Stefancic, Mitja (2009) 'A new framework for the analysis of contemporary financial markets: the need for pluralistic approaches', *The Journal of Philosophical Economics*, III:1, 90-107

A new framework for the analysis of contemporary financial markets: the need for pluralistic approaches

Mitja Stefancic

Abstract: Interdisciplinary approaches are essential to properly evaluate an economic and financial system that is increasingly complex and globally interrelated. With reference to the work of the philosopher Peter Godfrey – Smith, it is argued that a more pronounced interdisciplinarity in the social sciences would enable a flourishing of pluralism in economics. By adopting clearly defined research strategies and objectives, scholars with different academic backgrounds can successfully work on common projects. A better integration of economic, social and behavioural sciences will favour the establishment of new frames of thinking and new analytical tools which are much needed in contemporary financial regulation. Financial markets, defined as competitive markets in financial instruments such as stocks, bonds, loans and derivatives, represent a research subject that may be analysed from a plurality of angles and frames, including a sociological one. In practice, such a plurality of perspectives could favour sustainable wealth creation and contribute to maximizing the benefits from economic globalization.

Keywords: financial markets, economic complexity, methodological pluralism, interdisciplinarity

Introduction

In 1991, some leading economists writing for the *Economic Journal* agreed for the opening of economics to inputs from as well as inputs to disciplines such as sociology and psychology. Ten years later, in June 2001, a group of PhD students

in economics at Cambridge University signed a proposal to reform the economic discipline entitled *Opening Up Economics*, in which they asserted: 'we are not arguing against the mainstream approach *per se*, but against the fact that its dominance is taken for granted in the profession. We are not arguing against mainstream methods, but believe in a pluralism of methods and approaches justified by debate. Pluralism as a default implies that alternative economic work is not simply tolerated, but that the material and social conditions for its flourishing are met, to the same extent as is currently the case for mainstream economics. This is what we mean when we refer to an 'opening up' of economics'.

The arguments for pluralism in economics can be understood by reference to a biological metaphor on the survival of the species: as in nature, diversity of species provides protection against threats and a better possibility of survival, so a plurality of ideas, theories and methods assures a certain degree of protection against unanticipated developments in the sciences. As Boylan and O'Gorman (1995) note, the developments at the turn of the century have propelled us to a more pluralistic age. The concept of pluralism has been discussed in a number of fields, including the philosophy of science, sociology and economics. This article attempts to provide a new point of view on pluralism in economics by considering it in relation to interdisciplinarity and its implications for the analysis of financial markets. This introduction starts with an overview of Bruce J. Caldwell's seminal definition of pluralism as a post-positivist methodology. Throughout the paper, the focus will mainly remain on Caldwell's 1982 definition of methodological pluralism (although Caldwell later changed some of his initial ideas). Unlike in Caldwell, however, pluralism is looked at from a wider perspective by taking theoretical approaches, research strategies and their policy implications into account.

Caldwell's essay *Beyond Positivism* (1982) documents the demise of the positivist views in economics. His analysis implies their rejection and replacement by a pluralist (post-positivist) methodology. Caldwell's views are opposed to those held by Mark Blaug, one of the leading falsificationists (consider for instance his masterpiece *The Methodology of Economics*, 1980). The possibility to conduct straightforward tests of theories and hypotheses is an essential condition for the application of falsificationism. Blaug not only argues in favour of falsificationism, but further claims that modern economics largely subscribes to the methodology of falsificationism. By contrast, Caldwell insists on the fact that

the initial conditions in any test situation are numerous and some of them may be un-checkable. There is always some room for individual interpretations: confirming and disproving test results are seldom unambiguously interpretable. Even though economists often refer to the concept of 'economic laws' to advance theories, they have to take the absence of falsifiable general laws into account. Finally, empirical data may not accurately represent theoretical constructs: a common obstacle in economics consists of the difficulties in the interpretation of data (Caldwell 1994).

