein- und Wertpapiersammler e.V., 2012, p. 2)

(Deutsch historisches Museum, 2013, p. 1)
Appendix 4: WÖRGL – stamps

(Unterguggenberger Institut, 2007, p. 2)
Appendix 5: Interview with Bernd Senf about alternative monetary systems

Bernd Senf is a German economist, book author and former professor of the “Hochschule für Wirtschaft und Recht Berlin”. The interview was hold in German on the 20th of May 2013 in a written form (own translation).

1) In your book „Der Nebel um das Geld“ you present critical aspects of the free economy model. You write for instance that after the introduction of a Free Money system, speculations or capital flight could be possible. Do you think that the advantages or disadvantages of the Free Money system predominate?

In my book I wanted amongst others at first appreciate Silvio Gesell and his theory of free economy (which does not appear on the course of instruction of universities or universities of applied sciences), especially his fundamental criticism on the interest rate system. The critical aspects I mentioned carry less weight in contrast to the positive ones. In my opinion, other popular economic theories have more serious blind spots.

2) Some regional currencies, as the Chiemgauer, are partially based on the Free Money system of Silvio Gesell. Interest free credits are given and the currency is charged with a demurrage fee in order to accelerate the velocity of circulation of money. The example of Wörgl has shown that this system can be very successful. Are you of the opinion that a Free Money system based on the theoretical propositions of Gesell, can be realizable nowadays?

The example of Wörgl in 1932 was indeed an impressive model of a regional revival of business, in the middle of the world economic crisis, which got a lot of international attention. With the current crises tendencies, similar and further developed models of regional currencies or parallel currencies will gain in importance.

3) Why do Germany/ Europe need complementary currency systems? Which main problems exist in our current financial system?
I see the main problems of our current monetary system on various levels in which the respective crises tendencies interfere with each other:

a) On the level of the monetary system in general, the dynamic of the compounded interest rate as well as the previous way of creating money (by private central banks, as the FED and for the most part by private commercial banks in terms of check money) are main problems. As an alternative to these problems I see the “Monetative – Geldschöpfung in öffentlicher Hand” (http://www.monetative.de/). As a third main problem, I consider the speculative financial markets which become independent compared to the real economy after the annulment of the separate banking system in 1999. The call for the reintroduction of the separate banking system (Glass-Steagall-Act) is the result from it.

b) The special position of the US Dollar as national and international instrument of payment (the dollar as worldwide currency). An alternative for it would be the separation of national and international liquidity – similar to the Bancor developed by Keynes.

c) The constructional defect of the Euro from the very beginning (to which I cautioned against already in 1996) and the failed policy of the Euro rescue fund. An alternative to this problem could present an orderly exit out of the Euro – especially by the Southern peripheral countries – in combination with a partial debt cancellation.

4) Not only Silvio Gesell, but also John Maynard Keynes and Irving Fisher developed alternative monetary systems as the Bancor Plan or Stamp Scrip. Are you of the mind that these systems could be realized into practice?

The Bancor Plan of Keynes 1944 referred to the international currency system after the Second World War. It was certainly more rational than the created Bretton-Woods-System at that time with the hegemony of the US Dollar, which continues in a changed form (as Petro Dollar) until today. Irving Fisher’s commitment to the Stamp Scrip movement was also an appreciation of Silvio Gesell’s ideas of monetary reforms (at least on regional and federal level). Important suggestions for necessary future reforms of monetary systems can be taken from the two monetary reform approaches.
5) Which complementary currency system could be developed for the European Economic Area? Which advantages and disadvantages exist?

*In the current crisis of the Euro not only the propagation of regional currencies as “rescue boats”, but also the creation of national parallel currencies to the Euro with an integrated stimulation in order to let money circulate faster and with a “sinking brake” (Abflussbremse) (“Express-money”) could be supposable.*

6) Which positive and negative developments could occur in the future concerning complementary currency systems?

*We should learn from the positive experience with alternative monetary systems, but also from the partially made mistakes in the past. Furthermore, future reform models should be held open for possible necessary corrections.*

**Remark:**

*Answering the questions in few sentences is not easy for me. My perception to the problematic of the current financial system and necessary alternatives is extensively presented in my books:*

- *Der Nebel um das Geld*
- *Die blinden Flecken der Ökonomie*
- *Der Tanz um den Gewinn*

*as well as in my videos on the Internet:*

- *Tiefere Ursachen der Weltfinanzkrise (4 parts)*
- *Geld regiert die Welt – Die Entschleierung der Geldherrschaft (7 parts).*
Appendix 6: Interview with Margrit Kennedy about alternative monetary systems

Margrit Kennedy is a German ecologist, professor, book author and monetary expert. The interview was held in German on the 20th of May 2013 in a written form (own translation).

