Beyond Meadows*

The money-system as the overlooked connection towards a sustainable future

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Abstract: The D. Meadows report "Limits to growth" considered the money system as neutral. But is not and it leads to at least six negative side effects: Immanent instability, force to growth, short-termism, income disparity, accumulation of capital and erosion of social capital. In order to balance out our economic system as a whole, conventional and complementary solutions are required. Some concrete examples are given and a more philosophical framework to interpret the different approaches is described.

Keywords: Money-system, sustainability, complementary currency systems

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1. Meadows' Reports and "Beyond Meadows"

The two important reports by D. Meadows[1)2)] illustrate the close relationship between population growth, food production, industrial growth and environmental pollution in terms of a model theory. According to D. Meadows, the increase in the population leads to a rise in the demand for food and other resources. The consequence of this is that money has to be diverted from other sectors to address these growing domains of scarcity. As a result, the extraction of raw materials becomes increasingly more expensive. D. Meadows claims that this leads to a drop in net investment and to a reduction of services. In particular, the author believes that the main reason for this collapse is a delay in providing information.

1) Meadows, D., 1972, Die Grenzen des Wachstums, Bericht des Club of Rome zur Lage der Menschheit, Stuttgart: DVA.
2) Meadows, D., 1993, Die neuen Grenzen des Wachstums, Hamburg: Rororo.

Overall D. Meadows conclusions were pessimistic.

There are three areas that have not explicitly been taken into account in the report of D. Meadows: the significance of technological progress, the effects of military conflicts, and finally the role of the monetary sector. Money was only an accounting device and measuring unit (as in measuring temperature in Celsius or Fahrenheit) which evaluates many different economic activities. Monetary processes did not play any independent part in model calculations, nor in the conceptual considerations concerning the relationship between the environment, affluence and the consumption of resources. This means that in this approach the money function remained economically neutral.

In the following sections, we will deal with the subject of the significance of the monetary system for a sustainable pathway to global development. In short, it is a question of the inner relationship between money and wealth, or money and nature.

2. The overlooked connection: Money is non-neutral

We have important data with respect to anthropogenic effects on ecological exchange processes, but we still know little about the significance of the money economy for real economic processes, for our understanding of wealth and growth and thus also for the consumption of natural resources. This means that the way "we organise our finances" will play a major role in determining the relationship with the environment and thus also to a sustainable development of wealth in the coming years and decades.

Contrary to the hypothesis of neo-classical economics, money is not neutral. There are at least three forms of neutrality that have to be taken into account in this connection. Firstly, it is often assumed that money-systems have no effects on the kind of economic interactions that are occurring. Second, money systems are assumed not to affect the relationships between the actors using it. And finally, its neutrality can not affect the economic cycle. None of these three forms of neutrality exist in the modern money economy, instead it can more likely be assumed that through the "agreements" reached regarding money as a medium of exchange, a number of important system-inherent developments are triggered off that must be taken into consideration. As a metaphor: water is not neutral for the fish that live in it, even if it remains completely transparent and invisible for them. We can mention at least six system-inherent side effects:

1 **Compulsory growth pressure**: Normally economists consider that additional growth is typically due to labor productivity changes within the population or new technologies. This is true, indeed, but the monetary system itself has a built-in necessity to grow. Since there is an interest rate mechanism at the beginning of every monetary expansion, there is an inherent obligation for growth for all actors. We always have to produce a increased cash flow in order to pay back the debt; and the higher the interest rate the faster we have to grow. Under competitive conditions, zero growth is therefore inherently impossible, and the absence of growth would sooner or later lead to the market participant failing in the market. The higher the debt, the more limited the options to achieve a sustainable pathway. Particularly in the case of debt-laden individuals and companies, the present monetary and financial system exerts systematic pressure to achieve growth at any costs — regardless of whether it makes sense for the entities involved, or enhances the quality of life in a society or not.