Scientists should guarantee scientific freedom as well as a plurality of theoretical and methodological viewpoints. Methodological pluralism presumes the existence of a free science. Criticism, on a number of levels, is generally welcomed due to its positive role in knowledge-building. Non-dogmatic criticism plays an important role in scientific communication as well as in disciplinary organization. It is important to distinguish *external* criticism from *internal* criticism (the latter coming from within a research program). As his opponent Mark Blaug observes, Caldwell 'advocates "methodological pluralism" or "let a hundred flowers bloom" implying that various schools of thought in economics can be criticized from within, that is, in terms of the criteria they themselves avow' (Blaug 1997, xiii).

Scientists cannot *a priori* know which research methods will bring them closer to true knowledge nor which theories provide the most accurate representation of the world out there. One implication for methodological pluralism is not to expect to establish common criteria for progress: 'what is an acceptable explanation to one may not be acceptable to others, not just because there may be different preferred methods, but also because the nature of the subject matter is understood differently, and terms are being used in different ways' (Dow 2006, 21). Methodological pluralism for instance assumes that no universally applicable or logically compelling method of theory appraisal exists. The goal for methodologists is not to discover some universal scientific method. Instead, as suggested by Caldwell, there are specific guidelines that economists working under methodological pluralism should pursue, and they should be able to accomplish specific tasks. On the other hand, there are a number of objections that can be advanced for methodological pluralism, including the idea that pluralism may ultimately lead to an abrogation of scientific freedom.

Stefancic, Mitja (2009) 'A new framework for the analysis of contemporary financial markets: the need for pluralistic approaches', *The Journal of Philosophical Economics*, III:1, 90-107

A historical account of pluralism

Economic methodology investigates how economists justify both their theories and the concepts on which they are based. Several decades ago, the belief that economics could be (and should be) a scientific discipline emerged with unprecedented strength: although not entirely new, such a view was advocated by positivism with the aim to provide a solid epistemological foundation for all the sciences capable of adhering to the rigours of the scientific method. In the 1940s and 1950s, positivist ideas gained increasing popularity among scholars focusing on economic methodology and, as a result, 'positivist exhortations soon dominated the methodological rhetoric of economics' (Caldwell 1994, 4). Later, a number of important changes contributed to modifying methodological views and beliefs: new and arguably better ones replaced them. In the last decades of the Twentieth Century, positivism faced a severe decline within the philosophy of science, and its standpoints have lost much of the initial appeal.

That both rigour and precision can differ from one approach to another has become a commonly accepted idea. For instance, Weintraub (2002) asserts that both their meanings and application have changed within mathematics. The concept of precision could be discussed even further. Another example comes from econometrics, arguably one of the most formal and rigorous fields of specialization in economics. There are usually implicit assumptions underlying econometric tests that are hard to evaluate: consequently, models used to forecast economic trends or provide risk assessments are only as good as the assumptions in their implementation. When estimating parameters, econometricians may adopt alternative approaches to the widely adopted Ordinary Least Squares: two such approaches are Maximum Likelihood and the Bayesian approach. None is more correct and more precise. Each provides a methodological standpoint that defines econometric analysis from a specific 'philosophical' angle. Both are valid alternatives to more popular econometric approaches, and can lead to the design of rigorous and useful econometric models (Franses 2002).

Fragmentation in economics is not a new phenomenon. A historical outlook on economics helps to better evaluate the starting point of pluralism and its subsequent developments. In the aftermath of the Second World War, economics was already diversified and fragmented due to the plurality of conceptions in terms of the relation between theory and reality, the number of objectives and approaches adopted by different scholars. Since then, the domain and the research

areas covered by economics expanded, and the fields of applied economics increased significantly (Hutchison 1978). Conventional accounts (Colander 2000) describe the 1970s-1980s as a period of severe debate between different schools of thought, characterized by different ideological views. Conversely, contemporary accounts from that period identify a wider range of schools of thought, differentiated mainly by methodological approaches: mainstream economics, Post-Keynesian economics, neo-Austrian economics, institutional economics, to name but a few (Dow 2006).

In addition, it is argued that economic discourses generate and circulate on a number of levels. According to Beaud and Dostaler (1995), contemporary economics is characterized by a double dynamic, namely the swelling stock of published work and its 'parcelling out'. As a result – they argue – the world of economists resembles a tower of Babel, where the Anglo-American economic discourses prevail: 'few are those who listen to others and where only a small part of the discourses delivered are actually heard; all the more so since economic knowledge continues to be generated not only in the two languages which have asserted themselves since the war – English and mathematics – but also in a broad variety of national idioms. Whilst economists of non-Anglophone cultures follow what is produced in English, increasing numbers of English-speaking economists systematically ignore what is published in tongues other than their own' (Beaud and Dostaler 1995, 142).