1) On your website (http://www.margritkennedy.de) you write that we do not have a temporary financial problem, but a systemic problem. What exactly do you mean?

In the past, the possibilities to resolve financial crises have been collapses, social revolutions and wars. Collapses, like in the 1920s never changed the system. Social revolutions always lead to the situation where representatives of the 10% of the richest persons have been killed. This possibility has also never provoked a fundamental change of the system. Wars, like the First or the Second World War have not changed the monetary system either. The financial crisis of 2007/08 is not a temporary financial problem. The monetary and financial problems exist since a long time indeed for thousands of years and for this reason we have a systemic problem. The monoculture of official instrument of payments generates structural instability. Nowadays, with a global operating financial system, such historical possibilities are not effective anymore. In consequence, we need a new systemic solution.

2) What are the misconceptions of money?

There exist a lot of misconceptions of money. For instance that interest is wonderful for everybody since we all get it if we save or invest money. What most people do not realize is that we do not pay interest only if we borrow money, but interest is included in every price (garbage collection, social housing etc.). And if we look at who profits and pays in this system we can see a hidden redistribution mechanism which redistributes money constantly from 90% of the population to 10%, from the large majority to a small minority. The wealthiest people and organizations receive a steady rent from those who need to borrow or work for their money in order to obtain the necessary medium of exchange. Therefore, if we could abolish interest and replace it with another mechanism to keep money in circulation, most of us could either be twice as rich or work half of the time to keep the same standard of living we have now. Furthermore, money and interest rates follow an exponential growth pattern. This creates a con-
stant pressure for economic growth and explains another systemic problem with our monetary system today. The solution to the problems caused by these is to create a monetary system which follows the natural growth curve.

3) The economist Silvio Gesell identified a longtime ago that money has a supreme advantage over goods, because it can be hoarded. In consequence, he developed the Free Money system where money is charged with a demurrage fee. Do data already exist which confirm the benefit of demurrage? (Using the example of the Chiemgauer or other regional currencies)

Money with a demurrage fee circulates faster. It has been noticed that the Chiemgauer for example, is circulating three times faster than the Euro. In consequence, this complementary currency is offering a higher value added for the region and the regional economy will be facilitated. Instead of buying cheese from the Netherlands, you buy regional cheese. In consequence, the cheese vendor has an income and he spends it in the region. In this way a new cycle is being established which did not exist before.

4) In contrast to the Chiemgauer which is already very successful, the Bremer Roland is not widespread. Which are the reasons?

The Bremer Roland does not have the same active team as the Chiemgauer which spreads the regional currency. Furthermore, the Bremer Roland focuses mainly on the facilitation of the biodynamic agriculture.

5) What are the advantages of regional currencies?

With regional currencies a partial decoupling from globalized economy happens. They increase the use of regional products and services. In consequence, the added value and surpluses remain in the region. Furthermore, with regional currencies the community keeps its essential public utilities and there is a closer links between consumer and producer. Finally, they are strengthening regional identity & diversity and reducing need for transport and energy.
6) Furthermore, there exist amongst others educational currencies, energy currencies, care tickets and economic circles (Tauschringe). What obstacles exist concerning the realization of these systems? Could you present some examples of these alternative currencies?

There are two major obstacles preventing the practical conversion of our interest-based money into a means of exchange which would serve everyone. First: Few people seem to understand the problem, and secondly, successful experiments are thinly spread all over the world in comparison to "normal" money trade.

Since 1995, there exists the Fureai-Kippu (Care tickets) in Japan which support care of elderly with help from younger people who get hour credits which can be used at a later date in another part of the country or by another person.

Since 1934, there exists the WIR-Wirtschaftsring in Switzerland with more than 60,000 members and an average turnover per year of 1.5 bn WIR. It has been proved that this system has anti-cyclical effects and it supports policies of government.

7) Which are the differences between complementary and traditional currencies?

Complementary currencies are designed to serve a specific purpose in contrast to the present money system which is used mainly to make more money out of money. Furthermore, they are limited and transparent instead of general accepted and obscure. The system of complementary currencies is usually democratically organized in contrast to the central control of the traditional system. In addition, complementary currencies use a circulation incentive instead of an interest rate. They are also inflation-resistant in contrast to traditional currencies which are inflation-prone. In a social context, they are promoting and rewarding the community whereas traditional money destroys it.