2 **Short-termism**: Further we must take into account the fact that the modern money economy is closely related to our time priorities. As a rule, we perceive time as a linear, irreversible vector within which current states are evaluated more highly than future ones. Such preference for the short-term future is accentuated by the fact that any future costs or income will be discounted with among other the rate of interest of the currency involved. If for example the sum of 91 euro has a risk-free interest rate of 10 %, this corresponds to 100 euro in one year. If we look at this equation from a different perspective, we see the following: 100 euro in one year means only 91 euro today, even if there is no inflation. In the same way, the technique of "discounted cash flow" reduces 100 euro to approx. 30 euro in 10 years. After 200 years this would correspond to the insignificant amount of 0.0003 euro. Since practically all our money is created by loans nowadays, and thus an interest rate mechanism is automatically incorporated, it is not surprising that, from a financial point of view, it does not occur to anybody in our civilisation to be concerned about the proverbial "seventh generation". Therefore, our money system clearly accentuates the short-termism of our society.

3 **Concentration of wealth**: Despite the efforts of the world community the gap between the rich and the poor has significantly increased within the last 30 years. Here too, the interest mechanism accentuates the process. Those who already have money automatically receive more money; while those who don't and have to borrow as a consequence end up with even less. This accentuation in income distribution is simply the result of our monetary system and doesn't reflect a difference in cleverness or industriousness.

4 **Erosion of social capital**: The cohesion of a society is not due to geographical closeness, a common religion or the common nationality; but to the capacity of a society to generate trust, solidarity and responsibility. Putnam shows that democracies work best, when the social capital is high; and Fukuyama came to the same conclusion for the good functioning of a market system.[3] Our money- system however is not promoting social capital. Instead it encourages such collective

3) R. Putnam, Making democracy work: Civic Traditions in Modern Italy, Princeton 1993; F. Fukuyama, Trust: Social Virtues and the Creation of Prosperity, New York 1995.

emotions as greed, anxiety, herd behaviour, individualism and competitive behaviour. Consequently, money is nowhere value neutral, as is implicitly assumed in economic theory. Instead, it has significant effects on our social lives. To a certain extent, our money systems play the role of a filter through which we perceive our social and ecological reality.

5 **Towards capital concentration**: 51 out of the 100 largest economies are no longer countries but multinational corporations. This development is also accentuated by the given monetary-system, as it is easier for the financial system to provide one financing to a huge corporation, rather than dealing with hundreds of smaller entities that would add up to the same amount of funding. So its not surprising that there is a systematic financial incentive towards building huge corporations encouraging a global concentration in many sectors such as energy, car industry, military equipment, pharmaceuticals, etc. Our monetary-system favors therefore mergers and acquisitions to create global corporate giants, even if that tends to stifle innovation and diversification, as opposed to small regional businesses that also create more employment. There is a positive feed back loop between the incentives of the financial sector and business concentration.

6 **Immanent instability**: A global casino of unprecedented proportions determines our money's value. Over $1.3 trillion are traded per day in foreign exchange markets, a figure that is almost 100 times more than the trading volume of all of the world's stock exchanges combined. Nearly 96% of these transactions are purely speculative; they do not relate to the "real" economy and they do not reflect global movements or exchanges of actual goods and services. Functioning as a speculative market, current economic systems can be undermined not only by real economic news, but by mere rumor or perception as well. This unstable monetary situation has resulted in the many foreign exchange crises that have affected no less than 87 different countries over the past 25 years, of which Argentina early in 2002 was but its latest victim. Moreover the money-creation process by the banking system tends to amplify the boom and bust fluctuations of the business cycle. The banking system generally tends to have a herd instinct when either making credit available or restricting it for specific sectors or countries. Specifically, when business is good, banks tend to be more generous in terms of credit availability, thereby pushing the "good times" into a potentially inflationary boom period. Conversely, as soon as the business horizon looks less promising, banks simultaneously tend to reduce credit availability, thereby contributing to the deterioration of a small business dip into a full-blown recession. In short, the collective actions of the banking system tend to exacerbate the business cycle in both boom and bust directions. Notwithstanding the attempts by Central Banks to reduce such fluctuations by giving interest rate signals, the current process of creating money through bank-debt remains, in practice, a strong boom/bust-amplification mechanism.

