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FINANCIAL STABILITY
A CASE FOR COMPLEMENTARY CURRENCIES

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Reasons for my look at Monetary Sustainability

In the late seventies, environmentalists – among which I count myself - were among the first to question, why economic reasoning demanded exponential growth returns that the planet could never sustain. We discovered that there was severe lack of understanding of the most basic facts about money amongst laymen as well as professional economists. Remarkably little research by economists had been devoted to the questions of money creation and functioning. Up to this day, it remains almost taboo to discuss it, both, for economists and governments, as if the global monetary system was a fundamental given. However, nothing could be further from the truth.

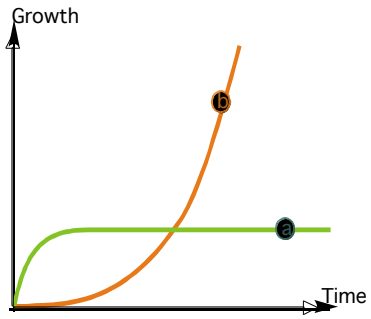
In this paper, I will summarize my learning process, which started in 1982, when I first asked the questions: Why the ecological renewal measures for Berlin we were planning would not be considered "economical"? As most people wanted to move towards a sustainable life style in the city, I felt that there had to be something wrong with the economic system, if it was the cause for preventing us from implementing them. Looking into this issue somewhat deeper, I found that there is a basic antinomy between ecology and economy due to a well-hidden problem in our money system.

The hidden problem: Compound interest

Money - as one of the most ingenious inventions of humankind - facilitates the exchange of goods and services and, thereby, overcomes the limitations of barter, and creates the possibility of specialization as the basis of civilization. Taking a more detailed view, leads us to a problem that has been ignored for a long time: the availability of money - based on the payment of interest - has two sides. The useful side most people understand immediately – sees interest as the price for money, which functions as an indicator for the scarcity of products or money in our economies - and as such, it is difficult to replace. The problematic side, which is rarely discussed, is that interest also creates an impetus for exponential growth. What we call 'Interest' not only contains the cost of the work of the bank, a risk premium and an inflationary adjustment, i.e. costs, which cannot be eliminated, but also contains the so-called 'liquidity premium'. This is the reward for the lender who lends his money to others. And the money owners' ability to hold money back until the 'price is right' (as it produces almost no storage costs like all other goods) forces other participants in the market to pay more than their fair share for obtaining the necessary means of exchange. Money – in its present form - therefore not only provides a key but also a lock to the market. This possibility for the retention of money tends to distort all market mechanisms and, therefore, should be eliminated. Otherwise, money (and not the provision of goods and services) becomes the prime focus of all economic activities. It inevitably leads - over time - to excesses of monetary speculation, at present, for the first time in human history, on a global scale.

We now have a world financial system in which speculation is more powerful than trade, has more financial clout, and depends on people running the system who have more to gain from instability rather than stability. Foreseeing this in 1936, Keynes wrote: "Speculators may do no harm as bubbles on a steady stream of enterprise. But the position is serious when enterprise becomes the bubble on a whirlpool of speculation. When the capital development of a country becomes a by-product of the activities of a casino, the job is likely to be ill-done." In the meantime, the capital development of the *world* seems to have become a by-product of the activities of a casino. Therefore, the question arises: How can we create a money system, which avoids the compounding of interest and all its associated problems? For this it is useful to understand three – out of at

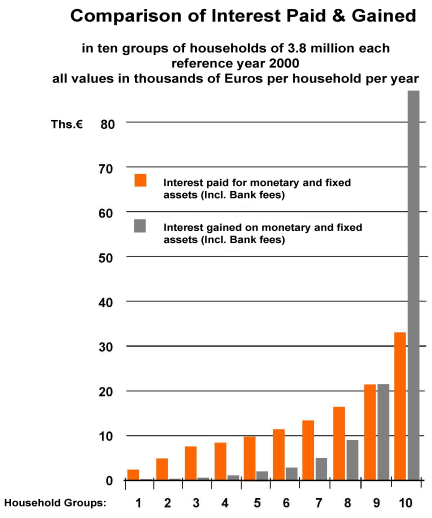
least thirty - misconceptions about money, which almost everybody holds (Creutz, 2004).