In conclusion, it can be said, that complementary currencies are a win-win solution for everybody instead of only 10% of the population who benefit from interest rates in the traditional system.

8) Do you think that alternative monetary systems are in competition with the EURO?
No, they are a complement to the EURO. All these systems function as complementary systems. This characteristic is its biggest strength which would create benefits for the present system by stabilizing the economy. Today, it is known from the complexity research that stability is being generated by a balance of efficiency and variety. The present system is optimized to create more and more efficiency. But the advantages of a bigger monetary variety over all with regard to a stabilization of the financial system are rarely taken into account. Parallel currencies try to create a greater stabilization and sustainability due to variety and decentralization instead of over-efficiency of the global monetary system. For these reasons, it is so important to understand that these parallel systems are of use for the whole financial system. We therefore need to abandon the monetary monopoly. In Germany, we disestablished all the monopolies which existed (post monopoly, train monopoly, water/electricity/gas monopolies) in our economy. Only the money monopoly is not treated by politicians. This is a big mistake, because this monopoly is the most harmful for the real economy. Of course it has contributed for a while to efficiency, but at the expense of sustainability.

9) Are there solutions for the global trade relations?

There exists an interesting proposition for the world economy; the introduction of a global currency called “Terra”. This would be an inflation-secured alternative currency which would facilitate enormously the international exchange of the most important goods and services. The system is about a global alliance of big companies which use their delivery notes as instruments of payment. Those are always 100% hedged on wares. An “anti-cyclical mechanism” arises. If the global economy overheats, then the wares are needed, but there is less money. Due to the scarcity of money the overheating will go down. And the opposite way around: If the worldwide trade is slowing down, fewer goods are needed and with the means which became free the economy can be leveraged. This system is easily introducible, because nowadays one third of the global trade is being operated by the so called countertrade transactions. Big companies as Siemens and Daimler Benz have countertrade divisions which organize the direct exchange of goods, for instance Pepsi-Cola from the US against vodka from Russia. This deal can be accomplished because currency volatilities become bigger and bigger and when negotiating long-term transactions companies often do not know if they make a
gain at the end. For this reason, hedge funds are being used in order to minimize such risks or you change to the direct exchange of goods and services.

10) In consequence, is the Terra based on the principle of the direct barter trade?

No, this currency is replacing the direct barter trade (countertrade or barter transactions) by a more intelligent medium namely a new international monetary system. The Terra would be charged with a demurrage fee, too. This demurrage would transfer the storage costs of the goods, which have to be paid in any event by somebody, to the possessor of money. The company which has Terra units on its account knows that hoarding Terra will cost daily money. In consequence, the firm will try to not hoard Terra, but to spend it. With this mechanism interest rate can be avoided and a stable global currency which is 100% hedged on wares can be created. This is a completely new idea.
Appendix 7: Presentation of different types of currency

<table>
<thead>
<tr>
<th>Type of currency</th>
<th>Purpose</th>
<th>Medium</th>
<th>Functioning</th>
<th>Process of money creation</th>
<th>Cost recovery</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard currency</td>
<td>Official instrument of payment</td>
<td>Forms of combination</td>
<td>General instrument of payment</td>
<td>Loan against security</td>
<td>Transaction fees, interest</td>
</tr>
<tr>
<td>LETS</td>
<td>Social (unemployment, solidarity)</td>
<td>Electronic (PC)</td>
<td>Medium of exchange, no interest</td>
<td>Mutual Credit</td>
<td>Member fees and various other forms</td>
</tr>
<tr>
<td>Time dollars</td>
<td>Social (care of the elderly, students, solidarity)</td>
<td>Electronic (PC)</td>
<td>Measure of value (time), medium of exchange, no interest</td>
<td>Mutual Credit</td>
<td>No cost recovery</td>
</tr>
<tr>
<td>Ithaca hours</td>
<td>General</td>
<td>Paper, Internet</td>
<td>Measure of value (time), medium of exchange, no interest</td>
<td>Purchasable coupons</td>
<td>Entrance fee</td>
</tr>
<tr>
<td>Chiemgauer</td>
<td>Business connections, social</td>
<td>Paper, Electronic</td>
<td>Medium of exchange, no interest</td>
<td>Purchasable coupons</td>
<td>Demurrage and re-exchange fee</td>
</tr>
<tr>
<td>Bonus miles</td>
<td>Business connections – B2C</td>
<td>Electronic</td>
<td>Measure of value, medium of exchange, no interest</td>
<td>Purchasable coupons</td>
<td>Few additional costs</td>
</tr>
<tr>
<td>WAT</td>
<td>Business connections – B2B, B2C</td>
<td>Paper</td>
<td>Measure of value, medium of exchange, no interest</td>
<td>Mutual credit</td>
<td>No cost recovery due to no costs</td>
</tr>
</tbody>
</table>

