

‘When the facts change, I change my mind...’

Some developments in the economic scientific community and the situation in Germany*

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1. Introduction

According to Thomas S. KUHN (1962), scientific progress does not advance straightforwardly but is marked again and again by key breaking points, which can be referred to as scientific revolutions. The trigger for these breaking points in the cognitive process, which is associated with a change in the basic explanatory pattern or paradigm¹, is the deviation of the model predictions from the empirically measurable reality. In the natural sciences, such crisis-laden developments are often due to new and improved measurements based on new technologies. In the humanities and social sciences, it is sudden socio-economic developments that (seem to) bust down the framework of the paradigm.

A “crisis” of this sort, however, is a necessary but insufficient condition for a scientific revolution.² The existence of an alternative explanation – a new scientific paradigm – is a further condition that must be met. In this sense, the “Keynesian revolution” after the Great Depression of the 1930s can be interpreted as a paradigm shift from the neoclassical, partial analytical theory of marginal utility to total analytical macroeconomics, just as the return of the microeconomic-based general equilibrium theory in the form of new classical macroeconomics (NCM) can be understood as a “counterrevolution” (or as it is sometimes called, a “rational expectations revolution”) after the stagflation of the 1970s that was so empirically fatal for Keynesianism.

On a politically pragmatic level, the global financial crisis of 2008-2009, which sparked the world's worst depression since the 1930s, swept away the state intervention scepticism that derived from the market euphoria of NCM as abruptly as it did the certainty of academic economists that they had actually found in NCM an analytical instrument that was compatible with reality. For example, Olivier Blanchard (2008), professor at the elite US university MIT

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¹ Thomas KUHN's notion of a ‘paradigm’ carries many similarities with Imre LAKATOS’ ‘research programmes’(see LAKATOS 1978) and they are often used interchangeably. However, KUHN's approach is more conducive to understanding radical changes, while LAKATOS’ approach sheds more light on the resilience of (dominating) research programmes (or paradigms). I will refer to each of the concepts in its due context.

² A ‘referee’ maintains that “Kuhn did not argue that paradigms are undermined by predictive failure per se. He argues e.g. Chp 6 & 7, that science involves puzzle solving and that normal science standardises the rules for puzzle solving but that novelty and anomalies accrue, which the current theories within the rules of normal science fail to account for - this includes predictive failure but is not reducible to predictive failure only - it involves new areas of insights, new observation possibility, new social contexts (social pressure (p. 69) - a crisis of normal science rather than a crisis of reality per se is what Kuhn emphasises”. This appears to be either a misunderstanding of my remarks or a misinterpretation of Kuhn. Kuhn is explicit about the necessary (though still not sufficient!) ingredients of a scientific revolution: “Discovery commences with the awareness of anomaly, i.e., with the recognition that nature has somehow violated the paradigm-induced expectations that govern normal science. It then continues with a more or less extended exploration of the area of anomaly. And it closes only when the paradigm theory has been adjusted so that the anomalous has become the expected. Assimilating a new sort of fact demands a more than additive adjustment of theory, and until that adjustment is completed—until the scientist has learned to see nature in a different way—the new fact is not quite a scientific fact at all” (KUHN 1962: 52f.).

and chief economist of the IMF, affirmed in 2008 that macroeconomics was in good condition because after the long debates during the “counterrevolution” in the 1970s, a broader consensus (or what KUHN would describe as a paradigm) had taken hold in economics: the so-called D(ynamic) S(tochastic) G(eneral) E(quilibrium) models, which were, in particular, also seen as empirically saturated once they allow some rigidities in their assumptions.³

Barely two years later (BLANCHARD/DELL’ARICCIA/MAURO 2010) – after the global financial crisis – he had to admit that the stability of the economic interactions in the DSGE models and economic policy’s single-minded focus on price stability (combined with the simultaneous failure of fiscal policy intervention) had had too much of a “lulling” effect and that economics required a reorientation. The Institute for New Economic Thinking (INET), which was founded in the fall of 2009 by a multimillion dollar donation by financial guru George Soros, and whose Advisory Board⁴ consists of a number of well-known representatives of the DSGE mainstream, from George AKERLOF and Joseph STIGLITZ to Kenneth ROGOFF and Jeffrey SACHS, supports these reorientation efforts and recognises “problems and inadequacies within our current economic system and the modes of thought used to comprehend recent and past catastrophic developments in the world economy. The Institute embraces the professional responsibility to think beyond these inadequate methods and models and will support the emergence of new paradigms in the understanding of economic processes.” (INET n.d.)

So is economics about to experience a new scientific revolution? In addition to the “crisis” as a trigger, alternative approaches that could replace the dominant mainstream paradigm are also necessary. In the following discussion, an assessment of heterodox developments as a basis for such a paradigm shift (Section 2) will be provided. Based on developments within mainstream thinking, it will be investigated whether the ground is fertile for an effective reorientation (Section 3). Finally, the design of the German academic economics market will be briefly discussed in order to appraise the specific German conditions for a paradigm shift (Section 4).

