

World Economics Association Newsletter

To *plurality*. The Association will encourage the free exploration of economic reality from any perspective that adds to the sum of our understanding. To this end it advocates plurality of thought, method and philosophy.

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The latest on WEA Conferences

October and November will see our next conference:

Neoliberalism in Turkey: a Balance Sheet of Three Decades

<http://turkeyconference2013.worldeconomicsassociation.org/>.

The theme is very timely given the recent and current events in Turkey. We hope that this encourages experts on Turkey and on neoliberalism to contribute papers. All interested members should contribute comments to the papers and to the conference in general. This will be the fourth and last conference for 2013.

WEA Books

We are hopeful to be able to develop edited books from two of this year's conferences: the one on ***The economics curriculum: towards a radical reformation*** and the one on ***Inequalities in Asia***. The volumes will contain some of the papers from the conferences and may also contain commissioned papers not part of the conference. These volumes will be edited by the conference leaders of the respective conferences. The books will be published by College Publications in collaboration with WEA.

Discussions about a conference on *Brazil* in 2014 are ongoing.

Grazia Ietto-Gillies
Chair, Conference Organizing Committee
ietogg@lsbu.ac.uk

World Economics Association on Facebook

<https://www.facebook.com/worldeconomicsassociation>

Click "Like" for regular update information.

WEA Young Economists Facebook Page

(now over 800 members)

<https://www.facebook.com/groups/521797714546263/>

**Contribute to the
World Economics
Association**

Call for contributions:

<http://www.worldeconomicsassociation.org/contribute/>

**Past WEA Newsletters
available at:**

<http://www.worldeconomicsassociation.org/newsletters/>

WEA National Chapters

Get involved!

Is your country listed?

Become a contact!

The First World Keynes Conference

The First World Keynes Conference held during the last week of June this year in the Turkish city of Izmir represented a milestone for diversity in the economics profession. Sponsored by the Economics University of Izmir and the Center for Economic and Sociological Studies of the University of Hamburg, the conference brought together well over 100 participants from countries in North and South America, Europe, Africa and Asia.

The conference, "Attacking the Citadel, Making Economics Fit for the Purpose", attracted participants at all stages of their careers, from graduate students to directors of research centers. The location of the conference proved uniquely appropriate. As the economic dissidents discussed and debated inside the university, citizens protested in the streets in support of basic civil liberties, protests which received strong endorsement from speakers including the keynotes.

John Weeks of the University of London and member of the World Economic Association, gave the opening keynote, "Marx, Keynes and the Economics of the 99%". In his presentation he argued that the neoclassical dogma of full employment general equilibrium (FEGE) leads it into an ideological *cul de sac* incapable of addressing the instability of capitalism. As a result, Weeks maintained, the neoclassicals are to the economics profession as alchemists are to chemistry (pdf version of talk available at <http://jweeks.org>).

Heinz Kurz from the Graz Schumpeter Center of the University of Graz, Austria, developed a complementary theme in the closing keynote. He demonstrated in detail how the neoclassical school has rejected all analysis not directly derivative from the FEGE parable. Evidence of the narrowing of the neoclassical intellectual territory can be found in the undisguised ridicule by Robert Lucas of the contributions of J M Keynes. In between the opening and closing keynotes, on the morning of the second day of the conference Wolfgang Elsner assessed the "state of heterodoxies in economics" in a third plenary session.

Very much in the spirit of the WEA, the conference provided a venue for debate over economics that focused on real-world issues, and the theory appropriate to confront those issues. Perhaps even more important, the conference validated the work of graduate students who have chosen to pursue the difficult path of dissent from the prevailing neoclassical orthodoxy. Focusing on the contributions of Keynes provided the venue for discussion and debate across the approaches to non-neoclassical economic theory: Keynesian, Neo-Ricardian, Marxian, institutional economics, and evolutionary economics.

During the closing discussion, chaired by the two principal organizers Arne Heise and Hakan Yetkiner, a strong agreement was reached to set in motion plans for a Second World Keynes Conference. The conference details and many of the papers can be accessed at the conference web site, <http://ekolider.ieu.edu.tr/keynes/>



John Weeks of the University of London and the WEA gives the opening keynote at the First World Keynes Conference, "Attacking the Citadel"

Competition requires cooperation, but...

Economists have placed so much emphasis on competition as a driving force for efficiency that it is sometimes considered a universal panacea. This ignores two facts:

1. competition occurs within commonly accepted conventions and rules, and these require cooperation;
2. where organisations compete against each other, a degree of cooperation is required within each organisation (note, for example, the assumption of a single profit-maximising objective, or failures of cooperation as one determinant of X-inefficiency).

Sennett recognises this:

"Cooperative exchanges come in many forms. Cooperation can combine with competition, as when children cooperate in establishing the ground rules for a game in which they then compete against one another; in adult life this same combination of cooperation and competition appears in economic markets, in electoral politics and in diplomatic negotiations." (Sennett, 2012, p. 5)

But he also sees a reduction in cooperation in modern organisations:

"Changes in modern labour have in another way weakened both the desire and the capacity to cooperate with those who differ. In principle, every modern organization is in favour of cooperation; in practice, the structure of modern organizations inhibits it - a fact recognized in managerial discussions of the 'silo effect', the isolation of individuals and departments in different units, people and groups who share little and who indeed hoard information valuable to others. Changes in the time people spend working together increase this isolation." (Sennett, 2012, p. 7)

Sennett, R. (2012). *Together: the rituals, pleasures and politics of cooperation*. New Haven, CT: Yale UP.

