

## Measuring the Real Value of Production and its Impact on Distribution of Global Wealth and Poverty, Reflections in the Economic Order of the Real World

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### Abstract

The paper explains the measure of the real value of a product in units of energy which is means of payment in the real equal natural world instead of money. It equals the gross added value in energy of this product gained during its production. This measure is used to estimate energy values of the financial haircut in Greece and of the mental product hate with the murders in Toulouse, France of March 2012. Wealth and poverty turn out as coupled issues of energy allocation of man for different purposes of production.

Key Words: Financial crisis; Value theory; Philosophy of economics

### 1. Introduction

**Subject** of this paper is the measurement of the real value of production in units of energy the urgent need for which is conclusion of author's article about the real cause of banking and financial crisis being a missing linkage between human money and energy (Maier 2009a, p. 152). Insofar this paper belongs to value theory with a long history in economic thought, a milestone being value theory of Karl Marx (1818-1883). Of this discussion is mentioned, only: It seems to be impossible to measure the absolute value of an economic good by itself that is independent from different goods and aspects. This **approach** reflects the production of a single good in neoclassic economic theory as well as in the economic order of natural equal real world (Maier 2007a). Bypassing details of the latter order it is necessary to note: Within this order we center the natural system instead of human society, and we focus the biological production of creatures as an economic production process; thus we look at the process of creation of life by creatures through glasses of economists in order to get inside in philosopher Hegel's (1770-1831) consistent overall picture of material and biological production of man the existence of which we assume. We learn: In the natural world *energy* is solely means of payment hence absolute reference to measure and evaluate economic activities and assets, any good has its price and not only scarce ones, all markets have dual faces with participants appearing as sellers in the one and as buyers in the second which feature is ignored in economic theory, and any creature in one and the same subject is producer, final user and final product, the latter is its *own living biomass and body able to provide services*, short notation *life*. This seems to be impossible but it is observable! The paradox how a creature can finance the production of its own life which it uses by itself could be solved; a decisive financial source is the gross added value equal surplus energy it gains by producing, restoring, and reproducing its body under market conditions periodically (Maier 2007, 2009, 2010). The existence of economic order within the natural system and its impact not only on reshaping System of National Account SNA of UN because of social indicators turn out to be decisive economic ones within Nature hence human society, is subject of ISI sessions and sections since 2003 (Maier 2003, 2004a, 2006, 2007b, 2008, 2009c, 2011a). First **aim** of this paper is to explain this measure and to present its result with two empiric case studies; one refers to financial haircut in Greece during Euro crisis in March 2012, a second to murders in Toulouse, France motivated by the mental product *hate* in March 2012, too; details with Maier 2012a, 2012b, 2012c. Second **aim** is to present Hegel's overall picture of human production and explain the role of energy within distribution of global wealth and poverty. Given restrictions for money within human society, third **aim** is to discuss and evaluate observable strategies how poverty is responded by use of the natural currency energy.

## 2. Explaining the measure for the real value of production

According concept of Carl Menger (1840-1921) and neoclassical theory a marginal quantity of production,  $\partial q$ , is considered which is *a washing machine produced by a factory in Zaragoza and delivered to a washing service center in the Pyrenees*. It's a virtual quantity because we move along an isoquant curve with no effect on total output. Step by step we observe its realization in the natural world, describe it in physical terms, and enhance it by the decisive economic description and interpretation; idea and bridge is the identification of energy E with money M, both represent stochastic variables and potentials  $\Phi$  depending from local position  $x$ , a vector, and time  $t$ , the degradation of which delivers a physical (and economic) force  $F = -\text{grad } \Phi$ , and the integral over the scalar product of force  $F$  and marginal changes of position during time,  $dx(t)$ , defines physical and economic labor  $L$  on the way from starting point  $x(t_0)$  in Zaragoza to goal point  $x(t_1)$  in the Pyrenees, denoted by the ascertained integral  $L = \int_{x(t_0)}^{x(t_1)} F \cdot dx(t) = \Phi(x(t_1))$

