Information economics as mainstream economics and the limits of reform: what does the Stiglitz Report and its aftermath tell us?[1]

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Abstract
In this paper we use the Stiglitz Report of 2009/2011 as a point of departure to explore the way the development in economics theory provides a limited contribution to further reform. In so doing we provide a detailed analysis of potential underlying problems of information-theoretic economics. We note this provides an additional way to consider Thomas Palley's concept of Gattopardo economics.

Keywords Stiglitz, finance, information-theoretic economics, Gattopardo economics

Introduction

Ian Stewart aptly summarises the general tenor of the financial industry's underlying ethos regarding regulators and the global financial crisis: 'It's your fault: you let us do it.' (Stewart, 2012, p. 298). The statement is no more than an extension of the basic neoliberal credo that *you are responsible for everything we do to you* (Morgan, 2011). Both statements formally acknowledge the power of finance to act whilst diverting attention from the issue of where significant power resides. This issue of power is fundamental to the on-going problem of finance as a system in many ways.

In November 2008 the United Nations convened a Commission of Experts on Reform of the International Financial and Monetary System, with Joseph Stiglitz as chair. In September 2009, the Commission published its *Report of the Commission of Experts of the President of the United Nations General Assembly on Reforms of the International Monetary and Financial System* (2009).[3] This was then republished in 2011. The Foreword to the 'Stiglitz Report' emphasises that its roots in the General Assembly of the United Nations provided a platform for the Commission to place the global financial crisis in a genuinely global context, whilst also articulating a genuinely global response to that crisis. Though the Commission was accorded only unofficial status its analysis was, according to the authors, one with a broad-based constituency and legitimacy because it was rooted in the convocation of nations (2009: p. 10). By implication, narrower organizations, such as the IMF, are not legitimate vehicles for adequate reflection in quite the same way. As such, the Stiglitz Report was positioned as an opportunity to speak truth to power.

The subsequent reality of policy has confirmed many of the fears expressed in the Stiglitz Report. For example, there has been a degree of beggar-thy-neighbour policies pursued by individual states that have had adverse effects on others. This has included competitive

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[3] All page references are to the original report published online by the United Nations, rather than the subsequent version published by New Press in 2011. The New Press version omits the paragraph enumeration.

currency manipulations and the use of monetary policy as a tacit subsidy and form of protectionism.[4] There has in general been a collectively (in the Report's phrasing) 'sub-optimal' approach to fiscal policy based on a domestic focus of any given 'stimulus package', and those fiscal policy solutions have been further undermined by an austerity discourse. That discourse, ironically has been rooted in the same economics ideology that presided over the prior boom i.e. (contra Keynes) a neoclassical framing, this time in terms of the concept of thrift (an early articulator of which was Marshall). Furthermore, the IMF has in the main continued to assert pro-cyclical conditionality when called upon to intervene. Its practical role, along with other key organizations has, despite its own published reservations, been punitive.[5]

Manifestly, there has been a lack of coordination of responses in the wake of the global financial crisis that actually take a global collective point of view (Sheehan, 2010, George, 2010). From a global perspective particular policy failures are indicative of an overall policy failure. They are a vindication of some of the analysis of the Stiglitz Report. However, the existence of an overall policy failure and the failure of the Stiglitz Report to galvanise its claimed constituency of states to appropriate collective action underscore basic flaws in the Stiglitz Report itself. These flaws are not restricted to the Stiglitz Report only but can be identified also in many of the subsequent elite policy documents and analyses that have emerged since the events of 2009.

The Stiglitz Report is in particular interesting and continues to be so because it is an early attempt to provide a stringent critique of the global financial crisis and the global economy that is also constrained by its context. As such, assessing the Stiglitz Report provides another way into issues recently raised by Thomas Palley under the guise of Gattopardo economics (2013). Analysing the Stiglitz Report is also of continuing interest because it provides an additional way to think about the continued resilience of neoliberalism as a knowledge framework; a matter also highlighted recently by Philip Mirowski (2013, also Mirowski and Plehwe eds. 2009).