Rethinking Economics

Lourenço Faria describes the launch of a grassroots community of new economic thinkers at a conference in London, 28-30 June 2013

I graduated with a Masters in Economics, and have taught Microeconomics (consumer theory) in Brazil. These experiences just made me disappointed with the way Economics is treated nowadays, especially the fact that some key issues, such as the impact of economic activity on the environment, are being overlooked by most mainstream economists. Therefore, I decided to head to another area in my PhD where I had more freedom (and found less prejudice) to study these issues. I like working with engineers because they seek not only to build beautiful models, but also to make them applicable to reality. No engineer will design a bridge that can eventually fall. Economists, by contrast, are constantly building "weak bridges" based on orthodox assumptions, although this does not seem to scare them away from theories that do not fit reality. I would like to see economists doing economics with more responsibility and less ego.

I heard of Rethinking Economics through a friend, David Angenendt, who posted something about the event on Facebook. It's funny how social networking has made a difference today. In Brazil, for example, postings, discussions and events on Facebook and Twitter were responsible for initiating an important social movement last month. So I like the fact that Rethinking Economics is also based on social networking and meetings less formal than would be expected in a usual academic conference. This creates a more open environment, a space where we can discuss as equals on issues that bother undergraduate students, Masters students, Ph.Ds, and professors.

My experience at the Rethinking Economics launch conference exceeded my expectations from the very first lecture with Ha-Joon Chang, who offered the clearest explanation I've seen on the differences and origins of main currents of thought in economics. An interesting question raised by him was about the contribution of each of these currents for effective social and economic development. I believe that, while economists, our role is precisely to promote such development. Inspired by this issue, I went to the next lecture on climate policies with Richard Tol and Cameron Hepburn. The content and discussions raised in this lecture only confirmed what I think about the (wrong)

way that economists see environmental issues. What is the point of treating sustainable development as just another simple choice subject to individual preferences and utilities, on traditional orthodox, market-oriented logic? Fortunately, in the section "Putting the planet back in the picture: The rise of ecology and green economics", Kate Raworth and Miriam Kennet addressed precisely this argument between economy and ecology in a very pragmatic and realistic way.

It's worthwhile to mention the analysis of the global financial crisis offered by Gabriel Palma, Victoria Chick, Alan Kirman and the Jubilee Debt Campaign. After seeing them talking, it became even more clear to me that the factors that led us to the current crisis are closely linked to our lack of economic understanding (and not an exogenous factor). The most difficult task is to find alternatives to it, whether through sustainable development or new ways of interpreting and studying economics, and that was the focus of discussions among participants on the last day of the conference, especially on the two closing sections.

The way the conference was organized also caught my attention. Firstly, because it was very well organized (and this is even more impressive when it comes with a conference organized mainly by students) and secondly, because it offered many different ways to interact and discuss the issues, such as workshops, roundtables, and discussions.

Although we cannot find all the answers in a weekend, I think the conference was important to define common goals, meet contacts and connect the community of students and professors who believe that economics can be studied in a human, responsible way. It was the first step of many to come. Motivated by what I heard at this conference, I have many more incentives to carry on my research.



Financialisation and Financial crisis in south-eastern European Countries: Call for Book Contributors

The book is planned to be out in the second half of 2014 and will be published by Peter Lang, International Academic Publishers. The editors of the book are Dubravko Radošević (former Principal Economic Adviser of the President of the Republic of Croatia; The Institute of Economics, Zagreb) and Vladimir Cvijanović (University of Zagreb).

These topics have remained underresearched for a region of South-Eastern Europe (SEE) ranging from Slovenia to Romania and from Croatia and Serbia to Albania. SEE has a population of 50 million, yet is broken up into many countries at different levels of development and at different stages of integration with/in the European Union or even European Monetary Union. With an exception of Slovenia, asset share of foreign owned banks has been very high. Financialisation and financial crisis stem from the integration of these economies into and their reliance on the global financialised regime. These have had different manifestations in SEE countries and have emerged in the banking sector (e.g. Slovenia), opaque credits denominated in Swiss Francs to the population (e.g. Croatia, Bosnia and Herzegovina, Serbia), powerlessness of central banks to change policy course (e.g. the Romanian example) etc. Policy outcomes based on austerity that accompanied the crisis in these countries have had a hugely negative outcomes for the SEE countries but have also, to paraphrase J. Becker, served as 'inspiration' for neoliberal prescription in the (rest of the) EU.

Heterodox economic contributions such as those of post Keynesian and institutional economics character are particularly welcome, but perspectives from other schools of economic thought will also be considered for publication. The papers that engage in comparative political economy and analyses of longer time periods that can draw on historical background on financialisation and financial crises have an advantage.

The contributions should be in the region of 6000 – 8000 words, and will be blind reviewed by external referees. All contributions should be original, i.e. should not be published before nor be under consideration for any other publication simultaneously. The authors may be asked to contribute to the costs of publishing the book. Papers that do not fit with the framework of the book and/or are rejected by either editors or the reviewers can be recommended to other economic journals such as Economic Research, Economic Review, Zagreb International Review of Economics and Business, Proceedings of Rijeka Faculty of Economics: Journal of Economics and Business.