Appendix 8: CHIEMGAUER – coupon

(Chiemgauer, Infoblatt Chiemgauer 2010, p. 1)
Appendix 9: Interview with Christian Gelleri about alternative monetary systems

Christian Gelleri is the initiator and executive director of the most successful European regional currency Chiemgauer. The interview was held in German on the 24th of May 2013 during a telephone conversation (own translation).

1) The Chiemgauer is currently the biggest regional currency system in Germany and one of the most successful complementary currency systems worldwide. What are the reasons for this success?

As the Chiemgauer was developed in a project with me and pupils of the “Waldorfschule Chiemgau”, the starting conditions were very favorable. There existed already a network of pupils, parents and teachers. Another reason for the success was our team which succeeded to activate a lot of people and the environment. Furthermore, the scope of the Chiemgauer is not limited to one field of activity (as the organic agriculture for instance). The organic agriculture plays an important role in our system, but it is not the only field of activity which is facilitated. In addition, a bonus of 3% is used in order to facilitate pre-defined activities (gym, or sports clubs for instance). In consequence, a lot of people are interested in the Chiemgauer, because it is offering an added value for the participants, for the regions and for social activities.

2) Is the regional currency based on the Free Money system of Silvio Gesell?

It is partially based on Gesell’s ideas.

Yes, because the model for our regional currency is based on the Wörgl experiment. We made some adaptations: The system of Wörgl envisaged a devaluation of 1% monthly (12% p.a.) and Gesell’s Free Money system envisaged a weekly devaluation of 0.1% (5.2% p.a.). The Chiemgauer looses 2% of its value quarterly (8% p.a.). The idea of a demurrage fee was also taken from Gesell’s ideas. Furthermore, I am of the opinion that the ideas of negative interest rates and demurrage fees are beneficial for the economy.

No, because Gesell’s Free Money system is state-oriented. He wanted that Free Money becomes a legal instrument of payment. The Chiemgauer in contrast is not a Free Money sys-
tem, but a complementary currency and does not want to abolish the Euro. For this reason, “Gesellianer” refuse the Chiemgauer, because it is “only” a complementary currency. Furthermore, Gesell was more a world economist and did not focus on regional economy. The Chiemgauer is a regional complementary currency and is focused on one region.

3) Thanks to the Chiemgauer, interest free credits can be given and the currency is charged with a demurrage fee in order to let money circulate faster. Which advantages and disadvantages exist for private persons and companies concerning a demurrage fee?

The biggest advantage of the Chiemgauer is that it is offering stability for private persons and especially for companies. At first glance, private persons are psychologically deterred from the demurrage fee. But when they participate in the system and use the Chiemgauer in their everyday life during the first 2-3 weeks, they remark that they only have minimal costs and that the system is offering a lot of advantages. In a long time perspective, the advantages are more and more remarked and appreciated. The velocity of circulation of the Euro or the Yen decrease continuously and they are not stable in contrast to the Chiemgauer.

4) The Chiemgauer is approximately circulating three times faster than the Euro. Nevertheless, the development seems to be volatile. Why for instance was the velocity of circulation of the Chiemgauer very high in 2006/07?

In the first years, when a new system is introduced, there are always volatilities until the system is established. In 2006/07 the electronic Chiemgauer (eChiemgauer) was introduced. Furthermore, we had problems to meet the demand and to print enough Chiemgauer. In consequence, the velocity of circulation increased. In the last years, the system calmed down and the development became more stable.

5) Do data already exist which confirm the benefit of the Chiemgauer for the region? Did the region for example become economically stronger? Are there social improvements?
The volume of the Chiemgauer (6.5 Mio € in 2012) is compared to the whole region relatively small. Nevertheless, the participating businesses report that the Chiemgauer is offering stability for them and especially customer loyalty.

Furthermore, without the Chiemgauer some companies would not exist, because the currency is facilitating small businesses with micro credits. As there is currently no economic crisis in the region, it is difficult to estimate the economical improvement for the region.