Three Misconceptions

1.The '*Growth Misconception*' is based on the belief that money based on interest can grow forever - and this in turn is based on people not understanding two generically different types of growth (Figure 1).
Curve a represents the normal physical growth pattern in nature in which everything stops growing at an optimal size. This is the only sustainable growth pattern that exists.
Curve b represents exponential growth doubling its units at regular intervals. It may be described as the exact opposite to curve a, in that it grows slowly in the beginning, then accelerates continually faster and, finally, grows in an almost vertical fashion. Based on interest and compound interest, our money follows an exponential growth pattern: at 3% compound interest it doubles in 24 years; at 6% it takes 12 years; at 12% 6 years. To show the impact on money in the long run, we may use the famous example of Josephs' cent invested at 5% interest in the year 0. In the year 2000 this cent would be worth over 500 billion balls of gold of the weight of the earth, at the price of gold in that year. Without the compounding of interest, the sum accumulated would have been 1,01 €. This shows that it is not interest that is the problem, but the compounding of interest. Through the use of the 'discounted cash flow', however, interest and compound interest provide the basis for all evaluations of economic efficiency for investments in conventional currencies.

2. The '*Transparency Misconception*' deals with the second major difficulty in fully understanding the impact of the interest mechanism on our economic system. Most people think that they pay interest only if they borrow money. They do not understand the fact that every price contains a certain amount of interest, depending on the share of capital deployed per unit of output. This relationship – together with the rate of interest – determines the interest component in prices. For the three following examples from Germany, it ranges from a 12 % interest component in the price for garbage collection (because here the share of capital costs is relatively low and the share of physical labor is particularly high) to 38% for drinking water - and up to 77% in the rent for public housing (when calculated over 100 years, which is the estimated time houses in Germany are supposed to last). On average, people in Germany pay about 45% interest in the prices of goods and services they need for their life.



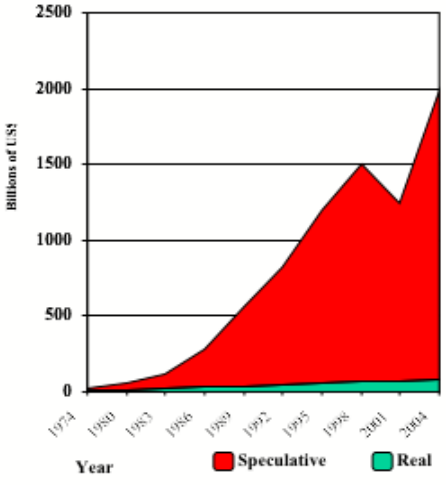
3. The '*Fairness Misconception*' is based on the notion that everyone is treated equally in our monetary system. We all have to pay interest when borrowing money and receive interest for savings. However, when we take a closer look, there are indeed huge differences as to who profits and who pays in this system. Comparing the average interest payments and income from interest in ten equal parts of 2.5 million households in Germany, we can show that 80% of the population pay almost twice as much as they receive, 10% receive slightly more than they pay, and the remaining 10% receive more than twice as much interest as they pay. This last amount is the share that the first 80% loses (Fig.2).
This illustrates one of the least understood reasons why the rich get richer and the poor get poorer - and that the economists' notion that money is just a neutral measure for the economy is incorrect. In Germany, in the year 2004, about 1 billion euros were transferred every day from those who work for their money to those who can make their 'money work for them' (Creutz, 2004). But money never 'works'. Only people and machines produce real value. Money can only be re-distributed from those who create that value to those who own money. In other words, we allow the operation of a hidden redistribution mechanism in our monetary system, which continually transfers money from the large majority to a small

minority, creating a social polarization that undermines any democracy over time. An Argentinian banker, who had worked in the National Central Bank for 36 years, once remarked – in regard to this figure: "…and what use is equality before the law for us, without equality before the money?"
Even more to the point, President Obasonjo of Nigeria stated after the G8 summit in Okinawa in 2000: "All that we borrowed up to 1985 or 1986 was about $5 billion. So far we have paid back about $16 billion. Yet we're being told that we still owe about $28 billion … because of foreign creditors' interest rates. If you ask me what is the worst thing in the world, I will say it is compound interest."
At that time, the developing world was spending thirteen dollars on debt repayment for every one dollar it received in foreign aid and grants (Lietaer, 2007).