2. The neoclassical benchmark model and recent developments in the global community?

“Normal” economic science⁵ is undoubtedly represented by the neoclassical paradigm of a

³ Such rigidities then make New Keynesian macroeconomics (NKM) out of new classical macroeconomics (NCM), but paradigmatically both versions of the DSGE approach make up the neoclassical mainstream benchmark model, as BLANCHARD (2008: 5ff) maintains: “The new tools developed by the new classicals came to dominate. The facts emphasised by the new-Keynesians forced imperfections back into the benchmark model. A largely common vision has emerged, ...: It starts from a general equilibrium structure, in which individuals maximise the expected present value of utility, firms maximise their value, and markets clear. Then, it introduces a twist, be it an imperfection or the closing of a particular set of markets, and works out the general equilibrium implications. It then performs a numerical simulation, based on calibration, showing that the model performs well. It ends with a welfare assessment.” This “fraternity” between NKM and NCM leaves post-Keynesians doubtful as to whether NKM should actually refer to itself as “Keynesian”; see ROTHEIM (1998), DAVIDSON (1994).

⁴ Indeed, of the current 31 members of the Advisory Board, only two - Duncan FOLEY und Paul DAVIDSON – had vigorously advocated for a “New Economic Thinking” before the world financial crisis.

⁵ Occasionally, social science is presented as a pre-paradigmatic science in which no consensus on an axiomatic core has yet emerged. This is certainly not the case for economics, as K.W. ROTHSCHILD (2005: 440) corroborated: “More than in any other social science, we have in economics a sharp division between a ruling mainstream and a multitude of ‘heterodox’ theories which have in common that they diverge in one way or another from the neoclassical mainstream.”

market or exchange economy. It consists of various schools within the exchange-theoretical axiomatics – NCM or NKM – and is challenged by alternative paradigms – e.g. post-Keynesianism or neo-Ricardianism. Protests by French university students provide evidence that dissatisfaction with the self-referentiality and compartmentalisation (“autism”) of the highly formalised neoclassical paradigm has transformed into a worldwide attack on neoclassical orthodoxy. Many “critical” economists have joined this movement (see FULLBROOK 2003), which received further fuel from the developments of the “real global financial crisis”. In the following, the hallmarks of the “neoclassical benchmark model” will be explicated and the burgeoning critiques of the model will be presented. This is followed by a consideration of possible alternatives, which is important because science does not permit any “theory vacuums”. If there were no available alternatives that could provide consistent substitute interpretations in addition to mere theory criticism, the dominance of neoclassical economics would remain safe for now⁶.

The objective is not to build a straw man which can then be arbitrarily knocked around but rather to describe the “neoclassical benchmark model” – the exemplar of normal science – as accurately as possible. Only in this manner can we prevent criticism from getting lost in the fog of unclear concepts. And I would like to try to examine this description with the help of the LAKATOSIAN idea of an axiomatic core, the assumptions of the “protective belt” and the resultant postulates. The exchange theoretical core of neoclassical economics can be summarised in three axioms:

- (1) The gross substitution axiom,
- (2) the rationality axiom, and
- (3) the ergodicity axiom.

The gross substitution axiom states that, in principle, all goods (and services) are mutually interchangeable. This ensures that the relative price can function as an allocation tool and guarantees the existence of market equilibria (see REIJNIERSE/VAN GELLEKOM/POTTERS 2002). The rationality axiom states that all economic activity is goal-oriented and consistent – a prerequisite for the benefit-maximising *homo economicus*. Finally, the ergodicity axiom allows for the idea of the stochastic-deterministic development of all variables that are important for economic decisions and necessary for the formation of rational expectations (see DAVIDSON 1984) – rational expectations being a stochastic extension of the overly simplistic assumption of perfect foresight. Economic agents are only able to do what neoclassical economics demands of them if these axioms are valid: optimal consumption, investment, labour supply and labour demand plans have all been established. Furthermore, portfolio decisions and numerous other decisions must also be optimised. In short, every circumstance must be optimised.

If certain assumptions from the “protective belt” are added to these core axioms – typically assumptions about atomistic market competition, infinite adjustment speeds, complete price flexibility and the absence of transaction and information costs – then the following postulates can be derived:

- (1) the postulate of a general market equilibrium in either its classical (Say's Law) or neoclassical garb (Walras's Law);

⁶ Actually, this appears to be the approach of some mainstream economists: simply to deny any valuable alternative: see SCHULTZ (2012). However, my approach is not the extreme opposite – i.e. to deny mainstream (neoclassical) economics its status as scientific theory (as has been done by LEE (2012) or to reduce it to ‘pseudo-knowledge’ (as has been done by LATSIS 1972) – but normatively to deny a monistic understanding of economics and positivistically to inquire into the likelihood of a paradigmatic shift (or, for that matter, paradigmatic opening).

