

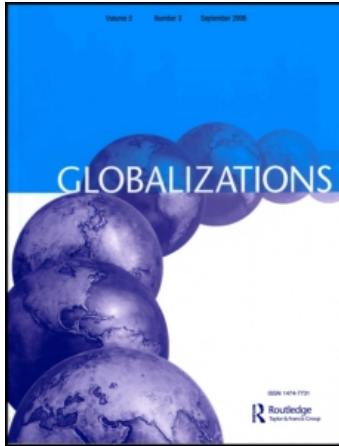
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What Next? An Explanation of the 2008-2009 Slump and Two Scenarios of the Shape of Things to Come

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What Next? An Explanation of the 2008–2009 Slump and Two Scenarios of the Shape of Things to Come

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ABSTRACT *In order to build scenarios of possible futures and grasp the structural liabilities and tendencies of global financial markets, we do not need just historical analogies to past crises and collapses but also a conceptual-theoretical model that explains the characteristic mechanisms of financial markets. Firstly, I summarise the neoclassical understanding of financial markets and its characteristic effects. This understanding gave ex post legitimisation to the re-emergence of global finance in the early 1970s, and has subsequently justified and encouraged its rise to predominance in the world economy. I provide reasons to suspect that the orthodox account is misleading not only because it has been unable to anticipate the 2008–2009 crisis (or any other major crisis) but more fundamentally because it lacks insight even into the basic operations of financial markets. Secondly, I sketch an explanatory model of the 2008–2009 financial crisis, based on Keynes and Minsky as well as on concepts derived from Schumpeter, chaos theory and theory of collective action and rationality. This explanation provides the basis for two short-term scenarios of future developments, involving the possibility of a major crash in the late 2010s or around 2020; (also pathological) learning; and the emergence of green global-Keynesian policies and institutions. I conclude by suggesting that the era of neoliberalism is likely to come to an end by 2030, having lasted for about half a century.*

Para poder crear situaciones de posibles futuros financieros y llegar a comprender las responsabilidades legales y las tendencias de los mercados financieros globales, no necesitamos tan sólo analogías históricas de crisis y desplomes anteriores, sino también un modelo teórico conceptual que explica los mecanismos característicos de los mercados financieros. Primero, resumo el entendimiento neoclásico de los mercados financieros y sus efectos característicos. Este entendimiento dio una legitimación retrospectiva al resurgimiento de las finanzas globales a principio de la década de 1970, y subsecuentemente ha justificado e impulsado su subida al predominio en la economía mundial. Proporciono razones para sospechar que el informe ortodoxo es desorientador no sólo porque no ha sido capaz de anticipar la crisis de 2008–2009 (o ninguna otra crisis mayor), pero fundamentalmente

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porque carece de conocimiento profundo de las operaciones básicas de los mercados financieros. Segundo, esbozo un modelo explicativo de la crisis financiera, en base a Keynes y Minsky como en los conceptos derivados de Shumpeter, la teoría del caos y de la acción colectiva y de la racionalidad. Esta explicación provee la base para dos situaciones a corto tiempo de desarrollos futuros, incorporando la posibilidad de un desplome mayor a finales del 2010 ó alrededor del 2020; (también aprendizaje patológico); y el surgimiento de las políticas Keynesianas verdes globales y de las instituciones. Concluyo con la sugerencia que la era del neoliberalismo probablemente llegará a su fin antes de 2030, habiendo durado cerca de medio siglo.

为了建立未来的多种可能性，把握全球金融市场的结构性债务和趋势，我们不仅需要对过去的危机和失败做历史性的类比，也需要一个能够解释金融市场典型机制的概念化的理论模型。首先，我概括了新自由主义关于金融市场及其典型影响的理解。这一理解为在 1970 年代初全球金融的出现提供了事后的合法性，随后，为其在世界经济中占据主导地位提供了正当性和激励。我提供了怀疑正统解释的理由，不仅是因为正统解释无法预测 2008-2009 年的危机（或其他重大危机），本质上讲更因为它缺乏即使是有关金融市场基本运作的洞察力。其次，我概述了一种关于 2008-2009 年危机的解释模型，这个模型以凯恩斯、明斯基（Minsky）和来自熊彼特的概念为基础，包括混沌理论以及集体行动和理性理论。这个解释为关于未来短期发展的两种方案提供了基础，其中涉及 2010 年代末或 2020 年左右一场可能的大崩溃；（病态的）学习；以及全球绿色凯恩斯主义政策和机构的兴起。作为结论，我认为新自由主义时代很可能在 2030 年走向终止，持续大约半个世纪之久。

Keywords: crisis, end of neoliberalism, financialisation, future, Keynes, Minsky, neoclassical economics, scenario, super-bubble

Introduction

As history does not repeat itself, only limited aspects of historical processes may prove sufficiently similar to provide insights into future possibilities. The point is not to look for exactly similar episodes or sequences, but for comparable structural liabilities and tendencies that may yield in some ways analogical outcomes. Hence, in order to grasp the structural liabilities and tendencies of global financial markets, we do not need mere historical analogies to past crises and collapses; we need a conceptual model explaining the characteristic mechanisms of financial markets. There is already a rich body of studies on the causes of the 2008–2009 financial crisis—many highly critical of the neoclassical orthodoxy, often relying instead on Keynesian and Minskyan concepts and ideas—but unless the relevant structures, mechanisms, tendencies and liabilities are clearly specified, no plausible scenarios of possible futures can be built.

Hyman Minsky's (1982) long ignored but now all of a sudden famous explorations on the mechanisms of financial markets revolved around the question: can the 1930s collapse happen again? Minsky argued that it does not need to happen again. True, by the early 1980s, a number of institutional changes and financial innovations had reversed the legacy of the reforms in the 1930s and 1940s and war finance. Yet, many qualitative differences remained in 2008–2009, and continue to do so. Governments are much bigger, implying a much greater deficit once a downturn occurs. In times of deficits, large government debt increases rapidly. Central banks are primed to intervene quickly as the lender-of-last-resort. Markets are not allowed to fall free; although they may nonetheless do so.

Have these automatic stabilisers and policy instruments been sufficient for countering the effects of the 2008–2009 global financial crisis? In the first quarter of 2010, is the worst already over? Of the 200 or so financial crises since the late 1970s, the most far-reaching ones have occurred in the past 15 years. Following the Mexican (1994–1995) crisis and its repercussions, the world has been further alarmed by the Asian crisis (1997)—which spread to Russia and Brazil (1998)—and the Dot-com bust (2001). The on-going crisis is more central and serious than any of the previous ones. Beginning with the sub-prime mortgage crises in 2007 and subsequent failures of large financial institutions in the United States and elsewhere, the 2008–2009 crisis developed rapidly into a global credit crisis, deflation and reductions in international trade. In the US alone, 22 banks collapsed in 2008 and 77 more by August 2009. The crisis has also involved major investment fund failures, sharp declines in stock indexes, and large reductions in the market value of commodities and housing worldwide.¹

According to the IMF (2009a) estimates from April 2009, total global output in 2009 is expected to decline by 1.3% when measured in terms of purchasing power parity (PPP); while per capita output is expected to decline drastically by 2.50% in PPP-terms and 3.68% in market rates terms. Moreover, these developments are unequal. Overall the advanced economies are expected to contract significantly and negative growth characterises also central and eastern European countries, while ‘emerging’ and developing countries may grow by a modest rate of 1.6% (the bulk of population growth concentrates in these areas). In some poor regions where population grows much faster than the economy, this can mean negative per capita growth. Unemployment rates are soaring everywhere, leading to further demultiplier effects even when stock markets may already be recovering.