The Stiglitz Report was positioned to speak truth to power, but also acknowledges that statements adopted by the General Assembly are products of 'compromise and calculated ambiguity' (2009, p. 7). The link between the Stiglitz Report and the General Assembly is thus also one of the recognition of the limits of speaking truth to power. This in turn becomes a problem of a self-limiting discourse of how truth is spoken to power in order to be an acceptable contribution. As such, the Stiglitz Report may well be directed at a global level of

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[4] One needs to be careful here. If one compares the last few years to the policy conflicts that followed in the Great Depression (see e.g. Hobsbawn, 1995), then the degree of conflict has been less. Still, the financial crisis has resulted in further stalling of the Doha round, contributed to the failures of Rio+20 and has resulted in various forms of self-interested policies. Quantitative easing (in various guises) and explicit or tacit exchange rate devaluations have been common across the major capitalist economies – as of the end of 2012 the US$ was 12% lower in value against a standard basket of currencies than it was just prior to the crisis, and 30% less than it was in 2002 (hence the many protests from countries with key trading relations in the US$, such as Brazil, who between August 2011 and January 2012 had reduced interest rates 10 times to try to offset the appreciation of the Real). The loosening of inflationary targets or ignoring the failure to meet them is likewise (whatever other explanations there may be) a self-interested way of reducing the value of debt. All the major convertible global currencies (in order US$, Euro, Yen and £) have exhibited observable (though not always successful) devaluation strategies over the last 4 years.

[5] See, for example, the widely reported July 2012 resignation letter of Peter Doyle, an IMF senior economist, in which he is scathing regarding 1. The selection of the IMF leadership, 2 The suppression of otherwise recognized emerging problems prior to aspects of the financial and then European debt crisis and 3 The way in which the debt crisis is being managed (e.g. Robertson, 2012)

analysis and incorporate forms of critique but it is not without its constraints. Furthermore, it exhibits a variety of conceptual problems.

Our concern in this paper is that the analysis seeks to move beyond the archetypal problems of specific forms of economics theory but, arguably, does so within the same general frame of economics theorisation. One can argue that the information-theoretic economics and new institutionalism that seem to inform the Report ultimately share a common frame with the positions they critique. This framing places a limit on the analysis, despite the many laudable points of critique made in the Report. Again, a similar claim can be made for many of the contemporary commissioned reports and analyses and those that have followed (for example, The Turner Review of 2009, the G30 Report 2009 or the Independent Commission on Banking Report 2011). The Stiglitz report has multiple contributors and is not a technical document but it does exhibit certain commitments in terms of what the key problems of economics as a body of knowledge are and by inference what the appropriate adjustments in the economics framework are. This is important because there can then be a mismatch between the general commitments to change, which can be sincere, and the real limits of that change.

Key elements of the Stiglitz Report

The Stiglitz Report is divided into six chapters, including an introduction and conclusion. It begins from the uncontroversial observation that the crisis manifested first in the 'core' of the global economy rather than the 'periphery' and that it manifested first in the financial sector, spreading then into the 'real' economy and generating adverse ripple effects through societies (2009: p. 12). The Report's initial premise is that the recognized crisis is not simply a set of events that are abnormal in the sense of unlikely, and abnormal in the sense of aberrations. Rather the system itself is the *cause* of the many manifestations of failure (2009: p. 8). They are consequences of the finance system and of the global economic architecture in general. The implication is that *preventable* crisis has become normal to the system (e.g. 2009: p. 132). This being so, it becomes necessary to identify the underlying systemic causes and to build from these to a variety of possible solutions. It is this combination that provides the Report with both motive force and a particular analytical structure over the course of the chapters. The Report is also shaped by a concern for developing countries that are in particular vulnerable to the adverse consequences of the crisis and its aftermath, particularly the inability of many developing countries to respond with the same level of fiscal and monetary support as more affluent countries during a period of collapsing aggregate demand, capital shortages, and capital flight (e.g. 2009: pp. 20-22). This concern, in turn, is enfolded in a broader commitment to democratic global governance for finance and economy.