These six side effects of our current money system distort our economic decisions, shape our social life and our relation with the environment. How can these distortions be counterbalance or corrected?

3. Two basic approaches to problem-solving

Addressing the problems listed above in the organisation of the monetary sector can be tackled in various ways, in the context of the three following findings.

Firstly, money is not value neutral, that is, the current money system provokes several socially significant effects (growth constraint, short-termism, increasing disparities in income). Secondly, the monetary sector does not represent an end in itself, but is by its very nature a public function. And thirdly, the money economy is a central overlooked link with respect to a sustainable development.

Within this light, one can classify any attempt at resolving the monetary issues into two basic approaches: (a) institutional reforms of the conventional system, and (b) market-compatible complementary monetary innovations. Both are necessary to stabilize the whole system.

The proposals for institutional reforms directly address the instability of the markets themselves, by changing some of the rules of the conventional money system (e.g. reinforcing cash deposit requirements, introducing a foreign exchange transaction Tobin tax) or by influencing the market environment (e.g. reforming off-shore centres). Introducing complementary monetary innovations, in contrast, activate compensating mechanisms against the effects generated by the conventional monetary regime. For example, a private Trade Reference Currency could be implemented that automatically has a countercyclical effect that balances the pro-cyclical effects of the conventional currency creation process. Similarly, local or regional monetary systems can encourage ecological, social or economic transactions that tend to be neglected by the conventional monetary system. It is important to point out that the two above approaches — institutional reforms and complementary monetary innovations — are not mutually exclusive, but can be implemented in parallel to each other.

3.1. Conventional Institutional Reforms[4]

Among the typical institutional reforms that are being proposed, one could mention, for example, more rapid or complete disclosure of foreign exchange reserves by Central Banks, increasing deposit requirements for the banking system, either tighter regulation or broader deregulation of the financial sector, or the democratisation of international institutions (WB, IMF, WTO)[5]. This also includes the proposal for a Tobin tax[6] or a reinsurance fund for highly speculative hedge funds[7].

The current monetary modus vivendi, with some 160 currencies worldwide and growing systemic instability, is itself inefficient. But a reform of the global system requires a high level of consensus capability on the part of individual states. On top of such solutions often involve high administrative costs. Moreover, all conventional reforms have at least two aspects in common: they all operate within the context of the existing money-system and therefore remain based on the perpetual growth paradigm to tackle ecological, economic or social problems. It doesn't matter whether one recommends more deregulation or more regulation, or whether it's a Keynesian or a neo-liberal approach, they are all hoping that further growth will solve the problem[8].

3.2. Complementary currency innovations[9,10]

Complementary currencies are agreements between users to use something else than conventional national currency as medium of exchange, in order to facilitate the linkage between unmet needs with unused resources. Complementary monetary systems do not affect or replace the present monetary system, but instead operate as a complement to this system.

More than 5000 such experimental systems already exist, mostly on a local scale, under names like Lets, Wir, Tauschringe, Talente, Time Dollars, Furreia Kippu, Curitiba currency. They are decentralised and self-organised, and function

4) See Lietaer B., Brunnhuber S., Our future economy (in press), 2004.
5) Shiller, R., 2003, The new financial order, Princeton University Press, Princeton.
6) Tobin J., 1978, A proposal for international monetary reform, The Eastern Economic Journal, 4(3-4), pg. 153-159.
7) Soros, G.,2001, Die Offene Gesellschaft, Für eine Reform des globalen Kapitalismus, Berlin: Fest.
8) Einhorn, W., Kümmel R., Lindenberger D.: 2001, Energie, Innovation und Wirtschaftswachstum, in: Zeitschrift für Energiewirtschaft 25, 273-282 or Binswanger, C., 1994, Geld und Wachstum, Weitbrecht, Stuttgart..
9) See Lietaer ,B., Kennedy, M., "Euro and Regio" (in press), 2004.
10) Lietaer, B., 1999, Das Geld der Zukunft, München: Riemann.

according to the "Chaordic" principle, as was initially used for the VISA credit card alliance[11]. The following table shows the differences between the conventional monetary system and the prototypes of local complementary currencies.