Can interdisciplinarity and pluralism contribute to the analysis of financial markets?

Pluralism in economics, defined as an argument for plurality, can be addressed from different levels: at the level of reality, the level of knowledge or meta-methodology, the level of methodology, and the level of theory or application (Dow 2008, 74). One way to develop pluralism in economics and apply it to the study of financial markets is by adopting insights from other social sciences. It is important to clearly define a sound pluralism and separate it from its more superficial examples. To do so, one needs to consider issues related to disciplinary organization. Stated otherwise, pluralism needs to be planned and organized according to some guidelines. This point has been largely neglected by the existing debates on pluralism and still needs to be properly addressed. If applied to

financial analysis, these ideas have far-reaching consequences on how one interprets and understands financial markets and products.

In this section, the main ideas on pluralism in economics will be assessed with reference to some arguments advanced by the Australian philosopher Peter Godfrey – Smith in his essay *Theory and Reality* (2003) on the possibility of integrating different philosophical views and standpoints that sometimes seem to contrast with each other. Such an approach can be further developed and expanded through an interdisciplinary integration of separate scientific fields into common research projects. The concept of integration sheds light on the possibility to combine two or more disciplines or scientific fields into new, well-designed research strategies. On the other hand, interdisciplinarity refers to the relationship of economics to other disciplines, such as sociology, psychology and philosophy (Groenewegen 2007). In the next section, an example of interdisciplinary research will be discussed, namely the 'law and economics' approach. Such a strategy is particularly suitable for the study of financial markets, which comprise social, legal and technological aspects that are often neglected.

To start with, it is important to provide a definition of financial markets. The concept of a market originally refers to a small area – say, a city square – where buyers and sellers gather. Conversely, contemporary financial markets are much more complex and are defined as competitive markets in financial instruments such as stocks, bonds, loans and derivatives. It comes as no surprise that financial economics is a highly empirical discipline and that the main method of inference for financial economists is model-based statistical inference: 'financial markets are not mere figments of theoretical abstraction; they thrive in practice and play a crucial role in the stability and growth of the global economy. Therefore, although some aspects of the academic finance literature may seem abstract at first, there is a practical relevance demanded of financial models that is often waived for the models of other comparable disciplines' (Campbell et al. 1997, 3).

Sophisticated techniques are at the core of innovative financial products, which are difficult to appraise. A common approach for the analysis of financial markets focuses on the analysis of equilibrium under the hypothesis of a perfect competition (Barucci 2007). A perfect market equilibrium and the self-regulation of markets should not be taken literally. As the 2007-2008 financial crisis shows, if unregulated (or badly regulated), financial markets can result in speculation

and may produce failures in the allocation of capital and resources. To properly address such markets, one needs to consider their cultural and legal dimensions: indeed, financial behaviour is influenced by tax and legal structures (these often differ between countries and sometimes even between regions within the same country – as in the case of countries such as Italy).

A methodological and philosophical point of view on financial markets is useful to understand the benefits from pluralism. Although writing from a very specific perspective, Godfrey – Smith embraces similar conclusions as some advocates of pluralism in economics. Caldwell for instance asserts that scientists may benefit from adopting a variety of methodological views: 'by getting inside a variety of such views, one gains new ways of perceiving the subject under investigation. Perhaps most essential, one may avoid the chains of a narrow perspective. This is especially important given that one's methodological views are rarely consciously held' (Caldwell 1994, 2-3). Similarly, Godfrey – Smith argues in favour of mixed and pluralist views on specific philosophical issues. Most important, Godfrey – Smith attempts to combine distinct philosophical traditions such as empiricism, naturalism and scientific realism in an original way. As he suggests, most of the tensions between these philosophical traditions are only superficial, and they can be successfully combined into a single strategy of scientific investigation. A way to overcome the tensions between empiricism and realism is via naturalistic ideas (Godfrey – Smith 2003, 220-221). Is it possible to expand such a perspective to financial analysis and define it as a basis to improve econometric and forecasting models?