However, the October 2009 IMF *World Economic Outlook* (2009b) looks already somewhat more optimistic and projects a growth of 3% for 2010. Despite signs of gradual recovery—mainly due to automatic stabilisers via the state and large-scale rescue and stimulus packages—it remains in principle possible that the worst is still ahead. The Great Depression began with the stock market crash in October 1929, but the deepest low came in the aftermath of the winter 1932–1933 financial collapse in the US and elsewhere. If automatic stabilisers and available policy instruments are not sufficient for avoiding deepening of the crisis, especially given the levels of public debt in many countries, the on-going pattern might still turn out similar.

In this paper, first I summarise the standard neoclassical theory of finance, stressing its practical involvement in the financialisation of global political economy, and its causal role in bringing about the 2008–2009 crisis. The standard neoclassical understanding has given *ex post* legitimisation to the re-emergence of global finance in the early 1970s and then, subsequently, justified and encouraged its rise to predominance in the world economy. I also provide reasons to think that the neoclassical account is largely wrong—not only since it has been unable to anticipate the 2008–2009 crisis (or any other major crisis) but more fundamentally because it lacks insight into even some of the basic operations of financial markets. Second, I sketch a general level Keynesian–Minskyan explanation (with some new elements) of the crisis. Finally, the point of this causal explanation is to provide a basis for developing scenarios of future developments. My two main short-term scenarios constitute alternative paths in the mid- and long-term developments, which I also briefly outline and discuss. In what way, and when, will the neoliberal era come to an end? A key consideration is that geo-historical political economy developments and changes in actors’ modes of responsiveness are closely related.

The Standard Neoclassical Theory of Finance

A long-term trend in global finance has been toward deregulation and liberalisation of entry (Bruner & Carr, 2007, p.120; UNCTAD, 2009). An index of openness shows that already by the late 1990s, restrictions on financial transactions had almost completely disappeared in industrialised countries and decreased in the global south (Quinn, 1997). Alan Greenspan, who served as the Chairman of the US Federal Reserve from 1987 to 2006, came to symbolise the market libertarian approach (for his own argument against pre-empting bubbles, see Greenspan, 2004). As the Chair of Morgan Stanley Asia explains at the height of 2008–2009 the crisis, ‘market libertarians simply looked the other way as the U.S. lurched recklessly from bubble to bubble’ (Roach, 2009, p. 26). Deregulation, liberalisation and optimism about the ‘outgrowths of the thriving free enterprise system’ (Roach, 2009, p. 26) are not arbitrary policy choices, but rather stem from the neoclassical theory.

Many articles in economics journals are technical and do not provide explicit or relevant policy implications.² The neoclassical theory of finance is developed, or its methodological and theoretical underpinnings are explicitly presupposed, only by some theoretical modellers (e.g. Altmann et al., 2008; Iacoviello, 2005; Menoncin, 2005; Riedel, 2004; Soumaré, 2007). A large part of economics of finance concerns econometric studies on—often rather specific and technical—aspects of finance (e.g. Doucouliagos, 2005; Janssen, 2004; Poskitt, 2008; Vinh Vo & Daly, 2007). While econometric studies can, at times, shed critical light on assumptions such as perfect rationality or foresight, and while they may even focus on determinants of financial crises, for the most part they are reasonably compatible with the standard neoclassical theory of finance.

The neoclassical theory of finance has less practical impact through the on-going technical research than through economics textbooks. Arguably, when asked for policy advice, mainstream economists tend to resort to the core beliefs of the neoclassical theory of finance. The *habitus* of economists—a system of dispositions, cognitive and motivational structures, and practical skills of making normative judgments (Bourdieu, 1977, p. 76, 1993, p. 76)—is acquired in the course of their long training, and anchored deeply in their daily professional practices, in the field of economics. The characteristic *habitus* of a neoclassical economist includes a predisposition towards favouring free markets, deregulation and liberalisation.³

Standard neoclassical theory is based on a set of relatively simple assumptions presented as axioms, on which theorems, corollaries and their mathematical proofs are based (see, for example, Varian, 1992; Sloman, 1994). This gives the appearance of well-established knowledge of laws that are comparable to the standard laws of physics; as students are not bothered with unorthodox ideas, remaining disagreements seem relatively minor. The key, it is assumed, lies in grasping the way the price mechanism functions in an economy with many consumers, producers and commodities. Hence, all economic developments can be analysed in terms of how supply and demand meet. Among the questions posed are: how does the price mechanism guarantee an optimal allocation of given resources?; and under what conditions does the system have a unique and stable equilibrium?

The price mechanism is studied by using formal methods derived from mechanics, field equations, and differential calculus (see Mirowski, 1991). The basic formal models imply that prices, as freely determined in open markets, can and often do ensure the optimal reconciliation of supply and demand.⁴ The technical term to describe this reconciliation is ‘equilibrium’. The standard claim is that equilibrium is achievable in open free markets. While various sophisticated models have qualified the basic claim in various nuanced ways, without usually renouncing the basic market clearing conviction, it is further assumed that equilibrium maximises

efficiency and thus also the overall welfare of society. In other words, the sum of atomistic individuals maximising their utility and consumption and firms maximising their profits can be optimal for everyone, provided that no redistribution of wealth is allowed. Welfare is conceived in terms of Pareto-optimality, i.e. no arrangement can improve the position of anyone without making worse the position of somebody else. The implicit background assumption of Pareto-optimality is that markets distribute wealth in a just way: those who contribute the most are equally rewarded the most.

It is commonly presumed that the so called first theorem of welfare economics applies to all situations involving the price mechanism. If money is merely a good among other goods, the Smithian invisible hand must guide also free trade of money. The real economy thus determines the prices of money and financial assets. Therefore, standard neoclassical theory assumes, or at least encourages one to think, that financial and other markets tend to cohere. Money may, for instance, be represented simply as a monotonic transformation of an underlying utility function in terms of bundle of goods (Varian, 1992, pp. 109–110). In the general equilibrium theory, financial and other markets are either in a simultaneous Pareto-optimal equilibrium or moving towards such an equilibrium if there have been disturbances or movements of correction (Arrow & Hahn, 1971). Economists are taught to confine their advice to this and similar efficiency claims derived from their formal mathematical models, and avoid any other kind of explicitly normative discourse.

In some contrast to Milton Friedman's (1953) categorical case for freely floating exchange rates and free markets more generally, sophisticated neoclassical accounts may explicate trade-offs between floating rates and other possible objectives and recognise that financial markets tend to overshoot. The notion of 'overshooting' (Dornbusch, 1976) presupposes that there is a known, unique equilibrium. From this point of view, the problem is that markets tend to create incentives for traders to push the price further from the equilibrium when the price is already below or above the price justified by economic fundamentals. Liquidity trading is rational and will enhance the efficiency of the markets; whereas, some trading can be characterised as destabilising or 'noise' in the otherwise efficient markets (the metaphor of noise refers to the part of the price data distorting the picture of the true underlying trend that would otherwise be clear to all). Again, the distinction presupposes the notion of Pareto-efficient equilibrium, against which it is assessed whether trading is rational or destabilising.

The problem is that the notion of efficient equilibrium is a purely theoretical notion in the speculative sense of the term. Equilibrium theorists do not know what an 'efficient equilibrium' would designate in the real, concrete world (outside their abstract, mathematical models). Take an example where the US dollar/British pound exchange rate justified by the economic fundamentals, is 1.5; once the rate is at 1.6, it is possible to show in terms of the overshoot model how traders would have the incentive to push it even higher. In the real world, however, 'the rate justified by economic fundamentals' cannot be determined in any objective sense. What *cannot* be known must thus be assumed. Analysis is then built on that fictional basis. The apparent clarity and precision brought about by mathematical tools cannot be a substitute for understanding reality. As Tony Lawson (1997, p. 112) argues: clarity and precision can be achieved in different ways and, in any case, they are not sufficient for understanding social phenomena.

