

On the Possible Replacement of the Efficient-Market Hypothesis: Toward a New Economics

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1. Introduction

This paper considers the possibility of replacing the efficient-market hypothesis. An apologia is immediately in order. This theme statement could lead us in either (or both) of two directions: first, toward a specification of an index for assessing the value of capital assets differently than is done in the efficient-market hypothesis; second, toward a reflection on the strategic role of the efficient-market hypothesis within neoclassical (“old”) economics, with some consideration of what a “new” economics would need in its place. Recognizing that a paper following the first direction is sorely needed, this paper takes the second direction.

Specifically, this paper contributes to the dialogue about the possibility of a New Economics by advancing three principal ideas. First, any “New Economics” must displace the Efficient Market hypothesis (EMH). This means challenging and replacing it as a guide both to financial theory and to contemporary thinking about banking policy and financial regulation.

Second, the “New Economics” cannot replace efficient markets with any single counter-hypothesis that replaces it by reaching as simply and deeply into the conceptual core of an alternative. For the heart of the efficient-market hypothesis, as we note below, is the notion of Pareto optimality.² And is there any concept that most heterodox economists would accept as a counterweight to the neoclassical concept of economic (Pareto) efficiency? It is not likely. One can imagine alternative propositions that might take the place of the EMH in a heterodox approach. A literal one-for-one replacement would be on this order: there is no set of market outcomes that can be privileged as superior on a sustainable a priori basis. But this hardly provides a criterion for positive statements about the world of experience. And if any single heterodox proposition were privileged as the “core” of the New Economics, it most likely would lack the conceptual wingspan required. Two examples are these: disorder emerges endogenously in economic relations; and, power relations should always be made visible in theoretical models of social relations. As a litmus test for determining one’s adherence to an alternative to neoclassical theory, neither could play as efficient a role as does the EMH within the framework of neoclassical economic theory.

Third, if the ambition of a New Economics is to touch on policy issues and not be purely monastic, it does need an alternative frame of reference - something that does the work that

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² The term “economic efficiency” is sometimes used synonymously with Pareto optimality.

the EMH does for Neoclassical economics. The range of policy concerns is wide indeed. Here I focus only on financial policy, and propose that a New Economics can be built up from three mutually-supportive bases: (1) a systems approach; (2) uncertainty as a root cause of financial instability; (3) an explicit justice criterion.

This list deserves a brief explanation before we proceed. By a “systems approach” here I mean a recognition that reality consists of multi-dimensional, interpenetrating dynamics whose core logic cannot be identified by parsing inessential or second-order elements until only a few determining motors remain. Those embarking on a “New Economics” enterprise should understand that they are analyzing an irreducibly thick, multi-dimensional set of social relations, with many different possible entry-points.

Uncertainty follows naturally from analytical thickness. Those engaged in building a New Economics must recognize that nothing as precise as a mathematical science is feasible here. This crucial point was not recognized in the construction of securities based on the premise that EMH conditions obtained in the real world. An approach cannot be thick and have analytical conclusions – to say nothing of policy implications – that map precisely to anticipated real-world dynamics. If I build a model that centers on class relations, I can understand better the linkages between class and whatever structures and constraints are my analytical focus. I must recognize, in *applying* the model or *translating* it into policy pronouncements, that the real world has elements missing from the idealized setting of my model. Those elements – gender, race, regional, and other dynamics – have their own effectivity. And since none of us have any way of knowing precisely how these different dynamics mix in the real world, we remain uncertain about what our analytical work means, about precisely what we have said, even when we have been able to make very precise statements within the boundaries set for our modeling exercises.³ Of course, this notion of analytical uncertainty is distinct from “Keynesian” uncertainty about future outcomes of present actions. There is a certain parallel, however, between the position of the analyst and the investor, on one hand, and the outcomes achieved in understanding the world and asset-building, on the other.

Analytical thickness and uncertainty, in turn, both make a justice criterion central to a New Economics. Given that proponents of a New Economics will be investigating theoretically disparate elements, and that models satisfactorily integrating these disparate elements are unlikely, then the different threads of a New Economics are certain to intersect only the claims each thread might make about the sources of – and remedies for – social injustice in the real world. A justice criterion is then crucial in a New Economics, in a particular way. For there is no way to choose neutrally about which is the most important of several different dynamics that generate or reproduce social inequality. One cannot evaluate abstractly whether gender inequality invariably trumps regional difference or racial/ethnic discrimination. So the social-justice criterion in heterodox theory has to be understood as a public good, in the first instance among the proponents of New Economics. This means that theoretical tolerance has to be a first principle of a New Economics.

³ This doesn't rule out mathematical models as tools of a New Economics – to the contrary. But it does imply seeing such models as part of broader wholes.

Hyman Minsky liked to say: “You have to fight a theory with a theory;” and the question is whether these three ideas constitute “a theory.” They do not, in the sense that Minsky meant; nor is that the project of this paper. Minsky was on a quest to respond one-for-one to the assertion of EMH theorists that financial fragility and instability were misconceived and irrelevant. He was looking for a bullet to meet their bullet mid-air and stop it. Would it be useful to counter the EMH with a specific alternative? Yes. But a key point in my discourse today is that there is not *one* such bullet. There are many things wrong with EMH theory, in terms of its methodology and its substantive claims. But adding up these problems in one meta-list does not provide the core of a single counter-theory. The construction of a New Economics cannot be understood as a competition for creating the most elegant single alternative to neoclassical theory. Elegant alternatives are certainly needed; but no one can span the wide range of concerns that lead to calls for New Economics. And in any case, as we explore in the following section, EMH theory doesn’t actually have a bullet. That is, it’s not a case of a complete, scientifically resilient theory being confronted by an incomplete assemblage of non-scientific observations. It’s that there is no complete, scientifically resilient theory at the core of modern economics. So a new economics recognizing this situation would constitute a gain in honest representation, at the expense of some economists’ desire to preserve an unwarranted scientific status.⁴

2. The neoclassical model as a conceptual “sink”

Let me pose two questions. First, can there be a “New Economics” to compete with “Neoclassical economics”? Second, is there one “mainstream” and one “heterodoxy” in economic theory?