- (2) (the monetary neutrality postulate (classical quantity theory) with its implicit dichotomy of real and monetary economic spheres;
- (3) the policy ineffectiveness postulate (Ricardo-Barro equivalence theorem); and
- (4) the welfare and harmony postulate. The critics concentrate on these four extremely strong implications of the neoclassical benchmark model, but first we should highlight their importance again.

The particular strength of the neoclassical benchmark model lies in its deductive rigor and coherence. However, this does not mean anything other than that the aforementioned postulates represent more than just doctrines that can either be accepted or (often intuitively) simply rejected. Rather, when the axioms (core) and basic assumptions (the “protective belt”) are ultimately accepted, transcendental logic leads to several logically indisputable results.⁷ First, there is one “best of all worlds”.⁸ Perfect markets always reproduce optimal results, even if they are hit by so-called “exogenous shocks”. These results show that the existing supply will always find its corresponding demand and that economic agents are free from monetary or nominal illusions; therefore, neither monetary nor fiscal policy interventions can have any positive influence whatsoever on economic agents, who are oriented toward real variables (real income, relative exchange values, real balance, etc.). Ultimately, this interpretation of reality culminates in the conclusion that this “best of all worlds” not only maximises individual economic agents’ welfare under the restriction of finite resources, but also does not even require them to engage in any trite behaviour such as benevolent altruism. Instead, individual, self-interested, “rational” behaviour will lead to this result. Adam SMITH’s famous “invisible hand” guarantees that the common good does not have to suffer under the (supposedly realistically described) behaviour of self-interested individuals.

I have no intention of suggesting that it requires a denial of reality to accept the predictions of this “Panglossian” model.⁹ All too easily, the assumptions of the “protective belt” – especially the assumption of atomistic competition and full price flexibility – can be altered with reference to disruptive institutions and organisations, restrictive (e.g. in the labour market) or missing rules (e.g. for competition) in such a manner that reality is restored into the explanatory framework of the model. It seems more significant to me that this Panglossian world provides an incredible intellectual stimulus as a reference scale and, more particularly, it strongly advocates some exceedingly clear economic policy implications: of course, the basic assumptions are rarely fulfilled in the real world, but it is imperative to approximate them as closely as possible through market-creating, market-enhancing and market-liberalising measures.

Whenever this is impossible or undesired, for example due to social or sociopolitical reasons, the consequences – namely, declining welfare and market imbalances – must be accepted and legitimised. The “protective belt” creates a buffer against reality but also protects the

⁷ To my knowledge, there has thus far been only one successful strike against the deductive rigor of the neoclassical benchmark model: the refutation of the price-driven exchange equilibrium during the so-called Cambridge capital controversy. As fundamental as this criticism was, it failed to yield any consequences. The neoclassical side (U.S. Cambridge) had to admit that the equilibrium postulate could logically be properly sustained only under further restrictive assumptions – the “single capital good world” – but argued that, on the other hand, the anomaly exposed by the classical proponents (UK Cambridge) was empirically insignificant and therefore did not warrant further consideration. This continues to be the *modus operandi* today. (see HODGSON 1999: 46ff.; COHEN/HARCOURT 2003)

⁸ Reference is made here to VOLTAIRE’s critique of the optimistic world view of Gottfried Wilhelm LEIBNIZ’s religious philosophy; see VOLTAIRE (1759/1971).

⁹ Dr. PANGLOSS is Candide’s instructor in VOLTAIRE’s *Candide: or, The Optimist*; see VOLTAIRE (1759/1971).

axiomatic core for it is all too easily forgotten that on the one hand, the postulates are ultimately grounded in the axioms, and on the other, that the retained image of actors rationally optimising their actions is a synthetic one with no analytical epistemological value. In other words, these axioms were established *a priori*; they did not arise *a posteriori* from the analysis of economic events.¹⁰

The most well-known criticism takes aim at the basic assumptions of the “protective belt”. The call for “microfoundations” has led to the prominence of numerous theoretical approaches which not only introduce ad hoc deviations from the assumption of full price flexibility, for instance, but which also derive these deviations from the rational behaviour of economic agents. It would not be wrong to see this as the common link among all the models that are labelled or operate under the name “neo-Keynesianism”.¹¹ The Keynesian element is generally limited to describing persistent market imbalances, especially in the labour market in the form of unemployment.¹² Ultimately, this means either that there are contradictions between the axioms of the “core” and the basic assumptions of the “protective belt” or that there is room for interpretation within the basic assumptions and thus deductive divergences must exist. In fact, the rationality axiom can enter into conflict with the price flexibility assumptions if a collective (political) rationality (rational choice) is justifiable beyond the individual (economic) rationality. Institutions and regulations which increase the benefits of the collective (to the detriment of the community of individuals) by limiting price flexibility can thus be explained (see OLSON 1965). In this case, the attractiveness of the neoclassical benchmark model remains justified, as it continues to explain how such incentives must be designed in order to stop the welfare-impairing rent seeking of the collective (cartels, trade unions, etc.) (see OLSON 1982).

