sanity, humanity and science

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Ethics in Economics - Where Is It?

Peter Radford [USA]

WEA online conference: **Economics in Society: The Ethical Dimension**

It is time to address the question of professional ethics in economics head-on.

As we pick our way through the debris of the lingering economic crisis, the economics profession continues to present a poor, incoherent, and frankly inadequate face to the wider society, one of whose key facets it purports to understand. Either it does. Or it doesn't. It is time to confront the possibility of failure and withdraw to sort the mess out. What it shouldn't be doing is to press on as if nothing has happened. The risk of doing even more damage is just too great.

Medicine has its famous injunction - first: do no harm. Economics ought to abide by that rule too. It is a massive evasion of responsibility for the profession to continue to plod along as if a few hundred more earnest papers will do the trick. They won't. The error is profound. It is deep. It is decisive. Economists everywhere: stop what you are doing. Stop advising. Stop writing. And above all stop pontificating. Start thinking about the ethics of economics. There are no clothes on this particular emperor, and it is high time we admitted as much. So, instead of all those old normal activities, consider this: what are you doing to rehabilitate economics? Now. Not tomorrow.

I found this comment buried deep in a Paul Krugman blog post about the effect of wage cuts. A correspondent of his, a non-economist, wrote:

> "I wish that you economists had the equivalent of a bar exam so that the incompetent among you could be prevented from practicing. As far as professional credentials are concerned, you seem to be operating like medicine in the eighteenth century, PhD's notwithstanding."

Precisely.

But it isn't that easy is it? It never is in economics. The root of the ethical problem sits beside the root of all the problems in economics: there is no such thing as "an economics", there are many. From New Classicals to Post Keynesians, from Austrians to Marxists, and all points between, economics is a fractured, plural, and multi-faceted pursuit. Economists are opinionated and fractious. They cannot agree on even the most basic of principles upon which to build a coherent body of thought. There is no single foundation for economic thought, just a series of scarcely intersecting ideas that co-exist uneasily.

When I talk about this fragmentation with people who are outside the profession I use the metaphor of the archipelago. Most economists I know pretend their body of knowledge is a continent when in fact it is just a tiny island in a vast and disconnected archipelago. They teach it that way: they ignore all the other islands. They advise that way: they ignore alternative ideas. They research along those lines. They publish along those lines. They think along those lines. If an outsider bumps into a random economist my advice is always: find out which school they belong to because none will give you the entire picture. None.

But they will always be quick to disparage the schools they don't belong to. This may be fun and nicely hidden beneath a veil of academic argumentation. The problem is that the arguments are still going on. They have been for decades. No amount of point or counterpoint seems to resolve anything. Nor does evidence matter much. Economics has become intellectual trench warfare that bursts into public view at the most inappropriate times. As in the recent crisis when the public was treated to unseemly spats between supposed masters of the trade contradicting each other. Flat out. Openly. And apparently tone deaf to the shambles that the infighting reveals.

And a shambles it is. Patience is running out. It is time to do something. Society has skin in this game. It has a right to know that advice is helpful not dangerous. It has a right to know that economics is trying to clean up its act, and that it isn't just a pile of contradictory, mutually exclusive, strongly held opinions. It has a right to know that economists agree on the basic issues, even if they disagree on the solutions. And it has a right to know that current economists are committed to teaching a comprehensive view - warts and all – so that future generations can draw on all economic knowledge and not just some small, but powerful, part.

This, to me at least, is an ethical challenge. A challenge the profession fails to admit exists.

Let's attack this by asking: What is the point of producing more economists? And, just what exactly is economics anyway?

First, What is Economics?

Whatever you want it to be. Economics is organic. It responds to contemporary issues. It seeks to resolve certain problems that crop up in society, and then to advocate solutions. But it is more than this: it has also become an academic field of study. So it tries to theorize and produce more lasting ideas that have relevance through time. It is consequently bifurcated. It is a profession akin to medicine, and it is an academic discipline akin to biology - both at once. This bifurcation creates great confusion. And creates an ethical dilemma. The endeavor to be a "science" has dominated for years, and as a result the professional or practical aspect has lingered with its relationship with society un-discussed, or at least radically under-discussed.

If you visit the web site of the American Economics Association you will find three well-known quotes, each trying to summarize what economics is about. Here they are verbatim:

> "Economics is the study of people in the ordinary business of life."-- Alfred Marshall, *Principles of Economics*; an introductory volume (London: Macmillan, 1890
>
> "Economics is the science which studies human behavior as a relationship between given ends and scarce means which have alternative uses." – Lionel Robbins, *An Essay on the Nature and Significance of Economic Science* (London: Macmillan, 1932)
>
> Economics is the "study of how societies use scarce resources to produce valuable commodities and distribute them among different people." – Paul A. Samuelson, *Economics*; (New York: McGraw Hill, 1948)

The problem with these quotes is that only the middle one truly pertains in most of what passes nowadays for economics.

Marshall cast the net far too widely for his successors. The real study of people in the “ordinary business of life” would include all sorts of things no longer considered as being within the remit of economics. Remember he was writing before the great splintering within the social sciences - before, for instance, Talcott Parsons led sociologists off on their own pursuit of part of that wider study.

Samuelson, in contrast, tried to keep faith with the broader notion of economics, but paid due reverence to the notion of scarcity that sits at the heart of the contemporary subject. The problem with his articulation of what economics is, is that most, if not all, economists pay no attention at all to the actual production of things; nor to the infrastructure of distribution; nor to the desirability of the distribution we end up with. The Samuelson project has been gutted. His successors evidently decided that such issues - actual production and distribution for instance - threw too much grit into the wheels of the holy grail of equilibrium. Production is a process through time. It entails all sorts of compromises with uncertainty. It introduces the possibility of error and a reliance on judgments that cannot easily be resolved into, or reflected within, the equations of classical machinery. So study of such stuff was outsourced to the people in the organizational and management studies schools. Economics was radically restricted to ignore whole chunks of what constitutes an actual economy. It became constrained allocation.

In my mind this definition is so narrow as to be worthless. It asks us to focus on a set of "given ends". What on earth are they? How could economists possibly know? These ends inevitably remain a mystery to be revealed magically as whatever outcome occurs. It is a leap of faith that what happens is concurrent with what is potentially desired. Economists have no way of knowing the difference so they march on secure in their faith. Having set off down this mechanical path they allow themselves to offer up a definition of ends that suits their process. They borrow the notion of utility from Bentham and then twist it about to squeeze it into their desired analytical framework. A useful metaphorical or philosophical idea suddenly morphs, in the hands of economists, into a highly precise tool upon which everything depends. It was never designed to be thus. It cannot carry the load. But there it is: up front and center.

And those "scarce means"? This seems to be a binding constraint, of Malthusian proportions. But economics needs to limit itself if it is to stay within its self-imposed analytical boundaries. No wonder innovation and technology have been difficult subjects for economics. If there is one characteristic of the entire capitalist era it is that what was once scarce is now less so because we have invented better ways to produce more from our available resources. Yet a strict Robbinsian approach places the study of innovation outside the boundaries of "true” economics.

This is why the subject can seem so sterile. According to the American Economics Association much of what most of the public might think of as economics turns out not to be. Business firms, entrepreneurs, institutions, culture, gender and other relations, technology, geography, and a host of other factors that an ordinary observer may think of as legitimate subject matter for economics, or at least of great influence on an economy, are excluded from the pure definition. What's left, of course, is the study of the efficacy of markets, and the supposedly general mechanisms allegedly within them.

Even then economics allows itself to defy the laws of physics. It pretends that a market system can provide allocation solutions without actually doing work. This error introduces something akin to Maxwell's demon: information moves weightlessly around, levitated instantaneously, at no cost, with no loss of accuracy, and no regard to entropy. Somehow the system defies physics. Economists have created their own version of the impossible: a perpetual motion machine. It is as if they never heard of the second law of thermodynamics. If they have, they certainly ignore its ramifications. This is alchemy: especially in a world well aware of the advances within physics and biology that take such real world constraints seriously. Yet economics soldiers on building its macro policy advice on these tenuous, deficient, and other worldly micro foundations.

In order to avoid being trapped by those constraints economics had to banish, as a great number of people have observed, humanity. As if this could possibly reveal anything of importance for an economy populated by humans. The notion that origin of growth has its roots in artifacts that litter the economic landscape and is thus within and not without the system should not have engendered wonder. On the contrary its absence should have attracted scorn. Yet economics continues to proffer advice from this inhuman and almost absurd perspective.

Of course economists are not that stupid. Many of them set off on various heretical journeys to study the impact of these interesting oddities. They were all cast out for their pains, but at least their work still exists, waiting to be incorporated into a more general notion of economics if the subject can make its way back out of the desert.

Meanwhile, the mainstream profession is teeming with highly educated folks who have no inkling of large parts of its hinterland. They have been taught just one strand of a multi-strand web of ideas. They stand on just one small island within the archipelago and imagine they inhabit a vast continent. They believe, profoundly and erroneously, that they know economics. In fact they are functionally ignorant. They are deeply immersed in only one thing, and oblivious to all others. They are thus not well-rounded professionals. Their training is a license to train others in a limited way. They thus perpetuate – and possibly accentuate - the limitation. Their training is not a license to give advice. This is where a serious ethical problem crops up: they have proliferated not just in economics departments of universities, but in any other institutions that need the wisdom expected from someone steeped in economics.

Professional economics is thus a sham. The public is not receiving fully formed advice. It is receiving opinions based upon a narrow education designed exactly to eliminate large, and possibly vitally relevant, knowledge. Economics has willingly reduced itself to a series of scarcely related specialties built without a general base. It produces doctors without a general knowledge of medicine, but all of whom also claim to be generalists.

Driven on by hubris, the self proclaimed "queen of the social sciences", with its faux accuracy and its bag of apparently clever analytical tricks, the economics world view has been imported into those outsourced disciplines like management and organizational theory. In other words economics has falsely blended its theoretical and practical aspects. Its academic practitioners pretend to have clean hands with respect to giving advice, but, in fact, they are educating and influencing whole generations of erstwhile practical people. These practical people think they are being taught useful real world and deeply applicable knowledge. Some of them end up running major corporations. Others occupy places of great influence in government. Yet more advise politicians. Economics is thus not just some arcane academic pursuit, but it is

enmeshed within the public sphere. It is not just the study of something, but through its advisory role, it seeks to bend society to conform to its worldview.

It ought, therefore, to make sure that its worldview is efficacious. It needs to do no harm.

But the narrow notion of economics allows many economists to elide the need to discuss and take on board the ethical relationship all advisors have with their clientele. When pressed to discuss the ethics of such a professional relationship most economists claim academic privilege. They claim they should be allowed to pursue their vocation wherever it leads. Ethics, they tell me, is for doctors, accountants, and attorneys. They argue economics is different.

But that position is no longer tenable. Not in view of the recent crisis and the inability of economics to muster a coherent response. Economists must address and correct the fractured and deliberately limited basis of their advice. It has customers, who deserve better.

The public perceives economists as deeply practical and worldly - no matter how abstract and theoretical they may feel themselves to be. What economists argue over matters a great deal to society as a whole; what they disagree over matters; what economics is, and isn't, matters; and what economists teach matters even more. What appears to be arcane academic argumentation has enormous real world consequences. This may feel like an enormous burden or an intrusion into freedom of thought, but it reflects the expectation society has of all the experts upon whose knowledge it draws. It is distressing, to me at least, that economics remains the only social science not to take seriously its relationship, as a center of expertise of interest and value to society, with the society within which it operates, and whose operations and wealth it affects with its opinions.

Yes this needs to be said.

Again.

There is, I believe, a general opinion - I stress the word "general" - about what an economist knows. That is to say out that there in the great wide world people have expectations of economists. There is a skill, or set of skills, attaching to the word "economist'. When people seek that skill, as in when they hire an economist, they are justified in imagining they have secured the services of someone who is well briefed in the subject and who is capable of providing a well rounded response to problems based upon that set of skills.

What they get nowadays, too often, is a very narrow mind largely ignorant of economic history, the history of economics, the context of its ideas, society at large, and, crucially, any notion of the limitations of the economic worldview. This worldview is based upon the absurd assumptions and naive psychology of economic orthodoxy, which propagates reductionist methods and methodological individualism even where they are wildly inappropriate. And even when the rest of the academic world has rejected them as being wildly inappropriate in a social setting.

And then there is the problem of politics.

Economics is inextricably tied up with politics. This is evident every day when we read of phalanxes of well-known economists proffering competing opinions that directly contradict

each other. The vaunted scientific project of economics is revealed to be nothing but an adjunct of a particular political point of view. There is, apparently, a well-crafted economic theory to justify every point on the political spectrum. There is no right and wrong, just a gaggle of opinions.

But at least they are opinions backed up with fancy math. Which is what influences the public most. I would wager that the image the word economist conjures up most is akin to a slightly more sophisticated accountant. Someone versed in more complicated math; someone who can be trusted with difficult computational problems; and someone steeped in the tradition and values of objective clinical analysis. In other words an applied mathematician and not an economist.

Yes: our schools are producing deliberately ill educated people and presenting them as the complete article. This is an ethical failure on the part of those schools. It fails the community who has every right to expect those places to produce well rounded, fully educated professionals who will in fact, and not just in theory, "do no harm".

In other words economics is a rotten enterprise when viewed as an activity that produces professionals who add value to society at large. Economists are not bad people. They are simply the product of a broken system. Rehabilitation is in order.

One of the more enjoyable moments I had this summer was reading Sylvia Nasar's excellent history of economics titled "Grand Pursuit". She brings to life some of the varied personalities who tower over the progress of economic thought, particularly up until the 1930's. I, like Krugman, had no idea that Irving Fisher invented the Rolodex. Her approach is revealing: she ignores everything after Samuelson - other than a long discussion of Sen. This is both highly deserved and telling. There has been remarkably little progress since 1948. In my more draconian moments I would say there's been none. On the contrary, the subject slid backwards. What was known as efficacious in 1948 has been disregarded and "unlearned" since.

This is an extraordinary disservice to society and is akin to medicine "forgetting" how to cure smallpox simply because that cure no longer conforms to contemporary ideas about what a cure ought to look like. It isn't that economists don't want to cure. Nor is it that the cure doesn't work. It is the nature of the cure, which isn't congruent with individualist thinking and is thus set aside as old-fashioned. And since all economics has been reconstructed on the absurd and flimsy base of its micro foundations, most, if not all, macro ideas have been deliberately forgotten. Tried and true cures were cast aside for the sake of ideological purity. Faith triumphed over reason. Which is odd in the extreme given the perverted place rationality plays in the workings of that faith.

This quote from Blaug tells it far more succinctly than I can:

> "At this point, it is helpful to note what methodological individualism strictly interpreted…would imply for economics. In effect, it would rule out all macroeconomic propositions that cannot be reduced to microeconomic ones, and since few have yet been so reduced, this amounts to saying goodbye to almost the whole of received macroeconomics. There must be something wrong with a methodological principle that has such devastating implications."

In my words: economics forgot some of its cures because they were inconsistent with the purity imposed after their discovery. Damn the patient, economics sought its ideal. It had to forget anything not fitting within this ideal. That this forgetting could cause harm, serious long term and very real harm in the actual economy, was of no consequence. That real human families could be broken up, could lose their homes, and could be ground down by relentless poverty was of no consequence. The pursuit of the ideal, of that elegance so marveled at, that wonderful and difficult mathematics, that narrow but beautiful construction of market magic, that consistency so prized within orthodoxy, all trumped, by far, any notion of retaining cures that did not fit. That this ideal was built upon axioms that explicitly rejected the core of humanity was also not a consideration. Nothing, absolutely nothing, was allowed to stand in the way of the pursuit of the ideal.

I do not think for a moment that students entering an economics education desire to emerge as narrow minded and potentially dangerous to society. On the contrary, most want to learn something useful and view economics as socially beneficial. They are unaware of the amnesia that bedevils the subject, its intellectual poverty, and the naive view of humanity that infests its models despite the glitter of their math.

As for my second question: What is the point of producing more economists?

I don't know.

It depends on what economics is. And that question is what got me into this trouble to start with.

Whatever the answer, they should do no harm.