Three Results
1. Inflation: As one result of this defect in our monetary system every Deutsche Mark lost 80% of its value between 1950 and 2001 - and this was the most stable currency in the world. For most people, inflation seems like an integral part of any money system - almost 'natural' - since there is no country in the world without inflation. Because inflation is perceived as a given, economists and most people believe interest is needed to counteract inflation, while in fact interest is the major cause of inflation. True, the short-term relationship between the rate of interest and the rate of inflation is different. It corresponds with conventional wisdom: A reduction of interest rates makes credit easier and encourages capital and consumer spending. The result is an expansion of the money supply and – in most cases – eventually a rise of the rate of inflation. Vice versa, an increase of interest rates slows down the economy, reduces the money supply and counters inflation. Empirical evidence substantiates this. But what happens in the long run? What is the relationship between interest rates and inflation over a period of – say 50 to 100 years?

Empirical research doesn't give us much of a clue as it is very difficult – if not impossible – to empirically identify a clear cause and its effect and exclude the impact of other effects over such a long time span. Still, what we do know is the following: The creation of money is carried out via bank loans. Whoever receives these loans has to repay them with interest and compound interest. If we consider the world economy, it follows that the amount of money in circulation is systematically insufficient to repay all debt. Leaving aside temporary contractions, it is only by a continuous expansion of the money supply that economic actors as a whole can sustain their ability to pay. And more: In order to meet the accumulating liabilities resulting from compound interest, it even has to be an exponential expansion. Common sense tells us – and empirical data confirms – that an exponential expansion of the producing-economy is impossible over the long run. Hence, an exponential raise of M1 – that aggregate of money that is available for payments immediately – has to be avoided if hyperinflation is to be prevented.

So where is exponential growth actually taking place? The asset markets holds the answer. It is in the number of assets and in the asset evaluations – and this is especially true for the securities market that has grown exponentially over the past decades. However, unless this rise corresponds with a comparable rise in the producing-economy their surge is excessive. These overvalued assets serve as backing for creating loans. But - if the backing is getting weaker - how is the money supposed not to lose solidity? In a monetary system with compound interest, inflation cannot be prevented. At best, it can be kept at low levels for a number of decades. Ultimately, a correction – that means a massive and painful adjustment – is inevitable. We probably see the beginnings of this process right now.



2. Monetary instability is a second result of the exponential growth pattern in our money system. In contrast to measures like the meter or the kilogram, we are used to the fact that the exchange rate of our currencies varies almost daily. Cashing in on this variability, the global volume of speculative foreign currency transactions between 1974 and 2004 increased to 97%, with a mere 3% of the transactions

serving the exchange of goods and services, including tourism. Recent figures in 2007 show that the daily volume of trading already exceeds $3,200 billion - whereas in the 1970ies it amounted to just $20-30 billion. What makes the situation so dangerous is that it creates economic instability on a global scale. In the early 1990s, for instance, speculative money flowed massively into Thailand, Malaysia and Korea, only to be withdrawn a few weeks later. Where these speculators withdrew, they left devastating effects on the culture, ecology and society.

3. An uneven growth of different sectors in the economy is one further result. Comparing three different indicators of net growth between 1950 and 1995 in Germany, we find that monetary assets - backed by an equivalent amount of debt - increased 461 times; the Gross National Product increased 141 times; and the net income in real wages and salaries (after tax) rose only 18 times (it actually declined after 1980 to the level of the 1970ies). Few people understand that these figures drifting further and further apart indicate a severe sickness of our economic system and a growing polarization of our societies. Many believe that those 10% who profit from the system are the culprits who will not allow any change. However, even the rich are just as helpless to change it as the poor who pay more than their fair share. The late billionaire Sir James Goldsmith once said: "What use is more money to me when I will be surrounded by more and more poor and suffering people who hate me? I feel as if I have won a game of poker on the *Titanic!"*

A recent study of the Club of Rome proves that money is anything but neutral (Brunnhuber, Klimenta, 2003). It changes the kind of trades being performed as well as the relationships among the people using it. What we need today is another perspective on money in order, finally, to be able to use the full potential of one of the most ingenious inventions of mankind, and to provide everyone on this earth with the basic necessities of life.