In a social context, the Chiemgauer is strengthening the community and the facilitation of educational establishments, social projects or sports clubs. The 3% bonus is also offering free available money for the projects and does not, like a lot of other sponsorships, envisage a pre-defined objective. In consequence, the associations can act freely. The educational sector is mostly facilitated by the 3% bonus. Furthermore, the 3% bonus is not only freely given, but it is also motivating, because the money does not only come from private donators, but also from businesses of the close environment. A gym for instance has been created, which would not have been built without the Chiemgauer and its 3% bonus. This building improved the atmosphere of the community.

6) What is your outlook concerning the development of the Chiemgauer?

There still exists growth concerning the number of memberships. Currently, we have each month 20 new members who want to participate in the Chiemgauer’s system. In consequence, the growth is very stable. The growth rate in contrast is decreasing because it is also limited, as the Chiemgauer is focused on one region. Nevertheless, the popularity of the Chiemgauer is still very high.

7) What is your conclusion of the congress of the 10 years existence of the Chiemgauer?

The researchers arrive at the conclusion that the Chiemgauer has successfully been established and that the system is functioning very well.

Concerning the number of attendance of the congress, it has been remarked that there are more and more persons from the region who come to the event. The participants do not only use the notes, but they are interested in the region and the topic of complementary currencies. The general feedback of the congress was very positive and motivating.
Appendix 10: BREMER ROLAND – coupon

(Regionotes, 2011, p. 1)
Appendix 11: Interview about alternative monetary systems – Roland Regional

The Roland Regional is an association which developed the first German regional currency: Roland. The interview was held in German on the 23rd of May 2013 in a written form with the executive director Karl-Heinz von Bestenbostel (own translation).

1) How much businesses, associations and private persons are currently using the complementary currency „Bremer Roland“? How did the membership develop (2001-2013)?

All in all, we have 260 participants. Half of these participants are vendors. We do not differentiate between contractors and private persons who offer services as a part-time job. Surprisingly, the increase of the number of membership is very constant of about 25 per annum.

2) Which turnover in Roland (ROL) was generated in 2012? How did the turnover develop (2001-2013)?

In 2012, the turnover was about 500,000 ROL. In contrast to transferred coupons, we enter each turnover in our current account system so that the figures are very exact.

<table>
<thead>
<tr>
<th>Year</th>
<th>Roland Points</th>
<th>Euro</th>
<th>Members</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Turnover from October 2001 on</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2001-2002</td>
<td>2,000</td>
<td></td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>2003</td>
<td>20,000</td>
<td></td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>Augustana data bank</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2004</td>
<td>65,000</td>
<td></td>
<td>80</td>
<td></td>
</tr>
<tr>
<td>2005</td>
<td>115,000</td>
<td></td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>2006</td>
<td>165,000</td>
<td></td>
<td>130</td>
<td></td>
</tr>
<tr>
<td>2007</td>
<td>170,000</td>
<td></td>
<td>150</td>
<td></td>
</tr>
<tr>
<td>approximately 6000 book entries</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2008</td>
<td>226,433</td>
<td>104,374 €</td>
<td>177</td>
<td>2.17:1</td>
</tr>
<tr>
<td>2009</td>
<td>360,934</td>
<td>153,277 €</td>
<td>206</td>
<td>2.35:1</td>
</tr>
<tr>
<td>2010</td>
<td>372,180</td>
<td>153,465 €</td>
<td>226</td>
<td>2.42:1</td>
</tr>
<tr>
<td>2011</td>
<td>288,150</td>
<td>132,747 €</td>
<td>239</td>
<td>2.17:1</td>
</tr>
<tr>
<td>2012</td>
<td>498,654</td>
<td>241,362 €</td>
<td>251</td>
<td>2.07:1</td>
</tr>
<tr>
<td>Outlook</td>
<td>2013</td>
<td>570,000</td>
<td></td>
<td>270</td>
</tr>
</tbody>
</table>
3) The Roland is partially based on the Free Money system of Silvio Gesell. Interest-free credits are given and the currency is charged with a demurrage fee in order to let money circulate faster. Which advantages and disadvantages is a demurrage offering for businesses and private persons?

*Our impression is that the demurrage fee is rarely noticed. In relation to account fees and interest paid on overdraft, the amount for the demurrage fee is minimal. Furthermore, we offer special conditions for some businesses.*

4) Do data exist which confirm the benefit of a demurrage fee? Is the Roland circulating faster than the Euro?