Tab. 1 : Some characteristics of conventional vs. complementary monetary systems

Conventional monetary system	Complementary monetary system
- hierarchical - competition-oriented - scarcity criterion - fiat currencies with inflation risk - interest rate-controlled	- decentralised, self-organising - cooperative - available "in sufficiency" - demurrage fee - inflation-neutral

The introduction of a local complementary currency affects social and ecological issues in particular. More substantially in terms of volume of transactions, the complementary currency movement also involves commercial applications. Loyalty currencies such as frequent flyer miles are the best-known examples of such applications. The five main airline alliances are issuing annually several trillion loyalty currency units. Commercial barter currencies should also be considered as part of these non-conventional currency exchanges. Their volume is estimated to at about $1 trillion per year, or about 10-15% of world trade.

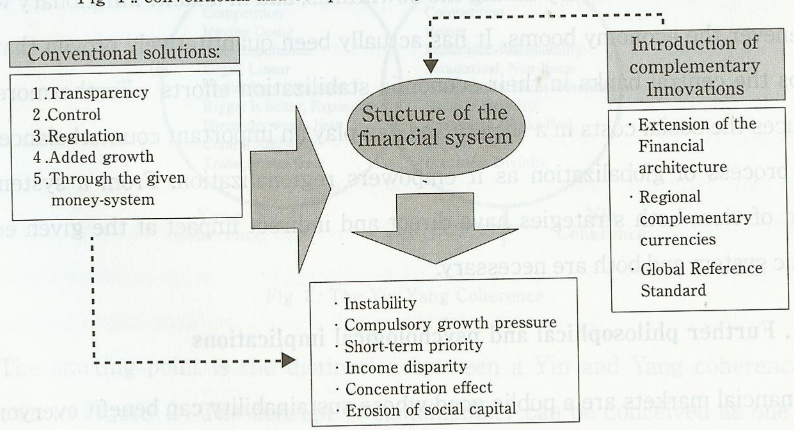
The need for a new international trade reference system is increasingly being acknowledged as well. For instance, P. Volcker, the former Chairman of the Federal Reserve Board in Washington, published a surprising article with the title "The exchange rate needs a new look". This is the first time that a leading financial authority in the US has admitted the need for a new global currency apart from the US dollar. His conclusion: "I happen to believe that the ultimate logic of economic globalization is a stable and common unit of account and an internationally accepted means of payment- in other words, a common world currency"[12].

11) Hock, D., 2000, The Dawn of the Chaordic Age, New York: Harmony Books.
12) Volcker, P. A., 2000, The exchange rate system needs a new look, The Conference Board Annual Report, pg 6.

One proposal for such a system consists in establishing a standardized basket of goods and services as a reference currency. It would be similar to the gold standard, but with the essential difference that it would be fully backed by a basket of goods with a dozen standardizable products, including various raw materials and services. Furthermore, the storage cost of the contents would be covered by the bearer of that currency, which would make it a demurrage currency. Demurrage currencies promote long-term thinking, in contrast with the short-termism encouraged by positive interest currencies. Furthermore, such a currency would tend to operate counter-cyclically with respect to the conventional money creation cycle, thereby stabilizing the world economy as well[13].

The following figure shows the effects of the two types of corrective initiatives: reform proposals of the conventional system which directly changes the operation of the existing system, but tend to leave intact the indirect side-effects of that system; and the complementary currency innovations which directly counteract the problems caused by the conventional system, while not affecting the operation of the conventional money system.

Fig 1 : conventional and complementary solutions from a systemic view



13) Lietaer, B. Nerb., G., 2001, Terra: A Countercyclical Reference Currency to stabilize the Business Cycle (IFO Working Paper for the Volkswagen Stiftung).