Three Historical Solutions

The religious leaders of Judaism, Islam and Christianity understood the problems of compounding interest and left us solutions how to deal with it:

- In *Islam* people who follow the Sharia observe a complex set of rules to prevent interest from compounding. It forbids not only investments in morally or socially prohibitive activities but also speculation and excessive costs of loans and, consequently, makes the moneylenders - whether private or professional - a part of the project, which they are financing. Therefore, they have a strong sense of responsibility for its continuity and success.
- *Judaism* used to resolve the problem of compounding interest by waiving all debt regularly every seven years in the so-called "jubilee year". After 7 x 7 or 49 years not only debts were 'for-given' and debt-slaves were freed, but also private land was given back to the community.
- The *Christian* churches in Europe, mainly during the Middle Ages between 900 and 1400 a.D., imposed strict interest prohibition laws. They punished those who levied interest on loans severely excluding them from the Christian community and Christian funerals. Money was kept in circulation by regularly re-calling and re-minting the thin metal coins - in some areas called Brakteaten - every 3 to 4 years and by levying a fee of 30 – 40 % in the renewal process. This was - at the same time - a way of collecting taxes. The use of the old coins was forbidden by law and sanctioned by prison sentences. This time related charge on money – called 'demurrage' – acted as a 'circulation incentive' and meant that nobody was able to hoard money without risking a loss. Instead of charging interest, people usually accepted loans that guaranteed the equivalent value after some months or years - and thus they eliminated the 'liquidity premium' or reward for the lender, which causes the compounding of interest. In terms of modern banking practices, leaving out this share in the cost of interest would halve the costs for loans and subsequently – over time - the 45% share of interest in prices.

All three historic solutions have remained alive up to this day: The Islamic model is finding more and more acceptance among the Muslim population in view of the failure of the capitalist money system to provide for systemic stability and fairness. The Jewish model of waiving the debts has been advocated to counteract the capitalist money systems' inability to deal with social justice - in terms of the waiving the outstanding loans of the lest developed countries. And many of the complementary currencies now running in Germany are using demurrage as a circulation incentive.

Where these solutions have *not* been applied, three historic consequences have arisen: hyperinflation (or crash), social revolution and war. However, neither the 87 monetary crashes over the last 25 years (Lietaer 2007), nor both World Wars, nor social revolutions like the French, Russian or Chinese, have changed anything fundamental in terms of the money system.

Various complementary currency models that tried to resolve the problem of compound interest through a time-related fee in order to keep money in circulation. They proved their potential to create employment and solve social problems in the 1930s in Austria and Germany - just before Hitler gained power. However, they were discontinued on 'legal' grounds - as they threatened the monopoly of central banks. It is, therefore, of paramount importance to start communicating with central banks, now, in order to create a sustainable legal framework for complementary currency systems on a scale that counts. Otherwise, we are heading for the abyss yet another time. This time the options seem to be crash or war.

One additional approach for 'taming' the economy comes from a *Buddhist* perspective. In contrast to Adam Smith's "invisible hand" - and the liberal and neo-liberal acceptance of the profit motive in all individuals, Brodbeck (2007) points out that the starting point of a Buddhist economy is every individual's freedom to recognize what is true for enhancing life and to change its behavior accordingly. Thus, we can overcome the three 'poisons' that are part of the accepted theoretical and practical basis of the global market economy: ignorance, greed and aggression.

Complementary Currencies and the Use of Demurrage

Complementary Currencies (CCs) may be defined as means of payment with a built-in target. They are not meant to replace the existing national or international currencies but to complement them. Mainly in social, cultural and ecological areas in which the present system does not work very well, new liquidity can be created without burdening the taxpayer or governments with additional costs. CCs can be seen as a powerful tool for strengthening the economic viability of a specific social sector or geographically limited region (defined here as an area between the local and the national). In many instances, they have proven their potential to support and strengthen the economy - especially in economically difficult periods. The Fureai Kippu Care Ticket in Japan, for instance, helps to provide care for millions of elderly people, based on *hours* of service. The WIR Wirtschaftsring in Switzerland is a *parallel currency* to the Swiss Franc and strengthens the economic viability of 20% of the small and medium sized businesses, which in turn create over 80% of all jobs. And the Saber (a proposed educational *voucher system* for Brazil) is designed to strengthen the educational system.