The situation looks a little different when the assumption of complete information is put into practical effect, such that all information may indeed be present but not equally available to all economic agents and there are rational reasons to exploit these information asymmetries. Joseph STIGLITZ’s information economy is certainly the most well-known approach that not only develops the consequences of information asymmetry – i.e. market failure due to moral hazard and adverse selection, resulting in long-lasting supply disequilibria or massive temporary aberrations, as recently experienced – but increasingly emphasises that such market failure is not an occasional anomaly of otherwise optimally functioning markets but rather an extremely widespread and therefore universal, nearly systematic phenomenon of market interaction. Information asymmetries acquire particular significance in futures markets such as the monetary, credit and financial markets. Labour markets are also affected to a great extent. None of the previously mentioned postulates hold up under such conditions. The Panglossian world is thus suddenly rendered completely unrelated to a satisfactory interpretation of reality, although the core axioms remain untouched. STIGLITZ sees in this a new economic paradigm (see STIGLITZ 2002), because the concept of the “perfect market” is consistently replaced by the concept of the “failing market”. In accordance with my proposed distinction between different paradigms on the one hand and different schools within a paradigm on the other hand, the latter would probably apply (see also DAVIDSON 2012: 60). In any case, the “failing market” implies broad regulatory and political interventions and thereby

¹⁰ Although axioms are distinguished by their normativity, economists have always tried to portray exchange as a fundamental anthropological fact of human activity; see e.g. SMITH (1776/1977: 16). For criticism, see e.g. HEINSOHN (1983) and HEISE (1990).

¹¹ See GORDON (1990); MANKIW/ROMER (1991).

¹² Especially in German-speaking countries, this occasionally led to discussions of “critical neoclassicists”; see e.g. SCHNEIDER (1988).

justifies a “strong” and present state, which could not be further removed from the “neoclassical benchmark model”.

The criticism aimed at the axioms of the paradigmatic core has a broader scope. On the one hand, the rationality axiom of the neoclassical benchmark model is rejected by the experimental, evolutionary and institutional complexity economics¹³; on the other hand, the ergodicity and the gross substitution axioms are regarded as unacceptable by post-Keynesianism. The former criticism is aimed at the allocative decision logic of economic agents – and is therefore microeconomically oriented – while the latter emphasises primarily the macroeconomic implications, in particular the representation of multiple equilibria in a rejection of the general equilibrium of the neoclassical benchmark model.

The rationality axiom states that the actions of economic agents are target-oriented and consistent. In order for this axiom to be deductively expanded to the above mentioned postulates and to action predictions that are testable, it must be specified: the material utility maximisation (e.g. as income or profit maximisation) is assumed as guidance and consistency is understood as the transitivity of preference orderings. Economics Nobel Laureate Vernon L. SMITH labels such a rationality axiom¹⁴ produced by a self-interested and rational *Homo economicus* “constructivist” and contrasts it against the “ecological” rationality axiom, in which economic agents can act with “bounded rationality” in different environments. Experimental economics shows on the one hand that the “constructivist” rationality axiom clashes with the “harmony postulate” when behaviour interdependencies lead to non-cooperative behaviour (prisoner and other cooperation dilemmas or free rider behaviour) of rational, self-interested individuals and thus lead to sub-optimal social welfare; a phenomenon which is sometimes called “rationality with regret”. Fortunately, this need not overly worry us, as experimental, evolutionary and institutional economics all describe numerous environments (norms such as reciprocity or institutions such as collective bargaining systems) in which “irrationality without regret” leads to cooperation among economic agents and thus increases social welfare. But of course this is also bad news for the neoclassical benchmark model: people all too rarely behave like the idealised *Homo economicus*. In Adam SMITH’s time, the assumption of a rational, self-interested economic agent was merely an attempt to hint at the harmony of utility maximisation for both the individual and society as a whole without recourse to an overly optimistic view of man. But in the neoclassical benchmark model, the individual optimiser has been turned into a necessary building block for a Panglossian world, without whom it could not be consistently sustained.¹⁵

Post-Keynesianism ultimately rejects the ergodicity and gross substitution axioms. One of the central propositions of John Maynard KEYNES’ General Theory is that in the neoclassical benchmark model the necessary information for the optimisation of decisions by economic agents is neither equally available to all market participants nor can it be sufficiently processed by all. Above all, in many cases – especially when it comes to information about

¹³ In no way are experimental, evolutionary and institutional economics identical. Experimental economics can be understood as a research laboratory of strategic interaction in which the behavioural hypotheses of normal science are tested (see e.g. AMANN 2007). Evolutionary and institutional economics, on the other hand, emphasise the importance of norms, conventions, routines, etc. for human behaviour and investigate their formation and variations (see M. HODGSON 1999: 127ff.). In the broadest sense, the neo-Marxist approaches of the French Regulation School and the American Social Structure of Accumulation School (see e.g. BOYER 1990; KOTZ/MCDONOUGH/REICH 1994).