Can we say that now?

No we cannot.

The issue of ethics in economics can no longer be avoided.

Editor' note:
Economics needs you to take part in the World Economics Association free online conference **Economics in Society: The Ethical Dimension.** If you go to the conference site now **http://weaethicsconference.wordpress.com/** and leave your email address, you will be notified when the conference begins and when new papers are submitted. You will be able to leave comments and take part in the ongoing discussions. Better yet, please consider submitting a paper. Short papers of 1,000 words are acceptable.

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Broader questions and a bigger toolbox:

A problem-centered and student-centered approach to teaching pluralist economics[1]

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Abstract:

This essay discusses a "broader questions and bigger toolbox" approach to teaching pluralist economics. This approach has three central characteristics. First, economics is defined so as to encompass a broad set of (provisioning) concerns. Second, emphasis is placed on contemporary real-world issues, institutions, and current events, rather than on debates in the history of economic thought. Third, a variety of concepts and theories are introduced, all of which are treated as partial and fallible--useful in some (perhaps very limited) situations while not so useful in others. Possible reasons an instructor might want to adopt this approach, and examples of use in practice, are discussed.

Possible approaches

Imagine an elephant surrounded by a number of blind people, who each explore a different part of it—some of them, perhaps, more ably than others. Suppose that this elephant is both a source of abundant life and potentially a source of great distress. Which is the more interesting thing to focus on: One of the blind people? Conversations and debates going on among the blind people? Or, perhaps, the large and dangerous elephant?

The instructor who wants to go beyond standard mainstream teaching of economics to a present a pluralist approach has to carefully consider questions of curricular demands and student receptivity. Two popular approaches, historically, have been the "single alternative" approach, in which economics is presented from the point of view of a single heterodox school, and the "competing paradigms" approach, in which orthodox and one or more heterodox approaches are explicitly compared and contrasted, within the context of a discussion of philosophies and the history of economic thought.

The single alternative approach—e.g., teaching an "Institutionalist Principles of Economics" or an upper-level "Ecological Economics" or "Feminist Economics" class and skipping the usual neoclassical approach--may be the most appealing from the point of view of an instructor who strongly identifies with a particular heterodox school. But because curriculum constraints often require coverage of at least some mainstream material in "core" courses such as introductory or intermediate theory or statistics, the luxury of teaching a single alternative school tends to be limited to elective courses. While this may give those students who take the heterodox elective a rich understanding of the particular view discussed, this approach runs the danger of ghettoizing alternative views, and leaving most students only exposed to the more mainstream ones dominant in the rest of the curriculum.

One way of solving the problem of how to introduce alternative perspectives within a course that must also include neoclassical content is to adopt what I call a competing paradigms approach. Knoedler and Underwood (Knoedler and Underwood 2003) refer to this sort of idea when they suggest that alternative views as might be presented as

[1] This paper draws—and expands—on previous articles I have written about university economics teaching (Nelson and Goodwin 2009) and (Nelson 2009), as well as my work in university textbook and teaching module design (Goodwin, Nelson et al. 2008; Goodwin, Nelson et al. 2008; Goodwin, Nelson et al. 2008), high school economics pedagogy (Maier and Nelson 2007), and classroom experience. While I worked on a number of curriculum materials and guides while employed by the Global Development and Environment Institute (GDAE), I do not have any financial interest in promoting these materials since all royalties go to GDAE, and the affiliation I now maintain with the Institute is unpaid.

“counterpoints” to neoclassical principles. The “parallel perspectives” approach described by Mearman (Mearman 2007) likewise involves presenting arguments from one or more different schools, and then engaging in critique and rebuttal, and there are other proponents. Such courses may use a standard theory or field textbook and then supplement it with instructor-selected readings that reflect views from one or more non-neoclassical paradigms, or use specially-prepared volumes of readings, or use complete textbooks built around a competing paradigms approach.

While designs for implementing the competing paradigms approach vary widely in their particulars, they all generally recommend some up-front and explicit discussion of one or more alternative paradigms by name (e.g., "political economy," "radical economics," "Institutionalism," "socio-economics," "Austrian economics"). Decrying the lack of attention given in mainstream courses to leaders in the history of alternative economic thought, they often call attention to historical figures such as Marx or Veblen. Substantial emphasis is often put on demonstrating the shortcomings of neoclassical approaches. Metaphors of war—or at least of a race—seem to underlies the approach, as proponents urge students to compare theories and decide which ones win out over the others.

Why "competing paradigms" may not always be best

Certainly, the competing paradigms approach has been used successfully at many colleges and universities. For some populations of students, however, there are drawbacks to structuring a course around a comparison of the history and principles of differing schools of thought.

First, one important reason why students—including potentially excellent ones—sign up for economics courses is because they want to understand how contemporary economies actually work. Classes that focus a great deal on the history of economic thought or debates among economists may seem to these students to be excessively backwards-looking, inward-turned, and abstract. It may not be that such students are inherently unable to appreciate history and intellectual debate, but rather that the students simply do not yet have the background of knowledge that makes philosophical debates so interesting to those of us involved in them. Many students—especially prime-age-college ones—have so little familiarity with economic history and experience with events and processes in the real economy that they have scant basis by which to understand—much less evaluate the validity of—any theory, no matter how bright they are. A course that asks them to engage in extensive critique too early may turn them off to the field.
One may note that the Neoclassical curriculum, in contrast, tends to feed right into many students' expectations that the they are going to learn "how the economy works." By pretending that the economy can be viewed in only a very limited range of ways, taking a thoroughly authoritative tone, and exploiting students' general naïveté about how the world works, it tends to satisfy students' desire for (what they are led to believe is) directly applicable, clear-cut knowledge.

Second, extended discussions of competing theories, and extended examinations of the philosophy or history of economic thought—no matter how interesting they may be to us as researchers!--may be too subtle and abstract given the cognitive development level of many students, perhaps even later in their academic careers. Some may not have the skills in abstract and critical thought that would enable them to handle the ambiguity of a point-

counterpoint approach. The result of too much abstraction may be that students simply memorize, for the purpose of passing the exams, two (or more) lists of principles rather than one, or learn to mechanically shift curves on a wider variety of graphs. Or students may adopt a disengaged, unhelpful “everybody has a right to their own opinion” attitude.

Thirdly, when instructors who teach such courses signal (whether intentionally or inadvertently) that they endorse the alternative view(s) and are strongly critical of the Neoclassical orthodoxy, a further pedagogical problem may be created. The emotional tone projected by an instructor who is metaphorically "holding her nose" when teaching the Neoclassical sections hardly inspires engagement and enthusiasm in her students (as I found out the hard way, as a graduate student TA). Students may (understandably) resent being required to learn the standard material, if they are simultaneously being told that it is wrong.

Very skilled instructors can work to overcome these obstacles, of course. And a long term goal of many heterodox economists is to ultimately replace neoclassical principles, theories, and methods with a better set, reformulating the whole core of economics teaching. But what can be done in the meantime, if one finds oneself in the unfortunate situation of facing a classroom in which a competing-paradigms approach meets with hostility, incomprehension, or merely mechanical learning? Is the only solution a reversion to neoclassical standard content?

Broader questions and bigger toolbox

There is another possibility. The broader questions and bigger toolbox approach (henceforth BQBT) is more in line with a pluralist and inclusive, rather than paradigm-centered, approach to economic research and teaching, and may more appropriately match the motivating interests and cognitive development stages of many students. Rather than beginning with a philosophical or history-of-thought introduction to various perspectives, such an approach starts with interesting and engaging questions, and then proceeds to draw from a variety of perspectives to help students think about the issues, progressively making students more aware of lively, investigative social science processes.

This approach, which I have used in university-level curriculum projects I have worked on, as well as in my own university-level teaching, has three major characteristics:

- First, economics is defined so as to encompass a broad set of concerns.
- Second, the motivational lead-in is through emphasis on contemporary real-world issues, institutions, and current events.
- Third, a variety of theoretical concepts, models, and other “tools” are presented as potentially useful—but also inherently limited and fallible—constructions, or "thought experiments," that humans have created to try to understand these real-world phenomena.

The first characteristic primarily distinguishes this approach from orthodox economics: Most alternative paradigms share a concern with at least somewhat broader questions.

The next two points distinguish this approach from the single- or contending-paradigm approaches. The BQBT approach, in emphasizing current events and a wide variety of particular “tools,” sidesteps or postpones the study of the history of economic thought, and de-emphasizes the explicit identification of theoretical systems. Instead of the

course being framed as a contest among schools of economic thought, the phenomenon we call “the economy” is placed front and center, and then investigated using a wide variety of conceptual tools. In other words, the elephant is made the center of attention, in contrast to debates among the blind folks exploring the elephant. To the extent there is a war going on, it is a war against the hegemony of any (partial) theory, not a battle against any particular theory in itself.

Students are not necessarily required to classify the tools according to their school or history of origin, nor is the emphasis on critiquing theories in an abstract and general sense. Rather, students are asked to learn how each particular theory works, while paying attention to the assumptions it requires and the various aspects of reality that it highlights or ignores. From this basis, the suitability of various theories for addressing various real-world issues under investigation can be investigated.

Such an approach, while not crusading against any particular view, need not be apolitical. It is entirely appropriate for the instructor to point out that the lucky blind person exploring the elegant ivory tusk gets quite a different view of the elephant than the poor soul positioned directly under its tail. Especially when things come down.

Broader questions

A good way to start to reframe the content of economics courses is to think of economics as being defined by the concern of economic provisioning, or how societies organize themselves to sustain life and enhance its quality. Such a definition is much broader than definitions of economics that focus on individual rational decision-making under scarcity, markets, or GDP growth. Such a definition, or one similar to it, will be familiar to many economists from Institutionalist or socio-economic backgrounds, and is wide enough to encompass concerns from other perspectives as well.

Because it does not focus on individual rational choice, this approach puts social and economic institutions, real human psychology, and the actual unfolding of historical events within the domain of Economics instruction. Because it is broader than a concern with only markets, it is inclusive of government and community activities, as well as the economic contribution of unpaid household labor. Because it points directly to questions of survival and the quality of life, it invites questions about whether current patterns of wealth and income distribution, consumerist attitudes, and the use and abuse of the natural environment serve valuable ends. Before and unless students are brainwashed by Neoclassical definitions, the idea that economics is about how people get what they need to live and thrive, and that the study of economics is motivated by a desire to improve this process, are generally accepted as simple common sense.

To operationalize this broader definition of economics, it can be helpful to make explicit certain aspects of economic life that are absurdly downplayed in conventional treatments. These include:

- Stewardship of an economy's resource base. An easy way to make this explicit is to add another economic activity to the usual list of three--that is, to "production, distribution and consumption." In curriculum materials I have worked on, we call this additional activity "resource maintenance" define it as "the management of natural, manufactured, human, and social resources in such a way that their productivity is

sustained," and list it first. You can't produce until you've taken account of your resources!

- Non-market forms of distribution. While in a standard course this mostly focuses on market exchange, adding an explicit discussion of distribution by way of one-way transfer opens up a wider set of issues, including, for example: the work involved in the care of dependent children, the sick, and the elderly; relations between current and future generations; the role of inherited wealth in perpetuating concentrations of economic power; and phenomena such as land grabs and armed conflict.
- Uncertainty, especially about the future. As pointed out in many heterodox (and particularly Post-Keynesian and Austrian) schools, economies evolve through time, and often in unexpected ways. Explicit introduction of uncertainty and time should also serve to create some healthy skepticism about purported universal "economic laws."
- The ways in which people must consciously work together to solve economic problems. It is helpful to introduce phenomena such as public goods, externalities, and market instability early on, as opposed to introducing them as "add-ons" late in a course. Since these cannot be satisfactorily addressed at the level of (Neoclassically-enshrined) individual, the students can see from the beginning the need for additional levels of analysis.
- Social institutions that shape economic activity—both non-market institutions as well as specific types of market institutions. Social institutions that create (or destroy) trust, social norms (including harmful ones such as prejudice), administrative structures, democratic organizations, and details of market construction (as compared to blackboard, abstract "markets") are important—and usually directly observable in a student's life.

Because the broader definition of economics in terms of survival and flourishing—with attention to stewardship, transfer, and uncertainty—is also inclusive of more traditional questions concerning financial incentives, markets, efficiency, and the aggregate level of economic activity, it does not preclude discussion of more conventional topics. A pluralist instructor is spared, then, being put in the awkward position of arguing that the dominant concerns of the traditional view (such efficiency or GDP growth) are wrong. Instead, the instructor may point out when they are too limited and have perhaps been too obsessively pursued—and then make a natural segue onto more interesting and relevant questions.

What might some of these larger and more relevant questions be? I will mention just two examples here that strike me as currently pressing:

- People in industrialized countries, for example, find themselves consuming more and more every year and contributing to massive degradation of the natural environment, but (according to survey research) do not seem to be getting on average any happier. Now is that not an interesting—and highly relevant--puzzle that economics classes could explore? Depending on instructor interest and the topic of the particular course, one could also highlight provocative questions about trends in income inequality, the role of corporations in social and economic life, the meaning of "development," what it means to have "quality of life" at the workplace, how technological change happens, the effects of globalization, the role of booms and busts, or other issues that affect students'—and everyone's—lives.
- What is the role of debt in economic life—whether it be at the level of individuals, households, communities, businesses, or nations? In an historical time period marked by financial crises, bankruptcies, and bailouts at all levels, questions about levels of

debt and the power and structure of financial institutions make the daily news. What role is played by unexpected events that develop over time? How do sudden changes in socially-held beliefs about the credit-worthiness of an actor come about, and what are their real-world consequences? Is there currently a student debt bubble—and if so, how will that affect the students themselves?

These are just a couple examples of big questions that might be focused on, or threaded through, a variety of economics courses, to motivate student interest and increase the relevance of learning.

A bigger toolbox: beyond the standard models

Besides expanding the range of questions addressed, there is also the question of methods or styles of analysis. Some professional economists consider the uniting force in economics of a set of techniques to be even stronger than that of a common subject matter or model. In a conventional undergraduate theory courses, students are taught that "doing economics" is largely a matter of manipulating equations and shifting curves, while for graduate students "doing economics" means using advanced calculus, real analysis, game theory and econometrics. Some heterodox economists agree that economics is defined by mathematical modeling techniques, and only disagree about the particulars. An improved economics course, from such a point of view, might just contain more or different mathematical models.

Other non-mainstream views, however, consider this to be a very limited perspective, based on an inadequate understanding of the nature of scientific investigation, and perhaps tainted by gender-related biases against methods that may appear to be relatively soft or imprecise (Ferber and Nelson 1993). A broader view of social science practice notes that, while mathematical representations may be precise and elegant, they often fail miserably on the criteria of richness or relevance. Much can be learned by other means.

Economics students at all levels (as well as many faculty) are often woefully ignorant about the basics of economic geography, economic history, and economic and social institutions. Most are also unaware of advances in the other social sciences concerning economics-related issues in human motivation and behavior, and in environmental science about the ecological effects of economic activities. Some do not even follow much in the way of current events. A dire lack of expository writing skills is also often evident. So one important tool in the larger toolbox is simply to spend more time reading. Reading assignments can help students gain the breadth of knowledge that a pluralist understanding economic issues demands. People who read extensively also tend to become better writers. Increased reading and writing may, of course, be looked down by methodological hard-liners as "only verbal" or "only descriptive"—or as "not economics" at all if it crosses disciplinary boundaries. Real reading and writing may also require more instructor effort on the grading side than mathematical problem sets. But, as well as being useful in themselves, such deeper assignments are also, of course, an essential precursor to any satisfactory (that is, rich, relevant, and connected to the real world) analytic research. More hands-on or fieldwork-related investigative methods, such as service learning or "economic naturalist"-type assignments [2] can also be of use.

[2] This is Robert Frank's (2007) term, though pluralist economists would likely including a broader range of explanatory concepts than Frank suggests.

What about how we teach statistical and econometric methods? The current tendency is to far overemphasize econometric theory at the expense of practical empirical skills. That is, students often spend months of classroom time studying the properties of the regression error term, but are lucky if an hour total is spent on issues of survey practices, understanding what variables actually mean, data "cleaning," and the many other considerations that divide quality data analysis from high-tech schlock. Discussions of professional ethics related to data work and means of effectively and honestly communicating empirical results are even rarer. These could and should be included in the economics curriculum.