Relevant topics:

- Socio-economic consequences of financialisation on South-Eastern European (SEE) economies
- Eurozone debt crisis and financialisation in SEE
- Capital flows, euroisation and financial (in)stability
- International borrowing, capital controls, exchange rate policies and accession to European Monetary Union
- Definancialisation – social struggles and their socio-economic repercussions
- Building alternative financial systems (based on e.g. co-operative banks, savings institutions, complementary currencies) that are less prone to financial crises
- Credit crunch and deleveraging: lessons from SEE

Deadlines:

Extended abstracts of up to 1000 words should be sent by 30 October 2013 to both editors at vcvijanovic@efzg.hr and dradosevic@eizg.hr. The authors will be notified by 15 December 2013 whether their paper is accepted for review. Full papers should be sent by 28 February 2014 via email to the editors. After the papers have been peer-reviewed (by 15 April 2014) the authors will be notified of final acceptance of their papers.

The Institute for New Economic Thinking (INET) Young Scholars Initiative (YSI)

INET's Young Scholars Initiative (YSI) has launched a **grant program** to promote new economic thinking at colleges and universities worldwide. Students can apply for funds in support of events such as conferences, workshops, mini schools, etc. Details here: <http://ineteconomics.org/ysi/event-grants>

And two INET events of interest to PhD students

The **YSI Workshop @ 41st Brazilian Economics Meeting** includes a mini course taught by Lance Taylor and Nelson Barbosa. The workshop takes place in Brazil on December 8-10 and the application deadline is September 12.

<http://ineteconomics.org/ysi/events/workshop-brazil>

The **Winter School on Law and Finance** includes a 4-day course on the legal theory of finance taught by Katharina Pistor, Brigitte Haar, and Dan Awrey. The school takes place in Paris on January 6-9 and the application deadline is November 18.

<http://ineteconomics.org/ysi/events/winter-school-law-and-finance>

Some quotes

Gunnar Myrdal and conservatism of methodology

"There is a conservatism of methodology in the social sciences, especially in economics, that undoubtedly has contributed to the adherence to familiar Western theories in the intensive study of underdeveloped countries. Economists operate to a great extent within a framework that developed early in close relationship with the Western philosophies of natural law and utilitarianism and the rationalistic psychology of hedonism. Only with time has this tradition been adapted to changing conditions, and then without much feeling of need for radical modifications. That economists work within a methodologically conservative tradition is usually not so apparent to the economists themselves, especially as the tradition affords them opportunity to display acumen and learning and, within limits, to be inventive, original, and controversial. Even the heretics remain bound by traditional thought in formulating their heresies."

P.17 of Myrdal, G. (1968). *Asian drama: an inquiry into the poverty of nations*. New York: Pantheon.

Consumer behaviour

Economists commonly consider the theory of consumer behaviour as underpinning the demand curve. This is not a requirement, but it is part of our rhetoric. However, the economics approach to consumer behaviour is highly simplified. There are many marketing texts on consumer behaviour. To take one, Schiffman, et al. (2008) dismisses economic theory in a few lines:

"[M]arketers realised that consumers did not always act or react as economic theory suggested they would. By 'economic theory' we mean the traditional economic concept of decision making, where the maximisation of economic utility or satisfaction is considered to be rational." (Schiffman, et al., 2008, p. 11)

The text runs to over 650 pages and presents theory and evidence on numerous nuanced aspects of demand. Much of the material may be controversial, just as there are alternative theories in economics. It does suggest the possibility of many important influences being overlooked or oversimplified by economists. How do we explain this to our students who have covered such alternative material elsewhere?

Schiffman, L., Bednall, D., O'Cass, A., Paladino, A., Ward, S., & Kanuk, L. (2008). *Consumer behaviour* (4th [Australian] ed.). Frenchs Forest, N.S.W.: Pearson Education Australia

16th Conference of the Association for Heterodox Economics

The Triple Crisis Finance, Development and Environment

3-5 July 2014

University of Greenwich, London

Call for papers



Important Dates:

Abstracts: 31 January, *Decisions* on abstracts by 14 February

Refereed papers: 14 May, *Review comments* to authors by 28 May

Final papers (and non-refereed papers) 10 June

Contact: b.cronin@greenwich.ac.uk

The importance of rhetoric

In a course on rhetoric Adam Smith talked of deliberative eloquence and judicial eloquence (Smith, 1963). The former refers to politics and policy debate, while the latter refers to law. Both describe processes of persuasion. We should not overlook the role that rhetoric has played and continues to play in economics, if only at the level of successfully persuading many economists to consider that rhetoric is not relevant through the emphasis on rationality and logical reasoning.

The [Rhetoric & Public Discourse eJournal](#) contains papers on politics and law. One paper, "[Why Does Balanced News Produce Unbalanced Views?](#)" is by Edward Glaeser and Cass Sunstein. It looks at response to news, but could apply equally to disciplinary perspectives underpinning "world views" (Dow, 2012). It is described as follows:

Many studies find that presentation of balanced information, offering competing positions, can promote polarization and thus increase preexisting social divisions. We offer two explanations for this apparently puzzling phenomenon. The first involves what we call asymmetric Bayesianism: the same information can have diametrically opposite effects if those who receive it have opposing antecedent convictions. Recipients whose beliefs are buttressed by the message, or a relevant part, rationally believe that it is true, while recipients whose beliefs are at odds with that message, or a relevant part, rationally believe that the message is false (and may reflect desperation). The second explanation is that the same information can activate radically different memories and associated convictions, thus producing polarized responses to that information, or what we call a memory boomerang. An understanding of these explanations reveals when balanced news will produce unbalanced views. The explanations also account for the potential influence of "surprising validators." Because such validators are credible to the relevant audience, they can reduce the likelihood of asymmetric Bayesianism, thus promoting agreement.