While the second question might be regarded as a corollary of the first, it is not. For the answer to the second question is plain enough: there is not one mainstream, nor is there one heterodoxy, in economic theory. However, we can’t leave things there. This does not mean there is ultimately no *there* there to be countered, much less challenged.

The mainstream encompasses work as varied as real business-cycle theory, the Chicago School’s pragmatics, game theory, behavioral economics, the “new political economy,” mathematical finance, and all the rest. So broad is the tableau of methodological possibility that even some who have strong sympathies with heterodoxy do not understand why every economist who is intellectually interested in one or another heterodox theme or figure (Marx, Keynes, gender, colonial oppression) cannot simply select a method from this tableau and begin creating, without first having to take the road to Damascus and breaking her allegiance to Rome.

Roger Farmer has famously written, “the future of macroeconomics is as a branch of applied general equilibrium theory.”⁵ This statement is worthy of contemplation. It is, first of all, an

⁴ Thus, we might rephrase Minsky’s expression as follows: “You need a metatheory to fight a metatheory.”

⁵ Farmer, Roger, *The Macroeconomics of Self-Fulfilling Prophecies*. Cambridge: MIT Press, 1993.

oath of fealty. But it is not more than that. It cannot be accepted at face value as an analytical deduction because microeconomic theory is incomplete.

As Ingrao and Israel (among others) have demonstrated, the grand effort to demonstrate the sufficiency of general equilibrium theory as the capstone of economics fails: for while existence and uniqueness can be demonstrated, temporal stability cannot be. This result devastates any notion that at the center of neoclassical economics is a theory of markets that, albeit under rarified conditions, offers a complete depiction of economic motion. The pure theory itself cannot explain the attainment of equilibrium, only the characteristics of an equilibrium once attained. And among these characteristics, of course, is the Pareto efficiency at the core of the EMH. Neoclassical welfare theory does not encompass cases wherein markets begin outside of equilibrium and then attain it via a self-adjusting process that preserves the wealth positions every agent enjoyed at the outset. The concept of equilibrium only coheres if it is timeless. You cannot define a process of movement toward equilibrium without undercutting the premises of the very notion of equilibrium. You can only guarantee equilibrium that meets the theory's high expectations for itself by starting in equilibrium and forbidding out-of-equilibrium trading.

In effect, there *is* no one *there* there, at the core of Neoclassical theory: Walrasian general equilibrium is not identical to Nash equilibrium, nor to subgame perfection, nor to mixed-strategy equilibrium, nor to dynamic stability. To say, as Nash equilibrium does, that once a particular (possibly non-unique) equilibrium is attained, no participating agent has an incentive to be elsewhere, is not the same as saying that the equilibrium achieved represents a global optimum given participants' initial conditions (especially their wealth levels). But it is this latter assertion that forms the basis of the EMH, not the weaker Nash-equilibrium assertion.

This is taken as a quibble by economists for whose work the EMH is an important reference-point.⁶ They might respond, vis-à-vis the relationship between the pure theory of an economy and applied work describing that economy, that the labor theory of value is similarly limited; and so, for that matter, is Keynesian uncertainty or aggregate demand. So no school of thought within the broad terrain of economic theory can make a claim to having a complete, internally-consistent account of system dynamics and system equilibrium.

But it goes to the heart of the nature of theoretical inquiry in economics. If theory does not offer a complete mapping of system movement and system stasis, then it provides at best a metaphor – a reference point – for our thinking. We can argue for the relevance of whatever reference points we favor, based on empirical evidence and logic and historical sequences; but we cannot assert that the gains promised to us by following any particular approach to allocating economic resources are real, or even realizable.

⁶ Lee Smolin, in a recent paper ("Time and symmetry in models of economic markets," working paper of the Perimeter Institute for Theoretical Physics, 2009), disagrees about this being the critical design flaw. He doesn't see the main limitation of neoclassical theory as residing in the tension between equilibria and initial states. For him, alternative ways of understanding this same scenario – models in which this sort of gap doesn't emerge – have to be developed.

This argument, then, asserts that all economists hoping to make statements about real-world economies using models, no matter their methods or favored structures, stand outside the gates of whatever heaven that any pure theory might try to describe. For those who use model-building as one tool in their analytics, then, what good are the ideal states or pathways traced out by pure theory? The answer is this: models and modeling traditions are ways of establishing and maintaining intellectual identity. There are instances where a thinker invents something completely new; but as Kuhn taught us, these are rare, since most intellectual enterprise unfolds within paradigms.