It is also the case that our approach to teaching statistics has concentrated nearly exclusively on reasonably predictable, non-scalable, often bell-curve-type phenomena. Such an approach had the effect of failing to develop our ability to analyze the large, unpredictable, feedback-loop amplified, real world events that bring about major changes in economic life. Even worse—as Nassim Nicholas Taleb has recently pointed out in his book, The Black Swan (2010)—the standard economic approach, with it's Platonic roots in ideas of "laws" and predictability, has tended to reduce people's awareness of the importance of phenomena such as unexpected technological innovations (on the positive side) or market or environmental crashes (on the negative). Orthodox economists are in this way even worse that the carpenter who, having a hammer, treats everything as a nail. The orthodoxy goes further and tries to convince everyone else, as well, that only nails exist! This is a major disservice. A broader toolbox would include greater knowledge of economic history and of the limitations of bell-curve analysis. It would likely also (as Taleb suggests) take on the study of how economic institutions and systems can be made to be more appropriately resilient in the presence of feedback loops and prepared for change.

Some specific examples

The unifying theme of a BQBT approach are, to repeat, a broad definition of the field, a lead-in through real-world issues, and the treatment of a variety of approaches as each potentially useful in some spheres but also human-created and limited. How might this work out in various course? Let me give just a few examples from my own classroom experiences.

Microeconomics

Using textbook materials I helped write, my classes look at consumerist goals and broader goals, as well as the environmental impact of high through-put consumption. We talk about self-interested rational choice behavior and habit-driven behavior, behavior influenced by advertising, and behavior influenced by social norms. Before talking about theories about markets, we talk about real world markets. For example, I use the specific structures that characterize the market for university textbooks to talk—on the very first day of class—about both market power (gained by a few large suppliers) and about misaligned incentives (when instructors choose but students pay). After they have learned about spot markets, auction markets, sealed-bid auction markets, wholesale markets, markets with long-term contracts, and other such variations, they need no convincing to see that the supply-and-demand model is an abstraction. We discuss market forces and other forces such as entrenched custom or political clout. We explore the notion of a stable market equilibrium and the psychology of

speculative bubbles. The concept of demand elasticity is presented as something useful to think about if one ever becomes a producer—either a for-profit or non-profit—trying to figure out an appropriate price to set, and controversies over the ethical pricing of pharmaceuticals are discussed. The model of perfect competition is presented as a model, and the narrowness of its assumptions stressed. The concept of deadweight loss, for example, which relies on the model of perfect competition, morphs into "deadweight gain" if a tax is Pigovian. Instead of being judged right or wrong at a very high level of abstraction, theories are judged as very useful or less useful or not useful in analyzing a particular situation.

Macroeconomics

In macroeconomics, it is especially easy to talk about real world events and the limits of various theories, given that one can hardly avoid talking about the Great Depression, supply shocks, the financial crisis and so on, as well as varieties of (at least) Classical and Keynesian theories that have developed in response. I add to this by expanding the discussion of the national accounts into issues of unpaid work and social and environmental accounting. I avoid like the plague the model of a vertical long run aggregate supply curve, substituting instead consideration of uncertainty, time, and evolutionary dynamics. I show parts of the movie Inside Job. Questions of quality of life, the quality of employment, the composition of production, and the length of work weeks diffuse arguments about macroeconomic health and environmental sustainability being necessarily at odds. Having introduced "resource maintenance" early on and having related many aspects of the course to the issue of climate change, I was gratified by an incident that happened late one recent semester: When I happened to mention that most macroeconomics courses do not identify "resource maintenance" as a major macroeconomic issue, I was greeted by dropped jaws and expressions of appalled disbelief.

Statistics (and econometrics)

I enjoy teaching statistics because I think every citizen should have a basic understanding of the subject, and because it is traditionally less drenched in neoclassical orthodoxy than economic theory courses. Questions of "fat tails" that are now prominent in discussions of the economics of climate change, however, along with Taleb's discussion of black swans has caused me to rethink the usual emphasis on Central-Limit-Theorem-based inference. The dirty little secret not talked about in most conventional basic statistics books is that the sample size necessary for valid inference rises with the amount of skewness for distributions with finite variance, while no finite sample size suffices for inference about fat-tailed distributions with infinite variance. I am dealing with this by teaching the usual skills of inference, but also assigning a reading that discusses the sorts of areas (e.g. biometric) where these are more likely to apply, and the sorts of areas (e.g. investment returns) where standard inference skills are less likely to apply. I also stress hands-on practice with data and some of the ethical issues involved in analyzing data and presenting results. The general tenor of my courses convey that statistics and econometrics can be useful, but do not allow one to control the world or predict its future (as some designers of, e.g., financial derivative models seemed to believe).

Gender and the economy

There are many ways one might use a BQBT approach in a course on gender and the economy. Paying attention to the actual psychology of human behavior and to the social

institutions that shape economic life allows for explicit discussion of the roles of stereotyping, prejudice, and social norms in shaping existing labor markets. The broad definition of economics highlights the economic contributions of unpaid labor. While the Wal-Mart national class-action discrimination case was in play in the United States, I used publicly-available news stories, case studies, and statistical background papers used in the legal case to create a current-events themed door into these issues. Others might use gender-related issues in international development and international trade. I do teach, at least briefly, conventional models of occupational "choice" and presumed human capital deficiencies of women, since students will come upon these ideas while researching their term papers, but I set them in context as fallible theories based on certain assumptions (some of which, for example related to women's education, are no longer true). I also tend to stir up some of my more conventional students, who may have come to perceive me as injecting too many "social issues" into what they think should be cut-and-dried economics, by turning around and—late in the semester—teaching about economic models of the household (especially bargaining). Some of these same students (particularly young ones) have a rather idealistic view of families, and are jolted by seeing the conventional assumption of economic self-interest transplanted into a new context. This serves the useful purpose of making these students think about the assumptions in a fresh way. While my own research concentrates heavily on the more philosophical and epistemology aspects of feminist economics, I do not emphasize these in undergraduate topical courses—in keeping with the BQBT philosophy of motivating students through a focus on current issues.

Conclusion

This paper has laid out a "broader questions and bigger toolbox" (BQBT) approach to teaching pluralist economics. First, economics is defined so as to encompass a broad set of (provisioning) concerns. Second, emphasis is placed on contemporary real-world issues, institutions, and current events, rather than on debates in the history of economic thought. Third, a variety of concepts and theories are introduced, all of which are treated as partial and fallible--useful in some (perhaps very limited) situations while not so useful in others. I hope that some aspects of this approach may be found to be useful by economists from all backgrounds, as we seek to improve economics education.

References

Ferber, Marianne A. and Julie A. Nelson, Eds. (1993). *Beyond Economic Man: Feminist Theory and Economics*. Chicago, University of Chicago Press.

Frank, Robert H. (2007). *The Economic Naturalist: In Search of Explanations for Everyday Enigmas*. NY, Basic Books.

Goodwin, Neva, Julie A. Nelson, et al. (2008) "Economics in Context: Goals, Issues, Behavior." *GDAE Teaching Modules on Social and Environmental Issues in Economics*.

Goodwin, Neva, Julie A. Nelson, et al. (2008). *Microeconomics in Context*. Armonk, NY, M.E. Sharpe.

Goodwin, Neva, Julie A. Nelson, et al. (2008). *Macroeconomics in Context*. Armonk NY, M.E. Sharpe.

Knoedler, Janet T. and Daniel A. Underwood (2003). "Teaching the principles of economics: a proposal for a multi-paradigmatic approach." *Journal of Economic Issues* 37(3): 697-725.

Maier, Mark H. and Julie A. Nelson (2007). *Introducing Economics: A Critical Guide for Teaching*. NY, M. E. Sharpe.

Mearman, Andrew. (2007). "Teaching Heterodox Economics Concepts." *The Handbook for Economics Lecturers*, 2008, from http://www.economicsnetwork.ac.uk/handbook/heterodox/. .

Nelson, Julie A. (2009). The Principles Course. *The Handbook for Pluralist Economics Education*. J. Reardon. London, Routledge**:** 57-68.

Nelson, Julie A. and Neva Goodwin (2009). "Teaching Ecological and Feminist Economics in the Principles Course " *Forum for Social Economics* 38(2-3): 173-187.

Taleb, Nassim Nicholas (2010). *The Black Swan: The Impact of the Highly Improbable*. NY, Random House.

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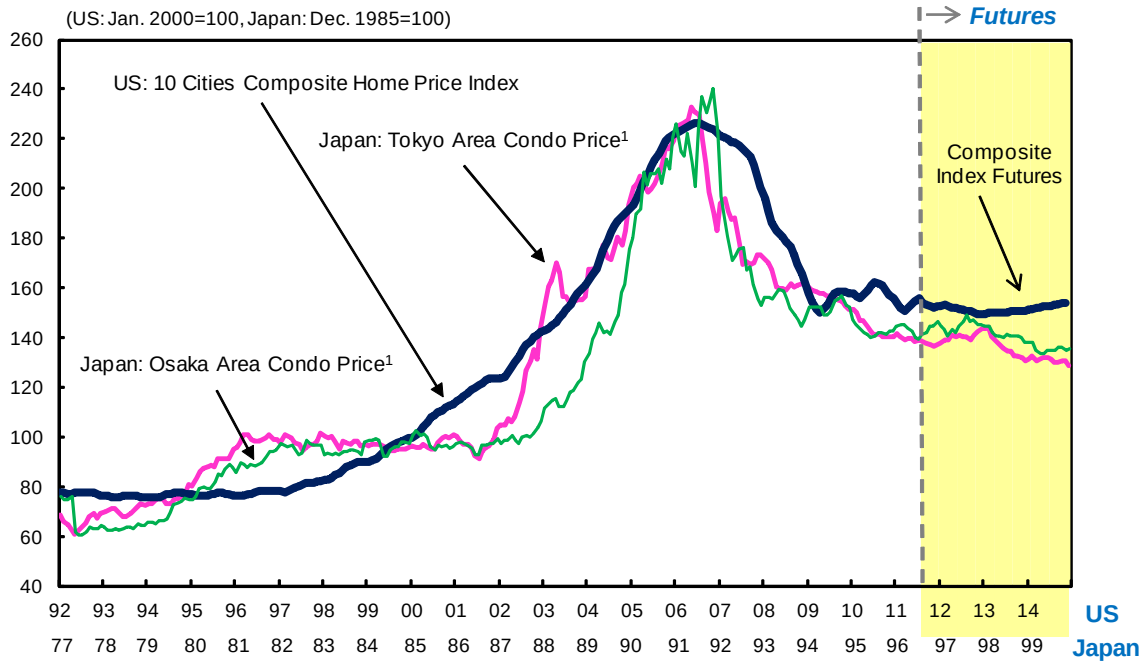
The world in balance sheet recession: causes, cure, and politics

Richard C. Koo (Nomura Research Institute, Tokyo)

A recurring concern in the Western economies today is that they may be headed toward a Japan-like lost decade. Remarkable similarities between house price movements in the U.S. this time and in Japan 15 years ago, illustrated in Exhibit 1, suggest that the two countries have indeed contracted a similar disease. The post-1990 Japanese experience, however, also demonstrated that the nation's recession was no ordinary recession.

Exhibit 1. US Housing Prices Mirror Japan's Experience



Note: per m^2, 5-month moving average
Sources: Bloomberg, Real Estate Economic Institute, Japan, S&P, S&P/Case-Shiller® Home Price Indices, as of Oct. 5, 2011

Recession driven by deleveraging leads to prolonged slump

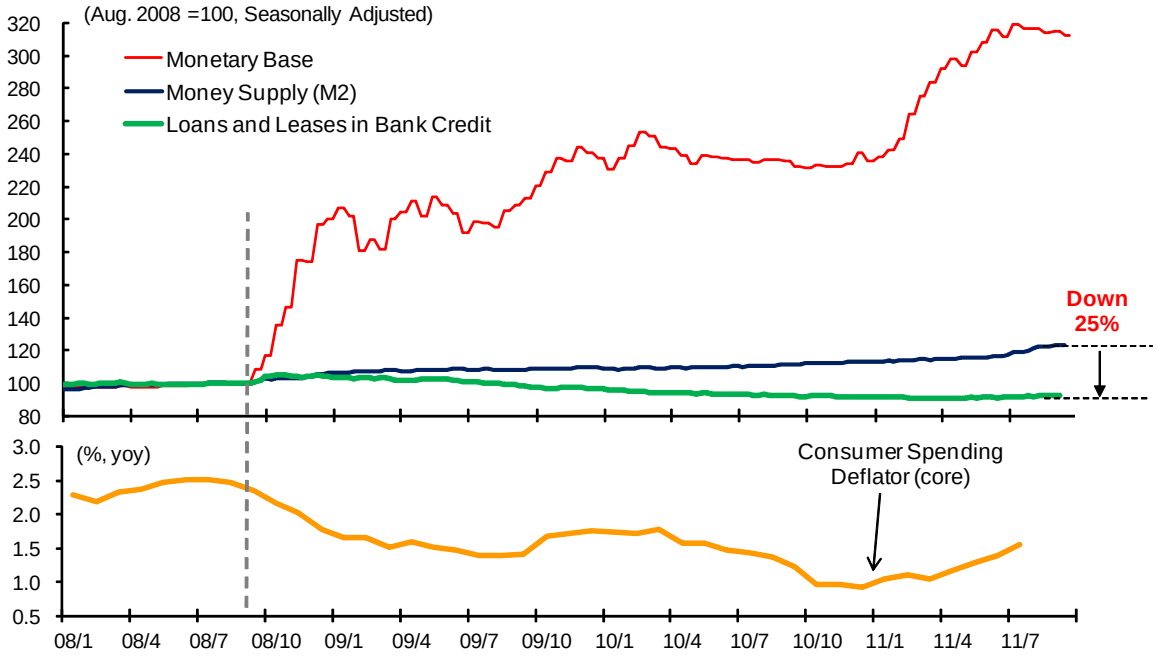
The key difference between an ordinary recession and one that can produce a lost decade is that in the latter, a large portion of the private sector is actually *minimizing debt* instead of maximizing profits following the bursting of a nation-wide asset price bubble. When a debt-financed bubble bursts, asset prices collapse while liabilities remain, leaving millions of private sector balance sheets underwater. In order to regain their financial health and credit ratings, households and businesses are forced to repair their balance sheets by increasing savings or paying down debt. This act of deleveraging reduces aggregate demand and throws the economy into a very special type of recession.

The first casualty of this shift to debt minimization is monetary policy, the traditional remedy for recessions, because people with negative equity are not interested in increasing borrowing at any interest rate. Nor will there be many willing lenders for those with impaired balance sheets, especially when the lenders themselves have balance sheet problems. Moreover, the money supply, which consists mostly of bank deposits, contracts when the private sector collectively draws down bank deposits to repay debt. Although the central bank can inject liquidity into the banking system, it will be hard-pressed to reverse the shrinkage of bank deposits when there are no borrowers and the money multiplier is zero or negative at the margin.

As shown in Exhibits 2 and 3, massive injections of liquidity by both the Federal Reserve in the US and the Bank of England in the UK not only failed to prevent contractions in credit available to the private sector, but also produced only miniscule increases in the money supply. This is exactly what happened to Japan after the bursting of its bubble in 1990, as shown in Exhibit 4.