Another paper highlights the role of rhetoric in the law. This is an important point for economists on several grounds. First, if rhetoric is important, people's behaviour cannot be based solely on logic. Second, if decisions in law are influenced by rhetoric, this will affect the way resources are allocated and the outcomes achieved by policies specified in terms of legal interventions. Third, if people's beliefs can be shaped in this way, and accepted perspectives shape what is seen and how it is seen, this tells us something about the impact of an economics education on our students. Note:

In all disciplines theory plays a double role: it is both a lens and a blinder. As a lens, it focuses the mind upon specified problems, enabling conditional statements to be made about causal relations for a well-defined but limited set of phenomena. But as a blinder, theory narrows the field of vision. (Minsky, 2008, p. 109).

The paper, "[Perception and Persuasion in Legal Argu-](#)

[mentation: Using Informal Fallacies and Cognitive Biases to Win the War of Words](#)", is by Cory Clements.

The abstract begins:

When zealously advocating a client's position, the lawyer's ultimate goal is winning. To win, however, the lawyer must convince a judge or jury to accept the lawyer's (and reject opposing counsel's) position. The best type of advocate accomplishes this goal using various rhetorical techniques, attempting to manage other people's perceptions of such things as the facts, the lawyer's own theory of the case, the credibility of eyewitness testimony, the weaknesses of opposing counsel's claims, and the praiseworthiness of the lawyer's own client. By design, we have an adversary system.

But how does the lawyer successfully convince the fact finder that the lawyer's (and not opposing counsel's) position is aligned with justice? Success inevitably boils down to persuasive legal argumentation. If the lawyer's ultimate goal is winning, the lawyer must master the art of persuasion. For the art of persuasion is intimately connected with the psychological process of perception. And perception is what convinces people whether to accept or reject the lawyer's argument.

In this Comment, I propose an account of legal argumentation that explains the relationship between mental processes that psychologists label cognitive biases and legal arguments that philosophers label informal fallacies. Cognitive biases are errors in our thinking and reasoning, which alter our perceptions. Informal fallacies are verbal or written arguments containing material flaws, which enhance their persuasiveness. I also describe the process of persuasion at play when the lawyer uses legal arguments that contain informal (material) fallacies. By using legal arguments that contain informal fallacies, the lawyer can play upon the listener's inherent cognitive biases to persuade the listener to see things the same way the lawyer does. When lawyers use these rhetorical techniques — whether before or during trial proceedings — they induce in most listeners erroneous perceptions that can, and often do, powerfully alter their listeners' beliefs.

There are many areas where economists' standard approaches lead us to develop highly stylised representations of issues and relationships consistent with our conventions. We are conditioned to take the findings seriously, even when packed with qualifications and express mention of required assumptions. One consequence is the erection of barriers, preventing integration of relevant analyses from elsewhere.

Dow, S. C. (2012). *Foundations for new economic thinking: a collection of essays*. Houndmills, Basingstoke, Hampshire: Palgrave Macmillan.

Minsky, H. P. (2008). *Stabilizing an unstable economy* (New ed.). New York: McGraw-Hill.

Smith, A. (1963). *Lectures on rhetoric and belles lettres: delivered in the University of Glasgow by Adam Smith, reported by a student in 1762-63*. London: Nelson.

Call for papers -Special issue of *On The Horizon* Language and economics

Edited by Tanweer Ali

Introduction

On the Horizon is preparing a special issue, due to be published in July 2014, on the application of linguistics in economics and the link between the two disciplines. The aim of the publication is to explore the impact of language on economic thought, and to encourage intellectual collaboration between linguists and economists. We wish to explore both the public discourse on economic issues as well as more specialised literature such as textbooks and academic publications. We welcome contributions from all schools of thought in linguistics and economics, although we are particularly interested in heterodox perspectives in economics. The target audience are academics in linguistics and economics and economic policy makers and analysts.

The Questions:

We will be happy to consider contributions that explore all aspects of the subject area, including, for instance, the following questions:

- How is language used to frame both sides of the austerity vs. stimulus debate?
- How is metaphor used in economic literature?
- How is the nature of money presented in public discourse / the teaching of economics? Are there differences between the two?
- How is debt presented in public discourse / the teaching of economics? Are there differences between the two?
- How has language and terminology borrowed from the natural sciences (e.g. equilibrium) affected the development of economic thought?
- Are there other metaphors that could summarize the public discourse as effectively as presenting the state as a household, but expressing an alternative view?
- How are power relations reflected in the language of academic economic literature? Are there significant differences between the academic literature and the public discourse?
- How are gender relations reflected in the language of public discourse / academic literature e.g. in discussions about work and employment?
- How does language affect public perceptions of unemployment?
- How are issues of class treated in economics textbooks, especially in books focused on labour economics?
- What role does national/ethnic stereotyping play in the media discourse on economic issues? (E.g. what stereotypes of Greeks is presented in the media Kir-

man discussion of the Euro zone crisis in northern Europe?)

- How do accounting concepts impact the framing of business decisions?
- How does language affect the discourse on corporate governance in the business press?
- Does the use of language and metaphor in the financial media reflect market moods during crashes and panics? Could discourse analysis provide advanced warning of impending financial crises?
- What are the differences in the way language impacts on economic thought and discourse in different languages e.g. French or German versus English?