In effect, the methods and substance of one's choice of a model convey meaning and are understood primarily in short-hand mathematical languages associated with one or another intellectual tradition. So while a scholar building a model may be hoping to make an innovative point, she is simultaneously engaged in a process of declaring intellectual fealty – loyalty to her queen. This fealty exists among those who call themselves Keynesians, or Marxians, or Sraffians. It exists, similarly, among those for whom the neoclassical vision of optimality through decentralized choice by utility-maximizing agents is understood as the only coherent model of the economy. This approach, for which economic (Pareto) efficiency represents the central point of reference, then organizes all conceptual and empirical thinking for many economists, even when they are exploring worlds far away from the ideal world of theory. Indeed, it takes an act of conceptual rebellion to establish a different reference point. The default perspective, at this juncture in the transmission of economic theory, is the ideal established by Walrasian equilibrium. And this makes Neoclassical theory into a sink. Theorists committed to this enterprise – which is to say, theorists who have not committed to any alternative offered up by Keynesian or Marxian or other frameworks - recognize their commonality through their shared commitment to the animating idea of a market equilibrium.

This is why we see so many economists continually refer back to economic efficiency, and constantly measure their distance from Walrasian equilibrium. This is why we see such “thin” descriptions of risk in New Keynesians’ models of the credit market, and why tentative efforts at interdisciplinary cooperation almost invariably reduce to importing one insight from another field into a field of rational, self-regarding action.

Ingrao and Israel point out the unresolvable tension for economic theorists between conceptual simplicity and elegance, on the one hand, and descriptive realism. Given the choice, the former always wins out; for this is what defines the common identity of the practitioners of this craft.

There are two notable benefits of this approach. First, it permits everyone to participate in and continually refer back to one shared core set of concepts. What makes us economists is that we all know *this theory and its implications*. Second, appeals to authority are built into the knowledge-creation process, and indeed hierarchies of authority arise, are acknowledged or challenged, and reproduce.

3. The triple role of the Efficient-Market Hypothesis

This brings us to a further question: if we want to replace the Efficient-Market Hypothesis, what is it that we are replacing? This depends on a prior question: What is the EMH, and what role does it play in neoclassical economics?

The EMH, of course, transports the idea of Walrasian general equilibrium to financial markets. When market prices are competitive, trades can be made instantaneously at any scale, and agents are rational, then assets traded in financial markets will be efficiently priced. So as McKenzie puts it, financial markets are understood as a mirror of real-sector opportunities and processes, not as an engine that has its own autonomous momentum within the wider economy.⁷

As the core concept for neoclassical understandings of financial markets, the EMH actually plays three intertwined roles:

(1) The EMH provides a *criterion for evaluating market outcomes*. It is linked to the notion of Pareto efficiency, and to the first welfare theorem - no one can be made better off without making someone else worse off, there are no \$500 bills lying unclaimed on the street.

Further, allocative efficiency assures fair distribution. The level of social satisfaction provided by any set of market arrangements is evaluated by “adding up” individual welfare assessments, which are assumed to derive from individuals’ preferences, wealth endowments, and available technology.

(2) The EMH makes strong assertions about *the relationship of the financial and ‘real’ sectors*:

1. Financing structure is irrelevant: in efficient markets, financial prices adjust perfectly for enterprise risk. This is the Modigliani-Miller theorem, which is readily paired with Fama (1980)’s result that banks can have no impact on the economy’s financing choices.
2. Competitively-set prices summarize all relevant information about all given assets, including the asset prices of the financial firms that bid on, securitize, and take off-balance sheet positions on those assets.
3. Competitive-set asset-market prices and rates reflect the underlying risks and returns they fund. Uncertainty is eliminated. A familiar example here is the use of probability theory to convert uncertainty into certainty-equivalence in the CAPM. Black-Scholes, the same thing.

These assertions have very strong implications. Respectively, they suggest that the financial fragility hypothesis of Minsky (1986) is wrong; they deny the possibility that the financial sector could be disproportionately large, and instead view the financial sector as a source of competitive advantage; and they deny the possibility that financial exploitation and exclusion could exist in competitive markets.

⁷ Donald McKenzie, *An Engine, Not a Camera: How Financial Models Shape Markets*. Cambridge: MIT Press, 2006.

(3) The EMH provides a *guideline for the construction and application of regulations to financial markets*. Specifically, the entry of government into financial-market processes is implicitly understood as *ex post*. Whether this action be distributional, allocational, and regulatory. Governmental action can disturb equilibria that would otherwise be achieved, and can squelch innovation. And if foreseen perfectly, governmental action can be perfectly offset.

Again, this role of EMH has strong implications. First, it implies that market competitiveness must be protected in designing market regulations. If a market is malfunctioning, it is imperative to look at how its competitive equilibrium can be reestablished. It suggests, further, that the proper offset for market power is competition. And competition depends on free market entry. Finally, any notion that regulators should consider how freedom-of-action in the financial sector might constrain opportunity or encourage exploitation in the 'real sector' is ruled out of bounds by assertion (2) – the markets *are* right.

The crisis as the EMH sees it. Once these three roles of the EMH are accepted, there is no alternative to the conclusion that markets allocate most efficiently when they are freest, so that regulation must simply prevent fraud, not risk-taking.

So what have been the reactions to the recent (and on-going) financial crisis? In some corners of the discipline and of the blogosphere, the perception is that this crisis demonstrates that 30 years of financial deregulation have been a failure: market forces were unleashed, and they led the economy over a cliff.

Several defenses of markets and market forces have been offered up. One approach, epitomized by recent writings of Peter Wallison of the American Enterprise Institute,⁸ is that banks have become too regulated, not too little. Specifically, he argues that banks were forced to take on overly-risky loans due to the imposition of social criteria into lending decisions by legislation (the Community Reinvestment Act of 1977) and by poorly-managed government-sponsored enterprises (Fannie Mae and Freddie Mac).⁹ A second approach is that no one could have foreseen the mistakes that were made – for if they had, they would have used their foresight to extract income from other market participants. Third, no one was exploited in mortgage markets. Those who obtained subprime loans were made these loans in competitive markets that discounted their risk. The demise of these loans and the subsequent liquidations of firms and mortgage contracts on a massive scale were foreseen by no one, for if they had been, compensating action would have been taken. In short, the crisis arose because of problems with the market mechanism by which excessively risky credit contracts were

⁸ See, for example, Wallison, "The True Origins of This Financial Crisis," *The American Spectator*, February 2009.