¹⁴ And he imputes it to his version of the neoclassical benchmark model: the “Standard Socioeconomic Science Model” (SSSM); see SMITH (2002).

¹⁵ And with whom it is also unsustainable: see “rationality with regrets”.

future developments – it simply does not exist, and thus no probability distributions can be objectively set. The issue is one of fundamental uncertainty, not merely one concerned with risk-carrying situations. In order to take any action in such a situation – any discussion of optimisation in the commonly used sense can be dispensed with – the existence of behavioural norms/routines, instincts and institutions is required. Keynes and post-Keynesianism place particular emphasis on one institution – money – and one instinct – the animal spirits – in their considerations. The “animal spirits” are surely the attempt to create a rudimentary and expandable theory of expectation formation – in the face of fundamental uncertainty – where money is the one asset that secures economic agents’ reproduction ability and is thus assigned a liquidity premium. Money is by no means being “invented” in this theoretical consideration in order to reduce exchange costs; rather, economic agents project their uncertainty about the future onto those assets whose excess of liquidity premium over carrying costs are greatest.

The disposability of money ultimately determines the neutral position of an economy – thus money is neither a neutral exchange medium (neutrality postulate) nor is the economy’s neutral position necessarily or even typically in a state of overall balance (equilibrium postulate). Furthermore, the policy effectiveness postulate can also no longer be maintained under these conditions. In this far-reaching rejection of the Panglossian postulates, the friendly relationship of post-Keynesianism to neo-Keynesianism can no doubt be seen, though as shown above, the basis for the rejections are quite different.

As already noted, criticism alone is insufficient if it fails to offer a constructive and consistent alternative interpretation of reality. And of course it is to be expected that the neoclassical “model tree” is much more thickly covered with leaves than the trees in the gardens of post- or neo-Keynesianism and experimental, evolutionary and institutional economics, considering the imbalance in the number of gardeners cultivating them. However, some quite serious intrinsic problems and shortcomings of the critics have been identified, which may be able to explain why the dominance of the neoclassical benchmark model is still so strong: (1) In spite of all the objections to the constructivist rationality axiom, there is still no replacement construction in sight which could substitute the *Homo economicus*. And perhaps there is no simple model of action upon which economics can build – but then comprehensive micro-based, prescriptive models would be nearly unthinkable. Perhaps this perspective is so worrying that even experimental economists such as Vernon L. SMITH refuse to reject the constructivist rationality axiom categorically (cf. SMITH 2002: 505), claiming instead that only personal, strategic interaction has been experimentally debunked. For more impersonal, market-based and contractual interaction, however, there is much to be said for stricter selfish-materialistic rational behaviour, though with limited information. (2) To this day, post-Keynesian theory has neglected one of its central elements: a comprehensive theory of expectation formation.¹⁶ Without a clearer idea of how expectations are formed in conditions of fundamental uncertainty, the *ex ante* forecast quality of this construction of reality remains limited, and the *ex post* forecast test can be passed all too easily via the introduction of *ad hoc* “animal spirits” (see HEISE 1993). On the other hand, post-Keynesianism can be connected to all the evolutionary and institutional “bounded rationality” approaches as well as to a reductionist expectancy theory and to a constructive dialogue with neo-Keynesianism. (3) Neo-Keynesianism is probably the most advanced in its development of a “new neoclassical

¹⁶ This is particularly surprising, as the concept of “bounded rationality” from Herbert SIMON (1968) and George SHACKLES (1955) was an early attempt to do so, and the neoclassical theory of rational expectations would really have to have been challenge enough.

synthesis” as a substitute for the neoclassical benchmark model¹⁷ – which is certainly also due to the fact that it is not an alternative paradigm but simply an alternative theoretical school within the same paradigm. However, its derivable postulates (“failing markets”) are sufficiently removed from the criticised mainstream model so as to appear heuristically as an alternative, although one which can not be epistemologically separated from the mainstream model at all. It might be more consistent here to take the paradigmatic step out of the exchange theoretical basis of the neoclassical benchmark model and seek to close ranks with post-Keynesianism and evolutionary and institutional economics.