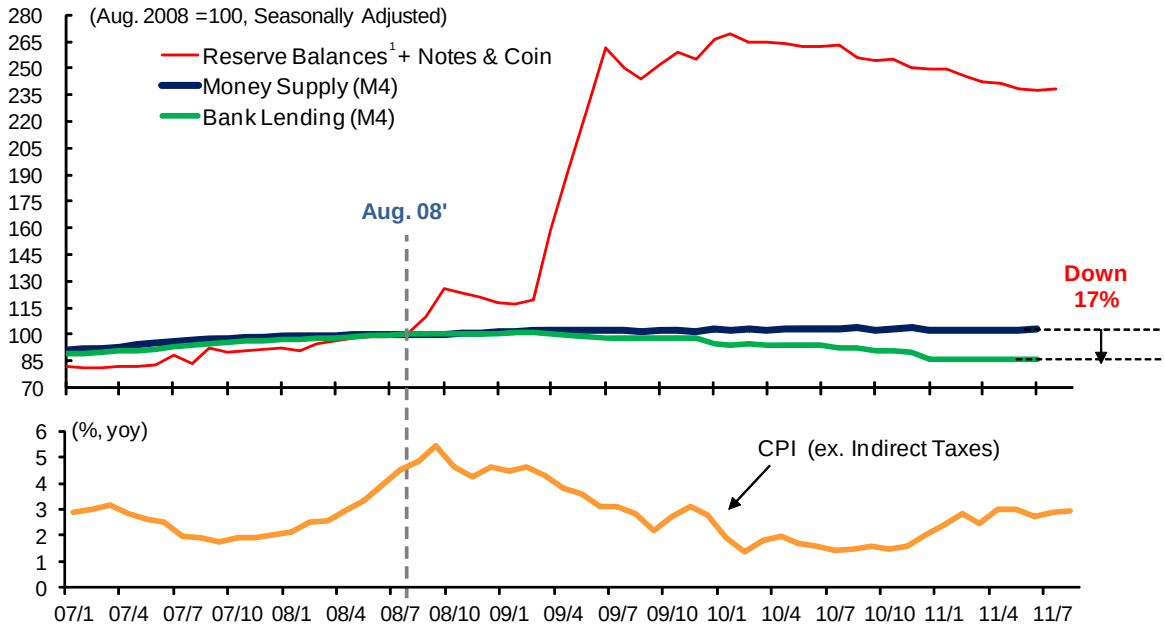
Nor is there any reason why bringing back inflation or inflation targeting should work, because people are paying down debt in response to the fall in *asset* prices, not consumer prices. And with the money multiplier negative at the margin, the central bank does not have the means to produce the money supply growth needed to increase the inflation rate.

Exhibit 2. Drastic Liquidity Injection Failed to Increase Money Supply (I): US



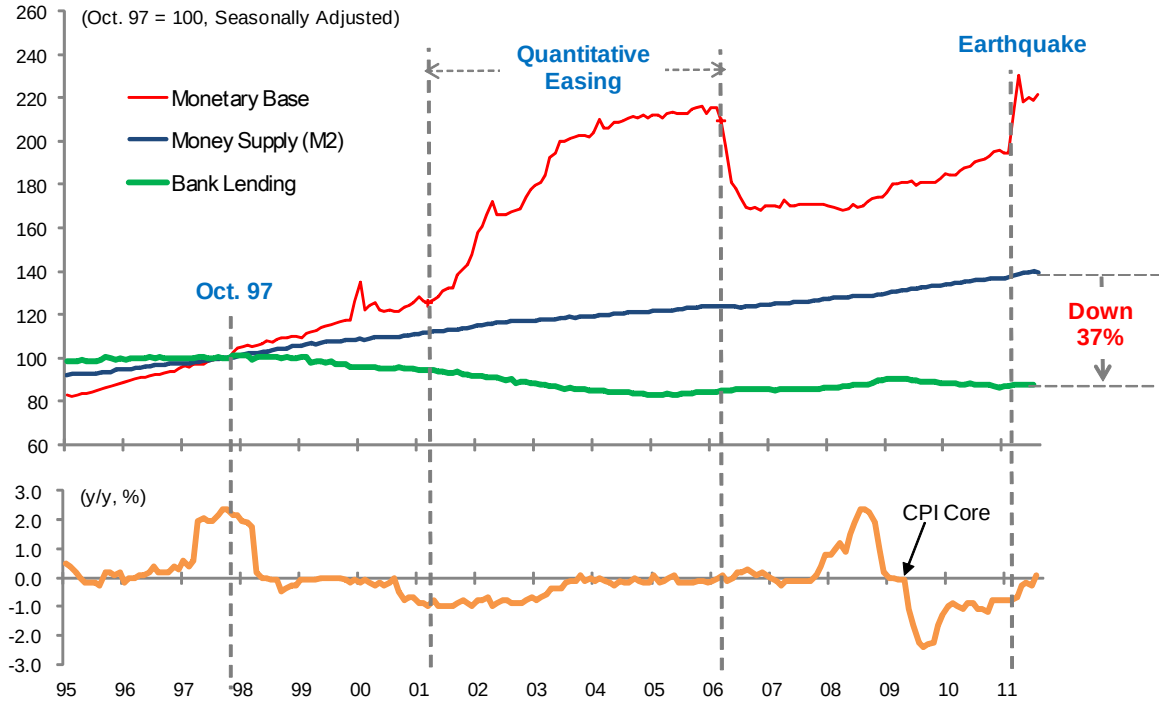
Sources: Board of Governors of the Federal Reserve System, US Department of Commerce
Note: Commercial bank loans and leases, adjustments for discontinuities made by Nomura Research Institute.

Exhibit 3. Drastic Liquidity Injection Failed to Increase Money Supply (II): UK



Sources: Bank of England, Office for National Statisics, UK
Notes: 1. Reserve Balances data are seasonally unadjusted. 2. Money supply and bank lending data exclude intermmediate financial institutions.

Exhibit 4. Drastic Liquidity Injection Failed to Increase Money Supply (III): Japan



Note: Bank lending are seasonally adjusted by Nomura Research Institute.
Source: Bank of Japan

More importantly, when the private sector deleverages in spite of zero interest rates, the economy enters a deflationary spiral because, in the absence of people borrowing and spending money, the economy *continuously* loses demand equal to the sum of savings and

net debt repayments. This process will continue until either private sector balance sheets are repaired or the private sector has become too poor to save (i.e., the economy enters a depression).

To see this, consider a world where a household has an income of $1,000 and a savings rate of 10 percent. This household would then spend $900 and save $100. In the usual or textbook world, the saved $100 will be taken up by the financial sector and lent to a borrower who can best use the money. When that borrower spends the $100, aggregate expenditure totals $1,000 ($900 plus $100) against original income of $1,000, and the economy moves on. When demand for the $100 in savings is insufficient, interest rates are lowered, which usually prompts a borrower to take up the remaining sum. When demand is excessive, interest rates are raised, prompting some borrowers to drop out.

In the world where the private sector is minimizing debt, however, there are no borrowers for the saved $100 even with interest rates at zero, leaving only $900 in expenditures. That $900 represents someone's income, and if that person also saves 10 percent, only $810 will be spent. Since repairing balance sheets after a major bubble bursts typically takes many years—15 years in the case of Japan—the saved $90 will go un-borrowed again, and the economy will shrink to $810, and then $730, and so on.

This is exactly what happened during the Great Depression, when everyone was paying down debt and no one was borrowing and spending. From 1929 to 1933, the U.S. lost 46 percent of its GDP mostly because of this debt-repayment-induced deflationary spiral. It was also largely for this reason that the U.S. money supply shrank by nearly 30 percent during the four-year period.

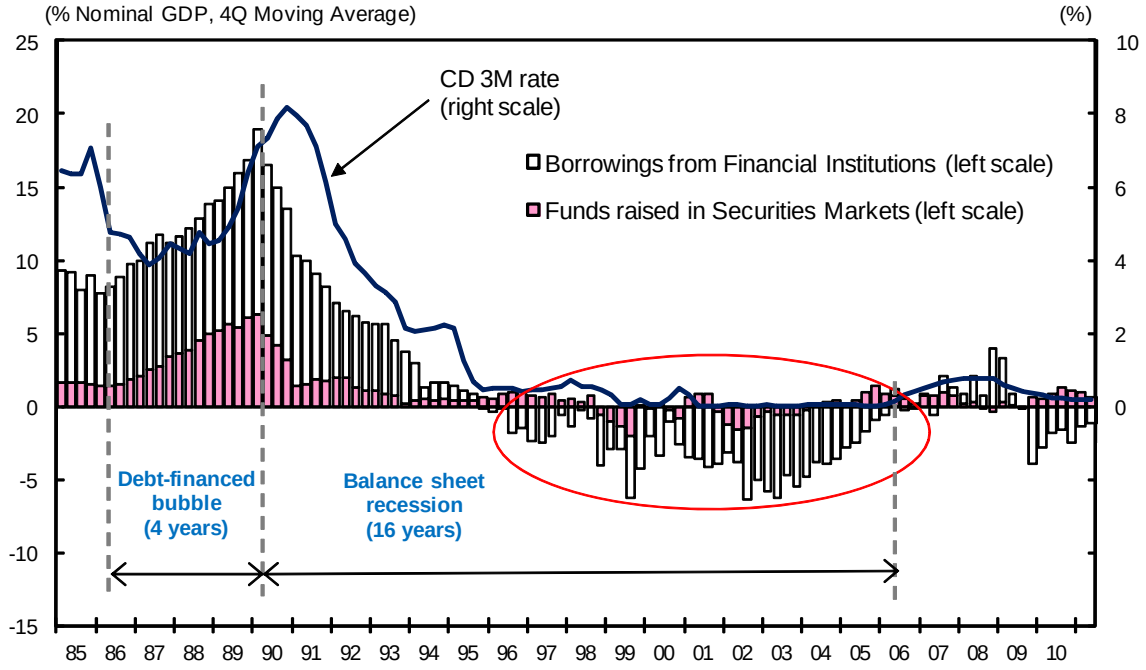
The discussion above suggests that there are at least two types of recessions: those triggered by the usual business cycle and those triggered by private sector deleveraging or debt minimization. Since the economics profession never considered the latter type of recession, there is no name for it in the literature. In order to distinguish this type of recession from ordinary recessions, it is referred to here as a *balance sheet recession.* Like nationwide debt-financed bubbles, balance sheet recessions are rare and, left untreated, will ultimately develop into a depression.

Significance of Japanese experience

Japan faced a balance sheet recession following the bursting of its bubble in 1990 as commercial real estate prices fell 87 percent nationwide. The resulting loss of national wealth in shares and real estate alone was equivalent to three years of 1989 GDP. In comparison, the U.S. lost national wealth equivalent to one year of 1929 GDP during the Great Depression. Japan's corporate sector responded by shifting from its traditional role as a large borrower of funds to a massive re-payer of debt, as shown in Exhibit 5. The net debt repayment of the corporate sector increased to more than 6 percent of GDP a year. And this was on top of household savings of over 4 percent of GDP a year, all with interest rates at zero. In other words, Japan could have lost 10 percent of GDP every year, just as the US did during the Great Depression.

Exhibit 5. Japan's Deleveraging under Zero Interest Rates Lasted for 10 Years

Funds Raised by Non-Financial Corporate Sector



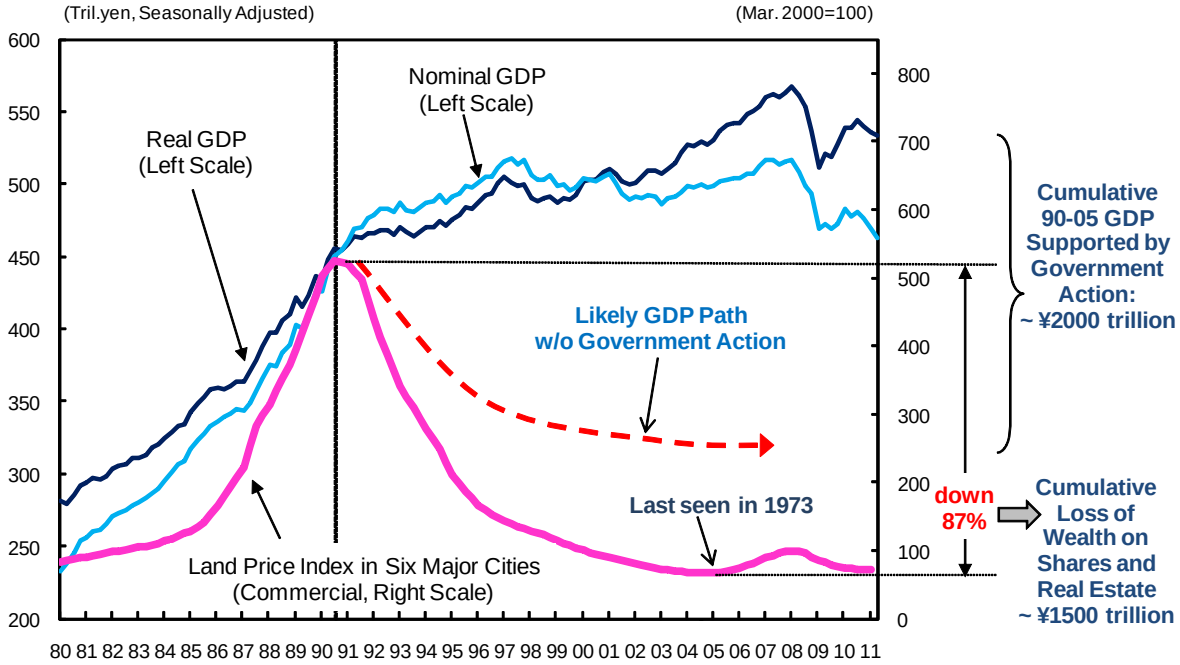
Sources: Bank of Japan, Cabinet Office, Japan

Japan managed to avoid a depression, however, because the government borrowed and spent the aforementioned $100 every year, thereby keeping the economy's expenditures at $1,000 ($900 in household spending plus $100 in government spending). In spite of a massive loss of wealth and private sector deleveraging reaching over 10 percent of GDP per year, Japan managed to keep its GDP above the bubble peak throughout the post-1990 era (Exhibit 6), and the unemployment rate never climbed above 5.5 percent.

This government action maintained incomes in the private sector and allowed businesses and households to pay down debt. By 2005 the private sector had completed its balance sheet repairs.

Although this fiscal action increased government debt by 460 trillion yen or 92 percent of GDP during the 1990–2005 period, the amount of GDP preserved by fiscal action compared with a depression scenario was far greater. For example, if we assume, rather optimistically, that without government action Japanese GDP would have returned to the pre-bubble level of 1985, the difference between this hypothetical GDP and actual GDP would be over 2,000 trillion yen for the 15-year period. In other words, Japan spent 460 trillion yen to buy 2,000 trillion yen of GDP, making it a tremendous bargain. And because the private sector was deleveraging, the government's fiscal actions did not lead to crowding out, inflation, or skyrocketing interest rates.

Exhibit 6. Japan's GDP Grew despite Massive Loss of Wealth and Private Sector Deleveraging

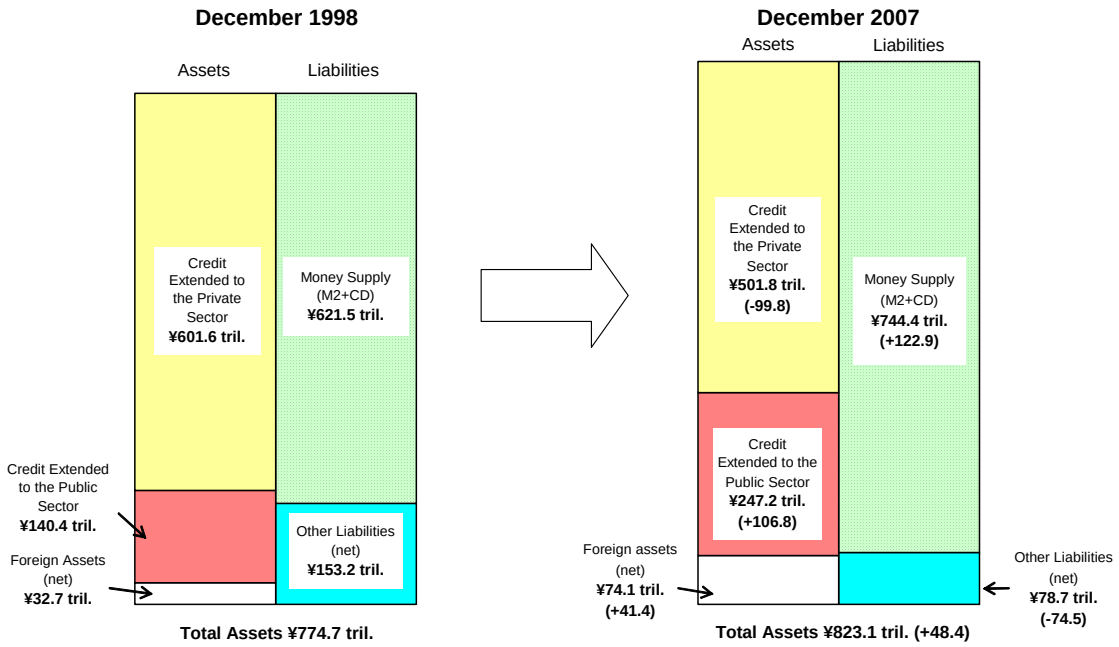


Sources: Cabinet Office, Japan Real Estate Institute

Post-1990 Japan also managed to keep its money supply from falling in spite of private sector deleveraging because government borrowing took the place of private sector borrowing and prevented a contraction of banks' assets. This is shown in Exhibit 7. The post-1933 U.S. money supply also stabilized and started growing again because the Roosevelt Administration began borrowing money aggressively for its New Deal programs, as shown in Exhibit 8.