⁹ These charges are readily disputed. See Gary Dymksi, "From Financial Exploitation to Global Banking Instability: Two Overlooked Roots of the Subprime Crisis," Forthcoming in Martijn Konings, editor, *Beyond the Subprime Headlines: Critical Perspectives on the Financial Crisis* (Verso Press), and the references therein.

produced. Market participants did what they could, but underlying flaws eventually undermined the market itself.

Not surprisingly, solutions proposed by those aligned with the EMH focus on the need to perfect the market mechanism. This could involve several things: getting government out of the housing-mortgage market; perfecting the regulation of mortgage and securitization markets; and/or creating more market-based “early warning mechanisms” that can be used to signal the buildup of excessive risk. There is nothing inherently wrong with risk-taking. Risk-taking in markets can create problems only if information about risk is asymmetrically distributed, if incentives for risk-taking are misaligned with risk-bearing, or if regulators’ incentives are not aligned with taxpayers’ interest(s).

4. Constructing an alternative: thick or thin?

This brings us to the problem of constructing an alternative approach – designing the basin of a different sink. The urgency of this moment is not to be underestimated. As this conference took place, the “Volcker rule” – the notion that financial firms that have insured deposits should be forbidden from trading on their own account – was being debated in the White House and in the US Congress.

This notion flies in the face of 30 years of regulatory thinking. Zach Carter pointed out in the January 4, 2010 issue of *The Nation* magazine that the 1991 Treasury study, *Modernizing the Financial System: Recommendations for Safer, More Competitive Banks* - popularly known as the “Green Book” - remains the reference point for financial reform in the US. Its author, John Dugan, a former lobbyist for the American Bankers Association, remains the head of the Office of the Comptroller of the Currency (OCC), which oversees many of the very largest banks and non-bank banks. The Green Book contains this assertion:

“Laws must be adapted to permit banks to reclaim the profit opportunities they have lost to changing markets. Where banking organizations have natural expertise in other lines of business, they should be allowed to provide it .. Adapting to market innovation is crucial.”

Given the utter dominance of EMH thinking, then, an alternative way of thinking about financial markets is needed. How should this proceed? The first choice is between a *thin* and a *thick* alternative approach. The thin approach that is most commonly offered up is the notion of asymmetric information. The idea is to identify that deviation from EMH – that design flaw – which causes the economy to malfunction – to achieve a second-best equilibrium. The discussion then moves to whether the second-best equilibrium that the economy has found is actually the best it could have found or instead represents a second-best second-best.

This is where moral hazard has come in as the favored design flaw. When moral hazard influences the behavior of participants in a market exchange – such as a credit transaction or the sale of a security based on credit transactions, or the insuring of the return on securities based on credit transactions – then the equilibrium achieved will be compromised, and excess risk

generated. If this risk is borne by multinational banks lending to developing nations, we have an international debt crisis. If this risk is borne by governments underwriting the stability of financial markets, we have the Troubled Asset Relief Program.

The asymmetric-information approach offers up something to those who disbelieve the efficiency of market outcomes. For it suggests that informational inefficiency is a defining characteristic of markets (Stiglitz). And it asserts the non-uniqueness of market equilibria. When asymmetric information is coupled with incentive incompatibility (as when borrowers know more than lenders about their own intentions or capabilities), then there is no EMH there, there - even in theory.

But this approach is at the same time an awkward half-way house for those seeking an alternative to the EMH. Its point of reference remains the EMH. It is located on the surface of the theoretical sink whose center is the Walrasian general equilibrium.

As such, it leads more toward debates with EMH practitioners than toward serious discussions among proponents of alternatives. For you only need one deviation from complete information to generate the imperfection. One side can claim racial discrimination in credit markets; the other, moral hazard due to the presence of deposit insurance, or the improper incentivization of financial firms' managers or brokers. We quickly get lost in the technical details of *which* mechanism within the existing edifice of financial institutions and regulations is broken, rather than seeing our way through to a different set of operational principles.

In sum, asymmetric information – a thin approach – is a way of making clear to devoted followers of the EMH how it is that malfunction(s) may have occurred. But it is too thin a reed to sustain the building of an alternative. The alternative has to be thicker.

5. Why the New Economics has to be a thick approach

So New Economics cannot be defined coherently as the set of conditions that make an economy unable to achieve its first-best second-best equilibrium. It can be defined coherently as the work of those who build on the premise that a more equal distribution of resources and opportunities – and thus of income and wealth – will generate fairer, more sustainable outcomes.¹⁰

What does it mean to say that a New Economics alternative to the EMH must be thick? Fundamentally, that analysts and economists and activists interested in gender inequality, in racial discrimination, in uneven urban development, should be able to construct their ideas freely and in ways that are visible to one another.

We asserted above that EMH theory is part of the broader theoretical 'sink' which defines the extent of neoclassical economics. If neoclassical theory has a built-in centripetal logic, however,

¹⁰ There is some resonance here with Adam Smith's *Theory of Moral Sentiments*, with Amartya Sen's investigations of social justice, and so on. Vis-à-vis contemporary neoclassical theory, the break is at a deep methodological level.

the logic of economic heterodoxy is that of a centrifuge. The passions that bring people into the heterodoxy often have a name and a locus – class conflict, gender oppression, neo-colonial exploitation, and so on. One locks onto one's point of difference, and pushes away from the Walrasian center, the assertion that 'everything is for the best in the best of all possible market worlds.'