The answer is positive. Indeed, it can be argued that a similar effort is required to integrate different theoretical and methodological perspectives in finance and to develop new analytical frameworks to support and improve existing tools and practices in financial analysis and financial accounting. An example may clarify this idea. The assessment of banks as well as other financial intermediaries is normally centred on their management and control, risk profile, financial statements, portfolio structure and quality, human resources and information capacity. However, an in-depth analysis should take other aspects, such as the existing regulatory frameworks and the economic environment in which a bank operates, into account. To properly carry out her or his tasks, a professional analyst must be able to apply a 'holistic view of the financial system' that presumes a variety of skills and capabilities: 'before appraising a bank, an analyst should understand the philosophical basis for pertinent laws and regulations and

ascertain if the legal and regulatory framework is complete and consistent. The analyst should be thoroughly familiar with the framework not only because bank operations must comply with it, but also because it provides a context of bank's business, including the objectives and scope of allowed activities' (Van Greuningen and Brajovic – Bratanovic 2004, 21-22).

In the last decades, the complexity of the economic and financial systems increased, and economists must be able to recognize these changes and their implications. Whether interdisciplinarity and pluralism simply provide a feedback for a better understanding of financial markets or a solid basis for their analysis is debatable. Such a debate must start from a reconsideration of the economic discipline and of the ways in which it relates to other disciplines in the social sciences. Some scholars argue that economics is *not* an independent, well-defined science. Rosenberg (1992) asserts that the intellectual achievements of economics make it either a branch of applied mathematics or a branch of political philosophy. Others contrast this view by arguing that economics is 'the most firmly structured of all social sciences' (Beaud and Dostaler 1995, 141). Since economics is a social science, an argument for pluralism suggests that economists and social scientists with different traditions and academic backgrounds can successfully work in the same research program. The more diverse the *curricula* of the scholars working on a joint program, the higher the probability that their research will produce an original contribution to science and pave the way to scientific progress.

The benefits become clear when one observes that both theories and methodologies advocated by scholars have an impact on policy-making processes (Guala 2006). A sound pluralism may promote new frameworks for the analysis of contemporary financial markets and may favour new ideas on regulation as well as on crisis prevention, for example by considering moral and social dimensions along with financial ones. An attempt to apply a pluralistic approach to the regulation of financial markets inevitably poses the following questions: who should regulate and supervise financial markets? What skills should regulators possess? Should they possess both quantitative and qualitative analytical skills, and how should they combine and apply such skills to empirical analysis?

An example of interdisciplinary research: the economic analysis of law

The 'law and economics' approach, an approach to legal theory that applies methods of economics to law and adopts economic concepts to explain the effects of laws and regulations, figures among the best examples of interdisciplinary research. It focuses mainly on the efficiency and on economic incentives (as well as people's responses to them). The example here introduced is only illustrative, therefore no specific attention is given to the internal tensions existing, say, between a 'Posnerian' and a 'Coasian' approach. Although scholars writing from a 'law and economics' perspective tend to stress the fact that markets are more efficient than courts and legal systems, some studies put a stronger emphasis on the institutional design of the economy. Recently, this research area has been developed through the application of the behavioural analysis to the study of legal issues in corporate governance. Kordel (2008) claims that since corporate governance institutions influence corporate performance and conduct, there is some potential for regulatory intervention to change corporate conduct by modifying the institutional design. Kordel concludes that behavioural science can help the regulator to improve such a design. These results are obtained with an original application of behavioural analysis termed as 'institutional ergonomics'.

What are the principal traits that help to explain the success of law and economics? Modern law and economics dates from 1960, when Ronald Coase published the seminal paper *The Problem of Social Cost*. This approach shares with some other branches of economics the assumption that individuals are rational and respond to incentives: 'when penalties for an action increase, people will undertake less of the action. Law and economics is more likely than other branches of legal analysis to use empirical or statistical methods to measure these responses to incentives' (Henderson 2008, 322-323). In 1972, Richard Posner published the first edition of the *Economic Analysis of Law* and founded the *Journal of Legal Studies*; both are important events in the establishment of the field. The economic analysis of law is recognized as a separate, well-established discipline. It includes several associations, and a number of journals cover most aspects of its research. Most law faculties and schools have scholars trained in economics, and many offer law and economics courses. In addition, several consulting firms are currently able to provide economic expertise in litigation.