Exhibit 7. Japan's Money Supply Has Been Sustained by Government Borrowings

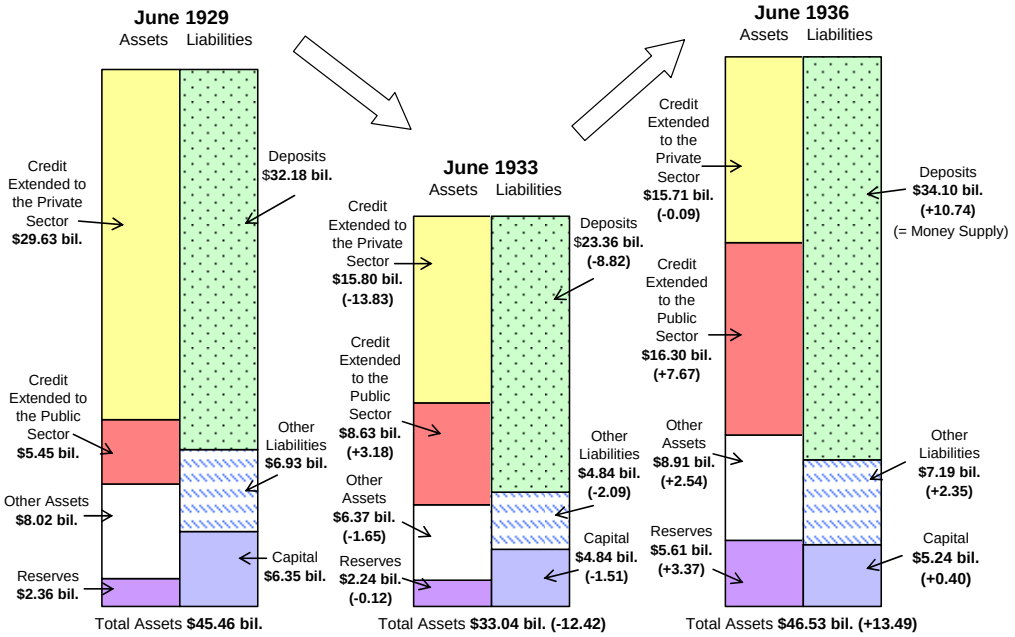
Balance Sheets of Banks in Japan



Source: Bank of Japan "Monetary Survey"

Exhibit 8. Post-1933 US Money Supply Growth Was also Made Possible by Government Borrowings

Balance Sheets of All Member Banks



Source: Board of Governors of the Federal Reserve System (1976) *Banking and Monetary Statistics 1914-1941* pp.72-79

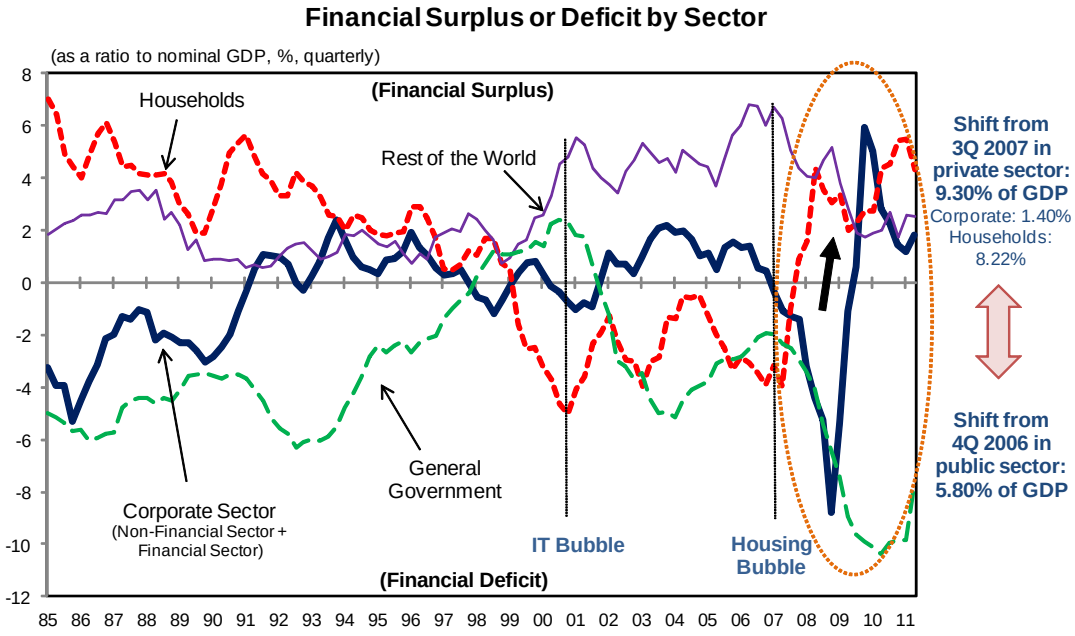
Many authors have argued that it was monetary policy that led to the post-1933 U.S. recovery, but they all failed to look at the asset side of banks' balance sheets. From 1933 to 1936, only lending to the government increased, while lending to the private sector did not increase at all. And lending to the government increased because the government had to finance the New Deal programs. Both of the examples above indicate that fiscal stimulus is essential in keeping both GDP *and* the money supply from contracting during a balance sheet recession.

The world in balance sheet recession

Today private sectors in the U.S., the U.K., Spain, and Ireland (but not Greece) are undergoing massive deleveraging in spite of record low interest rates. This means these countries are all in serious balance sheet recessions. The private sectors in Japan and Germany are not borrowing, either. With borrowers disappearing and banks reluctant to lend, it is no wonder that, after nearly three years of record low interest rates and massive liquidity injections, industrial economies are still doing so poorly.

Flow of funds data for the U.S. (Exhibit 9) show a massive shift away from borrowing to savings by the private sector since the housing bubble burst in 2007. The shift for the private sector as a whole represents over 9 percent of U.S. GDP at a time of zero interest rates. Moreover, this increase in private sector savings exceeds the increase in government borrowings (5.8 percent of GDP), which suggests that the government is not doing enough to offset private sector deleveraging.

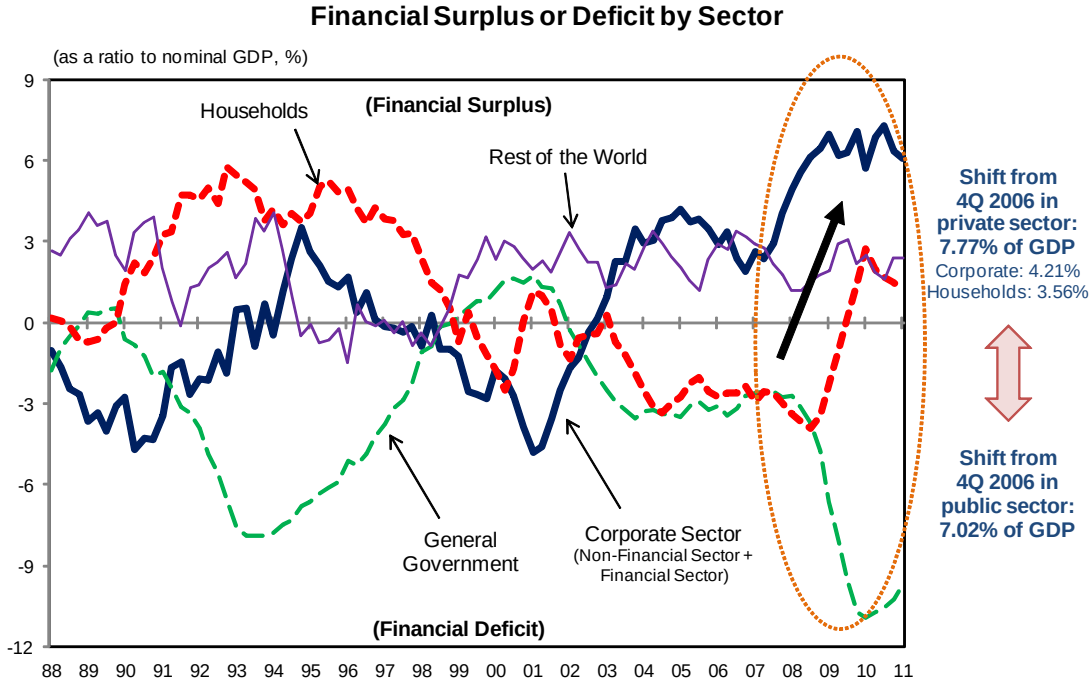
Exhibit 9. U.S. in Balance Sheet Recession: U.S. Private Sector Increased Savings Massively after the Bubble



Note: For figures, 4 quarter averages ending with 2Q/11' are used.
Sources: FRB, US Department of Commerce

Flow of funds data for the U.K. (Exhibit 10) tell the same story, with the growth in private savings (7.7 percent of GDP) exceeding the increase in government deficit (7.0 percent of GDP). Once again, this means the UK government is not doing enough to stabilize the economy by offsetting private sector deleveraging.

Exhibit 10. U.K. in Balance Sheet Recession:
Massive Increase in Private Savings after the Bubble

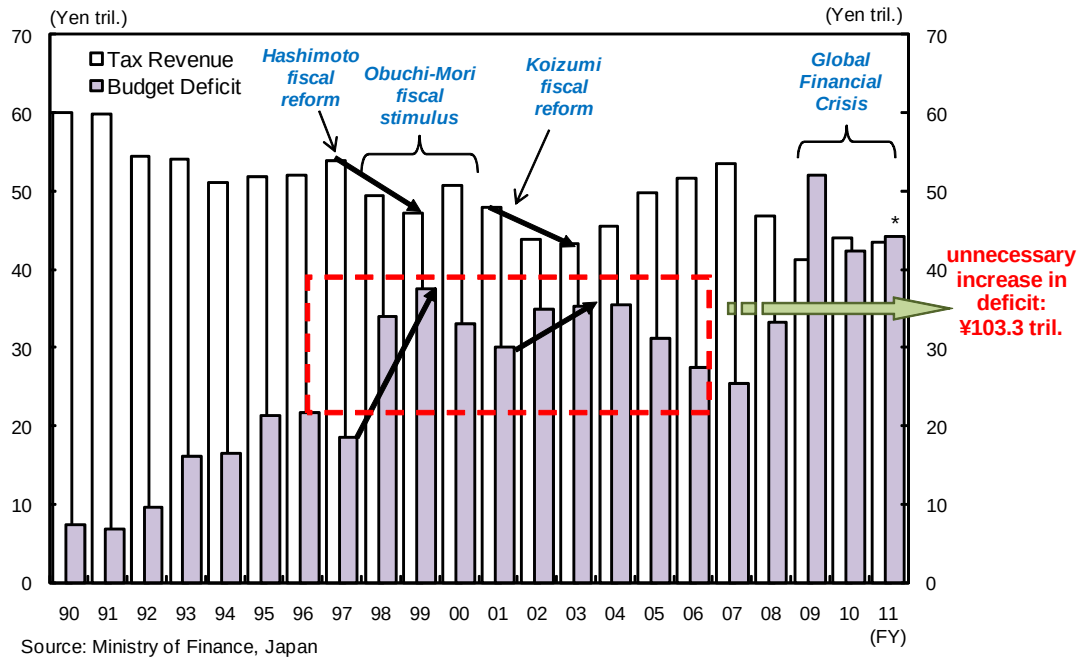


Note: For figures, 4 quarter averages ending with 1Q/11' are used.
Source: Office for National Statistics, UK

Yet policymakers in both countries, spooked by the events in Greece, have pushed strongly to cut budget deficits, with the U.K. pushing harder than the U.S. Although shunning fiscal profligacy is the right approach when the private sector is healthy and is maximizing profits, nothing is worse than fiscal consolidation when a sick private sector is minimizing debt. Removing government support in the midst of private sector deleveraging is equivalent to removing the aforementioned $100 from the economy's income stream, and that will trigger a deflationary spiral as the economy shrinks from $1,000 to $900 to $810.

Unfortunately, the proponents of fiscal consolidation are only looking at the growth in the fiscal deficit while ignoring even bigger increases in private sector savings. Indeed these governments are repeating the Japanese mistake of premature fiscal consolidation in 1997 and 2001, which in both cases triggered a deflationary spiral and ultimately *increased* the deficit (Exhibit 11).

Exhibit 11. Premature Fiscal Reforms in 1997 and 2001 Weakened Economy, Reduced Tax Revenue and Increased Deficit



Source: Ministry of Finance, Japan
*: estimated by MOF

The mistake in 1997, for example, resulted in five quarters of negative growth and increased the deficit by 68 percent, from 22 trillion yen in 1996 to 38 trillion yen in 1999. It took Japan 10 years to climb out of the hole created by this policy error. Japan would have come out of its balance sheet recession much faster and at a significantly lower cost than the 460 trillion yen noted above had it not implemented austerity measures on those two occasions. The U.S. made the same mistake of premature fiscal consolidation in 1937, with equally devastating results.

Except for certain countries in the eurozone which will be discussed below, there is no reason why a government should face financing problems during a balance sheet recession. The amount of money it must borrow and spend to avert a deflationary spiral is exactly equal to the un-borrowed and un-invested savings in the private sector (the $100 mentioned above) that is sitting somewhere in the financial system.

With very few viable borrowers left in the private sector, fund managers who must invest in fixed income assets without foreign exchange risk have no choice but to lend to the government, which is the last borrower standing. Although deficit hawks pushing for fiscal consolidation often talk about "bond market vigilantes," the fact that 10-year bond yields in the U.S. and U.K. today are only around 2 percent—unthinkably low given fiscal deficits of nearly ten percent of GDP—indicates that bond market participants are aware of the nature and dynamics of balance sheet recessions. Indeed bond yields in the U.S. and U.K. today are equivalent to Japanese bond yields in 1997.