In terms of the Report, the commitment to democratic global governance is not simply intended to stand as an arbitrary (if ex ante) means to construct a discursive position. It is rather a necessary corollary of the identified causes of the crisis (e.g. 2009: pp. 18-19). A lack of 'transparency' pervaded the system and a lack of effective representation of different interests was absent prior to the crisis. The combination contributed to limited critical analysis of finance and economy and a lack of 'accountability'. That lack allowed real vulnerabilities to accumulate as sectional interests developed. They developed in terms of organizations and practices, and did so often in the name of claimed universal benefits. As such, the Report takes the position that democratic governance is important because a lack of accountability not only means that those who cause 'injury' are not held responsible, it also means that they remain in a position to perpetuate injury (e.g. 2009: p. 9). Furthermore, accountability ought to mean that those who are affected by policy have a say in its formulation; the inference being that where injurious outcomes can be anticipated they will be avoided by democratically infused and differently constituted institutional arrangements, regulatory and oversight powers, specific policies, and particular interventions. Democratic governance is then a core constituent in reform and reform is deemed 'necessary' because the cause of the crisis was systemic. However, the Report is careful to distinguish between necessary and hasty reforms. There should be due consideration of the need for short term mitigating policies to address immediate manifest problems of finance (bailouts etc) and economy (fiscal and monetary stimulus) and also due consideration of further reforms intended to have long term consequences for the architecture of the global economy. The former should give due consideration to appropriate context in terms of the further effects on other regions and states (implying global coordination to avoid inadvertent 'hysteresis' effects i.e. irreversible adverse consequences of self-regarding policies). The latter should be considered in terms of its compatibility with short-term mitigations.

According to the Report, compatibility, however, is not a matter of forestalling long run reforms but of giving careful consideration to how those reforms can be implemented. The Report makes the central claim that if the crisis has systemic causes then reform is 'essential' to any sustainable recovery (2009: p. 15). A key statement here is that 'countries that held themselves out as models of best practice' have been proven not to be (2009: p. 20). Across the Report there are four components to this claim. First, these 'best practice' countries (presumably the US and UK) were nodal points for the articulation of what is variously termed in the Report 'free market fundamentalism' or 'neoliberalism' (e.g. 2009: p. 132). Second, this 'ideology' was rooted in a particular form of mainstream economics theory; specifically Fama's Efficient Market Hypothesis (EMH) and various articulations with a family resemblance to EMH based on an axiomatic expression of self-correcting dynamic markets (e.g. 2009: p. 24). Third, this family of theorisations informed the 'best practice' of those countries regulatory regimes. 'Light touch' approaches based on limited oversight and a general ethos of *whatever is not prevented is allowed* supported successive (de)regulation. Efficiency axioms effectively dominated central bank policy, which focused on simple measures of price stability (e.g. 2009: p. 35). This was expressed, for example, in a neoclassical equilibrium model form through the Taylor Rule Theorem (the Theorem was also built into the dynamic stochastic general equilibrium forecasting models of central banks; see also Morgan 2009 and 2013). They shaped financial innovation in the form of the neoclassical Capital Asset Pricing Model applied to investment formulae; and efficiency assumptions also decisively shaped the construction of financial instruments. For example, normal distribution and idealised information were (are) at the heart of the Black-Scholes model for pricing derivatives and the standard model for constructing collateralised debt obligations (developed by David Li, e.g. 2000; see also Morgan and Negru, 2012).[6] Fourth, in so far as particular countries were nodal centres of an international financial system, the theory-practice combination they epitomised also permeated international financial markets and key global institutions. As such, both the positive form of the finance system and its significant gaps (such as shadow banking) were significantly related to 'best practice' rooted in theory and encouraged from particular geographies.

[6] For an in-depth hermeneutic narrative of the diversity within understandings of derivative constructions see the work of Mackenzie within science studies (influenced by Latour, Woolgar and so forth). Mackenzie is keen to challenge a reductive technocratic account of derivatives and adds nuance to a simple tale of Gaussian copulas leading back to Li.

So, a major claim of the Report is that an underlying knowledge framework was a key constituent in the systemic causation of the crisis because it significantly structured what best practice would be and gave an impetus for the realisation of that 'best practice' (e.g. 2009: p. 20). The nature of that best practice was an important reason why the crisis manifested first in the core and first in the finance system. The way best practice has been rooted in a knowledge framework is identified, furthermore, as a key avenue for reform. Reform must be a combination of changes to the knowledge framework and corollary changes to best practice (encompassing institutions). It is this relation that is then pursued in various ways across the individual substantive chapters of the Report: stating vulnerabilities created by theory-practice, articulating reforms responding to the recognizable problems of theory-practice, and clarifying how those problems are also causes of the crisis and current limits on solutions to the crisis.