Despite some internal tensions, the success of the 'law and economics' approach depends on the strategy and the ability to overcome methodological divides, and on the ability to establish a conceptual framework by which the approach may be identified. Economics is a numerical science, whereas law and legal studies are based on the study of laws, norms and rules. Scholars need to first translate normative variables into numerical terms, and then analyse them from an economical perspective. The variables are defined either as indices or 'synthetic indices'. They must reflect the legal phenomenon under observation and must fully capture its characteristics (Franzoni and Marchesi 2006, 187). From a theoretical point of view, the economic analysis of law is divided into a positive and a normative sub-field. The positive approach uses economic analysis to assess and predict the effects of legal rules. On the other hand, the normative approach suggests policy recommendations based on the predicted economic results of various policies. A key concept of normative 'law and economics' is efficiency.

New analytical frameworks for the analysis of financial markets

Scholars focusing on the sociological analysis of financial markets may adopt a similar approach to the economic analysis of law. Financial behaviour is influenced by tax and legal structures as well as by a number of socio-economic variables. The 2007-2008 financial crisis developed in the sub-prime mortgage markets due to an unsuccessful segmentation of financial markets on the one hand, and an inefficient management of financial resources on the other. The failure of such market niches could have been anticipated and controlled if their social aspects such as class dimensions, level of education, living standards and ethnic group idiosyncrasies were adequately considered and properly addressed. Financial markets may be looked at from different perspectives, say, an economic and a sociological one. Although financial analysis differs from sociological analysis both methodologically and theoretically, it is worth combining finance and sociology to investigate financial markets and obtain a more complete picture of how they operate and how they are segmented. In doing so, one should recognize that terms such as 'financial', 'economic', and 'social' have lost straightforward meanings and clear boundaries, which makes things more complex. From an academic point of view, disciplinary organization is therefore essential to establish a basis for a fruitful research and empirical work as well as to provide an outline of the different philosophies and methodologies underlying the research.

With reference to the economic sociology, Hodgson observes: 'empirical work is invaluable and leading economic sociologists have made several major contributions in this area. But this does not mean that the problems of labelling and conceptual scaffolding are secondary. No empirical work is possible without a conceptual framework to guide us. These frameworks are developed through critical engagement with the works of others. Disciplinary organization serves to focus and channel these critical conversations. However, inappropriate disciplinary labels can become barriers: work by economic sociologists is largely published in sociological journals that are often ignored by economists, and the inadequate level of conversation across the disciplinary boundaries leads to problems on both sides' (Hodgson 2008, 145). The critical analysis conducted by Hodgson is relevant to a discussion on financial sociology, and particularly to a sociological analysis of financial markets.

Economics and finance frequently show a tendency to adopting interpretative categories from other social sciences: concepts such as 'networks', 'embeddedness', 'trust' and 'reciprocation' are all good examples. Such a trend represents a fertile ground for an interdisciplinary dialogue between different social sciences and can be applied to a large number of studies that may differ in terms of scope and goals. As suggested by a variety of studies, the concept of 'network' is not only helpful in the analysis of global economic trends, but also in the analysis of economic phenomena with a specific local dimension. Finocchiaro (2007) for instance applies the concept to a discussion of the Italian cooperative banks – the so-called *banche di credito cooperativo*. The study stresses the fact that their organization, which resembles networks, plays an essential role in supporting Italian SMEs and family-owned enterprises; these in turn are vital for the Italian economy. The concept of network clarifies the social responsibility that is characteristic of such banks and the idea that each of them is unique and provides a unique contribution to the geographic area in which it operates.

The success of such a dialogue depends on the ability to communicate and overcome the barriers that often exist between the social sciences. This can be achieved by adopting well-designed research strategies. In a recent study on trust-based intermediation, Della Giusta (2008) compares the transaction costs of different intermediation systems. Although starting from a socio-economic analysis, the implications of her results are primarily economic: by developing a model of trust-based intermediation, she observes that a focus on the development of a market and legal system often ignores the link between interpersonal and

institutional trust. Indeed, she argues that 'trust is undersupplied in a society with underdeveloped trust intermediation ... Trust intermediation offers a subsidy and therefore in its absence poorer individuals will be excluded, and the overall productive potential will not be exploited' (Della Giusta 2008, 78).