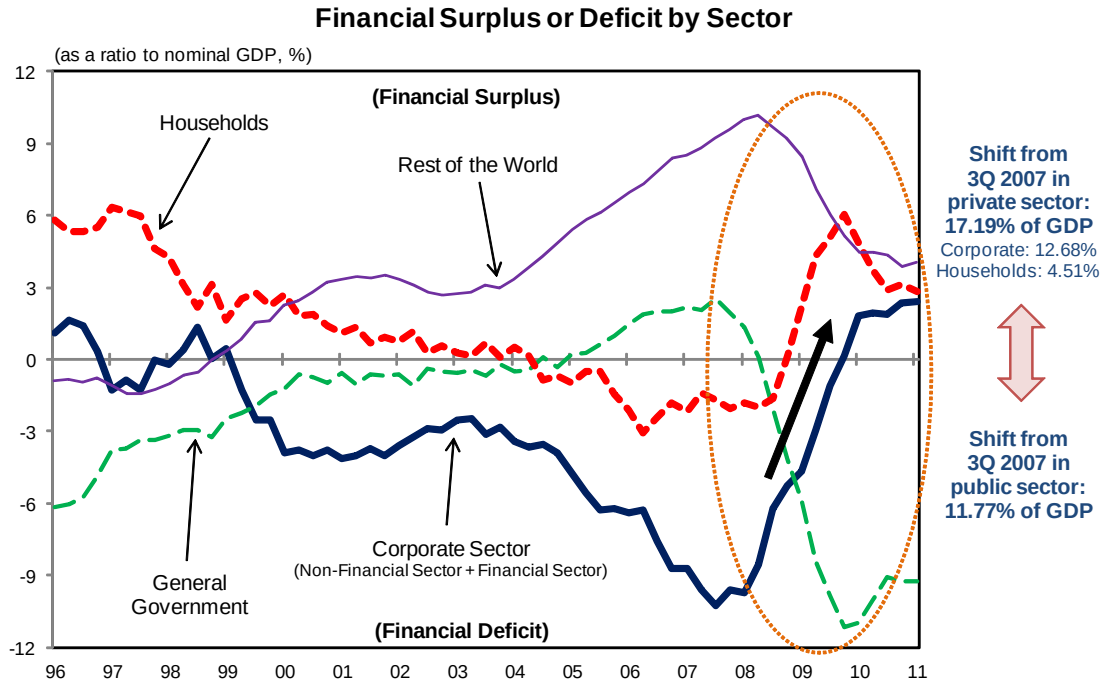
Reason for eurozone debt crisis

While western economies experience balance sheet recessions and most government bond yields fall to historic lows, investors continue to demand high yields to hold the debt of eurozone countries like Spain and Ireland. The reason behind this phenomenon is a factor unique to the eurozone: fixed-income fund managers can buy government bonds issued by *other* eurozone countries without taking on any exchange rate risk. If they grow worried about their own government's fiscal position, they can simply buy other governments' debt.

Spain and Ireland, for instance, are both in serious balance sheet recessions, with private sector deleveraging reaching 17 percent of GDP in Spain (Exhibit 12) and a whopping 21 percent of GDP (Exhibit 13) in Ireland, all under record low interest rates. Indeed the entire eurozone is in a balance sheet recession (Exhibit 14). Even though this means there is huge pool of private sector savings available in these countries, Spanish and Irish pension fund managers who do not like their own countries' debt can easily buy German government bonds. That leaves the governments of both Spain and Ireland unable to tap their own private savings surpluses to fight the balance sheet recessions.

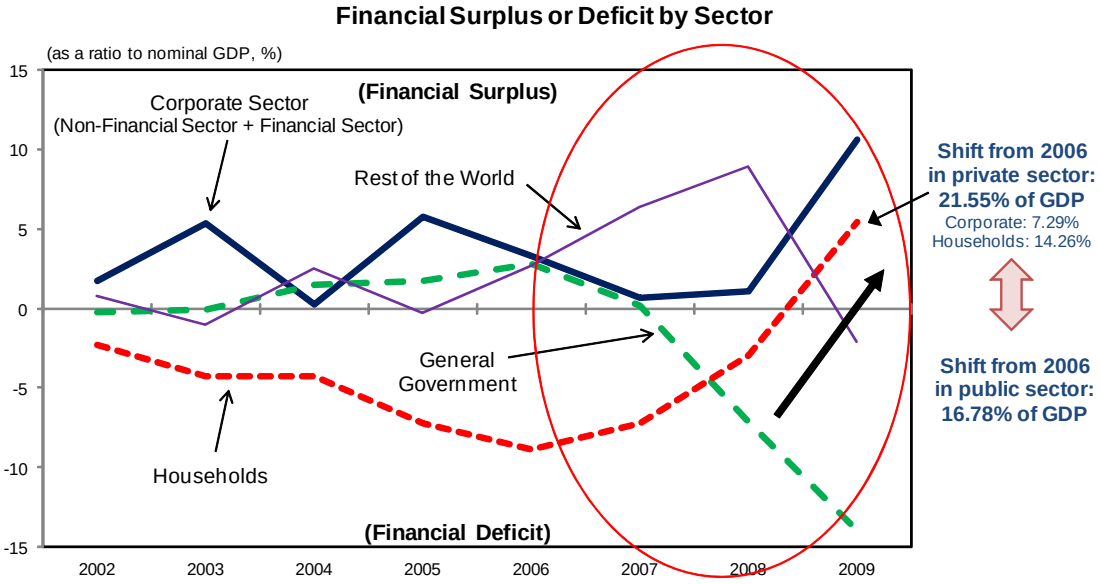
If the governments of countries like Germany and the Netherlands actively borrow and spend the money flowing in from Spain and Ireland, that will sustain economic activity in the broader eurozone economy and have a positive impact on Spain and Ireland as well. Unfortunately, the governments of Germany and the Netherlands are focused entirely on deficit-reduction efforts in a bid to observe the 3% ceiling on budget deficits prescribed by the Maastricht Treaty.

Exhibit 12. Spain in Balance Sheet Recession:
Massive Increase in Private Savings after the Bubble



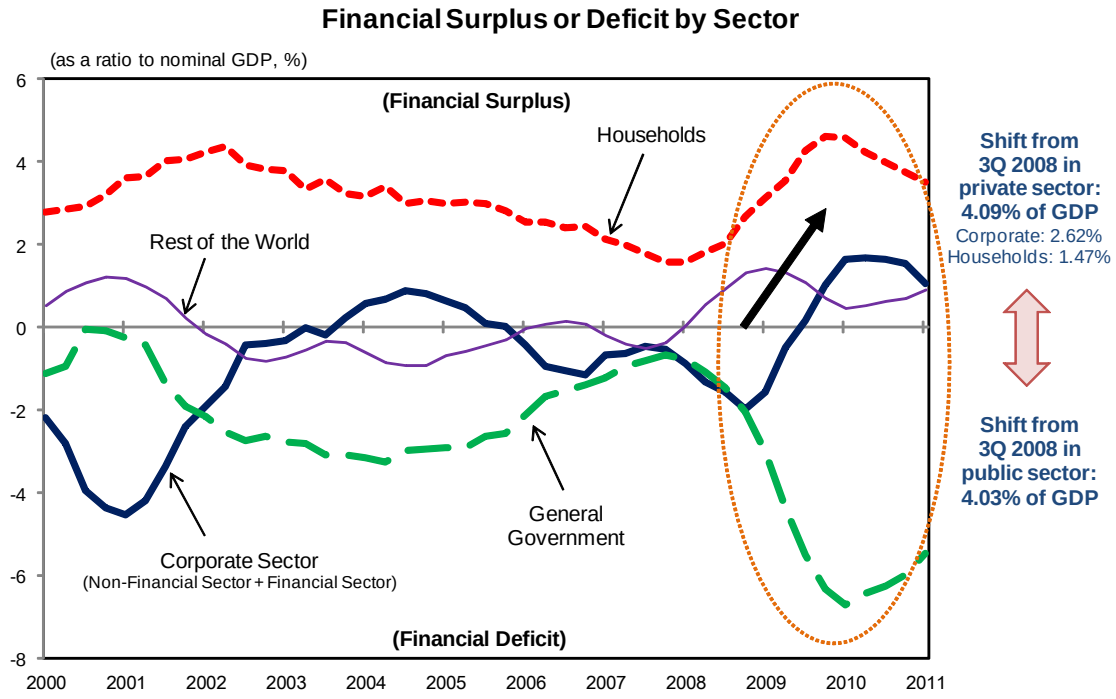
Note: For figures, 4 quarter averages ending with 1Q/11' are used.
Source: Banco de España

Exhibit 13. Ireland in Balance Sheet Recession:
Massive Increase in Private Savings after the Bubble



Sources: Eurostat, Central Statistics Office, Ireland

Exhibit 14. Eurozone in Balance Sheet Recession:
Massive Increase in Private Savings after the Bubble



Note: For figures, 4 quarter averages ending with 1Q/11' are used.
Source: ECB

Countries in balance sheet recessions such as Spain are desperately in need of fiscal stimulus but are unable to take advantage of the rapid increase in domestic savings and are therefore forced to engage in fiscal consolidation of their own. That causes the aforementioned $100 to be removed from the income steam, prompting a deflationary spiral. And since the countries receiving those savings are not borrowing and spending them, the broader eurozone economy is rapidly weakening. It is no wonder that the Spanish unemployment rate is over 21 percent and Irish GDP has fallen more than 10 percent from its peak.

Fund flows within the eurozone were following the opposite pattern until just a few years ago. Banks in Germany, which had fallen into a balance sheet recession after the telecom bubble collapsed in 2000, aggressively bought the debt of southern European nations, which were denominated in the same currency but offered higher yields than domestic debt. The resulting capital inflows from Germany poured further fuel onto the fire of housing bubbles in these countries.

There is thus a tendency within the eurozone for fund flows to go to extremes. When times are good, funds flow into booming economies in search of higher returns, thereby exacerbating the bubbles. When the bubbles finally burst, the funds shift suddenly to the countries least affected by the boom.

The problem with these shifts is that they are pro-cyclical, tending to amplify swings in the economy. Countries that are in the midst of a bubble and do not need or want additional funds experience massive inflows. Meanwhile, countries facing balance sheet recessions and in need of funds can only watch as money flows abroad, preventing their governments from implementing the fiscal stimulus needed to stabilize the economy.

Solution for Euro: allow only nationals to buy government bonds

One way to solve this eurozone-specific problem of capital shifts would be to prohibit member nations from selling government bonds to investors from other countries. Allowing only the citizens of a nation to hold that government's debt would, for example, prevent the investment of Spanish savings in German government debt. Most of the Spanish savings that have been used to buy other countries' government debt would therefore return to Spain. This would push Spanish government bond yields down to the levels observed in the U.S. and the U.K., thereby helping the Spanish government implement the fiscal stimulus required during a balance sheet recession.

The Maastricht Treaty with its rigid 3 percent GDP limit on budget deficits made no provision for balance sheet recessions. This is understandable given that the concept of balance sheet recessions did not exist when the Treaty was being negotiated in the 1990s. In contrast, the proposed new rule would allow individual governments to pursue autonomous fiscal policies within its constraint. In effect, governments could run larger deficits as long as they could persuade citizens to hold their debt. This would both instill discipline and provide flexibility to individual governments. By internalizing fiscal issues, the new rule would also free the European Central Bank from having to worry about fiscal issues in individual countries and allow it to focus its efforts on managing monetary policy.

In order to maximize efficiency gains in the single market, the new restriction should apply only to holdings of government bonds. German banks should still be allowed to buy Greek private sector debt, and Spanish banks should still be allowed to buy Dutch shares.

In retrospect, this rule should have been in place since the beginning of the euro. If that were the case, none of the problems the eurozone now faces would have materialized. Unfortunately, the euro was allowed to run for more than ten years without the rule, accumulating massive imbalances along the way. It may take many years to undo the damage.

In the meantime, it will be necessary to continue financing certain countries with bonds issued jointly by a body like the European Financial Stability Facility (EFSF). But compared with the present situation, where there is no end-game, the declaration of an end to member state sales of government bonds to other nationals five or ten years from now should help restore confidence in the euro. This is because none of the problems that have plagued the euro up to now would be repeated if the new rule were adopted.

Ending the eurozone's crisis will require a two-pronged approach. First, international bodies like the EU and ECB need to declare that member countries experiencing balance sheet recessions must implement and maintain fiscal stimulus to support the economy until private sector balance sheets are repaired. Second, eurozone member nations must declare that in ten years they will prohibit the sale of government debt to anyone other than their own nationals.

The first prescription would provide the international organizations' seal of approval for the fiscal stimulus needed to stabilize economies afflicted by balance sheet recessions, while the second would prohibit savings in countries like Spain from being invested in German

government bonds. Without these two "game changers," forcing eurozone nations in balance sheet recessions to engage in fiscal consolidation will simply make the problem worse.

Unfortunately, both ECB President Jean-Claude Trichet and BOE Chairman Mervyn King are still pushing for additional fiscal retrenchment. Among international organizations, only the IMF appears to have recognized the need for fiscal stimulus in countries facing balance sheet recessions.

Difficulty of maintaining fiscal stimulus in democracies

Federal Reserve Chairman Ben Bernanke understands the risk of balance sheet recessions and has been warning since early 2010 that now is not the time to engage in fiscal consolidation. Given that he was once a believer in the omnipotence of monetary policy, this represents a dramatic change of heart. Unfortunately, he and National Economic Council Chairman Gene Sperling are the only two officials openly pushing for fiscal stimulus: everyone else, including President Obama himself at times, seems to be in favor of fiscal consolidation. But with the U.S. private sector still deleveraging massively in spite of zero interest rates, nothing is potentially more dangerous for the U.S. economy than premature fiscal consolidation.

More broadly, recent developments in Washington, London, Madrid and other western capitals have proven that it is extremely difficult to maintain fiscal stimulus in a democracy during peacetime. This is a crucial problem during a balance sheet recession because fiscal stimulus must be maintained for the duration of the private sector deleveraging process in order to minimize both the length and the final fiscal cost of the recession. Unfortunately, in most democracies fiscal hawks are out in numbers demanding an end to fiscal stimulus as soon as the economy shows the first signs of life.

For example, many on both sides of the Atlantic have grown complacent after seeing certain economic and market indicators improve from their trough in the first half of 2009. The stock market, for example, was up nearly 60 percent at one point. Industrial production, which fell back to the level of 1998 in the U.S. and to the level of 1997 in the eurozone following the Lehman collapse, climbed back to the level of 2005 on both sides of the Atlantic, although it remains far below the peak levels of 2007.

This "recovery" has prompted a huge backlash from the Republican and Tea Party opposition in the U.S. seeking immediate fiscal consolidation. They argue that big government is bad government and that pork-barrel fiscal stimulus is costing future generations billions if not trillions. In the U.K., the Brown government, which implemented fiscal stimulus in 2009, was promptly voted out of office and replaced with the fiscal hawks of the Cameron government. In the eurozone, fiscal consolidation is now the only game in town. Even in Japan, the new DPJ government is pushing for a tax hike to pay for reconstruction work in the wake of the March 11th earthquake-tsunami-nuclear power plant disaster.

As a result of this backlash from fiscal hawks, the fiscal stimuli implemented by these countries in response to the Lehman–induced financial crisis are being allowed to expire. Private sector deleveraging, on the other hand, continues unabated at alarmingly high levels in all of these countries. Consequently, all of these economies are decelerating if not contracting altogether.

If the contraction appears serious and painful enough, the governments are likely to implement further fiscal stimulus, only to be forced back into fiscal consolidation once the stimulus breathes life back into the economy. This pattern of on-again, off-again fiscal stimulus is the reason why it took Japan 15 years to climb out of its own balance sheet recession. As shown in Exhibit 11, this policy zigzag, especially the austerity initiatives in 1997 and 2001, prolonged the recession by at least five years if not longer and added at least $1 trillion to the public debt unnecessarily. This policy zigzag also caused the disastrous collapse of the US economy in 1937.

Something else that slows down the implementation of fiscal stimulus in a democracy is the issue of how the money should be spent. As the previous example of 460 trillion yen in fiscal stimulus buying 2,000 trillion yen in Japanese GDP during the 1990–2005 period demonstrates, how the money is spent is largely irrelevant during a balance sheet recession: the important thing is *that* the money be spent.

In a democracy, however, where most people see only the trees and not the forest, even those few political leaders who understand the need for stimulus end up arguing endlessly about which projects the money should be spent on. In the meantime, the economy continues to shrink in the $1,000-to-$900-to-$810 deflationary spiral described above. Only during wartime, when it is obvious where the money should be spent, can democracies implement and sustain the kind of fiscal stimulus needed to overcome a balance sheet recession in the shortest possible time.

Even those who manage to prevent an economic meltdown by implementing necessary fiscal stimulus *before* the crisis are likely to be bashed instead of praised by the public. This is because the general public typically cannot envision what might have happened in the absence of fiscal stimulus. Seeing only a large deficit and no crisis, they assume the money must have been wasted on useless projects. That is exactly what happened to Liberal Democratic politicians in Japan, President Barack Obama in the U.S. and former Prime Minister Gordon Brown in the U.K. Although their actions saved their economies from devastating deflationary spirals, they were bashed because the public is unable to contemplate the counterfactual scenario. The man or woman who prevents a crisis never becomes a hero. For a hero to emerge we must first have a crisis, as Hollywood movies will attest.