The constructive contribution of The Stiglitz Report

The Stiglitz Report provided an important early contribution to the analysis of the global financial crisis and the subsequent and on-going global economic and social problems. It identifies many of the commonly recognized causes of the crisis – ranging from growing income inequality to the specific construction of financial strategies and instruments. Most importantly, it establishes quite clearly that the crisis has been a preventable consequence of the system, rather than simply an aberration within the system. This provides a solid basis for the claim that the system itself must change and that change must be global for a variety of related reasons. Finance has a global reach and thus must be regulated and controlled on a global basis. Since all states are affected by or involved in the operation of finance then all states should have a say in that regulation and control. Since, both the structure of finance and the consequences of financial crises have implications for the whole economy then finance must be made compatible with the stability and development of the whole economy – global and state. The overall approach to finance, therefore, must be embedded within a broader set of economic objectives and these must be coordinated at the widest level of cooperation.

The many specific proposals in the Report regarding policies and institutions all flow from this analysis. The underlying commitment moreover is that there is a need for a new theory-practice: one that eschews the inadequate knowledge framework of self-equilibrating and disciplining markets and that incorporates into regulation the recognition that markets are imperfect. Ultimately, the Report states that though 'debate' will continue:

> The ideas and ideologies underlying key aspects of what have variously been called neo-liberalism, market fundamentalism, or Washington Consensus doctrines have been found wanting. Other ideas, which might have been more helpful in avoiding the crisis and mitigating its extent, were overlooked. (2009: p. 132)

The Report places a central importance on the role of the knowledge framework as an active part of the constitution of the real financial and economic system: it provides the basis for financial instruments, practices and policies, and it provides the justification for regulatory forms and for the use of any existing powers by regulators. A reasonable issue to, therefore, raise regards the limits within which the alternatives are conceived. How far in fact does the new analysis deviate from the old knowledge framework, *and*, in so far as there is some difference what is the scope for the transmission of an altered knowledge framework (a change to or merely in the mainstream)?

The general frame of economics theorisation

One might argue that the Stiglitz Report is critical of a particular theoretical form – essentially neo-classical economics, but conforms to a common set of underlying and problematic positions within mainstream economics. One must be careful here to avoid being misconstrued. The Stiglitz Report, like many of the subsequent commissioned responses to the global financial crisis, is clear regarding what is to be avoided – typically an idealised form of perfect markets based on rationality assumptions and self-equilibration through well-used information. There is then a fairly narrowly targeted theoretical critique – one of specific expressions of economic theory. The Stiglitz Report is then clear that a different knowledge framework is required, but provides no significant substantive contribution as to what that will be. It is simply held that the new approach to economics will be something other than a narrowly defined form of neo-classically informed theory. At the same time the language of the mechanics of reform for finance in the Report is in particular phrased in terms of the need to address issues of information problems, incentive problems and so forth. Although the Report is the product of many authors, brought together under Stiglitz as co-ordinating chairman, it is clearly influenced by an information-theoretic approach, and perhaps by new institutionalism. Reform implies the need for more and better information and for ways to adjust to problems of information. Again, one sees a similar approach in many of the subsequent reports. What we want to suggest is that the focus, phrasing, and ambiguity raise the issue of what kind of economics knowledge framework underpins the claimed change? What does it add, what are its weaknesses?

Work on information-theoretic economics, on behaviour and also the new institutionalism are manifestly improvements on the theoretical constructs of the neo-classical school. However, they are not a decisive break with the knowledge framework that they ostensibly repudiate. This is important, given that the Report places a great deal of weight on the real world impact of a dominant economics knowledge framework and on the role of an alternative knowledge framework in the reconstruction of global finance and economy.

We restrict ourselves here to considering the information-theoretic approach in order to illustrate the point. We would argue that the new economics theory of information actually shares a great deal of common ground with the neoclassical school. This should not be surprising. Its originality had to conform to a common discourse in order to be publishable – it had to be recognizably 'economics' in a world where editorial boards and refereeing were (as they mainly still are) dominated by neo-classical advocates. The key early contributors - Akerlof, Spence, Stiglitz and Schiller - were thus innovating within a narrow remit (Neilsen & Morgan, 2005). In his historical retrospective on the originality of information economics Stiglitz claims that:

> The new information economics had profound implications for economics' Weltanshauung. In standard neoclassical economics the deep properties of an economy – preferences and technology – determined outcomes. Not just distribution, but history and institutions did not matter. But there are natural irreversibilities associated with the creation of knowledge: history has to matter. Indeed economies with the same deep properties could have

> markedly different equilibria. The new information economics not only showed that institutions mattered, and helped explain why institutions arose and the form they took, but showed why they mattered. (Stiglitz, 2000: p. 1452)