Communication needs to be effective not only among economists, but among the social scientists at large. When economists open to inputs from disciplines such as sociology, psychology and philosophy, they should necessarily avoid either oversimplifying the conceptual categories or absorbing them superficially. The same principle applies to scholars from other fields that open up to inputs from economics. According to scholars such as Mutti (2008), the integration of sociology and finance represents a field in which there is room for a fruitful interdisciplinary dialogue. Mutti observes that some academic strands – such as the Italian economic sociology tradition – have largely neglected financial issues. There are at least three major themes to be considered for a research on financial markets:

- the structure of financial markets (this field resembles the research conducted in organizational sociology)
- the cognitive frames of financial operators (similar research has been conducted in behavioural finance)
- the aggregate financial processes from a macro-perspective (with an adoption of the insights from social psychology).

These studies are expected to make an extensive use of concepts such as 'trust', 'distrust' and 'reputation', and are opposed to the neo-classical economics paradigm (Mutti 2008, 16). The above-mentioned concepts enable a focus on the social dimensions of financial markets that are often ignored by research. Also, they are useful in the appraisal of local financial systems in which trust between economic agents still matters. In fact, it is impossible to look at global financial markets without recognizing the structural and cultural differences that persist on a local dimension.

Old analytical frameworks in finance have lost much of their validity. Since financial markets have become increasingly complex, new analytical tools are required to obtain valuable insights on how the knowledge about financial markets is forged and presented, and to enable the study of financial markets with an open-system approach, allowing inputs from other disciplines (Schinckus 2004 and Dow 2008). Due to rapid changes resulting from innovation, technological

advancements and the internationalization of financial flows, markets have expanded and opportunities to design new financial services and products have arisen. On the other hand, risks have also increased and it is recognized that financial innovation does not always provide a positive social contribution. As Stiglitz observes, 'financial institutions created products that were so complex and non-transparent that not even the firms that created them fully understood all of their implications' (Stiglitz 2008, 3). Regulatory powers must be able to keep the pace with the new financial products that join the market.

A basic question in the ongoing debate on financial regulation centres on whether a global governance of financial systems is preferred to a national and more fragmented regulation. To provide an answer, social, political and cultural insights should be considered along the economic and financial ones. Earlier, the importance of local banks for the vitality of the Italian economy has been stressed: it is hard to imagine the same regulation for such local banks on the one hand, and for international banks on the other. Moreover, a better integration of economic, social and behavioural sciences should allow for a better appreciation of the dialectic between national and international, real and financial, the role of embedded power structures, agency and collective action. In turn, this would encourage the adoption of sound regulation policies, as well as the flourishing of pluralism and a non-partisan global governance that would favour sustainable wealth creation and maximize the benefits from globalization (Pitelis 2007; Argitis and Pitelis 2008). Finally, a focus on the social dimensions of financial markets provides an idea on regulation as a public good rather than as an obstacle to free markets and economic progress as is often suggested by the neo-classical approach to economics.

Conclusion: a complex financial reality and the benefits from pluralism

Pluralism in economics offers a number of significant advantages both from a theoretical and a practical point of view. In the 1980s and 1990s, a number of interesting debates were centred on pluralism and significant contributions have been offered to it. Referring to Caldwell's methodological pluralism, Salanti asks whether economists should continue to bother about issues such as economic methodology (Salanti 1989). Such debates have contributed to forging concepts such us 'structured' and 'probabilistic' pluralism. One may argue that pluralism

played a role in establishing a new, somehow eclectic agenda in economics, which involves philosophy, literary criticism and discourse analysis (Samuels 1990; Lavoie 1990). From time to time, pluralism has been promoted by economic and financial policy-makers, and particularly in the monetary policy arena by institutions such as the FED, the ECB and the Bank of England to adequately respond to an increasing complexity and a global openness of the economy (Mayer 1999 and Dow 2006). It appears, however, that such attempts have been promoted only temporarily and have not been included in long-term economic policies or financial strategies.