The *Brazilian 'Saber'* demonstrates clearly the different design features of complementary currencies in comparison to conventional currencies. That is the reason why I want to describe it here in more detail. In Brazil 40% of the population is less than 15 years of age. This causes an enormous educational problem. When the mobile phone industry was privatized, the government levied a 1% surcharge for education on all mobile phone bills. This resulted in a fund of 1 billion US$ or 3 billion Reais for education in 2004. Bernard Lietaer proposed the introduction of a voucher system called "Saber" in order to increase the number of students that could afford a college level education. The vouchers would be given to schools for the youngest (e.g. the 7 year-old) pupils, on the condition that they would chose a mentor from an older class to strengthen their weaker subjects. The Saber would then move to the older schoolchildren, and so on until, at last, seniors of 17 years (who want to go to university) would use the Sabers to pay a part of their tuition. While the value of the Saber would be the same as the Real, nominally, it would only be redeemable for tuition payments for higher education. In addition, it would lose 20% per year as an incentive to pass it on - unless it had reached the universities. Thus (including a reduced tuition rate for those subjects with free spaces in the universities), the Saber system would multiply by ten times what a direct allocation of the resources for education would otherwise allow and, thereby, create ten times the amount of education services.

Differences between complementary and traditional currencies

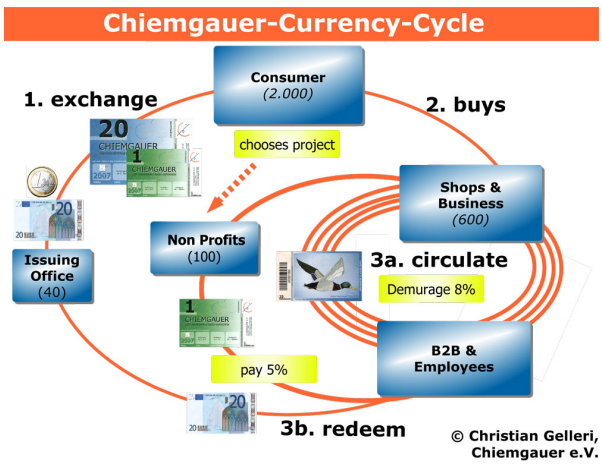
The differences between complementary and traditional currencies are marked indeed:

- Instead of being profit-oriented they are use-oriented - their primary goal is to connect underutilized resources with unmet demands.
- They are clearly marked as not being legal tender - thus their acceptance is entirely voluntary.
- Their limited - instead of general - acceptance provides a "semi-permeable membrane" around the function (or the region) for which they are designed; they cannot be used to buy products from abroad or to speculate on the international financial markets.
- Most of the complementary currencies do not charge interest but use a circulation incentive or a demurrage mechanism to keep the currency "on the move"; thus they avoid all the dire consequences associated with interest.
- They can be established through a transparent process and, therefore, can be democratically controlled by the users.
- As they are always 100% covered by services or products, they are not inflating
- They are a proven means to counteract economic boom and bust cycles in contrast to conventional currencies, and thus support the policies of central banks and governments (Stodder, 1998)
- They can stop the drain of financial resources to low-wage countries, thereby calling a halt to the resulting loss of wealth and job opportunities, and promoting community instead of destroying it.
- They create a win-win situation for everybody: from an expansion of educational benefits to solving the problems of the increasing numbers of elderly, from the protection of cultural identity to marketing regionally grown foods, from an ecologically sensible use of the shortest transportation routes to exercising ethical concerns when utilizing non-renewable resources, providing closer links between consumers and producers and helping to re-animate local and regional identity and diversity.