So the heterodoxy is inclined toward the dispersion of their beliefs toward the 'four corners' ... there is not a single core belief to which they subscribe, not one set of reference point their work uses as a launch-pad. Keynesians and Marxians and structuralists and feminists and institutionalists are related in different ways: if idiosyncratic choices peculiar to any one school within the heterodoxy were stripped away, neither another heterodox school's framework nor a generic heterodox model would remain.

Thus, analytical thickness is necessary to keep people inside the 'big tent' of heterodoxy. This can provide means for scholars to weave together work that has different reference points. This leads, then, to a key question for this analysis: does a New Economics need to keep analysis 'inside' looking out rather than outside and pushing away, even from a purported new center? To do this, two things are needed: first, an analytical framework robust enough to expand to absorb, integrate, and tolerate difference; second, an operational pragmatism. Let's take these in order.

6. Elements of a New Economics: a systems approach, uncertainty, and a justice principle

I suggest three elements for a New Economics: a systems approach; an insistence on the importance of uncertainty; and an equal insistence on the centrality of a justice criterion in defining efficiency – the notion of "social efficiency".

A systems approach. Systems theory arose in the 1950s and 1960s, at the same time that some of the core ideas about non-linear systems were being worked out. These were two different ways of thinking about structured complexity.

One significant application within economics was the work on systems dynamics of Kenneth Boulding and his colleagues. This became another sort of sink. SD led to the notion that once the boundaries of a field of social action are identified, one can itemize the elements and then interlink them – much in style of operations research – so as to identify the (previously hidden) systems dynamic.

The field of urban studies in the 1960s and 1970s took on the notion that the city could be viewed as a structured system, which comprised a terrain of action, inaction and stagnation that was incomparably more complex, layered, and subtle than any one perspective could

encompass.¹¹ So the first step toward wisdom in comprehending the city was analytical humility – an acceptance of the inability of any one seer to completely see the phenomenon in view.¹²

A systems approach in this sense would permit a New Economics that can permit its adherents to breathe, and to exchange, without the feeling that each is fighting for one's analytical relevance in a reductionist logical game.

At the core of New Economics' inquiries, then, would be our shared curiosity about the patterns and flows of interconnection between important system states – for example, inequality of gender, race, region, nation – system processes, and system outcomes.

The practice of New Economics would then feature exchanges of ideas grounded in different analytical centers. Some questions could be posed recurrently or even routinely among practitioners and theorists: how are different analytical approaches to given phenomena different, and how do they interrelate or resemble one another? What common conclusions emerge, and what different conclusions?

So New Economics is best conceptualized not as a unified theoretical enterprise with one center, but rather as a meeting ground for theorists who are investigating the relevance of a variety of factors – class, nation, race, gender, and so on. This means that analytical tolerance must be a guiding principle. As such, it can also provide a response to the puzzle of 'what is heterodox economics?' The answer – a jest, for some – is 'the set of all those who disagree with one or more of the premises of orthodox economics.' This answer is only seemingly an apology for a source of methodological weakness. To the contrary, this diversity of approaches can be its strength.

Uncertainty and a justice principle. Uncertainty and a justice principle should also be viewed as core elements of New Economics. Our inspiration here should be derived from the social movements that induced many of us to want to pursue heterodox approaches to economics in the first place. "Black and white, unite and fight" was one way of putting this. A "united front" strategy to achieve gains sought in common sought by members of diverse civil-society organizations is another. So it is appropriate to be both inclusive and pragmatic in building a framework for discussion and for intervening in policy debates.

Uncertainty here plays a double role. For a New Economics as a whole, the idea is to counter the implicit and even explicit claim of Neoclassical economists that economic investigation is valid only if it proceeds on the basis that it is a science. It was a bet on the certainties of science

¹¹ Among the key texts in this movement were: Kevin Lynch, *The Image of the City*, Cambridge MA: MIT Press, 1960; Lewis Mumford, *The City in History: Its Origins, Transformations, and its Prospects*. New York: Harvest Books, 1968; and Jane Jacobs, *The Death and Life of Great American Cities*. New York: Random House, 1961.

¹² Here we see the resonance with Walter Benjamin's *flaneur* and with Jane Jacobs' affirmation of the centrality of experienced chaos to authentic urbanity.

that landed us where we are in the subprime crisis.¹³ Secondly, uncertainty counters the Neoclassical focus on risk and preserves Keynes' key distinction.¹⁴

We also need a justice criterion that is inclusive as well. This justice criterion must be set out to counter the pervasive gravitational pull of the notion of "economic efficiency" embedded in Neoclassical thinking. The efficiency we seek is social, and thus includes justice. "Justice" here means the evaluation of the fairness of economic outcomes using evaluative criteria other than individuals' or families' initial levels of income and wealth. One central criterion should be sustainability: meaning here both natural, social, and human sustainability.

7. Countering the Efficient Market Hypothesis

Let's take the three roles of the EMH as a reference point for what is needed. We noted that the EMH provides a criterion for assessing economic efficiency, a guide for understanding the proper relationship between the financial and real sectors of the economy, and a benchmark for financial regulation.

A criterion for evaluating market outcomes is needed to counter the notion of "economic (Pareto) efficiency." This criterion must be consistent with the broad sweep and with the social and historical engagement of those involved in a New Economics. This is dictated by the philosophical commitments and political engagements linked to the generation of non-neoclassical theory in economics. The need to embed the historical and social/institutional in an alternative "efficiency" concept also emerges within the Classical economic analysis that provides a crucial reference point for some portions of a New Economics (and an analytical core for its Marxian and Keynesian subsets).