In order to facilitate interaction amongst economists and linguists we have created an online discussion forum: http://languageandeconomics.co.uk/?page_id=7 Please feel free to use this space to exchange ideas and build collaborative efforts.

Links

On the Horizon:

<http://www.emeraldinsight.com/products/journals/journals.htm?id=OTH#news>

Submissions:

Abstract Due: 1 October 2013

Drafts Due: 15 December 2013

Final Due: 1 March 2014

Publication: July 2014

Procedure:

Abstracts, questions to: tanweer27@gmail.com Subject Line: Language and Economics

Writers will need to state when submitting their abstract whether they request a double blind review.

All full papers submitted via the ScholarsOne website: <http://mc.manuscriptcentral.com/oth>

Paper requirements:

- a) word length: up to 5000 words including abstract, key words, footnotes, references;
- b) all graphs/drawings to be original or a formal release from copyright owners, even if in published works. Graphics can be in colour for electronic edition but must be legible in B/W for print edition;
- c) abstract to follow Emerald format (see Author Guidelines on the Emerald site: http://www.emeraldinsight.com/products/journals/author_guidelines.htm?id=oth) form needed but all categories do not need to be included;
- d) hot links allowed in article.

Contacts:

Tanweer Ali, guest editor: tanweer27@gmail.com

What's the use of economics?

Alan Kirman makes some suggestions for more broadly-based teaching in a column here:

<http://www.voxeu.org/article/what-s-use-economics>

More related columns here: <http://www.voxeu.org/debates/what-s-use-economics>

Interview with Ping Chen

Retired Professor of National School of Development at Peking University in Beijing; Senior Research Fellow of the Center for New Political Economy at Fudan University in Shanghai; And Foreign member of the Center for Capitalism and Society at Columbia University in New York; Main book:

Chen, Ping. (2010) *Economic Complexity and Equilibrium Illusion: Essays on Market Instability and Macro Vitality*, London: Routledge.

He recently answered the following questions for the WEA Newsletter:

1. How would you briefly state your perspective on economics?

My perspective is complex dynamics and evolutionary economics. Complexity implies nonlinear interactions and non-equilibrium changes, which is the driving force for life and division of labor. The linear and equilibrium models in neoclassical economics can be considered as the first approximation of complex systems.

I am a physicist by training. I graduated in physics in 1968 at the University of Science & Technology of China in Beijing. My college physics was taught by leading scientists from the Chinese Academy of Sciences, not by teaching professors. I learned how to identify fundamental issues and test competing theories by experiments, not by the beauty of mathematics or concepts. This is a valuable lesson in doing research.

I got a Ph.D. in physics in 1987, and continued to study nonlinear economic dynamics at the Ilya Prigogine Center for Statistical Mechanics and Complex Systems, University of Texas at Austin for 22 years. Prigogine was a pioneer in non-equilibrium physics and complex systems. I was Professor in economics and finance at Peking University in Beijing from 1997 until retirement in 2013. Currently, I am a senior research fellow at the Center for New Political Economy at Fudan University in Shanghai and a foreign member at the Center on Capitalism and Society at Columbia University led by Edmund Phelps.

My understanding of economics does not come from textbooks, but from real experiences in historical waves and original research in complex economics.

The discovery of deterministic chaos had changed the way of thinking in physics, chemistry, biology, and meteorology in the 1970s and 1980s, but met strong opposition from mainstream economics. Our works on economic chaos and market instability can be found through my book: *Economic Complexity and Equilibrium Illusion: Essays on Market Instability and Macro Vitality*, London: Routledge (2010).

Briefly speaking, five issues in complex economics may change economic thinking in quantitative analysis and theoretical modeling. Let me briefly discuss them below:

(I). Economic Chaos and the Illusion of Self-Stabilizing Market

Neoclassical economics was grounded on a mathematical belief rather than empirical analysis of market move-



ments. Neoclassical theories of self-stabilizing markets are based on the 1933 Frisch model of noise driven cycles. The so-called efficient market hypothesis is based on two linear stochastic models: the random walk and geometric Brownian motion. Laissez faire policy only works when negative feedback rules the market. This is possible when social interaction or herd behavior can be ignored. All these pretty models in neoclassical economics would be

killed by one ugly fact: the existence of nonlinearity in economic movements. New tools from physics and complexity science have helped us to identify nonlinear patterns from economic time series, which goes against the predictions from neoclassical theories.

I found empirical and theoretical evidence of economic chaos from monetary data in 1988. Wide evidence of color chaos was found from macro and stock market indexes in 1996. Here, color means life periods from 2 to 10 years in business cycles. The noise component from stock indexes is only about 40%. These results directly challenged the orthodox theory of efficient markets based on the random walk and Brownian motion models in economics, but confirm Schumpeter cycles in the “economic organism”. The existence of monetary chaos leads us to reject Milton Friedman’s theory of exogenous money, but supports Hayek’s theory of endogenous money. In response to this financial crisis, we can see that the use of monetary policy without structural reform has a weak effect. Two breakthroughs in methodology are essential in studying chaos in economics. First, we found a Copernicus problem in economics and finance. There are two competing reference systems for observing economic dynamics. An econometric system based on short-term rates of change (i.e. first differencing time series) produces an equilibrium illusion of white noise, which is similar to the motion of a geocentric system of planets. Alternatively, a macro reference system based on smooth moving trend, such as the HP filter, would show complex cycles with a narrow frequency band (1-10 years) and erratic amplitude. This is the typical feature of “color chaos” or Schumpeter’s “biological clock”. Second, time-frequency analysis is a more powerful tool for diagnosing complex dynamics, since real economic time series are nonlinear, non-stationary, and non-integrable. There is little hope for regression analysis in macro and finance. Our work triggered an intensive de-

bate among econometricians and economists.