3. Dominant mainstream or “new plurality” – where is the journey heading for?

Long before the recent global financial crisis and its consequences for the self-image of the economics profession, Robert CLOWER (1989) described the state of economics as “hopeless, but not serious”. His intention was to criticise the constriction of economics to the reductionism of the formal, axiomatic DSGE mainstream. Economics had grown too far removed from the type of science that could contribute solutions to real problems, and instead was wallowing in the self-referentiality of the unending “footnote discussions” it generated. Robert SOLOW (1989: 37) rightly points out that a science that develops a paradigmatic core will become a “normal science” in which droves of economists will produce scientific results that range “from very bad to excellent, with a median somewhere near O.K.” Criticism is thus reserved here not for the sprouting of findings that fail to promise to directly solve major global problems, but rather for the size and dominance of this “knowledge tree” which no longer lets in enough light for the growth of other “knowledge trees”. But don’t the aforementioned variety of alternative theories and perhaps even alternative paradigms point to a sufficient plurality that can in turn flourish now that the mainstream approach has been beset by skepticism? Is it still true that “When the facts change, I change my mind”?¹⁸

Before this question can be answered, one must first note that the alternative theories and paradigms have received very little propagation, and in recent decades economics has been increasingly restricted to the DSGE mainstream. Let’s take the German case: While in the early 1980s only about half of German academic economists considered neoclassical mainstream monism worthwhile, 20 years later this figure had grown to 80%, and it continues to rise, as the more critical opinions are predominantly held by elderly scientists striving toward retirement (cf. FREY/HUMBERT/SCHNEIDER 2007). Fred LEE (2009) puts the number of heterodox academic economists in Germany at about 30, which is no more than 5% of all economists (at the professorial level) teaching at German universities. The most serious problem, though, is that this vast majority of orthodox mainstream economists – due to their monistic concept of science – simply do not take note of heterodox approaches (in terms of a plurality of economics) (LEE/HARLEY 1998).

Under these conditions, a new scientific revolution – i.e. a paradigm shift away from the equilibrium-centred harmony postulate of the DSGE models that are optimistically inclined toward the market and sceptical of intervention, away from the methodology of optimisation analysis, away from the notion that monism alone has the right to explain economic phenomena – could be expected only if the older economists were to accept an extensive loss of identity and a devaluation of their hard-earned qualifications and the younger

¹⁷ See e.g. WOODFORD (2003); CARLIN/SOSKICE (2006).

¹⁸ This saying is attributed to John Maynard KEYNES, who was responding to a perceived change in his position; see MALABRE (1994: 220).

economists were willing to risk starting almost completely anew. But what incentives do they have to confront all of the associated uncertainties?

If we consider the economist as a non-self-interested individual whose sole desire is to be able to understand and describe the economic interrelations of the real world as accurately as possible, then the imminent arrival of a broad reorientation phase in economics would doubtlessly be expected. If not now, then when? However, if economists were such a species, then it would be incomprehensible for the plurality of methods and paradigms to be so strongly and consistently limited, as described above. This becomes understandable, though, when the career interests of economists – in the face of a limited employment market characterised by great uncertainty regarding the utilisation of human capital investment – are taken into account. Under these conditions, the pursuit of acceptance in the scientific community, i.e. attention and reputation, often replaces the search for objective knowledge. Economists research into topics that can be published, and these topics are limited to a methodological and paradigmatic standard¹⁹ designated as mainstream or normal science.

In the development of this standard²⁰, an important role is played by certain individuals with distinguished reputations – e.g. Nobel Memorial Prize in Economic Sciences winners or the presidents of major research organisations, in particular the American Economic Association (AEA) – and various journals (also note the correlation of these individuals with the editors of these particularly reputable journals form the “elite” of the scientific community).²¹ And because of the English language’s status as the international language of science and the cultural hegemony of the United States since World War II, the US maintains a dominant role in the setting of standards.²²

So if the “elite of the US-dominated scientific community” – or a number of them with loud voices – were to call for a reorientation or at least for greater openness with regard to the acceptance of reality constructions, the likelihood of a paradigm shift or at minimum a pluralisation of economics would be significantly increased.²³

In fact, one can make out the beginnings of a trend in the U.S. of critics from within the normal science paradigm (though not necessarily critics of the entire DSGE paradigm) being allowed to achieve prominent roles. Influential figures are also increasingly expressing criticism of the normal science paradigm. Of the last twenty presidents of the AEA, five had a critical attitude toward the DSGE paradigm: George AKERLOF, Robert FOGEL, Amartya SEN, William VICKREY and Robert EISNER. However, there were at least as many AEA presidents who were distinct representatives of the radical DSGE paradigm, e.g. Avinash DIXIT, Thomas SARGENT, Robert LUCAS, Gerard DEBREU and Gary BECKER.

¹⁹ FREY (2004) thus writes about “Publishing as Prostitution”.

²⁰ See SWANN (2000) regarding the meaning of standards in the scientific market.

²¹ Without Keynes’ outstanding reputation as an internationally renowned economist at one of the international centres of economic research in the early 20th century – the University of Cambridge – and as editor of the leading international academic journal of the time for economists – the *Economic Journal* – the “Keynesian revolution” probably never would have occurred. The same applies to Milton FRIEDMAN (a former president of the AEA) and the Chicago-based *Journal of Political Economy*.