The Neoclassical approach asserts that the problem of distribution is subsidiary to that of price formation: distribution is settled after prices are determined on the basis of the interaction of resource constraints and preferences. Classical analysis understands that distribution and value are intertwined. In the linear system developed by Sraffa to depict Marx's ideas of capitalist reproduction, the distribution of income – the determination of real wages and/or of profit rates – has to be determined before prices are set.

This divide operates here too. If our theoretical formation doesn't permit us to imagine that people are allocating their income and savings among capital assets based on preferences alone, but instead that there are feedback loops between this capital allocation and the various actors' levels of income, wealth, and in turn of prices and return, then we are faced with a very different problem.

¹³ Justin Fox, in *The Myth of the Rational Market* (New York: HarperCollins, 2009) , very effectively shows how the misapplied use of overly precise scientific thinking about the relationships among financial-market variables is one of the causes of the current financial crisis.

¹⁴ The classic reference here is to chapter 12 of Keynes' *General Theory*.

So a New Economics criterion must encompass history, power, conflict, race and gender, and colonialism, for starters – without being captured by any one approach and without being analytically empty.

How to proceed? Implicitly, the EMH approach is a wealth-centered criterion. You can only do that which doesn't redistribute wealth. That is too limiting. Another approach, associated with the Center for Full Employment and Price Stability at UMKC, is to evaluate economies based on whether every person has a job.

This concern – very much on the agenda of the Obama Administration these days - can become desperate if the private sector is not able or willing to provide jobs for all. The employer-of-last-resort approach, for example, supposes public sectors can provide the jobs that no one else will, drawing coercively on its ability to tax to pay for the jobs it creates. But jobs are not what everyone wants or can have. Another approach is to measure human capability, per Amartya Sen.¹⁵ Or more generally, one might create a measure of human happiness, per the recent report commissioned by the French government and chaired by Joseph Stiglitz.¹⁶

In truth, we will never agree. We need ways of including one another, of communicating, *within* our analytics and the benchmarks we set for policy.

Marc Fleurbaey offered an interesting perspective on alternative measures of well-offness very recently in the *Journal of Economic Literature*.¹⁷ He discusses the inadequacy of GDP and proposes three alternatives worth developing: sustainability; happiness; social choice and fair allocation; and the capability approach. Fleurbaey characterizes these as welfarist (neoclassical), liberal (Rawls), and perfectionist (Sen) – differences that derive from whether we view the individual as a resource owner, as a participant in deciding a social contract, or an endpoint.

The choice of terminology can be debated; but a focus on the endpoint – conceived as a multi-sided phenomenon, which different participants in a New Economics might see in different ways. So from one viewpoint, are women and men equal in income and resources; from a second, are ethnic/racial minorities disadvantaged in these ways; from a third, is the level of well-offness in one country (or region) the same as in others? And so on. We might imagine the adoption of a flexible, ex-ante criterion, which evaluates market outcomes on the basis of their “social efficiency.” This social efficiency can be constructed much like the loss function in estimations wherein the core generating distribution is unknown. The “loss” to be approximated would then consist of the sum of the losses from the various types of inequality that exist and are of concern to analysts, residents, and policy-makers. Gains in equality would

¹⁵ See, for example, Amartya Sen, *Development as Freedom*. Oxford: Oxford University Press, 1999.

¹⁶ *Report by the Commission on the Measurement of Economic Performance and Social Progress*. Chair, Joseph Stiglitz, Amartya Sen, Chair Adviser, Jean-Paul Fitoussi, Coordinator of the Commission. Paris, 2009. Accessed at www.stiglitz-sen-fitoussi.fr/en/documents.htm.

¹⁷ Marc Fleurbaey, “Beyond GDP: The Quest for a Measure of Social Welfare,” *Journal of Economic Literature*, 47(4), December 2009, 1029-75.

result in a smaller sum. How much a gain or loss in any one dimension of loss matters would be determined by the weight assigned that dimension in the initially-calculated sum. The idea would then be to make policy shifts that reduce the value of this loss function.

Purely as a thought experiment, then, we can specify social efficiency for a state of affairs in which we value equality income and capabilities, value between genders, equality between regions (or nations), and sustainability over time. So the idea would be to minimize the following sum of sums: the weighted sum of the differences between every individual's income and average income, plus the weighted sum of the differences between the capabilities of every individual (defined per Sen) and the average level of capabilities, plus the weighted sum of gender differences within every household, plus the weighted sums of the differences between the social resources available to any community (neighborhood, region, or nation) and the average resources available to all communities, plus the weighted sum of differences between the average resource use now and sustainable resource use.