A farmer may, with as much clarity as any 'theorist', assume that his or her pigs can fly in a definite direction with a determinate velocity. But his exercise is unlikely to help the farmer in understanding the nature, speed or cost etc., of any process whereby pigs can actually be brought to market, unless flying pigs are a real possibility.

The assumption of perfect foresight is no more realistic than the assumption that pigs can fly; however, in a typical move:

[T]he long-run exchange rate is assumed known . . . We note further that, while expectations formation may appear ad hoc, it will actually be consistent with perfect foresight. (Dornbusch, 1976, p. 1163)

Perfect foresight is something even the most celebrated economists are lacking. Many world-renowned economists have lost fortunes in financial crashes. If asked to pinpoint any concrete ‘equilibrium’ in any financial markets or, say, the long-run equilibrium exchange rate of actual currencies in the real historical world, economists either evade the question or resort to something like the notion PPP. In the context of foreign exchange markets, for instance, the problem with the PPP as an ‘equilibrium’ is that it practically never corresponds to the actual rates or prices. Purchase power may also, in the long run, deviate systematically and increasingly from the exchange rates. It is a well-known fact that the price level in less well-off countries is lower than in better-off countries, and that the gap tends to widen over time (dollar- or euro-converted values make them look poorer than they actually are). The difference has been striking in cases such as India and China over the last two or three decades.

Of course, there are many relevant considerations in assessing the validity of different expectations of the true value of, say, exchange rates. The comparative purchase power of different currencies, external balance of countries, and the competitiveness of their firms can be used in forming various *opinions* about what, for instance, the exchange rate of X *should* be or is likely to be. Sometimes these opinions converge within some time span (say a week, or 3 months); but usually they diverge at least in relation to some periods of time towards the future. And it is precisely the ambiguity and discrepancy between different estimations and anticipations that makes it reasonable for one trader to sell and another to buy an instrument or liability at a particular rate, both expecting the transaction to be profitable. Most of foreign exchange markets, speculation in any markets, or derivative markets would not exist without ambiguity and uncertainty about the developments. There must be an abundance of contradictory assessments of future developments for these kinds of markets to exist in the first place (see Tobin, 1978, pp. 157–158; cf. Best, 2008, pp. 360–370).

In their empirical studies on exchange rates and fundamentals, Richard Meese and Kenneth Rogoff (1983, 1988) found that random walk forecasts typically outperform forecasts based on Dornbusch-type and other standard models for exchange rates of major currencies. This is a major anomaly of the standard theory. Another anomaly sounds at least as serious: since the start of the floating rate exchange rates regime, the variability of the exchange rates has increased dramatically. There have been two kinds of responses to these anomalies. Models are being made more complicated either by allowing for non-constant coefficients that vary as a result of the underlying stochastic disturbances and of changing policy regimes; or by introducing non-linearities into the model (De Grauwe & Vansteenkiste, 2007, p. 38). In both cases, the idea is that the problem can be fixed just by making models more complicated, while retaining the concept of equilibrium. Thus, there seems to be no reason for revisiting the conceptual underpinnings of the standard theory and especially the idea of a tendency towards equilibrium and overall coherence of finance and other markets.

And yet, the notion of ‘equilibrium’ is borrowed from physics where it is used to determine in a precise manner whether a system of force field equations can be solved or not. In neoclassical economics, the only problem is not that equilibrium refers to nothing clearly specifiable in political economy. There is a lack of consensus of what it means (Lawson, 2005). Moreover, even if

there was a unique Pareto-optimal equilibrium in some well-defined sense in a given market, neoclassical models have little, if anything, realistic to say about how to get there. If an acceptable specification of a market allows for one specification, it will typically allow many. Even if the specification of the market was based on realistic assumptions; even if any of these equilibria was Pareto-optimal; and even if there was a clearly specified way of getting there (probably none of these conditions can ever be fulfilled), these models would say nothing about whether the narrow ‘efficiency’ in the financial markets would actually enhance the efficiency of the economy as a whole. Even ‘efficient’ finance could easily compromise efficiency, welfare or justice in the national and global political economy as a whole (see Mirowski, 1991, pp. 222–241; Addleson, 1995; Lawson, 1997, pp. 86–92; Keen, 2001, pp. 161–187).

A Keynesian–Minskyan Explanation of the 2008–2009 Financial Crisis

What unites those who actually foresaw a major financial crisis⁵ is the refusal to rely only, or at all, on standard neoclassical models. Rather than relying on the concept of equilibrium or empirical continuity of trends,⁶ the critics of the orthodoxy have made extensive use of the combination of Keynesian and Minskyan theories built on purportedly realist assumptions; historical analogies; comparisons of developments across the world economy; and whatever evidence can reasonably be mustered about the on-going developments, including official statistics, newspaper reports and interviews. Thereby, a systematic picture and causal explanatory story of the on-going process was formed; and judgements about the likelihood of different short-term scenarios made. For these scholars, it was clear that ‘the speculative bubbles, starting with the US housing price bubble, were made possible by an active policy of deregulating financial markets on a global scale’ (UNCTAD, 2009, p. xii). Their anticipation was that a bust and crisis is much more probable than the continuity of the then current upward trends (many of them, however, expected a crisis sooner).

From a Keynesian–Minskyan viewpoint, how do capitalist financial markets function?⁷ In trying to explain business cycles, Keynes (1961, pp. 324–326) stressed the role of expectations about an uncertain future. For instance, the liquidity preference of the public—people’s wish to hold cash instead of consuming or investing their money—is caused not only by the use of cash as a means of exchange but also by the uncertainty of the future. When there is confidence in the future, people feel secure about consuming, investing and often also accumulating debt, particularly if cheap money is easily available. Also, investments depend on (particularly long-term) interest rates and the horizons of expectations of those who make investment decisions.

Unpredictability and uncertainty about the future are critical for developments in a market economy. Following economist Frank Knight’s earlier distinction between risk that is calculable and uncertainty that is not, Keynes argued that there can be no scientific basis for predictions of many historical episodes and their outcomes or large-scale developments. When assessing future prospects, uncertainty is often more fundamental than risk (see Gillies, 2006, p. 214). The Keynesian frame admits, however, the existence of degrees of uncertainty. There may be some information that is relevant in determining the likelihood of future event E, but this likelihood becomes dependent also on the weight of the argument, i.e. from the ratio of things that can be plausibly known to ignorance.

Social systems are open and ‘nonergodic’, meaning that the relevant processes are non-repetitious and involve qualitative changes, and thus many events, episodes and decisions are unique (see Crocco, 2002). Therefore, the weight of evidence and degrees of uncertainty can

only be determined in terms of qualitative judgements based on conceptual theoretical and circumstantial evidence (historical analogies, comparisons between processes, prevailing understandings and opinions etc). Know-how of making plausible—yet fallible—intersubjective judgements can be cultivated by acquiring comprehensive conceptual and historical knowledge; understanding of social causation; and practical experience on building explanatory models and futures scenarios.

With the condition of uncertainty in mind, Keynes (1961, p. 158) distinguished between two ways of making investments and profits in the capitalist market economy: enterprise and speculation. Enterprise is ‘the activity of forecasting the prospective yields of assets over their whole life’; whereas speculation is ‘the activity of forecasting the psychology of the market’. Keynes argued that ‘as the organisation of investment markets improves, the risk of the predominance of speculation does increase’. Also on the basis of his own experiences from the 1920s and 1930s, he claimed that, for instance, in ‘New York the influence of speculation is enormous’. This is because liquid investments— ‘hoarding or lending money’—often pay better off, at least in the short-run, than long-term productive investments. He also maintained that this is ‘an inevitable result of an investment market organised’ in a manner making investments liquid (Keynes, 1961, p. 155).