This is an encouraging statement – real time, real people, on-going events, and a 'history' of interactions all *matter*. The *starting point* of the approach is information. Information is asymmetric i.e. different parties have different information. Information is either unavailable or involves costs. Practices develop to deal with and exploit the asymmetries, or minimise the costs. These become rules of conduct that then continue to develop in terms of their potentials, creating different kinds of markets. Stated in ordinary language there is a great deal of plausibility in this approach. However, one cannot neglect that the approach had to become *recognizably* economics theory. As such, the general insights are ones that were, from their inception, also rendered methodologically commensurable with the dominant approach to economic theory i.e. a neo-classical approach. Information-theoretic economics had to be also compatible with the theory it set out to criticise. In terms of methodology, information–theoretic approaches have thus often adopted the standard economic theorisation form: axioms/assumptions expressed in a logically consistent symbolic exposition. Moreover, the approach has also tended to appropriate the language and concepts of neo-classical economics in order to be part of a common discourse.

For example, since a market involves asymmetric information across its multiple participants it is unlikely that a single 'equilibrium' will occur as a periodic outcome that definitively reconciles demand and supply. Rather, there will be a relatively stable disequilibria based on a persistent information gap (an 'equilibria of disequilibria'). Also, since each participant still has a goal to pursue, subject to the recognizable information problems of the market, each will still achieve some end. As such, multiple participants are deemed to contribute to a fragmented market of multiple equilibria. Furthermore, in methodological terms, for relative (dis)equilibria to be *formally* demonstrated, there must be some kind of consistent source of order in the market based on its information dynamics *and* the response of economic agents to those dynamics. Accordingly, information-theoretic economists, notably Akerlof, introduced the concept of 'near-rationality'. In economics, rationality has a particular meaning; it refers to both the unrestricted calculative capacity of the participant and their consistent use of information (see Muth, 1961, Sen, 1978 and Friedman, 1979). Near-rationality is a small deviation from the neo-classical rational actor, not a profound repudiation of it. A key reason for not entirely eschewing the concept is that rationality of this kind is useful in economics theory because it provides a link in theoretical exposition from conditions to outcomes. If one wishes to *demonstrate* in a mainstream economic theory or model that an outcome occurs one does so along broadly deductive lines. This becomes a proof. As such, the actual theoretical form of an otherwise initially plausible insight is one that becomes deformed in order to expedite the economic proof. The use of phrases like an equilibria of disequilibria and near rationality do not just pay lip service to a neo-classical lexicon, they are part of making the theoretical form compatible with its concept of valid expression of an economic argument.

Consider what this means for the information approach as economics theory:

1. Markets are considered to be dynamic based on information systems but the theory of information is one in which the basis of any uncertainty is stabilised; an equilibria of disequilibria and multiple such equilibria arise; asymmetric information works out to some definable points, demonstrated in the proof. However, for these definable points to arise the dynamics of the information system must be a given and thus the system

of dynamism is, in its theoretical or model expression, effectively closed or fixed; there is complex determinism but nonetheless *still* determinism. The initial focus of the economics tends also to remain the individual. Though s/he is not 'representative' in the neo-classical sense of a single stylised individual, the approach constructs a series of such individuals, and each typically shares, as an economic agent within that model, given characteristics of idealised near rationality, for no other reason than to expedite the proof that there is an explicable information dynamic that can be explored in a model.

2. As such, the notions of equilibria, of rationality, and of dynamics are quite at odds with the initial insight that the system is one of uncertain and unstable processes in real time. When modelled everything is stylised. 'Near rationality' only has meaning in terms of the a priori of an ideal state that bears no resemblance to social reality. One cannot have 'near sociality'. If one were to construct an axiom to enable a model based on such a concept the general strangeness of any such attempt – including 'near rationality' - becomes apparent. Similarly, any concept of equilibria only makes sense in terms of an *a priori* optimal state that does not exist. This is quite different in its sense than an empirically observed point of relative stability, whose observation occurs only under some description of an on-going system in process.

3. In terms of that process, the theoretical focus of an information approach remains one of price signals as a point of reference for the market. A market functions in a dysfunctional way based on its information asymmetries (its inefficiencies). The implication is that economics theory models the general implications of types of asymmetry and then contrasts this (at least implicitly) with ideal states in order to indicate what makes a market *more* efficient; but the concept of efficiency and of information in its ideal state are essentially the ideal states that the approach begins from recognizing are the basic weakness of a neoclassical approach.