²² This is shown by the fact that the “scientifically” relevant journals – the so-called A-journals – are published almost exclusively in the U.S., textbooks written by U.S. economists have long been used in universities worldwide as a matter of course and the various international economist rankings are comprised nearly exclusively of U.S.-based economists.

²³ There was in fact a call for the diversification of the discipline in the *American Economic Review* that was signed by several Nobel laureates in 1992, but it seems that the timing was not optimal, as a “crisis of normal science” triggered by new socio-economic developments was not obvious enough to assure the success of the initiative.

The list of Nobel laureates in economics in recent years tells a similar story. Although these prizes generally honour accomplishments which were achieved quite some time ago, the timing of the award can be interpreted as a signal. Thus, it is quite astounding that four of the last ten Nobel prizes went to economists who must be regarded as representatives of complexity economics or neo-Keynesianism, while only three Nobel prizes were awarded to economists from the radical DSGE paradigm.

Overall, it can be said that there are developments in the hegemonic U.S. economics market outside or at the margins of the DSGE paradigm – as well as from within its core – that will no doubt increasingly call into question the dominance of at least the radical NCM variant. As the pendulum between the NCM and NKM models had already swung back strongly in the direction of the more realistic NKM models even before the recent global economic crisis – or in the American parlance, owing to the regional distribution of the main protagonists of the two variants of the DSGE paradigm, the “saltwater economists”²⁴ had begun dominating the “freshwater economists”²⁵ again – the sharp criticism of well-known economists such as Nobel laureates Paul KRUGMAN (2009) and Joseph STIGLITZ (2009a; 2009b) could contribute to making economics a more pluralistic discipline.

4. Institutional incentives of the ‘economics market’ in Germany

The German university system and with it the study of economics are subject to a significant process of transformation. Firstly, the generational turnover after the founding phase of many (reform) universities at the end of the 1960s and the beginning of the 1970s will soon be completed. Additionally, a profiling process has begun that was created in equal measure by the universities themselves as well as imposed upon them from the outside. The reform of the universities in the '60s and '70s was motivated by the demand for the “democratisation” of higher education institutions both inwardly and outwardly (see, e.g., VON DER VRING 1975). All stakeholders – professors, scientific and administrative staff, and students – should be entitled to participate in the organisation, just as research should be accessible to all social groups. In addition to tripartite representation on boards and committees, this included an alignment of scientific approaches that was as broadly pluralistic as possible. This applied particularly to economics, which was to be broadened from the narrow scientism and reductionism of neoclassical economics to a more comprehensive understanding of political economy (see, e.g., VOGT 1973; KADE 1973; NUTZINGER 1973). Chairs and professorships at many of the newly founded universities were filled with representatives who embraced Marxist and (post-)Keynesian worldviews.

Before the Bologna process started to Europeanise the EU's higher education system, there was yet another university reform process – one regulated not based on input (“democratisation”), but rather on output. As part of the wave of globalisation, universities see themselves in an international competition fuelled by rankings lists (e.g. the international “Shanghai list” or the German rankings of the Centre for Higher Education and the *Handelsblatt*). The particularly poor rankings of non-American universities in general and German universities in particular ostensibly indicate provincialisation and a loss of international prominence; they also subliminally imply a reduction in the quality of European

²⁴ From universities on the East and West Coasts of the US: e.g. UC Berkeley, Princeton, Harvard, MIT.

²⁵ From universities near the Great Lakes: e.g. University of Chicago, Carnegie Mellon University, University of Minnesota.

and German science and higher education. What is true for the university as a whole applies equally to most individual academic disciplines, including economics. The near-universal response throughout Europe has been to adopt “excellence initiatives”. In Great Britain, for example, a sizable portion of universities’ funding has now been made dependent on an assessment of their research outputs (Research Assessment Exercise – RAE), although the quality of research performance is nearly impossible to measure objectively. Since the measurement of quality almost inevitably conforms to the “international standard”, which in economics is set by American journals, which in turn are almost exclusively committed to the DSGE paradigm, the result was (and is) a mainstreaming of academic economics in Great Britain (see LEE/HARLEY 1998; LEE 2007).

In Germany such formal regulation does not yet exist. However, non-university economic research is increasingly subject to evaluations, the results of which determine whether the major research institutes (the so-called “blue list institutes”) continue to receive public funding. The research funding from the German Research Foundation (DFG) and the research rankings carried out by private institutions like the Centre for Higher Education (CHE) can also be viewed as informal forms of regulation.²⁶ However, German universities’ shortage of (public) basic founding, which has increased the pressure on them to seek out external funding, mainly through the DFG (making such external funding a prerequisite for the internal allocation of funds according to the so-called “performance and load-dependent allocation of funds” process being recently introduced in most German universities), and the federal government’s recent “Excellence Initiative” ought to be quite similar to the RAE in its effects. On the one hand, there are no reliable studies yet on the effectiveness of these regulations, and on the other hand, they are in part still too new (the rankings and the German “Excellence Initiative”) for us to expect noticeable impacts on the paradigmatic development of economics. The trend towards an increasingly monistic discipline as described above is thus apparently more a matter of self-referential processes within the scientific community (see, e.g., PIETERS/BAUMGARTNER 2002; LOCKETT/MCWILLIAMS 2005; MÜNCH 2007), which are increasingly perpetuated by supposedly thoughtful incentive systems to “assure excellence”.