It has also become popular in some circles to talk about medium-term fiscal consolidation while pushing for a short-term fiscal stimulus. Although this sounds responsible at one level, it is totally irresponsible at another. When the private sector is deleveraging in spite of zero interest rates, a condition that has never been anticipated in the economics or business literature, it is safe to assume that the private sector is very sick. Talking about medium-term consolidation in this environment is like asking a seriously injured person just admitted to an intensive care unit whether she can afford the expensive treatment needed. If asked this question enough times, the patient may become so depressed and discouraged that her condition will actually worsen, ultimately resulting in an even larger medical bill.

It has become commonplace to talk about the so-called policy duration effect of monetary policy. The July 2011 announcement by the Fed that it will not raise interest rates until well into 2013 was a prime example of maximizing this effect. For some reason, however, we hear nothing about the policy duration effect of fiscal policy. Talk of medium-term fiscal consolidation effectively *minimizes* the policy duration effect of whatever fiscal

stimuli that are still in place, which in a sense is highly irresponsible. Since the patient must be cured somehow, the government should work to maximize the policy duration effect of both monetary and fiscal policies in order to minimize the final cost of treatment. It is never a good idea to depress both the brakes and the accelerator at the same time.

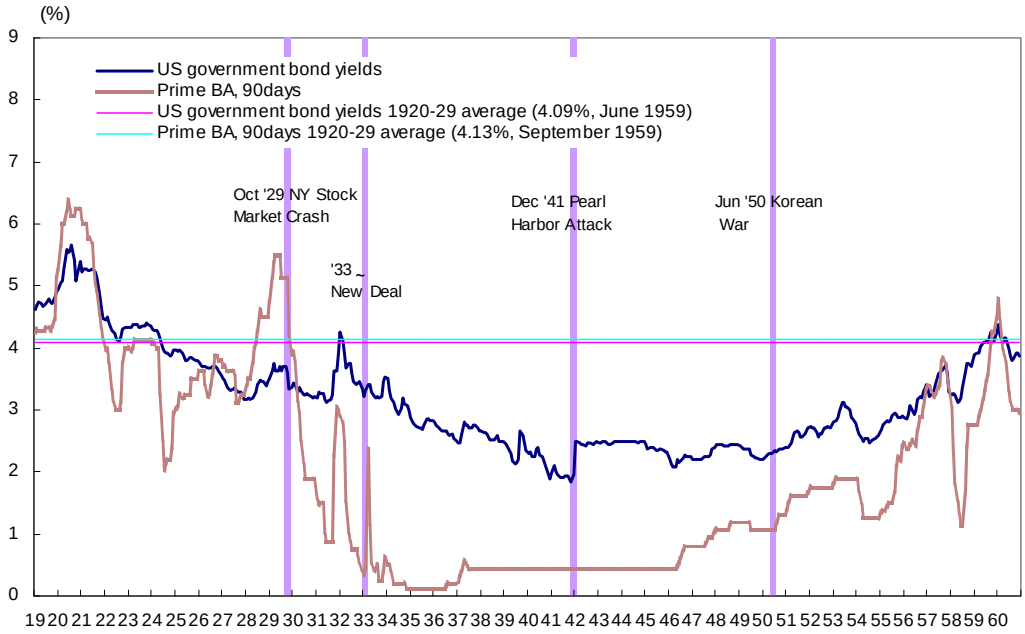
The above reality, together with the recent push for fiscal consolidation in Western capitals, suggests that it is difficult to maintain fiscal stimulus in a democracy during peacetime. Recovering from a balance sheet recession will therefore take a long time in a democracy.

"Exit problem" in balance sheet recessions

The long time required for the economy to pull out of a balance sheet recession means the private sector must spend many painful years paying down debt. That in turn brings about a debt "trauma" of sorts in which the private sector refuses to borrow money even after its balance sheet is fully repaired. This trauma may take years if not decades to overcome. But until the private sector is both willing and able to borrow again, the economy will be operating at less than full potential and may require continued fiscal support from the government to stay afloat. Overcoming this trauma may be called the "exit problem."

In Japan, where the private sector has grown extremely averse to borrowing after its bitter experience of paying down debt from 1990 to 2005, businesses are not borrowing money in spite of willing lenders and the lowest interest rates in human history. As a result, the 10-year government bond is yielding only around 1 percent even though government debt amounts to nearly 200 percent of GDP.

Exhibit 15. Exit Problem: U.S. Took 30 Years to Normalize Interest Rates after 1929 because of Aversion to Borrowing



Source: FRB, *Banking and Monetary Statistics 1914-1970 Vol.1,* pp.450-451 and 468-471, Vol.2, pp.674-676 and 720-727

After the U.S. private sector's devastating experience of paying down debt during the Great Depression, the same aversion to borrowing kept interest rates unusually low for a full

thirty years, until 1959 (Exhibit 15). The fact that it took the U.S. three decades to bring interest rates back up to 4 percent even with massive fiscal stimuli in the form of the New Deal and World War II suggests the severity of the trauma. Indeed many of those Americans forced to pay down debt during the Depression never borrowed again.

The experiences of post-1929 US and post-1990 Japan suggest that interest rates will remain low for a very long time even after private sector balance sheets are repaired. The governments of countries facing exit problems should therefore introduce incentives for businesses to borrow. Such incentives, which may include investment tax credits and accelerated depreciation allowances, should be exceptionally generous in order to attract private sector attention. The sooner the trauma is overcome, the sooner the government can embark on fiscal consolidation. The generosity will more than pay for itself once the private sector trauma is overcome.

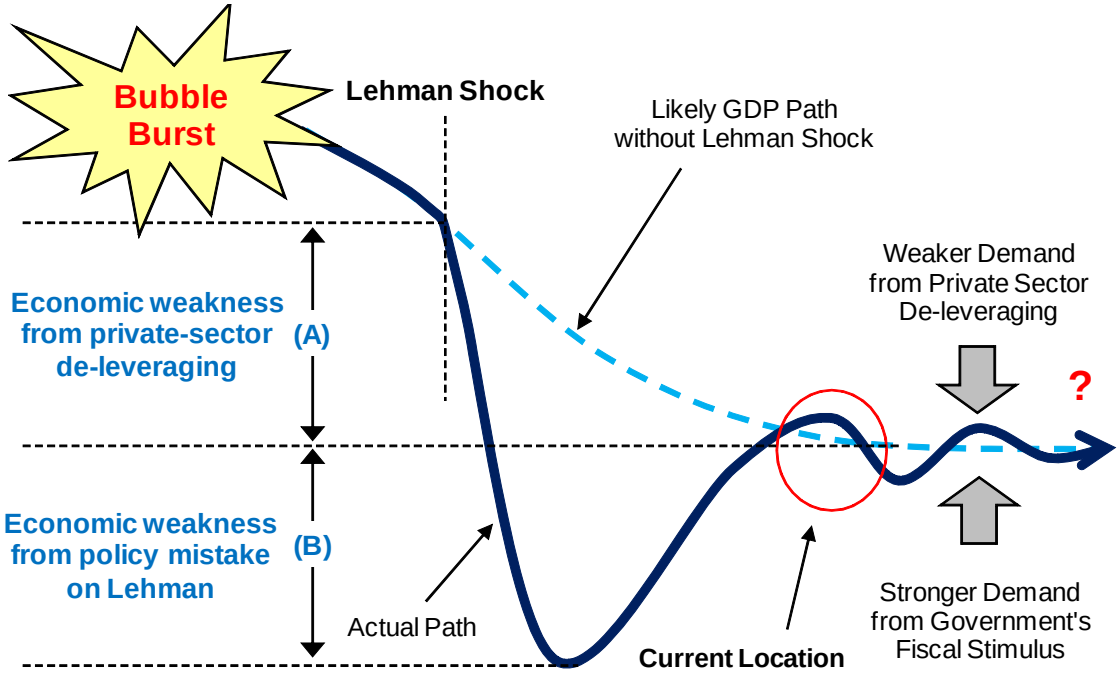
Ending panic was the easy part; rebuilding balance sheets is the hard part

A distinction should also be drawn between balance sheet recessions and financial crises, since both are present in the post-Lehman debacle. The former is a borrower's phenomenon, while the latter is a lender's phenomenon. This distinction is important because the economic "recovery" starting in 2009 has been largely limited to a recovery from the policy mistake of allowing Lehman Brothers to fail. The collapse of Lehman sparked a global financial crisis that weakened the economy far more severely and rapidly than what would have been suggested by balance sheet problems alone.

Unlike balance sheet recessions, in which monetary policy is largely impotent, financial crises can and must be addressed by the monetary authorities. Available tools include liquidity infusions, capital injections, explicit and implicit guarantees, lower interest rates and asset purchases. According to IMF figures, the Federal Reserve, together with governments and central banks around the world, injected some $8.9 trillion in liquidity and guarantees for this purpose in the wake of the Lehman shock.
The Lehman panic was caused by the government's decision not to safeguard the liabilities of a major financial institution when so many institutions had similar problems. Consequently, the panic dissipated when the authorities moved to safeguard those liabilities. That was the "recovery" observed in some quarters since the spring of 2009.

Although the panic has subsided, all the balance sheet problems that existed before the Lehman failure are still in place. If anything, the continuous fall in house prices since then has exacerbated these problems. Balance sheet problems are likely to slow down the recovery or derail it altogether unless the government moves to offset the deflationary pressure coming from private sector deleveraging. In other words, the recovery so far was the easy part ((B) in Exhibit 16). The hard work of repairing millions of impaired private sector balance sheets is just beginning ((A) in Exhibit 16).

Exhibit 16. Recovery from Lehman Shock Is NOT Recovery from Balance Sheet Recession



Source: Nomura Research Institute

Conclusion

It is laudable for policy makers to shun fiscal profligacy and aim for self-reliance on the part of the private sector. But every several decades, the private sector loses its self-control in a bubble and sustains heavy financial injuries when the bubble bursts. That forces the private sector to pay down debt in spite of zero interest rates, triggering a deflationary spiral. At such times and at such times *only*, the government must borrow and spend the private sector's excess savings, not only because monetary policy is impotent at such times but also because the government cannot tell the private sector *not* to repair its balance sheet.

Although anyone can push for fiscal consolidation in the form of higher taxes and lower spending, whether such efforts actually succeed in reducing the budget deficit is another matter entirely. When the private sector is both willing and able to borrow money, fiscal consolidation efforts by the government will lead to a smaller deficit and higher growth as resources are released to the more efficient private sector. But when the financial health of the private sector is so impaired that it is forced to deleverage even with interest rates at zero, a premature withdrawal of fiscal stimulus will both increase the deficit and weaken the economy. Key differences between the textbook world and the world of balance sheet recessions are summarized in Exhibit 17.

With massive private sector deleveraging continuing in the U.S. and in many other countries in spite of historically low interest rates, this is no time to embark on fiscal consolidation. Such measures must wait until it is certain the private sector has finished deleveraging and is ready to borrow and spend the savings that would be left un-borrowed by the government under an austerity program.

There will be plenty of time to pay down the accumulated public debt because the next balance sheet recession of this magnitude is likely to be generations away, given that those who learned a bitter lesson in the present episode will not make the same mistake again. The next bubble and balance sheet recession of this magnitude will happen only after we are no longer here to remember them.

Exhibit 17. Contrast Between Profit Maximization and Debt Minimization

Private sector behavior		***Profit Maximization***	***Debt Minimization***
1) Phenomenon		Textbook economy	Balance sheet recession
2) Fundamental driver		Adam Smith's "invisible hand"	Fallacy of composition
3) Corporate financial condition		Assets > Liabilities	Assets < Liabilities
4) Outcome		Greatest good for greatest number	Depression if left unattended
5) Monetary policy		Effective	Ineffective (liquidity trap)
6) Fiscal policy		Counterproductive (crowding-out)	Effective
7) Prices		Inflationary	Deflationary
8) Interest rates		Normal	Very low
9) Savings		Virtue	Vice (paradox of thrift)
10) Remedy for Banking Crisis	a) Localized	Quick NPL disposal Pursue accountability	Normal NPL disposal Pursue accountability
	b) Systemic	Slow NPL disposal Fat spread	Slow NPL disposal Capital injection

Source: Richard Koo, *The Holy Grail of Macroeconomics: Lessons from Japan's Great Recession Updated*, John Wiley & Sons, Singapore, 2009, p.176

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Financial crisis, the international monetary system and the challenge of the emerging economies

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Abstract
Even as in the debate over the current financial crisis there is a general agreement on the role played by foreign capital inflows into the United States –that, together with financial deregulation, allowed for an excessive increase of credit in that country–, we think that their importance has not been totally recognized, nor their link with the asymmetrical organization of an international monetary system that uses de dollar as a reserve currency, nor their relationship with the economic growth model adopted by the US during the last thirty years, which relied on the increase of credit-financed households' expenditure in order to maintain its dynamism, and that was able to keep inflation down by importing cheap foreign manufactures, at the cost of a fall in the profitability of its own manufacturing sector. We suggest here that the crisis has to do with the impossibility of indefinitely keeping this type of economic growth, and that a way out will require a radical reform of the international monetary system, as well as a general increase in economic efficiency.

Introduction

Although the financial crisis that began in 2008 is a global crisis, and many countries –especially Europeans– have been affected by the financial turmoil– partly because they also rode the financial deregulation wave that started in the 1980s[1]–, it seems unnecessary to emphasize that such phenomenon was engendered in the US economy.

It is also apparent that the crisis has to do with the conjunction of two major and closely related events taking place in the American economy: on the one hand, a disproportionate growth of domestic credit and financial markets, and, on the other hand, its accumulation of persistent and growing current account deficits during the last 30 years, while at the same time maintained its foreign reserves level basically flat, concurrence made possible by a net inflow of funds (financial account surpluses) and by –additionally– the role of the dollar as a reserve currency, as it was explained by Robert Triffin more than 50 years ago.[2]

Thus, it seems clear that the exhaustive financial deregulation process was a necessary but not sufficient condition for the disproportionate growth of credit and financial markets in the US, as such growth –in time– required the borrowing of huge amounts of money from the rest of the world. As a result of this, American banks limited themselves to carry out the intermediation of those funds, setting off a credit carnival –principally in the real estate market– that was bound to have a heartbreaking end.

Something that may not be that apparent is that, because of the use of the dollar as a reserve currency, American external deficits were, up to a point, "natural" and even "necessary", and that –eventually– they may have continued indefinitely without giving rise to major problems. Even more difficult may be to understand why such eventuality did not occur in this case, and we think that this issue underlies the current crisis. We are going to claim here that major problems arose because American external deficits were current account and

[1] In fact, the free-market fundamentalism made its debut in a European country, that is, in the United Kingdom during the government of P.M. Margaret Thatcher.
[2] See Triffin (1960).

not financial account deficits, and that this choice becomes a crucial fact to be explained. The explanation we are going to suggest here has to do with a falling rate of return on capital in the real sector of the US economy, linked –in time– with a structure of relative prices that prevents the United States –and rich countries in general– from successfully facing the challenge posed to them by a greater integration to the world economy of countries such as China, India and Brazil –that we will call here the "emerging economies".[3]

We will first try to identify the political and non-political factors that made possible, on the one hand, financial deregulation and expansion in the United States (point 2) and, on the other hand, the persistent widening of its current account deficits (point 3). We will then examine those deficits, and claim that –given their nature– those deficits had to necessarily lead to a disaster like the one that broke out in 2008 (point 4). We will then discuss some explanations of the nature of the current account deficits, distinguishing between political factors –in the case of fiscal deficits– and economic factors –in the case of private deficits (point 5). We will then consider some of the consequences of the crisis, as well as some conditions for a recovery (point 6). The conclusions are presented in point 7.