Let SE equal social efficiency. Then suppose X_i equals any individual's income for all N individuals in a given society, and \bar{X} equals average income; C_i , any individual's capabilities (defined for simplicity as a singleton); suppose there are M households in which male and female members are present, and that X_j^M and X_j^W , respectively, equal the incomes of the male and female members of each male-female household (and similarly for C_j^M and C_j^W); suppose \bar{X}_k represents average income in the k^{th} region in a community that has K regions, and suppose \bar{X}_S represents a sustainable level of income for this community. Suppose the value of each sum of differences is weighted by a weight θ , wherein the sum of the weights equals 1. Then:

$$\frac{1}{SE} = \min \left\{ \theta_X \sum_{i=1}^N (X_i - \bar{X}) + \theta_C \sum_{i=1}^N (C_i - \bar{C}) + \theta_{GX} \sum_{j=1}^M (X_j^M - X_j^W) \right. \\ \left. + \theta_{GC} \sum_{j=1}^M (C_j^M - C_j^W) + \theta_{XX} \sum_{k=1}^K (\bar{X}_k - \bar{X}) + \theta_S \sum_{k=1}^K (\bar{X}_k - \bar{X}_S) \right\} \quad (1)$$

The less the value of the weighted sums of differences, the more socially efficient the outcome or the intended policy intervention. We leave aside all the difficulties that would arise in calculating the quanta in equation (1). The emphasis on capabilities reflects what Fleurbaey would call a perfectionist impulse, the weights a liberalist impulse. This framework provides a way of assessing the impact of any decision on the distribution of income, wealth, and capabilities. It permits consideration of the concerns for equality of opportunity and resources that Rawls and Roemer, among others, have articulated.

We also acknowledge that there are many different ways to compute any one of these inequality measures; for example, gender could be calculated as the difference of mean or median male and female earnings, rather than on a household-by-household basis. How differences are computed – on the basis of gender, race, region, and so on – and how they are weighted is flexible, and can be adapted as analytics and social issues evolve. One advantage of

this schema is that protagonists who especially interested in one sub-category of inequality can have some autonomy in deciding how to measure it; where social consensus is required is in the assignment of weights for each sub-category.

It is interesting to apply the logic of Classical economic theory to equation (1). It is common in Classical theory to imagine a linear production system in which input-output relationships are specified, along with labor requirements, for every commodity. Recall that a model of this sort is underspecified; to “close” it requires the level of real wages (or of profit, which is to say surplus) in advance. This clearly demonstrates how distribution is prior to allocation in the Classical system, in contrast to the simultaneous determination of both in the neoclassical system. In this context, equation (1) suggests the idea that a prior exercise might be feasible in which various values of wages and returns to productive factors of production are tested to determine their implications for the various forms of income (and other) inequality that equation (1) picks up. Then a socially-optimal set of wages and returns - for example, for men and women, for different regions, and so on – could be determined and used either to determine wages or as a benchmark against a real-world economy’s performance.

In effect, equation (1) represents one approach to a justice criterion. Determining precisely what this criterion could be, and how to measure it, can be an object of discussion and reflection among New Economics practitioners.

8. The peculiarity of finance

We now consider replacing the EMH’s depiction of the relationship between the financial and real sectors of the economy. What has to be put into question is the notion that finance, if not distorted by over-regulation, passively reflects real-sector opportunities. This notion assumes that institutional structures in finance are irrelevant, and financing arrangements have no material impact on those units that take them on. We suggest here that they do. This then implies that different arrangements of financial institutions and markets affect the social efficiency of financial markets.

We begin by describing a phenomenon that Dorene Isenberg and I developed in several essays: the two-sided nature of micro-risks in financing arrangements.¹⁸ We observed that risk and efficiency is defined explicitly for financial intermediaries and for the financial instruments they create, both of which mediate the interests of borrowers and of lenders. So we have the default risk for a given instrument, and then the liquidity risk of the entity that holds this instruments on its balance sheet. A satisfactory distribution of risk is one that minimizes financial risks for wealth-holders in financial markets.

¹⁸ See, for example, “Financial Globalization and Housing Policy: From ‘Golden Age’ Housing to ‘Global Age’ Insecurity,” with Dorene Isenberg, in *Full Employment and Price Stability in a Global Economy*. Eds. Paul Davidson and Jan Kregel. Cheltenham: Edward Elgar, 2000. Pp. 139-165. The concept of social efficiency mentioned in the above section first arose in this work with Dorene.

What is not considered is the risk borne by the individuals involved. We termed this life-cycle risk. Arguably in many cases, shifts in financial arrangements that reduce financial risk for financial institutions and the wealthy raise life-cycle risk for household borrowers. That is, the reduction of risk for a lending intermediary often involves a zero-sum tradeoff with risk for the individual borrower.

Of course, this got stickier in the subprime lending period, during which borrowers took on very risky loans at the expense of their own hazard and that of lenders too, though this was not immediately evident. The introduction of the socially vulnerable into the world of high-pressure financial commitments – payday loans, subprime mortgages, high-fee debit cards, and so on – adds another dimension to the notion of the household as a bearer of financial and life risks. Now the poor and working class could be “included” as borrowers, on an exploitative basis. So what began happening with the invention of predatory lending is that means were found to increase the surplus for the wealthy and for financial institutions at the expense of the working poor.

A second peculiarity of an economy with external finance – in contrast to the distribution of resources and risk under financial autarchy – is the singular importance of leverage. Leverage – the ratio of total assets to own capital, that is, of financed assets to capital – is itself a source of risk. The risk in question is liquidity risk: the prospect that the economic unit that owns a given portfolio of assets may not be able to obtain financing at a rate permitting a positive overall margin.¹⁹

The use of leverage permits an economic unit to dramatically increase its return, all things equal. Suppose there are two units, one with £2 of debt for every £1 of equity, another with £5 for every £1. If a return of 20% per period is earned per dollar of asset, if equity requires no payment, and if debt requires a 10% per period, then every period the less-leveraged unit earns £0.4 on every £1 capital, while the more-leveraged unit earns £0.7. On pure rate-of-return grounds, the more leveraged unit clearly wins. What is left out here is the greater liquidity risk of the more leveraged unit. We could go further and note that the pool of available leverage is not infinite at any point in time. So the more leveraged unit generates more systemic risk insofar as its actions contribute to squeezing available liquidity. In sum, leverage enables greater prospective return and multiplies financial risk.²⁰

The possibility of leverage is enhanced in economies with advanced financial systems; and it has grown exponentially in the modern world of mega-banking. Whatever crisis tendencies exist in capitalism are thus amplified when the enterprises engaged in profit-seeking – including those providing finance and counterparty contracts on finance – can leverage their capital with debt.