Keynes likened the behaviour of investors in financial markets to ‘newspaper competitions in which the competitors have to pick out the six prettiest faces from a hundred photographs, the prize being awarded to the competitor whose choice most nearly corresponds to the average preferences of the competitors as a whole’. However, in this strategic game, everybody knows that everybody else is looking at the problem from the same point of view. ‘It is not the case of choosing those which, to the best of one’s judgement, are really the prettiest, nor even those which average opinion genuinely thinks the prettiest. We have reached the third degree where we devote our intelligences to anticipating what the average opinion expects the average opinion to be. And there are some, I believe, who practice the fourth, fifth and higher degrees’ (Keynes, 1961, p. 156). Keynes’ account illuminates the tendency towards self-reinforcing processes in financial markets.⁸

The necessity of social mechanisms that would mediate between the real but uncertain prospects of a firm and financial investments entails the possibility of a relative detachment of monetary and financial developments from other economic developments, even without the prevalence of speculation. And yet the productive developments and finance are conceptually and causally linked in a complex and reflexive way. Financial valuations can themselves have effects on the economic factors that they are supposed to reflect, especially through equity and debt leveraging (Soros, 2008b, p. 58). This interconnection may give rise to a positive feedback loop engendering a boom that will last only as long as optimistic expectations—to a significant degree generated by the positive feedback loop itself—can be sustained.

Relative detachment notwithstanding, there are manifold social relations and indirect causal feedback loops that connect finance to the rest of political economy. Money is not a mere neutral *numéraire* good but is internally and externally related, as a causally active part, to the processes of agency/structure dynamics in capitalist market society. The available accounts⁹ of the global financial market practices indicate at least the following contemporary connections, mechanisms and feedback loops:

- (1) *All decisions are based on anticipation of the future in the context of a blurred line between calculable risk and fully Keynesian uncertainty.* Give contradictory assessments of future developments, decision-makers have to acquire information from anywhere they can. For

dealers and investors, whatever happens to the short-term prices of assets for whatever reasons is in fact quite real, and they have to act consequently. Fortunes may come and go with these fluctuations. Shared moods about the overall situation; partially shared, partially private analyses of uncertain political situations; rumours about economic and political developments and other investors' decisions; as well as assessments about the possibility of speculative attacks and self-fulfilling prophecies; are all very real, with potentially far-reaching consequences. Therefore, anticipation of the moves of other players *within* the financial markets is a key consideration in financial decisions.

- (2) *The connection between productive and financial economy is mediated through agency.* There is an indirect link to the material economy of work, production, consumption, trade and state budgets through the assessments of the IMF or the rating agencies such as Standard & Poor and Moody's Investors Services. Also, the reports and actions of the IMF and BIS (Bank for International Settlements) play a role. These private or public expert systems are dependent upon particular socially constructed mathematical models involving neoclassical economics; available statistical data; and computer systems. In addition, they rely on news and other qualitative information, and on practical judgements based upon them. With the exception of a broad outline of the development of a few variables under 'normal' circumstances, the expert systems cannot predict anymore than any economic theory can; their models are built on unrealistic assumptions.
- (3) *Everybody is trying to estimate and guess the trend at various time spans because it is better to be a step ahead of others—although not too much, for then you would lose as well.* The strategic game is reflective, partly communicative and often also highly self-referential (reflexive). Yet, the stories actors are telling continue to make references to the non-financial world (to the economic prospects of X; changes in economic policies of X, and so on). Thus an external process, as perceived and interpreted by the leading actors, may trigger, especially after the critical point when expectations can no longer be self-evidently sustained, a downward process. Anticipation of changes—particularly if many others follow the market leaders' actions—can also contribute to a bringing about those changes; this is the phenomenon of partially or fully self-fulfilling prophecies. Whatever happens at least partially of one's own accord, is, in many situations, potentially profitable, certainly more profitable than simply reacting, after others, to episodes and developments that have already taken place. For the latecomers, prices have already changed, occasionally with dramatic consequences.
- (4) *Equity or debt leveraging tends to affect the underlying financial valuations and thus enable further leveraging through the wealth-effect, increasing value of collateral and sustained optimism.* Significant savings in one part of the global system have a tendency to gravitate towards segments or regions of financial markets exhibiting profitable booms, thus fuelling those booms further. The financialisation of things and practices (for instance, through private pensions funds or commodities futures markets) and securisation of debt have a similar effect by increasing liquidity for leveraging and speculation. Central bank and government activities may contribute further to the process, involving the possibility of something akin a political business cycle as leveraging and speculation in financial markets can compensate, temporarily for the lack of purchasing power of lower strata in (increasingly) unequal societies, and thus induce short-term growth.
- (5) *A bubble is eventually followed by a bust for reasons that are largely inherent to financial markets.* Under certain conditions, the financial multiplication process—or in standard terminology, the collective consequences of leverage building, mutual indebtedness and rapidly

inflating asset prices—can grow into a bubble in particular places and markets, meaning that the process is unsustainable and will turn downwards sooner or later. Certainty that an inflationary process has constituted a bubble can only be established *ex post*, i.e. after its bust, although *ex ante* indicators and historical analogies can be taken to be sufficiently reliable for many practical purposes.

- (6) *Rising involvement in debt makes the system gradually more vulnerable to small disturbances, and thus increasingly chaotic.* If the confidence on the prospects of X is gone, the individually rational choice of ‘sell as quickly as you can’ amounts to a collectively catastrophic outcome of a collapse of asset values, although overall most investors would be better off by not selling for the time being. For any individual actor the worst outcome is to stay in now while most others opt out. By not selling as quickly as they can, they would be easily left with nothing. Hence the occasional bursts of panics and busts, with far-reaching causal consequences to production, employment and welfare.

Capitalist market economy generates innovations also in finance, not only in production and exchange (see Minsky, 1982, 2008). New financial instruments and other financial innovations presuppose de- and re-regulation. Financial innovations are based on a strive that is analogical to the effects of Schumpeterian innovations, aiming at ensuring something analogical monopoly profits as long as possible (see Schumpeter, 1939, pp. 87–125). These prospects can be made better, and the endurance of the monopoly position longer, by means of ‘secrecy regarding processes, patents, judicious differentiation of products, advertising’ (Schumpeter, 1939, p. 107). In financial markets innovations concern first and foremost leverage and the management of risk. At least partial secrecy or non-transparency is essential for hiding uncertainty, for masquerading uncertainty as calculable risks, and for profitably transferring and re-pooling risks. Financial innovations are often also about increasing leverage or decreasing the time of the investments or capital requirements, both of which mean news risks and uncertainty. Sometimes innovations are needed to evade regulations.

Banks create money when they give loans against future revenues and profits. Decisions about loans must be based on anticipation of the future under the conditions of Keynesian uncertainty. The monetary system is stable only as long as streams of revenue and profit enable firms to meet their financial liabilities. (Minsky, 1982, p. 22) New forms of profitable finance typically increase velocity of circulation and decrease liquidity, often merely by hiding uncertainty and risks. Even disregarding attempts to hide and transfer hidden risks to others, there is a fallacy of composition involved in ‘innovative risk-spreading’: what is possible for one actor at a given time is often not possible for all of them simultaneously.¹⁰

Many capital goods, and also real estate and financial investments, have been bought at least in part on credit. This makes their value (and the value of collaterals) dependent also on developments in financial markets, which in turn are contingent on actors’ expectations about the future, commonness of speculative orientation and the general degree of involvement in debt. Speculative activities sensitise actors on alterations in expectations about the future; yet no-one can predict the future. The development of asset values is always uncertain in open systems and determined in significant part by actors’ expectations and anticipations (Minsky, 1982, pp. 59–69).