*This is not relevant for our system. Concerning the exchange of goods and services consumers and vendors have to question themselves if they take ROLAND or Euro. But many persons do not notice this alternative. For us the perception is important that a high number of vendors remarked that they can do their business independently from the expensive Euro. It is also interesting for us, that many consumers report that money in ROLAND is spend more easily than in Euro. The consumers are more generous.*

5) Do data already exist which confirm the benefit of the Roland for the region? Did the region for example become economically stronger? Are there social improvements?

*No, in this context our number of participating members is too small. Nevertheless, the ROLAND is an institution which is consistently invited to events.*

6) Which critical aspects exist concerning complementary currency systems?

*Concrete to the ROLAND, we noticed following problems or questions which came up: If you do not offer online banking, you do not have a chance. How can I see my current account balance? Other reactions are:*

1. *Why? The Euro is great and the Greeks are lazy!*
2. *Yes, there is a problem! Nevertheless, people do not become members.*
3. Yes, there is a problem and I participate! And then they do not make turnover.
4. Yes, there is a problem and I participate and become a member.

7) Are you of the opinion that alternative monetary systems are a competition for the Euro?

Yes and no. In a formal regard, each turnover which is alternatively made, is a loss for the Euro. The question which follows is who wins and who loses?
Concerning the aspect of power the question rises if somebody is constraining my profit and am I powerful enough to abolish it on a political level?
With regard to alternatives, a complete other context is concerned: Am I in favor of a paradigm change? Is it a matter of the quality of life of people or of the functioning of the markets? How do we want to create life after the “Peak everything” (Niko Paech)?

8) Which positive and negative future developments could occur concerning complementary currency systems?

Each development depends on interests and power.
Positive developments: It is possible to establish connectivity in which the members of regional communities feel better than people who are not members. The reasons are the security, but also the use of surpluses for culture and education.
During future crises (which we expect to break out), regional currencies represent a real alternative. They are so strong that people in the region use them in order to satisfy existential needs.
Negative developments: With the increasing significance of regional currencies, the “global players” lose profits. They use their power in order to criminalize these initiatives. We, as critics of interest rates, emanate from a necessary crash of the financial systems. If our initiatives are not strong enough, they will be swept by others.

9) According to the free economy literature, the critical number of members of a regional currency system is about 2,000 participants. Only if this aspect is fulfilled stable and closed cycles can be established. With currently 260 members the Bremer Roland does not reach this critical number. How do you want to make the Roland more successful?
We do not know the number of 2,000 participants and we do not see us as “Freiwirtschaftler”. Nevertheless, the question towards a better success is justified. On the other hand, we remarked at the Chiemgauer congress that despite a high number of members, there exist however high resistance.

In order to make the ROLAND more successful, our legal basis has to put on another level. Our focus has as fundamental problem the situation of organic farmers. Nevertheless, it does not succeed yet to present this as an advantage for the consumers. If we criticize the monetary system, we have to provide a better alternative to the members, interest-free money, also in Euro. In this context, we work on two alternatives:

- How can we finance projects of the members, also of the consumers, without being a bank?
- How can we acquire productive capital which we can in consequence provide to the members so that the results represent a direct benefit for the members?

The conceptual questions are well developed. We have to clarify the legal questions. It follows an arrangement with an appropriate security.

If a regional currency wants to be successful, it has to serve/treat a problem of people. Currently, we treat a problem of the monetary system. Here exists a need of development. We think in the direction: something new complementary to the old.

10) What is your outlook concerning the development of the Roland?

We do not have exact prognoses. If economists who deal with regional currencies predict that regional currencies could cover 30% of the demand, than we talk about 30 billion Euros for the ROLAND in the region of Bremen/Bremerhaven. This is relativizing a lot with regard to our turnover of 0.0005 billion Euro.
Appendix 12: Ithaca Hours – bills

(Paul Glover, 2013, p. 3)

(Paul Glover, 2013, p. 3)
Appendix 13: Mechanism of the Terra Trade Reference Currency

Terra Trade Reference Currency Mechanism

(Lietaer, 2004, p. 8)
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Statutory Declaration

I herewith formally declare that I have developed and written the enclosed Master’s Thesis completely by myself without anyone else's assistance. Where ever I have drawn on literature and other sources, either in direct quotes, or in paraphrasing such material, I have given the reference to the original author, or authors, and to the source where it appeared.

I am aware that the use of quotations, or of close paraphrasing, from books, magazines, newspapers, the internet, or other sources, which are not marked as such, will be considered as an attempt at deception and that the thesis will be graded with a fail.

Berlin, 10\textsuperscript{th} of July 2013

Place, Date

Lina Laubisch