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Foundations Of Microeconomics Including A Model Of Marx's Microeconomics

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Foundations of a discipline, e.g. economics, means to lay bare meta-or epitheoretically the presuppositions in form of protomodels or paradigms or background knowledge together with the methodologically important hypotheses or principles which may be expressed by axioms dealing with a part of the discipline or the total field. The description of the protomodels such as ideological presuppositions, political views, religious and metaphysical basic ideas together with their influence on the discipline is often called hermeneutics, whereas the latter methodological foundation has to prove that the whole discipline can be derived classically – deductively or probabilistically – from the given axiom, a task which is especially interesting if the discipline consists of well formed hypotheses or theories. The first typically methodological step consists in singling out similar hypotheses and theories of discipline, i.e. dealing with the same field (D). In such a sense the differences between macroeconomic theories, such as theory of money, of income and price level and microeconomic theories such as resource allocation, theory of markets, of firms and households dwindle down, if we characterize macro- as well as microeconomics according to J. St. Mill, H. Sidgewick, A. Smith, K. Marx as based on a common field D, namely on economic preferences, values as well as actions and decisions. Elimination of "economic" to avoid circularity, leads to the epitheoretical statement:

ES1: Macro- and microeconomic hypotheses and theories are preoccupied or may be reduced to the investigation of evaluative processes and/or to decision making dealing with creation of values by labor (production) comparison, exchange, distribution and possession of creative (produced) values.

A. Smith, K. Marx, L.v. Mises, Rodbard and the Austrian school of economics saw in value creation, not in production of goods, the crucial problem of economics. This seems to be a withdrawal to the onetime occasional title of economics as "the science of values" without being concerned with the factual demand of economic decisions. This definition would certainly be too wide for our purpose, since we have restricted the basis of economics to "value creating actions" which is equivalent according to A. Smith and K. Marx to "productive labor." The following explication by ES2 may be regarded as a protomodel or paradigm in the sense of Kuhn, in the light of which we have to understand economics. We will call this paradigm the protomodel of value creative actions and describe it epitheoretically by reformulating Rodbard's praxeological foundation of economics.

ES2: The protomodel of value creation consists of the following presuppositions: All economic actions are defined as purposeful individual evaluative behavior which may serve for decision making under risk and uncertainty and are based on production, exchange and distribution of values, if the following conditions are fulfilled:

2.1 Actions require an image of a desired state (end), a technological plan and/or procedure to arrive at this end.

2.2 Desired ends presuppose that the future state is more satisfactory for the individual as well as for his society.

2.3 More satisfactory states can only be achieved by value creating means. Means are the created manufactured goods or factors of production (artificially produced by man's labor or available from nature).

2.4 The means to achieve the desired ends are always scarce.

2.5 The ranking of final ends as well as the means to achieve desired ends change according to the changing efforts, time and technical (technological) procedures constantly developed.

The whole paradigm 2 boils down to the primitive model that things which are momentarily scarce have to be created, realized. The realization, creation of an end product or good gives the final end product a value, i.e. creates values.

It seems that man in and within his society is not primarily striving for maximization of his utility or satisfaction, but tends to produce, create new goods which are scarce. 2.3 and 2.4 replace therefore the utilitarian maximization of utility. 2.4 introduces at the same time a minimal Pareto condition.

Marx's version can easily be obtained from ES2.

ES3: If in a protomodel described in ES2 values can only be created by labor, then it is called a Marxian protomodel of economics. Marx's version is therefore a restriction since it does not take into account that, e.g., exchange distribution of values has to be considered at least as value changing, i.e. increasing or decreasing the labor value.

In a next step the neo-utilitarian version of the protomodel ES2 will be described.

ES4: A neo-utilitarian protomodel of microeconomics is obtained if we add the following conditions to the primitive model described in ES2:

4.1 Evaluations and decisions can only be done by individuals (agents) which decide rationally, i.e. by using a well formed conventionally established decision or value theory prescribing how to evaluate and to decide in a formal sense.

4.2 More satisfactory decisions are obtained only by maximization of the agents' expected utility, or simply of his utility.

4.1 demands that interpersonal utility has to be established between decision makers partaking in a common decision procedure. From 2.2 it follows that any compromises (e.g. minimax strategies) are permitted. It should depend completely on the reader and economist which one he regards – ES2, ES3 or ES4 – as his protomodel, paradigm in the sense of Kuhn or simply as background knowledge on which the economic theories are founded.

Finally, to conclude the foundations by laying bare the methodological presuppositions of microeconomics, a model M will be discussed by means of an axiomatization published in extended form by the author elsewhere. From this axiomatized model both the neo-utilitarian version and the Marxistic version of microeconomics can be obtained.

ES5: The basic structure $M=(G,N,E,V;v,p)_C$ is called a set theoretical model of microeconomics, which will be defined simultaneously with its empirical interpretation if and only if the following structural (methodological) epiconditions are fulfilled:

C1: G is a finite non-empty set of goods, consisting of three categories: the raw materials (RG), the means of production (MG) and the end products of the production process (PG), where $rg \in RG$, $mg \in MG$, $pg \in PG$.

C2: N is a finite non-empty set of individuals, forming groups, coalitions, societies, e.g., Firms: $N_i \in N$.

C3: V is the set of values defined by a value function on RG, MG and PG, for example, by a monetary value-function.

C4: A is a set of actions, consisting of single actions $a^i_1, a^i_2, \ldots a^i_n$ of the i – the decision maker (i=1,2, ...n) and consisting of a set of actions $a^j_1, a^j_2, \ldots a^j_m$ for the j-th decision maker (j=1,2, . . . m).

C5: v is a general value and choice function of first and second order defined on G and N whose values are the elements of the set V.

C6: p is a probability function, a measure of the uncertainty of the random events E, but also of G or A, on which economic evaluations and decisions are depending.

C7: $v^c(MG+RG)$ is a monotonically increasing function called cost function.

C8: v^p called the price function is a monotonically decreasing function given for the producer i and his end products pg^i by the law of supply and demand:

$$pg^i v^p(pg^1+pg^2+, \ldots pg^n) = V^p$$

C9: V^p is called the profit-value and is given by: $V^P = V^p - V^C$ or

$$V^P = pg^i v^p(pg^1+pg^2+, \ldots pg^n) - v^c(mg^i+rg^i)$$

This axiomatization adds to ES2 the cost function, price function and the law of supply and demand.

Marx called V^P profit, V^p exchange value or price on the market and V^C labor value, what we today call the costs.

With respect to C9 the Marxian interpretation and the neo-utilitarian differ. ES4 regards the profit as the motor of all business and economy since it satisfies in an ideal way the maximization of individual utility (See ES4).

In Marx's interpretation (ES3) the profit is regarded as a surplus value not created by labor (therefore called dead labor value). Marx has to applicate his socio-political protomodel of classes together with his dialectic proto-model of development to explain C9. Consequently the neoutilitarian (e.g. Keynes) regards economy as self regulating, because of the law of supply and demand (C9), but Marx has to impose planning control, which he deliberately takes from its socio-political model, since he abandoned the supply and demand structure of the market, (see ES3).