4. This in turn leads to a potential misconception of what asymmetric information means in reality. Information asymmetry is not simply or always the difference in quantities of truth between economic agents. The disclosure of what another knows may mean that any agent then has 100% of the information available. But this does not make the information made available from multiple sources coherent or complete. Information made available can be in regard of values, data, rules, practices, and so on. It is a matter of kinds and qualities as well as differential availability. It is, therefore, complex in a way that necessarily resists any sense that information dynamics converge on points of (dis)equilibria (multiple though they may be) and resists any translation from this to the *necessity* that more information (transparency &c) is a contribution to solving problems of efficiency or stability. The requirements of a demonstration of equilibria and the implications of real information dynamics are thus quite different.

5. The point 4 highlights a basic tension in information-theoretic economics between its commitment to understanding real institutions and the methodological and conceptual aspects by which behaviour is explored in its theoretical and model form. By focusing on information and building its conceptualisations *outwards* from information one can marginalise the full complexity of socio-economic relations. One begins from a thin theoretical approach to history and institutions. Consider, for example, that structures of social relations are also seats of power that continue to exist irrespective of the

> divulgence of more or less information.[7] Control of information is an expression of power but the power inherent in roles and positions in given structures, based on organizations, and so forth, is far more than a matter of information.[8]

One does not wish to traduce Stiglitz and advocates of information-theoretic economics here. Many of them recognize conceptual problems within the economics theorisation and it is a branch of economics that is constantly moving forward (see Durlauf and Blume eds, 2010). However, it is typically innovating within the methodological constraints it has inherited. Also, recognition that there are problems of conceptualisation is not the same as an actual repudiation of or moving on from the underlying sources of those problems.

In a positive vein one could engage in a lengthy treatment of the nuance of information-theoretic economics; highlighting its genuine improvements in comparison to the neo-classical approach. It has, for example, been used variously to express 'sub-optimality', to recognize realities that neoclassical economics simply assumes away, such as the observation that nominal wages are 'sticky downwards', to 'explain' the persistent failure of supply and demand to reconcile in any given market, and to provide an account of why a given market can be 'pathological' in its development. We don't wish to demean these achievements but we do want to put them into context. The branch of economics theory that Stigltiz's own work is rooted in, and which partly informs the Report, is not in its underlying aspects a decisive break with neoclassical economics in terms of initial theoretical form or language use. It is part of a mainstream economics discourse. Information-theoretic economics developed as a form of mainstream economics – it has not decisively altered mainstream economics, merely innovated within it in a relatively narrow way. Various commentators have recognized a growing diversity in the aspects of mainstream economics over the last decade (e.g. Davis, 2006). They have, however, also drawn attention to the limitations within that diversity (e.g. Lawson 2003, Colander et al 2006, Milonakis, 2012). The nature of change has then reduced the capacity for productive pluralism (Reardon, 2012).

Here, one can press a further issue. It is not just that information-theoretic economics tends to marginalise the full complexity of socio-economic relations, and provides a thin theoretical approach to history and institutions, it also fails to historicize its own significance as a constitutive part of knowledge production within social reality. One might, for example, question what it means for information-theoretic approaches to have *become* part of the mainstream. If one considers the underlying commonalities then one can view information-theoretic approaches as conducive more to assimilation rather than being actual sources of fundamental challenge. Recognizing this places a rather different significance on the Stiglitz Report's call for a different kind of economics. One can, for example, begin from the actual responses to the global financial crisis within the profession. Bigo and Negru (2013), for example, have conducted an extensive survey of the main economics journals, professional bodies, their conferences, and workshops and have found that there has been very little focus on or direct recognition of the financial crisis and its aftermath; and even less

[7] Put another way commonly available information does not translate into the right to refuse an action or the capacity to undertake it; it is a condition of making an aware choice not a condition that makes the choice more or less coercive or necessarily possible; it can, for example, be placed in the context of issues of real (practical) and formal freedoms. The focus on problems of information as a starting point for institutions tends to invite the conceptualisation of structure as information *that then* embodies practice.