$-\Phi(x(t_0))$ , by the latter a new potential (in energy or money) is regained. This access is hybrid; besides economics we use knowledge about potentials of physics. Due to Hegel we consider the marginal production quantity  $\partial q$  as an output of the one enterprise as well as an input  $\partial x_i$  of the other enterprise, we look for its consistent overall picture of total cost and return under equilibrium market conditions of supply and demand, and we enhance the consideration to a real marginal quantity,  $dq$ . First **result** is: The bottom line of all intermediate balances between regained or recoverable potential of energy (or money) at the goal point in the Pyrenees reduced by the stock of the potential of energy (or money) at the starting point of production in Zaragoza must be positive, otherwise this production as well as this factory neither in the natural world nor in human world could exist economically because it makes no profit (neither in energy nor in money), hence we would not observe it in the real world. But we observe it, hence the profit must exist! This positive bottom line of all marginal energy balances during the production process is a natural measure for the real value of this product. It is the positive balance between accumulation and degradation of energy during its production process, and it represents the gross added value in energy units gained by producing this product, independent from whether it is material or biological production. As for man, material production includes buildings, cars, engines, streets and other human infrastructure, cloths and other textiles etc. which products together with related services are reported in the SNA. However, man's essential self-production which reflects in the mass and number of its population is not reported in the SNA. Second **result** is: Within process of pricing of a product this energy value represents the market price of this product in case of market equilibrium, and it determines Marx' exchange ratio of goods and services on markets. To clarify the latter we assume in case of market equilibrium that the gross added value of 1 washing machine produced in the factory in Zaragoza and delivered to the washing center in the Pyrenees is just one energy unit, and we assume that the washing center has to wash 3 tons of cloth to regain a gross added value of just one energy unit, too; then this one energy unit is the market price of this washing machine and the exchange ratio 1:3 represents Marx' exchange ratio in units of energy, but it does not refer to human money. As for human markets a balance in real terms of energy is given if and only if human money is re-convertible into energy or covered by energy, this item is to be regarded by governments with tailoring new banking-laws in order to reconstitute the lost confidence on financial markets. It is noted that this second result could be substantiated with the dual structure of natural markets, only, by which a coupled and closed system is given which allows formulation of balances between cost and returns; the latter feature is missing in micro- and subject of macroeconomics. The third **result** provides an answer to the question how we can visualize the total energy value of entire material and biological production output of all species and creatures including humans: Indirectly, either by the created bodies of all creatures enhanced by their subordinate material products, or vice versa by destruction and pollution of environment on earth through creation and consumption of life, independent from the period we consider.

### 3. Demonstration of this measure with empiric case studies

We need a measuring unit with view from economics, and we chose the *labor energy of one person within the period of one year*, the advantage of it is that we can imagine invisible energy via visible working persons during time. In respect to the **first empiric case study** (Maier 2012b, p. 3-11) we measure the energy value of the financial haircut in Greece from 9<sup>th</sup> March 2012 in order to avoid a financial collapse of Greece in Euro crisis; we estimate the amount as *over 120 billion Euro*; we chose Germany which is biggest net payer within European Union EU and data from Statistical Yearbook of Federal Republic of Germany FRG of 2010 as reference country and data. We execute two independent approaches to estimate the number of employees necessary to produce an output of 120 billion Euros within one year, via the Gross Domestic Product GDP in 2009, and via the input-output-table of 2006 with 12 commodity sectors; result of the first is 2.1 million employees, result of the second 1.79 million, and we take *about 2 million employees* as rough estimation; finally we identify two groups who made profit of this labor energy, the over 10 Million people of Greece observable with the improved infrastructure, and banks as well as speculators observable with buildings and other real values. We conclude: Result of this financial haircut is a transfer in energy from EU to Greece, for which equivalent retransfers in energy from Greece to EU do not exist. Measured with the production in FRG in 2009 this energy transfer is equivalent to the labor energy of about 2 Million employees which irreversibly is flown into real wealth of over 10 Million Greek people as well as into real profits of banks and speculators. In the **second empiric case study** (Maier 2012c, p. 3-15) we identify mental products with potentials, and we measure them indirectly via their social impacts. Referring to micro phenomenon of murders in Toulouse/France in March 2012 motivated by *hate* of the murderer M. approach and result is shown in the table below, the upper part of it reflects accumulation of energy (with view from M. returns), and the lower part degradation of energy (with view from M. cost). The energy balance equal total return minus total cost

**Econometric concept to estimate the real value of the mental product „hate“ via its social impact,  
Measuring unit: Labor energy of one person per year and month, Case study: Murders of Toulouse/France in March 2012**