I am looking for reasons why mainstream economists find it hard to accept the new science of deterministic chaos. I found their barrier is rooted in the Frisch model of noise-driven cycles. This was an unproved claim in a conference speech in 1933 by Ragnar Frisch, the editor of newly founded *Econometrica*. During the peak of the Great Depression he proposed the idea that a self-stabilizing market could be modeled by a pendulum with friction. Frisch claimed that random shocks could keep the pendulum alive, which is the very foundation of noise driven model in business cycle theory. He promised that his analytical paper would soon appear in his journal. Frisch shared the first Nobel prize in economics because of this model. I solved the historical puzzle in 1999 when I considered the Frisch model as a perpetual motion machine in physics. There was an identical model in physics known as the “the Brownian motion of a harmonically bound particle” first published in 1930 (Uhlenbeck and Ornstein), confirmed again in 1945 (Wang and Uhlenbeck). Physicists proved that harmonic oscillation would rapidly decay in Brownian motion. I tested the Frisch model with the US data. The Frisch model predicted that the US business cycle would disappear within 10 years! Now we understand a better alternative to a self-sustained biological clock, the nonlinear oscillator. I searched the literature and made a surprising finding: Frisch quietly abandoned his model in 1934 and did not mention a word about it in his Nobel speech in 1969. However, the noise-driven model formed the foundation of work on neoclassical business cycle theory, including that of Milton Friedman, Robert Lucas, and the Real Business Cycle (RBC) school, and Ben Bernanke’s financial accelerator. The equilibrium school in macroeconomics may have been going down the wrong track for eight decades. Nonlinear dynamics provides tools for diagnosing and preventing crises, while noise-driven models create the equilibrium illusion of self-stabilizing markets.

(II). Micro versus Meso Foundation of Macro Fluctuations

The central idea in physics and biology is the relation between interaction and structure. Gas, liquid, and solid states are distinguished by the strength of interacting forces and molecular structure. Biological species are classified by their structure and function. However, there is no structure in macro and institutional economics. Reductionism in neoclassical economics is dominated by the concept of price and costs. Through an analysis of business cycles we re-discovered the role of structure.

Paul Krugman (2009) criticized the dark age in macroeconomics, but did not point out what went wrong with microfoundations and rational expectations, which reversed the Keynesian revolution in 1970s. Robert Lucas (1972) destroyed the usefulness of government policy in job creation by a fancy idea that independent fluctuations at the level of households (e.g., the inter-temporal substitution between work and leisure) would generate

large fluctuations at the aggregate level. We tested the Lucas model by the Principle of Large Numbers in 2002. The Principle says that the more micro agents there are, the smaller the aggregate fluctuations when independent fluctuations cancel each other out. We found weak evidence of microfoundations from macro indexes: less than 5% of observed US business cycles may be explained by the microfoundations, i.e. fluctuations generated by households. We found that the main source of business cycles comes from meso foundations, namely the finance sector. They may generate large fluctuations in investment, which is several times larger than fluctuations in consumption and GDP. This conclusion is confirmed by the 2008 financial crisis. Fluctuations in currency and commodity markets are several times larger than those in stock markets. The only possible source is due to financial oligarchs. The policy implications are also clear. Competition policy is critical for macro stabilization. We demonstrate that 2008 crisis was caused by excessive speculation by financial oligarchs. We must have international anti-trust law and break up financial oligarchs to prevent financial crises. My proposals have been well received at international meetings on the financial crisis, including the pre G20 meeting at Mexico City in May 5, 2012.

...the two-level model of a micro-macro economy is over-simplified for modern economies. We propose a three-level model of a micro-meso-macro economy since the finance sector and industry structure at the meso-economy level is the key to generating innovation, instability, business cycles, and crisis.

We have two important lessons for macroeconomics.

First, the two-level model of a micro-macro economy is over-simplified for modern economies. We propose a three-level model of a micro-meso-macro economy, since the finance sector and industry structure at the meso-economy level is the key to generating innovation, instability, business cycles, and crisis.

Second, methodological individualism is not capable of explaining macro fluctuations. Lucas made two fundamental mistakes. One, he did not realize that relative prices always move in pairs. If many people choose leisure when the average wage declines, the leisure price would also go up and create an arbitrage opportunity for those who postpone leisure instead. Their arbitrage activities could offset the intertemporal substitution effect of the vacation group. Therefore, the rational expectations hypothesis is a self-defeating prophecy. Lucas’ critique should apply to his rational expectations theory. Two, Lucas made an elementary mistake in stochastic calculation. He did not know the numerical difference between the population model of an island economy and the representative agent model with only one agent in calculating its variance. Economists should learn an important lesson from the Lucas mistake, namely that many do not behave as one. Our analysis is based on a

population model of the birth-death process. We provide strong evidence that methodological individualism in the form of a representative agent or a Robinson Crusoe economy cannot explain macro fluctuations. This is a useful lesson that new classical macroeconomics needs a more advanced mathematics, not simple and wrong math.