From a systemic point of view both strategies may be necessary to balance out the economic system, as both strategies produce desirable feed-back loops from a sustainability perspective. For example the reforms of the conventional system could encourage more transparency and control (anticorruption- law), so that it improves confidence to the financial system; or encourages more financial resources to become available to address ecological or social problems. By implementing corporate governance standards, or social and ecological standards one can also directly have an impact on the economic system. However all such conventional solutions, as pointed out above, run through the existing monetary system which will therefore continue to produce all the six negative side effects identified earlier. Using only conventional reform solutions is comparable to try to fill a barrel with a leak at the bottom, by filling it up all the time without considering to repair the leak itself.

The complementary approach itself has also an important feed back loop on the economic systems as it stabilizes the conventional economic dynamics: it operates in an anti-deflationary during the downturns, and in an anti-inflationary way whenever the economy booms. It has actually been quantitatively proven that it helps the central banks in their economic stabilization efforts[14]. Furthermore it reduces the social costs in a society and can play an important counterbalance to the process of globalization as it empowers regionalization. From a systemic point of view, both strategies have direct and indirect impact at the given economic system and both are necessary.

4. Further philosophical and psychological implications

Financial markets are a public good whose sustainability can benefit everyone,

14) Stodder, J. "Reciprocal Exchange Networks: Implications for Macroeconomic Stability" (Albuquerque, NM, IEEE Conference, August 2000).

but today's system has become intrinsically unstable. Rethinking international financial markets is one of the most important leverage points to attain sustainable development on a scale commensurate with the today's challenges. An improved understanding of the function of money, particularly on international markets, is the missing link in sustainability planning. The non-neutrality of the conventional monetary system includes short-termism, the built-in obligation for growth, increasing disparities in income and unemployment. The way we choose to rethink our monetary system can only start when we attain an improved understanding of the dynamics of money systems.

Humans are to money as fish are to water. Compared to fish, however, we have the advantage that we can become conscious of the medium in which we "swim". We have to evaluate the effects of different money systems, and choose a system that supports our collective objectives, such as a sustainable world. But what does that mean in both theory and practice?

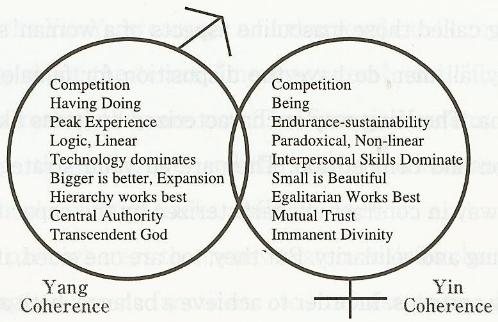


Fig 2: The Yin Yang Coherence

The starting point is the distinction between a Yin and Yang coherence as shown in Figure 2. The concept of sustainability can be conceived as one empowering a balanced society which takes into account the social, economical and ecological constraints and needs over several generations. This requires input from both the Yin and Yang value coherences. Both strategies — reform of the conventional system and complementary currency strategies — represent from a hermeneutic point of view two different approaches to perceive, understand our world and achieve desirable changes in it. The theoretical framework in which these strategies make most sense requires a multi-disciplinary approach: besides economics, it requires at least three other fields: the analytical psychology of C.G. Jung, aspects of systems theory, and the eastern Taoist philosophy. And our arguments on the two approaches — reform or complementary approaches — converge from all these disciplines.

Human beings as well as societies do have a gender-specific way of perceiving their world: a balanced or unbalanced relationship between the masculine and feminine interpretations of reality, a Yin-Yang balance or imbalance. Each human is internally a balance between these two polarities. For instance, on an individual level each woman has also male aspects of thinking, perceiving and experiencing. C. G. Jung called those masculine aspects of a woman's unconscious the Animus. Similarly, all men do have the disposition for female patterns and he called them Anima. The Yang way is characterized by items like hierarchy, control, concentration and competition. They are all valid strategies, but they are one sided. A Yin way in contrast is characterized by the capacity of cooperation, equality, networking and solidarity. But they, too are one sided, if they are not balanced out by Yang patterns. In order to achieve a balance, both are necessary.