According to Max Planck, “(a) new scientific truth does not triumph by convincing its opponents and making them see the light, but rather because its opponents eventually die, and a new generation grows up that is familiar with it” (PLANCK 1928:22; own translation). If this is true, then the formal and informal frameworks of the German ‘economics market’ most likely contributed to the fact that the generational turnover at German universities and the reorientation of the university landscape in East Germany since 1990 could not be used for a pluralisation – let alone a paradigm shift – in economics.

5. A sceptical outlook

“Economics today is a discipline that must either die or undergo a paradigm shift—to make itself both more broadminded, and more modest. It must broaden its horizons to recognise the insights of other social sciences and historical studies and it must return to its roots. Smith, Keynes, Hayek, Schumpeter and all the other truly great economists were interested in economic reality. They studied real human behaviour in markets that actually existed. Their

²⁶ MÜNCH (2006) shows that the allocation of DFG funds occurs for the most part based not upon scientific expertise but rather according to representation in the DFG’s statutory bodies, i.e. the distribution of power. It can be assumed, though not yet proved, that this result can be reproduced if the paradigmatic orientation (rather than the regional distribution of DFG representatives) is taken into consideration.

insights came from historical knowledge, psychological intuition and political understanding. Their analytical tools were words, not mathematics. They persuaded with eloquence, not just formal logic. One can see why many of today's academics may fear such a return of economics to its roots. Academic establishments fight hard to resist such paradigm shifts, as Thomas Kuhn, the historian of science who coined the phrase in the 1960s, demonstrated. Such a shift will not be easy, despite the obvious failure of academic economics. But economists now face a clear choice: embrace new ideas or give back your public funding and your Nobel prizes, along with the bankers' bonuses you justified and inspired" (KALETSKY 2009: 156). This appraisal by Anatole KALETSKY, economist and former editor-at-large of the British newspaper *Times*, is probably shared by many heterodox economists – as well as by those with sufficient confidence that the global financial crisis signalled the end of the neoclassical DSGE doctrine (see, e.g., BOUCHAUD 2008; KIRMAN 2009). However, the resistance to this view among the vast majority of academic economists as well as the established institutional structures of the economics market should not be overlooked.

Even the "Keynesian revolution" of the 1950s and 1960s was, on closer inspection, not the paradigm shift²⁷ that KEYNES immodestly envisioned when drafting his *General Theory*.²⁸ At most, this initial push to swing the pendulum within the neoclassical real-exchange paradigm succeeded in emphasising short-term disequilibria and market imperfections more than the harmony postulate of "general equilibrium" allowed. As a result, the stabilisation point of view temporarily gained the upper hand over the allocation point of view without shaking the structurally formative function of the equilibrium ideal. However, there was room alongside this view for post-Keynesian, Marxist and institutionalist constructions of reality, which together constituted something approaching pluralism. History shows, though, that this pluralism without regulatory intervention in the economics market did not endure.

The events of the global financial crisis created cracks in major components of the dominant DSGE paradigm – in particular the rational expectations hypothesis and the efficient market hypothesis – that are much too grave for the paradigm to be able to survive in its present form.²⁹ Furthermore, the number of prominent critics who come from within the DSGE paradigm is too large to be able to continue with "business as usual" economic theories after overcoming the economic crisis. The pendulum has already swung back, and perhaps critical, alternative theoretical approaches will also become more popular again. However, the current "crisis of mainstream economics" – at least in Germany – is running up against a largely saturated market for academic economists, one in which the younger generation of mainstream scientists were only recently granted their professorships and steady incomes. Unless an entirely new form of regulation is created³⁰, it can hardly be expected that the impetus for a renewal will come from Germany.

²⁷ See, e.g. MINSKY (1975: 18f.); HUTTON (1986).

²⁸ As he wrote to George Bernard SHAW on New Year's Day in 1935: "...I believe myself to be writing a book on economic theory, which will largely revolutionise – not, I suppose, at once but in course of the next ten years – the way the world thinks about economic problems" (KEYNES 1935/1973: 492).

²⁹ For example, Joseph STIGLITZ writes (2009b: 294): "The models that have predominated within macro-economics, which assume representative agents with rational expectations, are particularly disturbing. What I find even more striking is that some economists still argue that this crisis has not shaken their belief in rational expectations."

³⁰ For example, one could envision some sort of a "code of scientific pluralism", which would call for all universities to have at least one professor for "heterodox economics" (or the equivalent), and a substantial line of special grants from the DFG for "heterodox or non-mainstream research".

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