The higher the liabilities in relation to revenues and liquidity, the more unstable the financial system becomes. Relatively small changes in interest rates, revenues or incomes may make actors insolvent, endangering the solvency of those actors who are expecting due payments from them. In the midst of mounting difficulties many have to opt for ‘Ponzi finance’, akin to

a pyramid scheme, i.e. they have to take expensive short-term loans merely in order to meet their immediate financial liabilities. A rapid rise in Ponzi-finance indicates a crisis in the near future. Relatively small absolute changes in interest rates, streams of revenue and wealth can thus trigger a financial crisis (Minsky, 1982, pp. 162–177). In other words, financial innovations and increasing involvement in debt make the financial system more chaotic, despite regulatory authorities' occasional attempts to close some loopholes and warn about the hazards of speculation. The inherent tendencies of finance thus create a mechanism of making the system as a whole increasingly sensitive to the conditions of its weak or vulnerable parts, while their weakness is, in part, a result of involvement in debt.

Yet, many actors are structurally inclined to reinforce the collective illusion of official optimism. Governments, central banks, and other official bodies do not want to trigger a downturn (and the more chaotic the system, the more likely this is to happen); thus they continue with the official optimism, qualified only by occasional acts and words of caution. Those who keep their own money at stake must believe that the new era will last permanently, while some use optimistic prognosis to manipulate share prices. Widespread consensus in the media is also reinforcing. The system thus self-sustains illusionary expectations that eventually turn out detrimental—but when the truth starts to emerge it is already too late.

International Politics of Global Finance

The inherent tendencies of capitalist finance towards a chaotic situation is a necessary but not sufficient part of a complex that in itself is sufficient but not necessary for generating a rapid financial downturn, i.e. a collapse. For instance, a worldwide contagious collapse is possible only under conditions of global networks of interdependence. In 2007–2008, global financial markets were arguably more tightly integrated than ever before. Although the financial collapse clearly hit North America and Europe more seriously than other parts of the world, the way financial markets in different parts of the globe react to changes has been synchronised to a remarkable degree.

On the other hand, the 2008–2009 crisis was generated by relatively enduring mechanisms of international political economy and related political choices. Global economy consists of states themselves engaging in financial activities and giving or taking loans. Their immediate financial situation depends on the prevailing current and capital account (im)balances. Since 1971–1973, currencies have been floating and the foreign exchange market has grown to be an essential part of the global financial system. The re-emergence of global finance has in effect meant the return of some of the key features of the Gold Standard and *haute finance* era of 1870–1914, involving unprecedented integration and increasing volatility.

From an international political point of view (see Patomäki, 2001, ch. 2, 2008a, ch. 6), global finance re-emerged as a response to the relative weakness of US competitiveness, while the British were also keen to restore the former eminence of the City of London. The post-Bretton Woods system has given a lot of leverage to the US and British governments as well as to Anglo-American financial markets and operators (other states have subsequently tried to reap the benefits¹¹ of global finance by regulatory laxity and by establishing off shore centres and tax havens). However, the position of the US dollar in the world economy has especially favoured the US. For a long while after 1971–1973 (this era may have ended now in 2009), the US government became *more sovereign* in its economic policy.

The US could continue financing its deficit with dollars and IOUs, and, alone among governments, could also move the exchange rate of the dollar against other currencies without suffering

the economic consequences that would face other states attempting to do the same. But there is a limit also to the level of US indebtedness. With the emergence of the euro and the rise of China, the systemic imbalances have been reflected in changing levels of confidence and exchange rates. As of the early 1990s, an increasing part of world surplus has been accumulated by China in its foreign reserves. Moreover, since its introduction in the 1990s, the euro has been the second most widely-held international reserve currency after the US dollar, providing an alternative to dollar (however weak and contradictory the politico-economic basis of the euro may be). The euro has already surpassed the US dollar in terms of the combined value of cash in circulation (more than €610 billion was in circulation in December 2006, which is equivalent to US \$802 billion at the exchange rates at the time).

From a global point of view, the exchange rate system is closed. Up and down of any particular value is always in relation to the value of other currencies. Overall the system is roughly zero-sum: changes in rates cancel each other. In a situation when all states (including the EU) are simultaneously facing a banking crisis, triggered by a bust of the housing market bubble, and a collapse in stock values, the crisis may not involve any acute problems in foreign exchange (forex) markets. There has nonetheless been a lot of volatility in forex markets preceding the 2008–2009 crisis. This volatility has affected the position of the US dollar, which is dependent to a large extent on the political decisions of various central banks and governments, in addition to the private decisions of especially Asian investors. In August 2005, the euro/dollar exchange rate was at 1.22, standing at above 1.34 in May 2007, 1.41 in December 2008, and 1.49 a year later. Amidst ups and downs, the overall trend has been upward.

China and some other Asian countries have been exporting their capital surplus to the US, thus making it possible to keep interest rates down despite low and declining rates of saving. With financialisation, securitisation, and leverage building through financial innovations and non-bank financial institutions, this was an enabling condition in the housing market bubble, and still enables low interest rates in the first half of 2009 (cf. *The Economist*, 2009a; UNCTAD, 2009). From the point of view of many central banks, the decision to hold dollars in their reserves is based on balancing their dependence on the US consumer markets with hedging against the risk that any currency contains, including the US dollar and its main alternative and rival, the euro. China has not been willing to risk a trade conflict with the US (or the EU), or the possibility that it will suffer systemic problem assignment through a collapse of the dollar and thus collapse of the value of its holdings of foreign currency and of bonds. However, with growing surplus capacity and internal economic problems looming, Chinese state-leaders are tempted to export China's economic problems, also with the help of devaluing the *renminbi*. This temptation has been reinforced by past examples of US unilateralism.

The point is that to a significant degree, the 2008–2009 global financial crisis has been caused by the unlearning of the lessons of the 1930s and 1940s; and by the short-sighted attempts by different state-actors to use the options provided by the global monetary system for their own narrowly defined, short-term benefit. As states have become entangled with free market global finance, and as there is a trade-off between states' relative competitiveness and financial stability (Singer, 2007; cf. Patomäki, 2008b), regulators and law-makers have found it acutely difficult to control the system in concert. There is 'a glaring lack of governance of international monetary and financial relations' (UNCTAD, 2009, p. xii). The minimum capital requirements of Basel I and II Accords, for instance, were easily offset by financial innovations allowed for, and even encouraged, by the authorities.

The Shape of Things to Come

Will the negative experiences from the crisis amount to generating a new momentum for major regulatory and institutional reforms? Or will the main lesson be just that some of the details of governance were the weak link in the chain: ‘Fix [those], and capitalism will be just fine’ (Roach, 2009, p. 27). I contend that it is likely that if (a) the peak negative real per capita global growth rate remains, on average, at the annual level of not much more than roughly two percent, and (b) if the crisis has now been contained and a recovery starts by 2010 or at the latest in 2010–2011, we will see just another round of neoliberal and technical business-as-usual ‘reforms’.