(III). The Birth-Death Process and the Limit of Methodological Individualism

Our work on the birth-death process re-shaped the foundation of finance theory. We found that the neo-classical model of asset pricing has a fundamental flaw. The two stochastic models that are widely used in finance theory, random walk and geometric Brownian motion, are both representative models with only one agent and unstable in nature. We found that a random walk is damping while geometric Brownian motion is explosive in time. The proper model is the population model of the birth-death process with N agents, which is sustainable through market instability and crisis. We warned in 2005 that the Black-Scholes model is explosive for longer than a three-month time-horizon. During the 2008 financial crisis, AIG was nearly bankrupt because of the collapse of the Credit Default Swap market. All derivative pricing was based on the representative agent model of geometric Brownian motion. In 2012 we developed a more generalized model for option pricing and crisis regime-switch, which is based on the birth-death process.

(IV). Transaction Costs and the Reductionism in Institutional Analysis

When I read the Coase (1937) paper on the firm, I was puzzled how the firm size could depend solely on transaction costs. From a physics perspective, transaction costs are similar to heat, wasted energy, or entropy, which has little information on its structure and complexity. The so-called transaction cost theory is a false analogy of a frictionless world in physics. Can you compare the stone physics with the animal physics? Certainly not! Planet motion can be approximated by a frictionless world (we call this a conservative system with conservation of energy). But people's life depends on constant dissipation of energy (we call this a dissipative system with time asymmetry). Coase claimed that the ideal form of firm and social institution can be understood by the Coasian world of zero transaction costs. Its implication is simple: history or time evolution is irrelevant in institutional economics. This assumption leads to the Coase belief: all kinds of institution would converge to the unique optimal form, regardless uneven initial conditions. This is the central message in his social cost paper in 1960. In contrast to a biological theory of species evolution, the Coase theory is extreme reductionism, similar to Ostwald's energism in late 19th-century physics as an alternative to the matter-based approach of atomic theory. The size of the firm cannot be determined solely by an internal balance between transaction and coordination cost, regardless the competitor's scale and the size of the market niche. Coase made a hidden assumption

that market competition would drive down transaction costs. Technological progress may reduce the unit transportation cost and communication cost. However, aggregate transaction costs as a whole had a clear increasing trend in the history of the industrial revolution and division of labor, which was driven by increasing network complexity and innovation uncertainty. The Coase belief of reducing transaction costs in social evolution is simply against the second law of thermodynamics, since entropy production increases in biological and social evolution. The Coasian world is another example of a perpetual motion machine in equilibrium economics (Chen 2007). The most controversial assertion in his article on social costs is that any social conflicts could be resolved by bilateral bargaining without the third party (law, government, or civic society) intermediation (Coase 1960, 1988). His argument was based on the symmetry between polluter and victim, and more generally, the symmetry between consumption and investment (Coase 1960, 1988, Cheung 1998). The problem is that the origin of division of labor means symmetry breaking in time and space. Power and conflicts are the price of industrialization. That is why we study political economy and social economics. If the Coase theory is valid, there would be no power, no conflicts, no war, no government, and no regulations. This is not true in the history of industrialization. Coase made the claim of observing

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the real world. After careful examination, we found out that no single case studied by Coase could support his claim. Reducing transaction costs is the main argument for financial deregulation, which is the root of current financial crisis. Coase often argues that government effect is hard to judge when transaction costs are high. Clearly, the only agenda of transaction costs theory is its use for laissez-fair policy. The question is: can you find any modern industry that could run without regulation? Manufacture? Airline? Food and Drugs? Or Finance? In policy debate, the concept of transaction costs has limited use in practice, since no one knows how to compare existing regulation costs with potential risk and uncertainty. Our work demonstrates the role of a selection mechanism is more important than transaction costs in institutional design.

(V). Knowledge Accumulation vs. Metabolic Growth

Chapter 1 of Book 1 of Adam Smith's *An Inquiry Into the Nature and Causes of the Wealth of Nations* was on the division of labor, a process of increasing complexity in economic systems. Smith's theorem, (the term was coined by George Stigler in 1951) in his third chapter, states that the division of labor is limited by the extent of the market. Theoretical biology explicitly described the biological niche by a logistic equation with an S-

shaped growth curve. Population or output growth always has a resource ceiling. We introduced learning competition in 1987 and developed the metabolic growth theory in 2012. Arrow's theory of learning by doing implies a theory of knowledge accumulation. So-called endogenous growth theory implies a permanent divide between rich and poor countries. In the history of science, knowledge development is a metabolic process. Partial old knowledge is replaced by new knowledge. Otherwise, we cannot understand the fall and rise of industries and civilizations. Schumpeter's "creative destruction" can be described by a species competition model and "logistic wavelets" in theoretical biology. Both Adam Smith and Schumpeter can be integrated into evolutionary dynamics without optimization.

Now, we have the main building blocks to develop an alternative paradigm for economics, a vision first realized by Paul Samuelson in 1995. From our perspective, the problem of neoclassical economics is not too much mathematics, but too narrow mathematics. As Keynes once pointed out: they believe in Euclidean geometry but live in a non-Euclidean world. Complexity science provides new tools for evolutionary economics, which is beyond the dream of Schumpeter and Hayek.

2. How does this compare to the mainstream?

Complex economics has several aspects that radically differ from neoclassical economics.