What is true for individuals is also valid on a larger scale for communities and societies. Patriarchal societies tend to suppress the female (Yin) values and priorities and vice versa. From this perspective, most of the reforms of the conventional currency system are of a Yang nature, where the complementary solutions are a Yin approach.

In a competitive society we live in at the moment, reforming the monetary strategies are, clearly on the Yang side re-shaping hierarchy, control or concentration. On the other hand complementary reforms are Yin patterns increasing the more cooperative aspect in a society like solidarity, empathy or networking. And here again both strategies have a role to play in reshaping competition and activating cooperation as two necessary strategies.

In Eastern philosophy, Taoism offers with the Yin-Yang concept the clearest explanation to the approach. Whenever there is an excess Yang situation, Taoist doctors recommend "calming the Yang, and activating the Yin". Complementary currencies activate the Yin coherence which is why they are also called Yin currencies.[15] The are Yin currencies because they operate without interest, locally or regionally and solve Yin-type problems. In contrast, two strategies "calm the Yang" coherence: A global Reference Standard (Terra) and most of the reforms of the existing system. The current system is clearly a Yang currency system: It operates worldwide, can be accumulated, and speculated and involves interest.

With regard to the Yin-Yang concept a further level can be revealing. So far, we have been talking about the terms "money-system" and "finance-system" as synonyms. But in reality, they are not. The financial system, consisting of the stock-, currencies-, the derivative- and the capital markets and their monetary institutions (like banks, central banks, IMF, World Bank, exchange markets) represents the outer part, whereas the money-system with its characteristics (interest-rate, demurrage, different functions, etc.) represents the inner part of the whole monetary sector. And this corresponds again with the Yin- and the Yang concept: Yang captures the outer perspective, whereas Yin stands for the micro- and inner-perspective of the same construct[16]. The following figure demonstrates

15) Lietaer B., 1999, Das Geld der Zukunft, München : Riemann.
16) Livia Kohn, 2001; Daoism and Chinese Culture(Cambridge, MA: Three Pines Press, or Eva Wong, editor and translator,1997, Teachings of the Tao: Readings from the Taoist Spiritual Tradition (Boston and London: Shambhala, or Ingrid Fischer-Schreiber,1996, ↗

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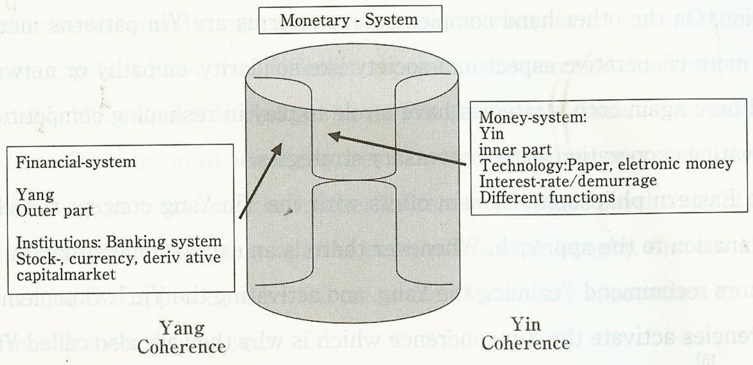

Fig 3: The monetary system has an inner (money-system) and outer (financial system) aspect. They both correlate to the Yin-Yang Coherence, too.

To summarize, the Yin- Yang metaphor works not only with regard to "inner" and "outer" parts, but also in terms of the feminine vs. masculine value system that they activate. If we follow the non-dualistic approach of Taoism, the balance between Yin and Yang is what creates a healthy unity. And this is a further reason why we need a complementary approach.

We perceive ecological degradation, income disparity, poverty, concentration of wealth, increase of crimes, aging problems, military conflicts, the digital gap etc. as isolated problems and search for isolated specialized solutions. But these are not isolated problems. They are all linked to each other. One way to detect a missing and overlooked link is looking closer to the underpinnings of the monetary-system, probably the most neglected aspect within the sustainability debate. Nevertheless, it may also be the most powerful leverage point available to us towards a "common and sustainable future".

The Shambhala Dictionary of Taoism, tr. by Werner Winsche Boston: Shambhala.