The illusionary idea that financial markets can make wealth out of nothing has experienced a major setback, but people’s memory is short and minds are open to manipulation, especially through the global media. However, there are some signs of progressive learning at the top of the financial system. Perhaps most notably, the chair of the London-based Financial Services Authority, Adair Turner, proposed in August 2009 far-reaching measures from a comprehensive financial transactions tax to various new regulations to curb the flows and power of global financial markets (for controversies, see Pickard, 2009). These proposals were discussed at the G20 meeting on 24–25 September 2009. The IMF was mandated to prepare for the next summit a report on instruments to make the financial industry ‘a fair and substantial contribution toward paying for any burdens associated with government interventions to repair the banking system’ (point 16 of the *Leaders Statement*; G20, 2009). What will come out of the report remains to be seen, but what is also interesting are the proposals of the Chinese to increase the use of Special Drawing Rights (SDRs) or even to create a global reserve currency. These are proposals to strengthen existing or create new common institutions as a way to overcome contradictions between individual and collective rationality in the international system of states:

[A]n international reserve currency should first be anchored to a stable benchmark and issued according to a clear set of rules, therefore to ensure orderly supply; second, its supply should be flexible enough to allow timely adjustment according to the changing demand; third, such adjustments should be disconnected from economic conditions and sovereign interests of any single country. (Zhou, 2009)

These signs of progressive learning notwithstanding, as of early 2010 the structures of the global political economy remain mostly intact. An ambiguous recovery is already in sight. Therefore, it seems likely that after a partial economic recovery, many governments, central banks, media corporations and other authorised bodies will return to their official optimism, grounded in the standard neoclassical theory, even if qualified or modified in some minor ways (for a similar conclusion from somewhat different premises about the near future, see Wade, 2009). The bulk of regulators and law-makers can under these circumstances continue to pursue relative state competitiveness at the expense of long-term stability and collective development, also because they do not see any alternative.

As Soros (2008a; see also Soros, 2008b) has argued, the periodic crises since the late 1970s have been part of a larger boom–bust process. If the ‘recovery followed by neoliberal business-as-usual’ scenario proves right, the underlying super-bubble that has already lasted for three decades will then continue to grow, gradually assembling conditions for an even bigger crash probably in the late 2010s, at the very latest in the early 2020s. Figure 1 illustrates how credit creation and financial multiplication are developing and how the 2008–2009 crisis can be seen in terms of this scenario as another periodic crisis. The on-going crisis may have been

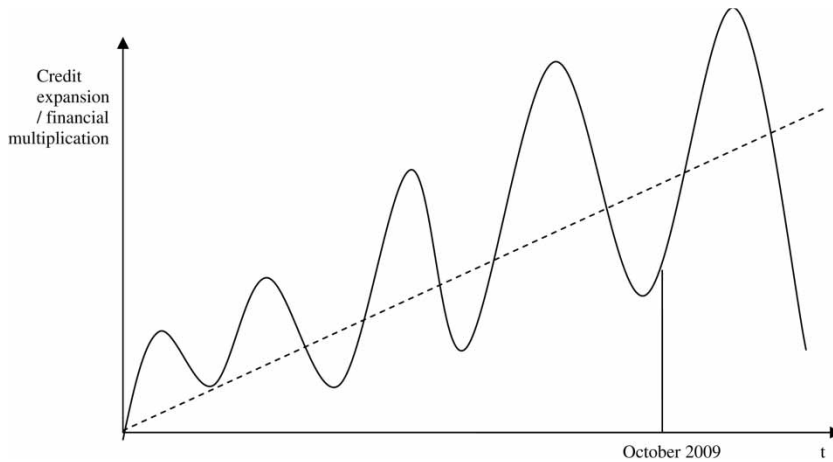


Figure 1. The 2008–2009 crisis within the super-bubble (recovery scenario).

more potent and global than any of the previous crisis, but retrospectively it will be seen as less serious than the next major crisis, hitting in all likelihood by 2020.

However, in the progressively more unlikely—but in December 2009 still possible—scenario that the current crisis proves deeper and longer than indicated by Figure 1, two things will probably happen:

- the tendency towards one-sided and short-sighted policies by the states will become stronger, reinforcing the already on-going neo-imperial competition over resources and markets and accelerating the already on-going armament race (see *The Economist*, 2009b, for a warning of the spectre of rising economic nationalism); and
- demands for global reforms will become stronger and more radical and are likely to include major regulatory and institutional reforms.

This implies a dialectics between two opposing tendencies: (i) a general tendency towards a repetition of the mistakes of the eras 1871–1914 and the 1920s; and (ii) a tendency towards a rise of global ethico-political imaginary—both through elite learning and activities of movements—focussing on global sustainability, justice and democracy. The tendency towards self-regarding and one-sided policies has to do also with the role of the US dollar in the world economy. It is possible that a turning-point for the US dollar in relation to other major currencies will be reached in spite of the sensitive cooperation of central bankers and of their intention to diversify reserves cautiously, and despite the attempts of the US to use its political–military leverage in defending the position of the dollar as the main currency of the world economy (due to safety and return of home bias, the US dollar, euro, and yen have all strengthened in real effective terms vis-à-vis other currencies; see IMF, 2009b, p. xvi). The collapse of US dollar would constitute a global currency crisis and could have far-reaching consequences also for global peace and security.

Meanwhile, should the worldwide depression following the 2008–2009 crash prove especially deep or long, with a new downturn occurring in 2010–2011, calls for fundamental reforms will become stronger. New global movements and parties will rise and some of the

existing political parties will rewrite their programmes. If the basic contours of this somewhat unlikely sub-scenario ‘a deep depression followed by a situation dominated by calls for transformative reforms (rather than tendencies towards new crises and possible catastrophe)’ are materialised, and should significant learning prevail and movements for reforms rise, we will see far-reaching global regulatory and institutional reforms in the course of the 2010s. Although in some dimensions of governance the neoliberal era may continue well into the 2020s and perhaps beyond, from a global perspective it would be a more collectively managed and regulated form of neoliberalism.

How will the global future look in the most likely scenario of ‘recovery followed by neoliberal business-as-usual’? Traces of collective learning will remain in place such as new financial regulations, perhaps even a cross-border financial transaction tax. Nevertheless, the subsequent re-return to official optimism implies a new round of credit expansion and financial multiplication, as depicted in Figure 1, while in most policy dimensions, neoliberalisation will continue unabated in most countries (cf. Patomäki, 2009). In the subsequent short-lived era, economic growth will be uneven and ambiguous. Overall growth will sluggish largely because of financial instability and insufficient aggregate global demand, both by-products of neoliberalisation and its direct and indirect effects. Moreover, also the physical, ecological, and social limits to economic growth measured in terms of market transactions are becoming visible (see e.g. Meadows et al., 2005). The peak of oil production will be reached before 2020, while the direct and indirect effects of global warming are becoming tangible.

The super-bubble will result in the biggest ever financial crash sometime in the late 2010s (or early 2020s), followed by a deep global depression. The states are weakened also through their involvement in debt and cannot repeat the fragile success of 2008–2009. The most far-reaching responses will come from those generations that are too young to have personal experiences from the Bretton Woods era or from the Cold War, i.e. those born from the mid-1970s onwards. These generations will have seen only the neoliberal era, and will turn their frustrations and moral critique against the increasingly empty liturgy of benefits of free markets and competition; but a lot depends on their learning processes. The experiences of the 2010s and early 2020s may suffice for clearing the path towards building common institutions in order to overcome fallacies and contradictions between individual and collective rationality; yet a lot more suffering may lie ahead.

In the early 2020s, the financial crash and the consequent deep depression will intensify the dialectics between the opposing tendencies of pathological and progressive learning. Democratically accountable and green global-Keynesian institutions would set the twenty-first century onto a much healthier path than the on-going one. But even if pathological forms of learning dominate in the 2020s, changes are unavoidable. The era of neoliberalism is thus likely to come to an end by 2030, having lasted for about half a century.

Notes

- 1 To give a few examples of the declines in stock indexes, the Nikkei 225 stock market index dropped from 18,000 in July 2007 to about 8,000 in late 2008 and early 2009; the Dow Jones Industrial Average from 14,000 in October 2007 to about 8,000; and the Paris CAC 40 from over 6,000 in June 2007 to about 3,000.
- 2 For a discussion on whether the unrealistic assumptions of neoclassical economics tend to generate more irrelevance than ideology, or vice versa, see Guerrian (2009); and Lawson (2009). Neither category, of course, applies to those mathematical models that have been constitutive of market practices, such as the option pricing model of Fischer Black and Myron Scholes (1973).