One additional difference and reason for the introduction of complementary currencies on a scale that counts, would be the massive redemption of tax revenue that is, at present, evaded due to multinational companies playing off national tax authorities against each other in such a way that many of them pay very little or no tax in their home economies. Somewhere between a sixth and a third of all the money in the world - is now lodged offshore, and though it re-enters the economy, it does so mostly in the form of short-term speculation in the growth centres of the world (Doyle and Kanoor, 2006).

Regional Complementary Currencies

In addition to the above list of advantages, regional currencies offer a feasible way to counteract the negative consequences of financial globalization. They allow a partial decoupling from the global financial system, and thus, may become an effective life raft in the case of a global financial meltdown. Everyone who accepts "Regios" - as they are often called - will pass them on to another person who shops with it in the region.



Of altogether 22 practical examples of regional currencies that are, presently, up and running in Germany - one of the first is the **Chiemgauer**, circulating in the region around Lake Chiem, Bavaria. Initiated in January 2003, it uses a voucher model. A bonus of 3 % is given to selected regional associations for purchasing Chiemgauer vouchers. The associations in turn sell 1Chiemgauer for 1Euro to their members, who profit by supporting their association without paying for it. The members can spend it in over 560 participating shops. The 2000 participants accept an annual fee of 8% to guarantee circulation. Four times, a year a stamp (worth 2% of the value of the voucher) has to be attached to Chiemgauer notes in order for them to retain their nominal value. The businesses that accept the vouchers can either exchange them for Euros at a five percent fee - or can use them for paying other businesses. If they pass the vouchers on, they do not have to pay the fee. Both exchange fee and circulation incentive are tax deductible, because they are seen as customer loyalty schemes. Since August 2006, an electronic version of the Chiemgauer is being used in Wasserburg/Inn, which makes it easier to deduct this

time-related fee. The 550.000,- Chiemgauer that were issued in 2006 circulated about 3 times as fast as the Euro. They changed hands over 20times, while the Euro changed hands on average 7times per year, thus creating and keeping the added in the region (www.Chiemgauer.Info).

A new model amongst the complementary regional currencies in Germany is the 'SonnenSchein' (translates as sun-note *and* sun-shine) a currency backed 100% by kilowatt-hours from renewable energy production. It combines two recent innovations and synergizes their effects: firstly, the German feed-in legislation that allows those who invest in the provision of solar energy a secure return on their investment – at the expense of all the customers of electricity - (a model, which is now copied by over 40 countries around the world) and secondly, the experiences of 22 initiatives in Germany, which have already issued their own regional complementary currency. The 'SonnenSchein' is designed to enhance the use of renewable energy and create the backing for a complementary regional currency through the "kWh-harvest" which is going to increase in value as fossil fuels get more expensive. Thus, the inhabitants of the region can acquire a stable, inflation-proof and crash-resistant currency. Unless necessary - as in the case of a crash or hyperinflation of the euro - it will not be subject to a fee or demurrage, as the initiators believe that the limited acceptance in the region provides enough of an incentive to use it before spending the euro. (www.sonnen-scheine.de)

Conclusions

While complementary sectoral and regional currencies can show how applying relatively small amounts of energy and resources at the right time and place can produce maximum advantageous change, it should be made clear that their basic tenets can also be applied on a larger scale. At least two solutions for complementary currencies that are meant to operate on a worldwide scale should be mentioned: the emissions-backed currency unit called "EBCU" (Douthwaite, 1998); and the "Terra", a global Trade Reference Currency (Lietaer, 2007). Both aim at adding more fairness, sustainability and stability to our international monetary systems.

The solutions for monetary sustainability and financial stability, presented here, will be a surprise for conventional economic thinking, which invariably assumes monopolies for national moneys as an unquestionable given. What the above examples are trying to show is that monetary sustainability will be enhanced by a diversity of currency systems, so that multiple and more diverse channels of monetary links and exchanges can emerge. We have all the technologies to make the use of multiple currencies feasible. However, complementary currencies operate as yet at the margins of the official system. While they are proving their capacity to play a stabilizing role on a small scale, it is urgent to recognize that they can contribute to sustaining the global economic system tomorrow, if they are able to grow to a scale necessary for them to make a difference. For allowing this to happen, a co-operation between central banks and federations of complementary currency associations - which formulate quality criteria and observe their implementation - is an essential pre-condition.

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