By reference to the 2007-2008 financial crisis and the increasing complexity of the social and economic reality, policy-makers should pay particular attention to the several benefits resulting from theoretical and methodological pluralism and from a pluralistic approach to financial analysis. Regulators and financial policy-makers show an unprecedented awareness of the fact that crises may result from unexpected events that are difficult to anticipate. Draghi for example states: 'we have made progress in recent years in developing analytical tools and metrics for assessing risks ahead of a crisis. Unfortunately, almost by definition, a crisis involves events and processes that are unexpected. And once problems emerge, their dimensions and implications are impossible to gauge quickly. At the international level, assessment is more challenging still' (Draghi 2008, 7). Arguably, financial forecasting techniques and forecasting models are more important than ever before. To provide fully reliable accounts, they must incorporate the social, political and cultural dimensions of markets. This poses the question of how to combine quantitative and numerical data with qualitative data to obtain new insights.

In a reality characterised by a global complexity and in globally connected financial markets, both economic and social relations become liquid and fragmented: 'interactions are complex, rich and non-linear, involving multiple negative and, more significantly, positive feedback loops with ineluctable patterns of increasing returns and path dependence. Such systems interact dissipatively with their environment. The elements within any such system operate under conditions that are far from equilibrium' (Urry 2003, 123).

The need for pluralism can be better understood by considering the fact that financial markets and the economy work globally and are significantly related. According to a large number of scholars, 'nations throughout the world seem much

more closely related to each other, but fragility of the global market may have increased' (Osano and Tachibanaki 2001, 293). In their analysis of the recent financial crisis resulting from the US subprime mortgage markets, Argitis and Pitelis (2008) ask whether the extant economic theory could have enabled scholars and analysts to timely predict this and similar potential crises. A plurality of viewpoints, frames and ideas may not suffice to prevent financial crises, but may nonetheless favour a more rapid recognition of their occurrence and thereby limit their negative outcomes. It must be concluded that from a practical point of view, a sound pluralism can promote a variety of useful analytical tools and therefore contribute to improving financial and economic policies.

Acknowledgements: I gratefully acknowledge the insightful comments from Professor Sheila C. Dow on a first draft of this paper, and those from Evan Kraft on my presentation on the methodology of financial analysis at the "Challenges of Europe 2009" conference, held in May 2009 at the Faculty of Economics of the University of Split, Croatia. I am also indebted to two anonymous referees for the comments that helped me to improve the present article. The remaining errors that may exist are my own responsibility.

References

Argitis, G. and C. Pitelis (2008) 'Global Finance and Systemic Instability', *Contributions to Political Economy*, 27, 1-11

Barucci, Emilio (2000) *Teoria dei mercati finanziari. Equilibrio, efficienza, informazione*, Bologna, Il Mulino

Beaud, Michel and Gilles Dostaler (1995) *Economic Thought since Keynes*, London, Routledge

Blaug, Mark (1997, [1980]) *The Methodology of Economics. Or How Economists Explain*, Cambridge, Cambridge University Press

Boylan, Thomas A. and Paschal O'Gorman (1995) *Beyond Rhetoric and Realism in Economics. Towards a Reformulation of Economic Methodology*, London, Routledge

Caldwell, B. J. (1989) 'The Trend of Methodological Thinking', *Ricerche economiche*, 43 (1-2), 8-20

Caldwell, Bruce J. (1994, [19821) *Beyond Positivism. Economic Methodology in the Twentieth Century*, London, Routledge

Campbell, John Y. et al. (1997) *The Econometrics of Financial Markets*, Princeton, Princeton University Press

Colander, D. (2000) 'The Death of Neoclassical Economics', *Journal of the History of Economic Thought*, 22 (2), 127-143

Della Giusta, M. (2008) 'A Theory of Trust Based System of Intermediation', *Cambridge Journal of Economics*, 32, 65-81

Dow, S. C. (2004) 'Structured Pluralism', *Journal of Economic Methodology*, 11 (3), 275-290