- 3 This is a falsifiable empirical claim about the economic–political opinions of mainstream economists (how much is there diversity among the model-builders?; cf. Stiglitz, 2000, 2006).
- 4 The neo-Keynesian end of the acceptable left–right continuum within the mainstream (some state intervention vs. free markets) acknowledges that markets can fail to achieve full efficiency. ‘Part of the problem is the lack of perfect competition, part is the existence of externalities, and part is the fact that markets may take a long time to adjust to any disequilibrium given the often considerable short-run immobility of factors’ (Sloman, 1994, p. 411). However, this analysis implies that in the long run competition can be made more ‘perfect’; externalities can be overcome by privatisation and setting a price to everything; and factors can be made more mobile and ‘flexible’.
- 5 Including but not limited to: Dean Baker (2002); Gabriel Kolko (2006); Paul Krugman (2005); Ann Pettifor (2006); Heikki Patomäki (2005, 2007, ch. 6, 2008a, ch. 7 and 8); Nouriel Roubini (2008; about his earlier predictions, Mihm, 2008); and George Soros (2008a; about his earlier anticipations and consequent investment decisions, see Cassidy, 2008).
- 6 These critics of the standard neoclassical theory also avoided relying much, or at all, on econometric models that must assume continuity of the prevailing, relatively short-term trends expressed by the available data, as this business-as-usual assumption in effect translates into short-sightedness.
- 7 There are numerous *ex post* Keynesian–Minskyan analyses of the 2008–2009 global crisis (which started in the US already in 2007 as the sub-prime mortgage crisis). Perhaps most notably, see the special issues of *Journal of Post Keynesian Economics*, 30(4), Summer 2008, and *Cambridge Journal of Economics*, 33(4), July 2009. Paul Davidson’s (2008) claim in the former journal that ‘a Minsky moment’ was never involved in the sub-prime crisis is based on a narrow specification of Minsky’s theory. More generically, however, Minsky (2008) can be read as saying that in financial markets there is a tendency to innovate new instruments and engage in activities that increase risks and the amount of liabilities vis-à-vis incomes and thus make various (but not necessarily all) actors increasingly dependent on short-term liquidity. As will be specified below, the further this process goes, the more chaotic—i.e. sensitive to small disturbances—the financial system as a whole becomes.
- 8 Keynes did not, however, go very far in exploring self-fulfilling and self-denying prophecies or, in a longer time-span, self-reinforcing processes characterised by positive feedback-loops. For Soros (2008b), however, biased expectations and initially self-reinforcing but eventually self-defeating processes are the key to understanding how global finance works. These are part of my account below, too, but a systematic conceptual and theoretical discussion of these phenomena is beyond the scope of this paper.
- 9 There have been relatively few studies on the social practices of financial investments. Doug Henwood’s (1997) *Wall Street* is one of the best accounts, although it only focuses on the stock and bond markets in the US. Leyshon and Thrift (1997) take a few preliminary steps towards this direction as well, but eventually they shy away from doing proper empirical research. The theoretically (self-)reflexive insider accounts of Soros (1994, 1998, 2008b) have also been helpful.
- 10 Mistaking the abstract neoclassical models based on assumptions such as perfect foresight and competition for reality, neoliberal policymakers have first shifted financial activities and responsibilities from public to private actors, and then encouraged securitisation by transferring credit from bank-based to equity-based tradable forms. These moves led to the sub-prime mortgage crisis in 2007–2008 (Best, 2008, p. 366). The idea that competitive markets have a foresight that every single actor is lacking amounts to reification. Collective ‘free markets’ assume magical qualities that no human being can have, even though trading practices depend on human actors and investment decisions can only be made by them (automatic trading-protocols depend on humans who design them and allow them to operate on their behalf).
- 11 These benefits are, of course, individualist and relational. From the point of the growth of the world economy as a whole, and from the perspective of adequately sustainable and just global political economy, the effects of financialisation, and dominance of global finance, have been problematical. A worldwide framework of institutional arrangements has been created that, among other things, prevents a turn to a new genuinely upward phase in the world economy. With the rise of global finance, the average per capita growth has gradually declined and wealth has been redistributed in favour of the rich; and very little has been done to ensure ecological sustainability (see Patomäki, 2005, 2008a, ch. 5–8).

References

- Addleson, M. (1995) *Equilibrium versus Understanding. Towards the Restoration of Economics as Social Theory* (London: Routledge).

- Altmann, T., Schmidt, T. & Stute, W. (2008) A shot noise model for financial assets, *International Journal of Theoretical and Applied Finance*, 11(1), pp. 87–106.
- Arrow, K. & Hahn, F. (1971) *General Competitive Analysis* (Amsterdam: North Holland).
- Baker, D. (2002) *The Run-up in Home Prices: Is It Real or Is It Another Bubble*, CEPR (Centre for Economic and Policy Research) Briefing Paper, Washington, DC, <http://www.cepr.net/index.php/publications/reports/the-run-up-in-home-prices-is-it-real-or-is-it-another-bubble/>
- Best, J. (2008) Ambiguity, uncertainty, and risk: rethinking indeterminacy, *International Political Sociology*, 2(4), pp. 355–374.
- Black, F. & Scholes, M. (1973) The pricing of options and corporate liabilities, *The Journal of Political Economy*, 81(3), pp. 637–654.
- Bourdieu, P. (1977) *Outline of a Theory of Practice*, trans. R. Nice (Cambridge: Cambridge University Press).
- Bourdieu, P. (1993) *Sociology in Question*, trans. R. Nice (London: Sage).
- Bruner, R. & Carr, S. (2007) Lessons from the financial crisis of 1907, *Journal of Applied Corporate Finance*, 19(4), pp. 115–124.
- Cassidy, J. (2008) He foresaw the end of an era, *The New York Review of Books*, 55(16), 23 October, <http://www.nybooks.com/articles/21934>
- Crocco, M. (2002) The concept of degrees of uncertainty in Keynes, Shackle, and Davidson, *Nova Economia Belo Horizonte*, 12(2), pp. 11–27.
- Davidson, P. (2008) Is the current financial distress caused by the subprime mortgage crisis a Minsky moment? Or is it the result of attempting to securitize illiquid noncommercial mortgage loans?, *Journal of Post Keynesian Economics*, 30(4), pp. 669–676.
- De Grauwe, P. & Vansteenkiste, I. (2007) Exchange rates and fundamentals: a non-linear relationship?, *International Journal of Finance and Economics*, 12(1), pp. 37–54.
- Dornbusch, R. (1976) Expectations and exchange rate dynamics, *Journal of Political Economy*, 84(6), pp. 1161–1176.
- Doucoulagos, C. (2005) Price exhaustion and number preference: time and price confluence in Australian stock prices, *The European Journal of Finance*, 11(3), pp. 207–222.
- The Economist* (2009a) When a flow becomes a flood. The deep causes of the financial crisis lie in global imbalances, 22 January, http://www.economist.com/displaystory.cfm?story_id=12972083
- The Economist* (2009b) The return of economic nationalism, *The Economist*, 7–13 February, pp. 9–10.
- Friedman, M. (1953) The case for flexible exchange rates, in M. Friedman, *Essays on Positive Economics* (Chicago: Chicago University Press), pp. 157–203.
- G20 (2009) *Leaders' Statement: The Pittsburgh Summit*, 24–25 September, <http://www.pittsburghsummit.gov/mediacenter/129639.htm>
- Gillies, D. (2006) Keynes and probability, in R. Backhouse & B. Bateman (eds) *The Cambridge Companion to Keynes* (Cambridge: Cambridge University Press), pp. 199–216.
- Greenspan, A. (2004) Risk and uncertainty in monetary policy (innovations and issues in monetary policy: the last fifteen years), *The American Economic Review*, 94(2), pp. 33–40.
- Guerran, B. (2009) Irrelevance and ideology, in S. Fullbrook (ed.) *Ontology and Economics. Tony Lawson and His Critics* (London: Routledge), pp. 158–161.
- Henwood, D. (1997) *Wall Street. How It Works and For Whom?* (London: Verso).
- Iacoviello, M. (2005) House prices, borrowing constraints, and monetary policy in the business cycle, *The American Economic Review*, 95(3), pp. 739–764.
- IMF (2009a) *World Economic Outlook. Crisis and Recovery*, April, <http://www.imf.org/external/pubs/ft/weo/2009/01/pdf/text.pdf>
- IMF (2009b) *World Economic Outlook. Sustaining the Recovery*, October, <http://www.imf.org/external/pubs/ft/weo/2009/02/pdf/text.pdf>
- Janssen, G. (2004) Public information arrival and volatility persistence in financial markets, *The European Journal of Finance*, 10(3), pp. 177–197.
- Keen, S. (2001) *Debunking Economics. The Naked Emperor of the Social Sciences* (London: Zed Books).
- Keynes, J. (1961[1936]) *The General Theory of Employment, Interest and Money* (London: MacMillan).
- Kolko, G. (2006) Weapons of mass financial destruction, *Le Monde Diplomatique*, October, pp. 1–3.
- Krugman, P. (2005) Greenspan and the bubble, *The New York Times*, 29 August, http://www.nytimes.com/2005/08/29/opinion/29krugman.html?_r=1
- Lawson, T. (1997) *Economics & Reality* (London: Routledge).
- Lawson, T. (2005) The (confused) state of equilibrium analysis in modern economics: an explanation, *Journal of Post Keynesian Economics*, 27(3), pp. 423–444.