¹⁹ ‘Ownership’ here is a problematic term. The assets in question may be contracted for a period of time and not owned outright. The converse of the problem of finding ‘affordable’ financing is the problem of selling assets at a price that avoids capital loss.

²⁰ A similar point can be made about the speed with which investments pay off. If one unit has access to returns after half a period, whereas another unit requires a full period, then the unit with access to shorter-term investments can earn a multiple of the other unit’s earnings on the same capital base.

Here we are on analytical turf well-marked by the models of cyclical boom and bust developed by Marx, Keynes, Fisher, and Kalecki, among others. In recent years, Hyman Minsky shed new light on the dynamics of financial instability that are linked to increasing leverage. Minsky's ideas crystallize some – though by no means all - of the critical insights of economists who have worked with the assumption that financial structures and their particular historical and institutional circumstances can independently affect economic outcomes. The financial is no mirror of the real; it is, as McKenzie argued (see footnote 7), an engine on its own.

9. Regulating financial markets when the financial is not a reflection of the real

EMH's final function in neoclassical theory is to serve as a benchmark for financial regulation. We begin with implications of section 8 about the relationship of the financial and 'real' sectors:

- a. financing structure is crucially important for overall economic activity; excessive accumulations of financial risk can undercut the real economy's health. The mechanisms by which financial risks are created, the level of these risks, and their locus, must be identified.
- b. Financial prices can vary independently of the available information about any given investment
- c. So price dynamics in the equity market can diverge dramatically from what the real sector needs or can support.

These points have profound Implications. First, they assert that the financial fragility hypothesis is a fundamental analytical building block. Second, they suggest that the financial sector can grow disproportionately large and dysfunctional for the economy as a whole, thus undercutting sources of national competitive advantage in other areas. Third, they suggest that the possibility of financial exploitation and exclusion does not exist

So outside of an EMH world, increasing leverage increases financial fragility, and banks' credit creation provides them with the ability to be super-leveraged. And this super-leverage can be used for socially destructive, economically dysfunctional ends, such as creating exploitative credit contracts with socially vulnerable economic units that are unsustainable.

This immediately provides us with a guideline for regulating finance. This special capacity should be used to enhance the productivity – and if not that, the output – of the economy as a whole. The fact that liquidity and leverage have public-goods aspects – both are dimensions that financial firms can treat as implicitly unrestricted, but which have systemic limits – only amplifies the case for regulation that pays attention to system functionality. And since implicit public support is present, the more risk any unit's financial position involves, using super-leverage to achieve private gains is untenable.

This is not the place for a detailed discussion of regulation. However, a few points can be made in the context of this discussion. Excessive risk-taking has to be bounded, and this means:

- insuring that lenders remain accountable for the riskiness of the loans they have made.

- Avoiding excessive leverage on the balance sheet; avoiding the offloading of funds without offloading ultimate responsibility; avoiding the games that go along with banks' efforts to evade the rules.

The fundamental problems of risk/liquidity imbalances vis-à-vis the use of scarce public resources and good will cannot be resolved through half-measures like the creation of bad banks. When the banks that are able to access excessive leverage and evade the rules are countable, they must be broken up, shrunk, and tamed. For such banks, speculative trading on institutions' own account must also be overseen and bounded. In effect, finance must be treated more like utilities – a sector that at best performs a service that, if it runs well, is unduly dull.

Next, financial exploitation must be limited. Financial exclusion hurts the poor and the socially vulnerable; but exploitative inclusion is equally destructive. We can imagine a benchmark that computes every household's net asset position. Theory normally takes into account the possible returns from different asset positions. This accounting must be expanded: there should be monitoring, by regulators and financial institutions, of the cost of financing and of doing financial transactions, for those who have few resources – are unbanked, or poor, or both.

Finally, the context of regulation and thus the goals set for regulators should be widened. Society needs an economically functional financial system. Regulators should monitor the impact of different kinds of financial arrangements on the investment capacity of the economy – especially that of small and medium enterprise. And we must pay attention as well to the links between financial capability and access, on one hand, and social efficiency, on the other.

Wider goals such as these mean that regulatory policy cannot follow a simple rule. This means that the design of regulation must be institutionally contingent and must adapt to overall economic conditions, as Akerlof and Shiller urge in their recent co-authored book.²¹ But going beyond the concerns of these economists with volatility, uncertainty, and stability, regulatory policy must pay attention to the need to preserve access and enhance equity.

It should not be surprising that an analysis calling for a thicker approach to theory also advocates a 'thick' approach to financial regulation. Here we might adapt an insight by Justin Fox. In his recent volume (see footnote 13), Fox notes that just because the EMH was disproven does not mean it didn't prove useful. Similarly, just because a thicker approach to financial regulation doesn't settle down to one or two simple rules of thumb that are context-invariant doesn't mean that simpler is better. The present crisis is the proof.

Whether financial regulation should be directly subject to democratic oversight can be debated; but for sure, financial regulation cannot be conducted in isolation from society's striving for more equality in outcomes and opportunity. In the end, the extent of such dual equality is the true measure of social efficiency.

²¹ See the postscript to chapter seven in *Animal Spirits*, by George A. Akerlof and Robert J. Shiller (Princeton: Princeton University Press, 2009).