[8] One might more appropriately refer to information as limited rather than asymmetric, since asymmetric has stronger connotations of a potential completeness where one can have 100% of available information and this constitutes a coherency.

acknowledgement that the profession as a whole requires fundamental change because of it.[9] Most direct articulations have extended little further than Ben Bernanke's recognition that:

> Some observers have suggested the need for an overhaul of economics as a discipline, arguing that much of the research in macroeconomics and finance in recent decades has been of little value or even counterproductive. Although economists have much to learn from this crisis, as I will discuss, I think that calls for a radical reworking of the field go too far. In particular, it seems to me that current critiques of economics sometimes conflate three overlapping yet separate enterprises, which, for the purposes of my remarks today, I will call economic science, economic engineering, and economic management. *Economic science* concerns itself primarily with theoretical and empirical generalizations about the behavior of individuals, institutions, markets, and national economies. Most academic research falls in this category. *Economic engineering* is about the design and analysis of frameworks for achieving specific economic objectives… *Economic management* involves the operation of economic frameworks in real time… the recent financial crisis was more a failure of economic engineering and economic management than of what I have called economic science. (2010)

This statement is indicative of the inertia within the field of economics. Influential economists continue to reject that there is anything fundamentally wrong with the knowledge framework. Here, one might argue that one ought to apply an institutional analysis to the role of economists that goes beyond that articulated in the Stiglitz Report. The Report emphasises the role of the knowledge framework in underpinning financial deregulation. But economics is not just contributing theory it ought also to be viewed as a significant institution. Such a view is implicit in an information-theoretic approach. However, explicitly acknowledging this in terms of the crisis and its aftermath invites one to conceive information-theoretic economics as part of the *internal* dynamics of mainstream economics. One might conceive of it as a constituent in the reproduction of the economics discipline in ways that, as *theory*, do not fundamentally challenge the grounds that the Report itself claims to be one key aspect of the financial crisis. In so far as this is the case, the lack of genuine pressure for fundamental alternatives within economics since the crisis becomes more explicable. Furthermore, explaining the lack of alternatives becomes more than simply identifying the family resemblances within the mainstream. It extends also to the way fundamental challenges have been and continue to be systematically and progressively excluded from economics departments. As a whole host of research over the last two decades has indicated, though mainstream economics is becoming more diverse in a narrow sense it is becoming less diverse in its overall constitution (e.g. Colander, 2008). For example, in the UK, old institutionalists, classical Keynesians, post-Keynesians, Marxists, green economists, feminist economists and purveyors of other more niche varieties of alternative perspectives are being forced out of economics departments, because of the structures of the REF system based on particular journal rankings and because of the predilections of department interview panels (e.g. Lee et al, 2013).

[9] Organizations such as The Cambridge Trust for New Thinking in Economics are mainly heterodox initiatives. Even where figures such as Stiglitz are involved, the question remains one of the compatibility between the intent of the participants and the actual form of the economics they are committed to.

The important point here is that placing the theory form that underpins the Stiglitz Report within mainstream economics, and then placing the two within the institutional story of the crisis in a different way than the Report itself focuses upon, helps to account for two failures; first, the failure to secure a consistent fundamental and widespread recognition of the problems of economics theory amongst economists; second, the failure of any recognition that does occur within the mainstream to move decisively beyond the received theoretical forms of the mainstream. One might think that this is a minor issue for the Report, since it is written in ordinary language and is not a technical exposition in theoretical form. Moreover, the point of the Report is to galvanise policy solutions that focus on the structural dynamics of global finance and economy. However, a main claim of the Report is that theory-practice matters; that the knowledge framework must be profoundly altered. One cannot ignore the point, therefore, that the theoretical form, rather than the headline insights and commitments, is potentially a hindrance rather than a help.

Moreover, consider what the analysis developed here indicates concerning the Report. The Report focuses on information dynamics as a key constituent in adequate solutions to the crisis. However, the approach places structural changes within the context of informational changes. This, as we have previously argued, is a thin notion of structure. One might argue then that information-theoretic approaches do not just produce a conceptually thin notion of structure, the Stiglitz Report is itself thinly structured as an account of the world it analyses because it is based on this thin notion. There is a basic tension in the information-theoretic foundation here. From an information-theoretic approach one must assume that the prior mainstream dominance was a product of the nature of defective information then expressed in structures of social relations. But this would also imply that unequivocal changes in information would lead to a critical mass of argument and practical behavioural changes (including legal and organizational forms) expressed then in key structural changes in the global economy. The occurrence of the global financial crisis ought to have resulted in profound structural change because of the nature of positive information changes set in motion by subsequent recognitions (everyone recognizes the problems). Yet what has actually occurred is a combination of the occlusion of information and the entrenchment of vested interests.