Indicators/Parameters	Time window	Discount Rate DR	Age estimated if necessary	Remaining labor time estimated	Labor energy of one person in years and months
<b>Return</b> in energy units = capital values of the murdered persons = Net Present Values NPVs					
Murder of 3 paratroopers	From 11 March to 22 March in 2012	10%	each 24 years	each 36 years	3 times 8.67 years = 3 times (8 years + 8 months)
Murder of 1 teacher		10%	35 years	25 years	1 times 6.07 years
Murder of 3 pupils		10%	each 12 years	each 36 years	3 times 8.67 years
<b>Total return</b> in labor energy of one person of					<b>60 years + 1 month</b>
<b>Cost</b> in energy units		(Labor time)		(Weight estimated)	
<b>Creating</b> phase of hate until point of no return	March 2004 to March 2010	6 years of one man or 72 months		1 / 36	2 months
<b>Planning</b> phase (Financing travel + training/upgrading + worklessness)	March 2010 to 10 März 2012	18 months of one man = 6 + 8 + 4		1	18 months
<b>Execution</b> phase	11 to 22 March 2012	1/2 month of one man		2	1 month
<b>Capital value</b> in energy of M. at day of death = Net Present Value NPV in energy units due to cash flow analysis	22 March 2012	Discount Rate DR 10%	24 years	Remaining labor time of 36 years	8.67 years = 8 years + 8 months
<b>Total cost</b> in energy units of one person of					<b>10 years + 5 months</b>
<b>Energy balance</b> = Total return - total cost					<b>49 years + 8 months</b>
<b>Economic multiplier</b> = Total return/Total cost		10%			<b>5.76</b>
		8%			5.93
		15%			5.31

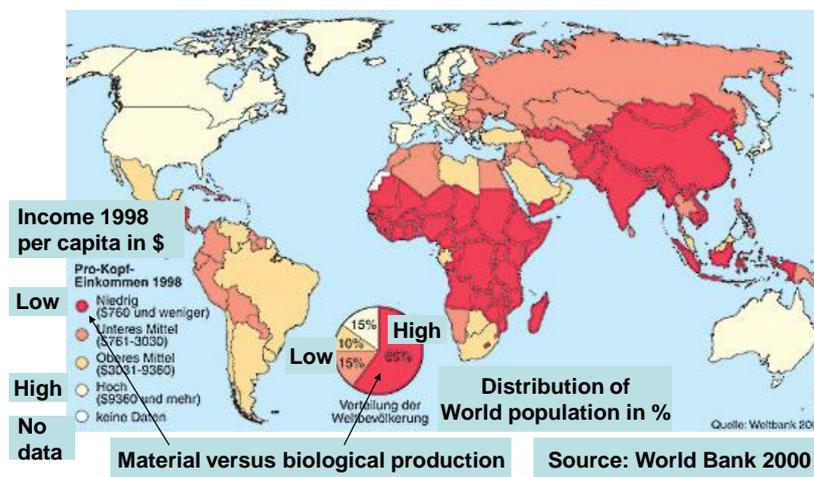
is estimated with 49 years and 8 months labor energy of one person, and the economic multiplier equal total return divided by total cost is estimated with 5.76 (last column). M.'s cost include cost during the creating phase of his hate until the point of no return,

estimated by labor energy of 2 months (last column); cost during the planning phase to finance travel, training/upgrading in Afghanistan/Pakistan, and to prepare actions during worklessness, estimated by labor energy of 18 months in the end (last column); cost for the execution phase, estimated by labor energy of 1 month in the end (last column); and cost for the loss of his own life measured by the Net Present Value NPV at day of death according the concept of cash flow analysis with energy instead of money, estimated by labor energy of 8 years and 8 months (last column) assuming a discount rate DR of 10%, an age of 24 years, and 36 years remaining labor time; his total cost is measured by labor energy of 10 years plus 5 months of 1 person. M.'s return includes 7 murdered people, 3 paratroopers (age estimated with 24 years), a teacher (age estimated with 35 years), and 3 pupils (age estimated with 12 years each). Assuming the same DR of 10%, 36 years remaining labor time for paratroopers/pupils and 25 for the teacher, the NPVs are 8 years and 8 months for each paratrooper and pupil, and 6.07 years for the teacher; so M.'s total return is measured by labor energy of 60 years and 1 month of 1 person. For comparison the table includes also values for the economic multiplier with DR of 8% and 15% being equal 5.93 and 5.31; this high values strengthen importance of mental products. M.'s benefit from his *hate* is a mental product, too; it is his *belief* that by these doings, terrorists' doings viewed from society, he will come into heaven.