First, there is no economic man who has perfect information and is capable in optimizing resource allocation under limited resources and in a changing environment. Two nonlinear features characterize all living and social systems: i) limited resources and market extent (constrained by technology capability, population size, and ecological constraints), and ii) limited life time and living space. Therefore, people have only limited freedom and opportunity for trial and error. No purely selfish social animal could survive in a fiercely competitive world. Division of labor demands coordinated hands in modern society.

Second, human beings are social animals by nature. Social interactions are major sources of market fluctuations and learning competition. Both negative and positive feedback exists in economic dynamics and these lead to both variability and resilience. The general equilibrium optimization approach is only a static picture and it omits innovation, uncertainty, and life cycles. A representative agent model is useful only as the first approximation in a short-term time window in analyzing time series. Methodological individualism has severe limits in understanding social as well as structural issues in economics.

The mathematical framework of neoclassical economics is the Hamiltonian mechanics in a closed system. Its problem is that optimization implies time symmetry. That is why neoclassical economics ignores historical information in economic analysis. This is the fundamental difference between the equilibrium school and the

evolutionary school. Any economic activity is based on dissipation of energy in open systems. Unrealistic concepts in neoclassical economics, such as perfect information, rational expectations, a frictionless world, unlimited resources, long-run equilibrium, etc., are simply contrary to the basic laws of physics. New concepts in complex evolutionary economics are consistent with these and with biological constraints. For example, resource constraints, time horizons, life cycles, innovation, chaos, uncertainty, multiple equilibria, moving trends, evolutionary history, climate change, and geography are important in studying economic issues. Interactions, correlations, and two-way evolution occur in open systems.

There is no such thing as unique supply-demand equilibrium in microeconomics or uni-directional causality in IS-LM models. When a central bank lowers the interest rate, you may face not one but three outcomes: you may increase investment in a normal economy; you may hold cash during uncertain times; or there may be capital flight to foreign countries with better growth potential. Monetary and fiscal policies are not simple in the global era. Economic policy and organizational design should be based not on blackboard economics in a utopian economy, but on applied engineering in a mixed economy. Economic analysis cannot be separated from political, social, and historical perspectives. This is the end of economic imperialism, but the beginning of a unified science, integrating natural and social science as well as humanity.

3. What are the main lessons resulting from your experiences with the Chinese economy?

My view of economics is shaped by intellectual storms and historical waves, not by formal training in mainstream economics. Many ideas in evolutionary economics came from my observation of the changing Chinese economy.

First, comparative history is important for understanding civilization bifurcation: the western mode of division of labor is characterized by labor-saving but resource-consuming technologies, such as dairy-farming and industrialization, while the Chinese mode of division of labor is characterized by resource-saving but labor-consuming technology such as small-scale intensive farming. These two features are essential to understanding the ecological foundation of Smith's theorem. Scale economies simply destroy old jobs much faster than they create new jobs. That is why co-existence of scale and scope economies is the key to understanding the foundation of biodiversity and mixed economies. Social stability and economic efficiency must be balanced to achieve sustainable growth.

Second, different industries have different investment and product cycles. This is central to understanding why the speed of price convergence varies greatly over industries. The products in the Arrow-Debreu model have infinite life. Therefore, general equilibrium theory is incapable of understanding price instability in an industrial

economy. That is why the Washington Consensus failed in East Europe. China's open-door policy was conducted through an experimental approach. China's dual-track price reform, special economic zones, and decentralized experiments ensured both innovation and stability. Keynes and Frank Knight realized the difficulty of uncertainty arising from change. Chinese reformers deal with these problems by pragmatic wisdom, not by ideological doctrine.

Third, market share competition is more important than price competition in an information economy. There is no empirical evidence of marginal cost pricing. China's state, collective, and private firms are rapidly catching up in learning to compete through advancing technology. This is because they are thinking strategically, aiming to upgrade technology and expand market-shares, rather than maximizing short-term profit. Leadership and collective spirits are essential both in government management and corporate governance. These observations reveal the limits of new institutional economics.

Fourth, herd behavior is visible in emerging stock market and consumer behavior. Social interaction and public opinion play a larger role than individual rationality in market behavior. These observations inspired me to study collective models first in public opinion, then in finance. The power and beauty of the population model in theoretical biology and the birth-death process in chemical reactions can be seen when they replace representative agent models of random walks and Brownian motion in macroeconomics and finance.

Fifth, holism is rooted in Chinese agriculture, while reductionism is rooted in Greek commerce. Analytical thinking has made tremendous progress in physics when controlled experiments can test competing theories. However, the analytical approach has increasing difficulty in dealing with living and social systems, since the whole is much more than the sum of the parts. Holistic approaches are deeply embedded in Chinese medicine and classical thinking, such as Taoism. I consider the future of complexity science to be a synthesis of analytical structures and evolutionary perspectives. Complex economics could be an integration of western methodology and oriental wisdom.

4. Do you think that a more pluralist approach to

economics might gain traction? What factors constrain and support such a development?

We live in an open society under globalization, so a pluralistic world is a reality. People have many choices of life styles and institutions, subject to ecological and cultural constraints. There exist several models of market economies, including Anglo-Saxon, German, Japanese, Scandinavian, and Chinese.

I learned a lot from readings in cultural anthropology, biology, psychology, philosophy, and history. For quantitative analysis and mathematical modeling, economists can borrow a lot of tools from science and engineering.

Evolutionary economics and complexity science originated in the US and Europe, but they are rapidly developing in Japan, Australia, and China. The platform of the World Economic Association will accelerate the pluralistic trends in economics.

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