If one refers back to the section Key Elements of the Stiglitz Report, the key commitment to democratic governance involves the claim that those who cause injury are to be held responsible and should not then also be in a position to continue to cause injury, which presumes a more democratic governance would facilitate these. However, the very lack of truly democratic governance, free from sectional interests has prevented this ideal outcome. One can consider this in various contexts. For example, key institutions such as the IMF have approached solving problems of fiscal crisis following the financial crisis by localising the distribution of costs to the victims of crisis. This has been the primary commitment. It has overridden any sense of a positive collective response, which the Stiglitz Report initially claims ought to be considered. A collective positive fiscal response rather than a collective imposition of damage limitation in terms of individual fiscal prudence, has simply not occurred. Instead localised intervention has been phrased as necessary (and thus positive – getting to grips with the reality of debt), but it is a necessity only if one accepts an austerity logic, and it plainly results in hysteresis effects and injury.

The possibility of pathology is not inimical to information-theoretic approaches or to behavioural economics or new institutionalism; but the reality is problematic for them, since the real issue here is not information per se but the *reasons* for the control of information.

These are not just properties of individuals or solely of the dynamics of given markets. They are matters of power and politics in an economic context. Since information-theoretic economics concerns itself with the constitution of markets it ought also to (if realistic) embrace the real construction of such markets. So, despite that the Report actually recognizes the dangers of such matters as hysteresis, it does so in a way one might infer is problematic in terms of the economics. The issue that should provide more of the focus for an adequate account is one that has a broader and deeper understanding of the political and of power within structures of social relations. This would provide a fuller and thus more realistic account of the grounds of the crisis *and* the potentials for the policy changes articulated.

Conclusion: A different kind of economics for a different kind of economy

Recall that the core claim of the Stiglitz Report was that the system itself was a *cause* of the global financial crisis (2009: p. 8). The crisis was not simply an aberration. This means that *preventable* crisis has become normal to the system (e.g. 2009: p. 132) and reform must then also be of the system. The Report then claims that one must begin with short term mitigating policies (bank rescues etc.) but then move on to consider and construct long-term reform. However, as the years have passed the commitment to profound reform for the long term has receded. At the same time subsequent commissioned reports, analyses and influential policy documents have retained a familiar underlying language – a critique of the clear failings of a narrowly conceived form of economics theorisation – the EMH and so forth, which provided support for light touch regulation – and a concomitant sense that what is needed is more and better information (for transparency, accountability, governance, culture etc.), which will allow new institutions to temper future crises (see for example the vast majority of relevant Group of Thirty publications).

Consider what the limits here are. First, if we accept that the new economics shares some of the problems of the old, then one can ask to what degree is it actually providing better explanations of financial crises and also better means to anticipate them. The financial crisis was a product of real time activity in dynamic unstable and uncertain markets. The underlying commitments to model forms that have formed the basis of information-theoretic economics innovation can deform one's understanding and appreciation of these key characteristics. The focus is information and improving it, but within models of stylised activity. The scope for blind spots, complacency and explanatory failure are thus significant. Second, the focus on information and also on finance provides a narrow context for a much broader issue. It is rarely asked within the economics of finance why finance has become so powerful. One must look to global political economists, post-Keynesians and radical political economy for adequate accounts of financialisation (e.g. Fine 2010, Lapavitsas, ed. 2012, Palley, 2009).[10] If one wishes genuine reform that addresses the problem of financial crises one must ask why finance of the kind that created the crisis was needed (not just simply allowed). This is an issue of income inequality and thus of the problems of debt creation.[11] It is an issue of how aggregate demand is created and maintained and so is an issue also of wages, the location of industry and the power of corporations. The Stiglitz Report recognizes problems of aggregate demand and of income as causes of the crisis but does not then push on from these to recognize them as constituents in a more coherent form of economics theory. There

[10] Again we have no wish to traduce Stiglitz here. He has of course written insightful populist works on these subject matters, as has Schiller. But again, this highlights a mismatch, this time between the populist works and the economics theory also being developed.
[11] See also Fullbrook 2012.

is, therefore, a mismatch – one that speaks to Palley's Gattopardo claim. Moreover, these issues are simply absent in the majority of other significant reports on the financial crisis and its aftermath. The fact of their absence tells one something about the continued resilience of neoliberalism – it commands a thoughtscape. It also tells one much about the marginalisation of alternatives.

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