Dow, S. C. (2006) 'Plurality in Economics', *SCEME Working Paper* 11

Dow, S. C. (2008a) 'Mainstream Methodology, Financial Markets and Global Political Economy', *Contributions to Political Economy*, 27, 13-29

Dow, S.C. (2008b) 'Plurality in Orthodox and Heterodox Economics', *Journal of Philosophical Economics*, 1(2), 73-96

Draghi, M. (2008) 'Combating the global financial crisis – the role of international cooperation'. *HKMA Distinguished Lecture*, 16 December 2008. www.bancaditalia.it/interventi/integov/2008/draghi_161208/Draghi_161208_HKMA.pdf -, 18 February

Finocchiaro, A. (2007) 'Il network delle banche di credito cooperativo', *Studi economici e sociali*, 3, 11-22

Franses, Philip H. (2002) *A Concise Introduction to Econometrics. An Intuitive Guide*, Cambridge, Cambridge University Press

Franzoni, Luigi A. and Daniela Marchesi (2006) *Economia e politica economica del diritto*, Bologna, Il Mulino

Godfrey – Smith, Peter (2003) *Theory and Reality. An Introduction to the Philosophy of Science*, London, University of Chicago Press

Groenewegen, John (ed.) (2007) *Teaching Pluralism in Economics*, Cheltenham, Edward Elgar

Guala, Francesco (2006) *Filosofia dell'economia. Modelli, causalità, previsione*, Bologna, Il Mulino

Henderson, David R. (ed.) (2008) *The Concise Encyclopaedia of Economics*, Indianapolis, Liberty Fund

Hodgson, G. M. (2008) 'Prospects for Economic Sociology', *Philosophy of the Social Sciences*, 38 (1), 133-149

Hutchison, Terence W. (1978) *On Revolution and Progress in Economic Knowledge*, Cambridge, Cambridge University Press

Kordel, G. (2008) 'Behavioral Corporate Governance from a Regulatory Perspective', *European Business Organization Law Review*, 9 (1), 29-62

Lavoie, Don (ed.) (1990) *Economics and Hermeneutics*, London, Routledge

Mayer, T. (1999) 'Some Practical Aspects of Pluralism in Economics', *University of California Working Paper 99-05*, www.econ.ucdavis.edu/workingpapers/wpapers.html, 07 February

Mutti, Antonio (2008) *Finanza sregolata? Le dimensioni sociali dei mercati finanziari*, Bologna, Il Mulino

Osano, Hiroshi and Toshiaki Tachibanaki (2001) *Banking, Capital Markets and Corporate Governance*, Basingstoke, Palgrave

Pitelis, C. (2007) 'European Industrial and Competition Policy: Perspectives, Trends and a New Approach', *Policy Studies*, 28(4), 365-381

Rosenberg, Alexander (1992) *Economics – Mathematical Policies or Science of Diminishing Returns?*, Chicago, University of Chicago Press

Salanti, A. (1989) 'Recent Work in Economic Methodology: Much Ado about What?', *Ricerche economiche*, 43, 21-39

Samuels, Warren J. (ed.) (1990) *Economics as Discourse: An Analysis of the Language of Economists*, Boston, Kluwer

Schinckus, C. (2004) 'Sociology and Semiotics of Financial Markets', http://www.departments.bucknell.edu/management/apfa/Stockholm%20Papers/Schinkus.pdf, 29 June

Stefancic, Mitja (2009) 'A new framework for the analysis of contemporary financial markets: the need for pluralistic approaches', *The Journal of Philosophical Economics*, III:1, 90-107

Stiglitz, Joseph E. (2008) *Social Democratic Principles: Towards a New Financial Architecture*, Brussels, Foundation for European Progressive Studies

Urry, John (2003) *Global Complexity*, Cambridge, Polity

Van Greuning, Hennie and Sonia Brajovic-Bratanovic (2004) *Analyzing Banking Risk: A Framework for Assessing Corporate Governance and Risk Management*, Washington, World Bank

Weintraub, Eliot R. (2002) *How Economics Became a Mathematical Science*, Durham, Duke University Press

Mitja Stefancic is a PhD candidate at the University of Ljubljana, Slovenia and holds an MPhil in 'Modern Society and Global Transformations' from Cambridge University (2004) (mitja.s@katamail.com)