- Lawson, T. (2009) The mainstream orientation and ideology. Reply to Guerrian, in S. Fullbrook (ed.) *Ontology and Economics. Tony Lawson and His Critics* (London: Routledge), pp. 162–174.
- Leyshon, A. & Thrift, N. (1997) *MoneySpace. Geographies of Monetary Transformation* (London: Routledge).
- Meadows, D., Randers, J. & Meadows, D. (2005) *Limits to Growth. The 30-Year Update* (London: Earthscan).
- Meese, R. & Rogoff, K. (1983) Empirical exchange rate models of the seventies: do they fit out of sample?, *Journal of International Economics*, 14(1–2), pp. 3–24.
- Meese, R. & Rogoff, K. (1988) Was it real? The exchange rate–interest rate differential relation over the modern floating rate period, *Journal of Finance*, 43(4), pp. 933–948.
- Menoncin, F. (2005) Risk management and asset allocation with jump-diffusion exogenous risks: some algebraic approximated solutions, *The European Journal of Finance*, 11(3), pp. 223–246.
- Mihm, S. (2008) Dr. Doom, *The New York Times*, 17 August, p. MM26.
- Minsky, H. (1982) *Can 'It' Happen Again? Essays on Instability and Finance* (Armonk, NY: M.E. Sharpe).
- Minsky, H. (2008) *Stabilizing and Unstable Economy*, 2nd ed. (New York: McGraw Hill).
- Mirowski, P. (1991) *More Heat than Light. Economics as Social Physics, Physics as Natural Economics* (Cambridge: Cambridge University Press).
- Patomäki, H. (2001) *Democratizing Globalisation. The Leverage of the Tobin Tax* (London: Zed Books).
- Patomäki, H. (2005) The long downward wave of the world economy and the future of global conflict, *Globalizations*, 2(1), pp. 61–78.
- Patomäki, H. (2007) *Uusliberalismi Suomessa [Neoliberalism in Finland]* (Helsinki: WSOY).
- Patomäki, H. (2008a) *The Political Economy of Global Security. War, Future Crises and Changes in Global Governance* (London: Routledge).
- Patomäki, H. (2008b) Regulating global capital in the age of neoliberalism, a book review of *Regulating Capital. Setting Standards for the International Financial System* by David A. Singer, *International Studies Review*, 10(2), pp. 348–350.
- Patomäki, H. (2009) Neoliberalism and the global financial crisis, *New Political Science*, 31(4), pp. 431–442.
- Pettifor, A. (2006) *The Coming First World Debt Crisis* (Basingstoke: Palgrave MacMillan).
- Pickard, J. (2009) Turner stands firm after Tobin tax backlash, *Financial Times*, 30 August, <http://www.ft.com/cms/s/0/331e7a84-958f-11de-90e0-00144feabdc0.html>
- Poskitt, R. (2008) The truth about interest rate futures and forwards: evidence from high frequency data, *Global Finance Journal*, 18(3), pp. 319–336.
- Quinn, D. (1997) The correlates of change in international financial regulation, *The American Political Science Review*, 91(3), pp. 531–551.
- Riedel, F. (2004) Heterogeneous time preferences and interest rates—the preferred habitat theory revisited, *The European Journal of Finance*, 10(1), pp. 3–22.
- Roach, S. (2009) Whither capitalism?, *Journal of Applied Corporate Finance*, 21(1), pp. 24–27.
- Roubini, N. (2008) The coming financial pandemic, *Foreign Policy*, no. 165, March–April, http://www.foreignpolicy.com/story/cms.php?story_id=4169
- Schumpeter, J. (1939) *Business Cycles*, Vol. 1 (New York and London: McGraw-Hill).
- Singer, D. (2007) *Regulating Capital. Setting Standards for the International Financial System* (Ithaca, NY: Cornell University Press).
- Sloman, J. (1994) *Economics*, 2nd ed. (Prentice Hall: Harvester Wheatsheaf).
- Soros, G. (1994) *The Alchemy of Finance: Reading the Mind of the Market* (London: John Wiley & Sons).
- Soros, G. (1998) *The Crisis of Global Capitalism: Open Society Endangered* (London: Little, Brown & Co).
- Soros, G. (2008a) The crisis & what to do about it, *The New York Review of Books*, 55(19), 4 December, <http://www.nybooks.com/articles/22113>
- Soros, G. (2008b) *The Crash of 2008 and What it Means: The New Paradigm for Financial Markets* (Melbourne: Scribe).
- Soumaré, I. (2007) Equilibrium with excessive holdings constraint: an application to DC pension plans, *International Journal of Theoretical and Applied Finance*, 10(7), pp. 1159–1190.
- Stiglitz, J. (2000) The contribution of the economics of information to twentieth century economics, *The Quarterly Journal of Economics*, 115(4), pp. 1441–1478.
- Stiglitz, J. (2006) *Making Globalization Work. The Next Steps to Global Justice* (London: Allen Lane).
- Tobin, J. (1978) A proposal for international monetary reform, *Eastern Economic Journal*, 4(3–4), pp. 153–159.
- UNCTAD (2009) *The Global Economic Crisis: Systemic Failure and Multilateral Remedies*, Report by the UNCTAD Secretariat Task Force on Systemic Issues and Economic Cooperation (New York and Geneva: United Nations Publication), <http://www.unctad.org/Templates/WebFlyer.asp?intItemID=4776&lang=1>
- Varian, H. (1992) *Microeconomic Analysis*, 3rd ed. (New York: W.W. Norton & Co).

- Vinh Vo, X. & Daly, K. (2007) The determinants of international financial integration, *Global Finance Journal*, 18(2), pp. 228–250.
- Wade, R. (2009) From global imbalances to global reorganisations, *Cambridge Journal of Economics*, 33(4), pp. 539–562.
- Zhou, Xiaochuan (2009) *Reform the International Monetary System*, Speech by the governor of the People's Bank of China, <http://www.pbc.gov.cn/english/detail.asp?col=6500&id=178>

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