**4. Explaining impact on distribution of global wealth and poverty**

Focusing Nature's solution of poverty, Hegel's entire picture of human production was presented within ISI session in Dublin in 2011 (Maier 2011a). Here it is used to confirm the thesis that *origin of human wealth and poverty is the different allocation of energy for production* in different countries or societies whether this is done consciously or not.

**The dual phenomena of wealth and poverty:  
Hegel's entire picture of human production**



The graph with data of 1998 shows the geographical distribution of wealth and poverty of humans in different countries, measured by the leading indicator *Income 1998 per capita in US \$* of human world producing mainly material goods and related services; classified in groups *Low* (\$760 and less, red color), *Lower middle* (\$761- 3030, flesh-colored), *Upper middle* (\$3031-9350, sandy), *High* (\$9360 and more, bright), and *No data* (white). Using the same colors, this graph shows geographical distribution of human biological self-production, too; measured by the leading indicator *Number of population* of natural world; classified in groups *60% of world population* (red color), *15% of world population* (flesh-colored), *10% of world population* (sandy), and *15% of*

*world population* (bright). Subjected to the natural law of conservation of energy within a closed system in the natural world like any other species, either man can allocate its restricted energy budget per year to produce more biological goods which reflects in increasing growth and wealth of population in natural world and reversely reflects in decreasing growth and wealth in terms of material issues in human world, or man can allocate this energy budget to produce more material goods and related service which reflects in increasing growth and wealth of real income hence in income per capita in US \$ in human world and reversely in decreasing growth and wealth in terms of number of population in natural world. Thus distribution of global wealth and poverty in the end and long run turns out as impact of different use and distribution of the natural money energy by man under different social and regional circumstances which are human laws, social habits, natural resources of environment, and others. Wealth and poverty are dual phenomena which mean both are inseparably coupled by allocation of energy like dual markets in the natural world; they appear as dual faces of man's activity. An isolated eradication of poverty is not possible to aim at it is an illusion; this is the message of Hegel's consistent entire or overall picture of man's production in this context. It is empirically confirmed with data of World Bank where poverty lines occur indirectly, only, namely by the settings of the income classes; however, the concrete setting of these classes and intervals does not upset this message from Hegel's philosophy. This is compatible with Nature's own solution of poverty phenomenon which doesn't eradicate poverty and wealth, too; but rather changes man's ethnographic basis of poverty and wealth over long time and several generations, via migrations and demographic change, and which solution was derived from Hegel's overall picture as well (Maier 2011a).

##### **5. Observable strategies and measures to respond to poverty**

Whatever reason is money restrictions of or within human society are fact and challenge strategies and public measures to use the natural currency and absolute money energy in order to respond to poverty; we focus some of them. The **Chinese strategy** and public measure to respond to poverty we identify as an outcome of Hegel's entire picture of production. By a population policy it shifts bio-energy from human self-production to production of material goods, obviously it was and is successful: China's reproduction rate decreased from 1.12 in 1980/1985 to 0.80 in 1995/2000 (Maier 2011a, p. 9), and parallel its material production increased enormously which is fact. China overcame Germany as second biggest exporter of commodities; within an oligopoly structure it may turn to world power number one during 21<sup>st</sup> century. However, China's high-speed development according harmony principle of Chinese philosophy of Daoism is to be turned into a sustainable development for people and environment not only in China. Response to poverty by **remittances** of migratory workers applies David Ricardo's (1772-1832) theory of comparative cost advantages within the natural world. Migratory workers sell bio-energy as input to material production abroad to a better price in human money than at home, by remittances of this money and retransfer of it in real values in their home state or region they make a better profit. It reflects behavior of migratory birds within the natural world. Ricardo's theory is practiced by **piracy**, too. Pirates use their natural money bio-energy to capture material goods and men equal bio-products, sell them for human money, and retransfer the latter into real values thus make profit. The strategy and measure of **social transfers** is well known from welfare economics and practiced by many states. Different from the natural solution of poverty this strategy aims at transfers from wealthy to poor just now in present. But undoubtedly this strategy is limited and cannot be maintained for ever, this is indicated by high and growing public and national debts of wealthy countries; besides it is counterproductive, it forces aging and immigration of poor people (Maier 2007a, p. 71-72). Finally a comment to observable strategies by individuals and groups on local level: **beggar's strategy**, and strategies **out of human laws**, both make profits in money by use of energy. Beggar's strategy either aims at human money by showing his or her poor situation or by offering for some money to do not disturb a scene by their presence. Strategies out of human

laws are reported in statistics, they trust either in the weakness and favor of legal orders which impose evidence on the other side, or in silence of concerned people.

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