Deregulation, financialization and financial instability in the US

Concerning the process of deregulation –financial in particular and economic in general– in the US, we must point out that such process can be seen mainly as a political phenomenon brought about by –among other things– the increased power of giant banks and financial corporations, the resurgence of conservative thinking, etc. Besides tax reductions, the removal of price controls, and the curbing of collective bargaining rights and benefits of workers, the deregulation process began during the Carter administration and affected basically the financial, transport, communication and energy sectors, financial deregulation being the most important one.[4]

The process of financial deregulation was carried out with a set of laws passed during the period 1980-2000, the most important ones being the *Depository Institutions Deregulation and Monetary Control Act* of 1980, the *Garn–St. Germain Depository Institutions Act* of 1982, and the *Gramm-Leach-Bliley Financial Services Modernization Act* of 1999. These laws abolished the financial configuration inaugurated by the *Glass-Steagall Act* of 1933, eliminating controls on interest rates; authorizing banks to offer new types of accounts as well as variable-interest mortgages; and allowing the merger of banks of different types and states, giving rise in this way to the emergence of financial conglomerates grouping commercial banking, investment banking and insurance services.[5]

The consequences of financial deregulation may have been of lesser importance had it been circumscribed to the US economy. However –as we have already pointed out–, free-market fundamentalism in a major economy first appeared in Europe, and the financial deregulation wave was also ridden by those countries and many more in the rest of the world, the most important milestone in this process being the publication of the Basel Accord II in June of 2004. [6]

[3] Morgan (2009)
[4] Niskanen (1989).
[5] See Mishkin (2009), pp. 270-271.
[6] See Bank for International Settlements (2006).

The **financialization** phenomenon –defined as an increase in the relative importance of the financial sector in a given economy– can be seen as a direct result of financial deregulation, which –because it stimulated the emergence and/or growth of more sophisticated financial instruments and institutions– enlarged both the maneuvering power of private financial agents and the magnitude of the money multipliers, in such a way that total liquidity ended up being basically independent of the monetary base, hindering in this way the effectiveness of monetary policy and the power of central banks as lenders of last resort.

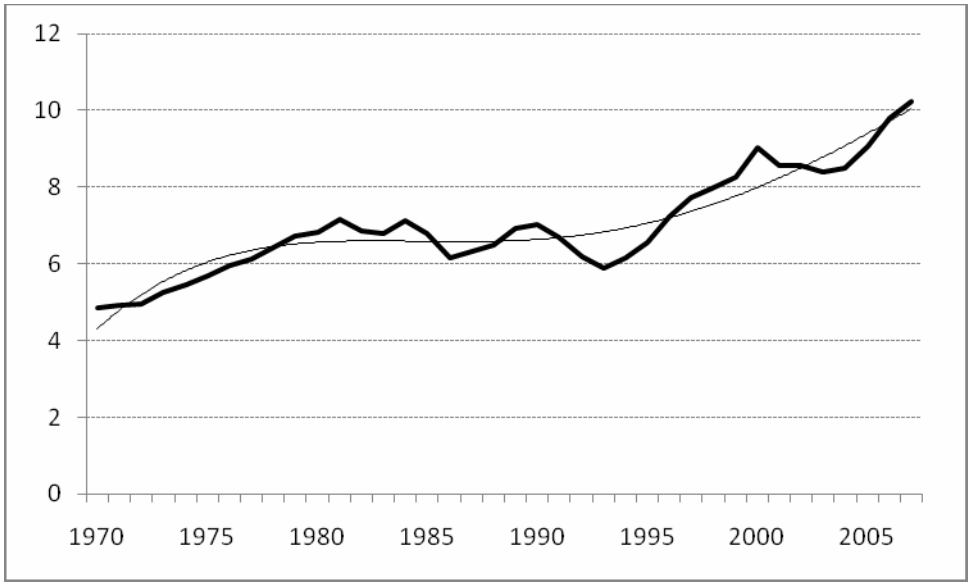
Among the financial instruments and institutions that emerged and/or gained importance we can mention institutional investors –mainly investment funds–, the securitization of loans, derivatives (forwards, futures, options, swaps, etc.), junk bonds, etc. The larger importance of institutional investors in the US is revealed by the steep fall of the value of shares held by households, from 90% in 1952 to 37% in 2008.[7] The increased importance of securitization is exposed by the growth of institutions such as Fannie Mae and Freddie Mac starting in 1984 in the case of mortgages, and its subsequent expansion to other types of bank loans.[8] Concerning financial derivatives –involving foreign exchange, interest rates, shares and commodities contracts–, their expansion is revealed by an annual growth rate of 25% of the world's notional amounts outstanding of OTC derivatives between June 1998 and June 2008.[9]

On the other hand, the simplest way of illustrating the rise in the value of the money multiplier is by showing the behavior of the velocity of circulation of money in the US. As can be seen in Figure 1, there has been a sharp increase in the velocity of circulation of money (M1) since 1994, an increase that has been observed in spite of the growing "exports" of dollars by the US to the rest of the world, but that can be at least partially explained by a lower demand for cash resulting from a greater usage of debit and credit cards.[10]

One of the problems with financialization is that, unlike other types of goods and assets, it is relatively easy to speculate with financial assets, as they are very liquid and have a very low storage cost. If we add to this the fact that the demand for financial assets tends to increase when prices go up, and to decrease when prices go down –the *herd-like behavior*–, we will find that financial speculation is likely to play a destabilizing role.[11]

[7] These figures are given by Authers (2010), quoting the Federal Reserve.
[8] See Gutenttag and Herring (1987), p. 154.
[9] In the case of the gross market values, the corresponding rate is 22%. See BIS Quarterly Review: December 2010, or www.bis.org/statistics/derstats.htm.
[10] See Amromin and Chakravorti (2007).
[11] Minsky (1982) maintains that in the case of capitalist economies external shocks are not required to explain financial crises. Kindleberger (1978), on the other hand, calls financial crises "a hardy perennial".

Figure 1
US Velocity of Circulation of Money (M1), 1970-2008



Source: Original data taken from *The Economic Report of the President 2010*, Tables B-1 and B-69.

In this way, deregulation and financialization –together with an increasing international capital mobility that began in 1973– caused a growing price instability in a variety of markets –stocks, foreign exchange, commodities, etc.– which contributed to increase the probability and severity of financial crises.

The higher international capital mobility –encouraged by, among other things, the greater integration of developing countries to international markets, and by the abolition of exchange and capital controls all over the world – became an additional source of instability,[12] not only because of the costs that entail sudden reversals in the flow of funds, but also because of the central role acquired by foreign exchange markets, given its gigantic size,[13] its considerable liquidity, and high volatility resulting, for example, in the "overshooting" phenomenon described by Dornbusch (1976). Moreover, as has been pointed out by Authers (2010), the closer integration of world markets of a variety of assets implies a higher synchronization of their prices, which in time hinders the possibility of assembling portfolios with a low correlation of asset prices (and a more stable total value).

On the other hand, the greater importance of institutional investors aggravated the instability problem, not only because it allowed the accumulation of huge liquid funds in the hands of a few speculators, but also because it worsened the problem of "lending borrowed money", that is, the problem of the separation of *agents* (fund managers) and *principals* (fund owners), something that stimulates moral hazard, i.e., the taking of excessive risks by the *agents*. An analogous problem arose from the importance gained by the three big credit rating agencies –Standard and Poor's, Moody's and Fitch–, not only because their inaccurate credit ratings became a source of instability, but also because they may have incurred in serious conflicts of interest.[14]

[12] Obstfeld (1993) presents a discussion on the issue of rising international capital mobility.
[13] The Bank for International Settlements estimated that, by April 2010, the **daily** turnover in the world foreign exchange markets was $4 trillion (www.bis.org/publ/rpfx10.htm).
[14] See Partnoy (2006).

A similar effect resulted from the bailouts of financial institutions –such as the savings and loans and the *Continental Illinois* bank in the 1980s, and the hedge fund *Long Term Capital Management* in 1998– carried out or sponsored by the Federal Reserve and that strengthened the problem of moral hazard, becoming an additional source of risk and instability. To the bailouts handled by the Federal Reserve we must add those managed by the International Monetary Fund (IMF) by helping international banks recover their money after a number of debtor countries went into default, an activity that gained a lot of importance with the triggering of the international debt crisis after Mexico went into default in 1982.[15]

In the case of financial derivatives, whose purpose is to reduce or eliminate certain risks facing productive activities, the final results do not appear to have been the expected ones. For example, Dodd (2005) gives several reasons why the "extraordinary" growth of derivatives must lead to an increase in the vulnerability of the financial sector. Among those reasons he mentions the fact that such instruments allow for the increase of leverages, the reduction of the cost of risk taking, the evasion of regulation and taxes, frauds, etc.

Loan securitization, on the other hand, involved the bundling of thousands of loans –residential mortgages, for example– into securities that were then sold to investors –mainly investment funds. Guttentag and Herring (1984) point out that this process has not achieved its main objective, which is to allow banks to obtain the liquidity they need, and that –actually– ended up contributing to their vulnerability. Even more, this phenomenon appears to have given rise to questionable practices on the side of the banks.[16]

Finally, technological innovations – such as the internet –, which allow the instantaneous carrying out of financial transactions, as well as cheaper and faster stock exchanges, ended up aggravating the problem of instability.

The US external deficits and the Triffin Dilemma

Concerning the question of what made possible –and necessary– American external deficits of the magnitude and duration in which they have been observed, we think that the role of the dollar as an international reserve currency was an important factor. Indeed, the situation that has been observed is analogous to the one described more than 50 years ago by Robert Triffin, who pointed out that the monetary system established in Bretton Woods in 1944 –which assigned the dollar the role of reserve currency with a fixed value in terms of gold– would only be feasible if the US met the growing international demand for liquidity (dollars) by means of sustained external deficits, warning that this would eventually erode other countries' confidence in the dollar.

We must, then, consider two questions. First, how was it possible for the dollar to maintain its role of reserve currency after the demise of Bretton Woods? And, second, what is the relevance at this time of Triffin's concern on the confidence in the dollar?

To understand the permanence of the dollar as a reserve currency we must take into consideration that markets –by their own nature– prefer the use of a single currency, as money fulfills its functions as means of exchange, storage of value and unit of account if it is

[15] Milton Friedman is one of the economists making this type of criticism to the IMF.
[16] In fact, the New York attorney general is currently investigating major Wall Street banks, accused by investors of dumping loans they knew to be troubled into securities sold to them.

universally accepted. While a number of countries completely isolated from each other will experience no harm when each of them has its own currency, the option of a single currency is the most efficient –and the one preferred by the markets– if the counties are –or want to be– economically integrated.

In this way, given the nonexistence of alternatives, the dollar was able to maintain its role as a reserve currency. The prospects of the yen as a possible option receded after the Japanese crisis started in 1989. In the same way, the possibilities for the Special Drawing Rights (SDR's) to become an alternative disappeared as a consequence of the refusal by rich countries –particularly the United States– to assign a more important role to them.

Although as a reserve currency the dollar has contributed for more than 60 years to the world's economic growth and financial stability, we must make the point that it has not done it for free, and that there has been an exchange of mutual favors between the United States and the rest of the world: playing the role of the world's central bank the US was able to spend money it had not earned but only printed –the seigniorage revenue–, while, on the other hand, the rest of the world obtained the liquidity it needed to carry out its growing economic activities.

The point is that growing economic activities, in time, required for the rest of the world to accumulate also growing dollar reserves. It is in a situation of this type that the Triffin Dilemma becomes relevant, in the sense that countries in the rest of the world may start to have doubts concerning the capability (and/or willingness) of the United States to defend the value of its currency. Besides, although recognizing that the view of the mutual exchange of favors of the previous paragraph is valid, some countries may anyway begin to feel that such an arrangement is not totally symmetrical, and start thinking about alternatives to the dollar.

In this way, the introduction of the euro in 1999 and its quick initial growth suggests –up to a point– that the world economy gives a sympathetic look to the possibility of having alternative currencies (or liquid assets in general), something that reflects a degree of distrust towards the dollar. In the same way, the disproportionate increase in the price of gold in recent years can also be seen as a means for the markets to satisfy the world´s demand for liquidity resorting to an asset alternative to the dollar, in spite of its lower liquidity.

The need for alternative liquid assets has already been recognized by rich countries, as it is shown by the approval of a new emission of Special Drawing Rights (SDR's) by the IMF made in 2009 –the first two had been made in 1970-1972 and in 1979-1981–, which increased the total stock of SDR's from 21.4 billion to 204 billion, with a dollar value of 308 billion by August 2010.[17]

Finally, the problem of the disproportionate size of the world's dollar reserves was aggravated starting in 1990 after Asian central banks –including China– and those of developing countries in general began to increase their dollar reserves as a way to increase their degrees of freedom in the face of external crises, as well as to obtain more bargaining power in their negotiations with the IMF and creditor international banks.[18]

[17] See www.imf.org/external/np/exr/facts/sdr.HTM.

[18] The Report of the UN Commission chaired by Joseph Stiglitz (2009) indicates that "Developing countries hold reserves which are, in proportion to their GDP, several times those of industrial countries (26.4% in 2007 vs. 4.8% for high-income OECD countries)" (p. 116).

4. The nature of external deficits and the Financial Crisis

As it has been indicated, it was as a result of the dollar role as a reserve currency that the US was able –and forced– to have continuous **external deficits** during the last 30 years. It must also be pointed out that an international monetary system that allows the country issuing the reserve currency to accumulate external deficits in an indefinite way must not necessarily be unfeasible, not even unstable. The problem emerges when such deficits cannot, for some reason, be kept in the long run.[19]

In order to understand this issue it is very important to take into account that countries can have two types of external deficits: **current account** and **financial account** deficits. While a current account deficit implies that –during a given period of time– the country´s spending is larger than the value of its production (or income), a financial account deficit implies that –also for a given period of time– the value of the country´s foreign investment is larger than the foreign investment it receives. That is, while in the first case the country is increasing its foreign debt –or reducing the value of its foreign assets–, in the second case it makes a net purchase of foreign assets. The same can be said if the external deficit occurs as a combination of a current account deficit and a smaller financial account surplus. Thus, it is apparent that it is the first type of situation the one that may not be feasible in the long run.

As the issuer of the reserve currency, the US had the privilege of being able to pay for at least part of its imports –or current account deficits in general– by printing more dollars. However, it could take advantage of this benefit only up to a point: eventually, if the deficit grew too much, it would become necessary to exert another privilege associated with the reserve currency role of the dollar, and pay issuing dollar-denominated liabilities. And this was the situation for the 25 years previous to the beginning of the crisis, during which the US had annual current account deficits of an average nominal value of $269 billion, while its average financial account surplus –the net capital inflows– was $256 billion, which gives us an annual average external deficit of $13 billion. Given that during the same period the level of the US foreign reserves remained basically flat,[20] we can consider this $13 billion external deficit as a proxy of the US annual supply of dollar liquidity (a flow) to the rest of the world, in time equal to the portion of its current account deficit it was able to pay printing dollars.

That is, the annual (increase of) dollar supply to the rest of the world represented only 5% of the annual US current account deficit; and the US was able to pay for the remaining 95% of such deficit selling dollar-denominated liabilities to foreign investors. The view that this ability to sell dollar-denominated liabilities to foreign investors can also be considered a privilege for the US as the issuer of the reserve currency is not challenged by the fact that other –mostly large– countries are able to do the same.[21] In the same way, the fact that the world market of US debt is extremely big and complex, and that many factors, concerning both the supply and the demand of funds, must be considered if we want to have a clear view of what actually happened, is only telling us that the reserve currency role of the dollar cannot explain the whole picture.

[19] Morgan (2009).
[20] It is possible to say that the United States actually does not require foreign reserves: their value at the end of 2007 was $74 billion, small change for such a big economy.
[21] Studying the question of the developing countries' inability to borrow abroad in terms of their own currency –their *original sin*–, Eichengreen et al (2002) find that the only significant explanatory variable of such condition representing the characteristics of the countries is their size.

Thus, the facts appear to tell us that the United States preferred to use the role of the dollar as a reserve currency to increase its expenditure in goods and services (current consumption), instead of increasing its level of investment in the rest of the world (future consumption), becoming a net debtor country at least 20 years ago, having accumulated a federal debt equivalent to more than 100% of its GDP, and become the largest debtor country in the world.[22] This option between current account and financial account deficits is a key question that has not received the attention it deserves.[23] For example, when Joseph Stiglitz proposes the reform of the international monetary system, he writes:

"A country whose currency is being used as a reserve must –if it is to continue to be used as a reserve– "sell" its currency (or more accurately, its T-bills or bonds) to other countries, who hold on to them". [24]

Thus, according to Stiglitz, the only way that the United States had to meet the growing demand for liquidity was issuing more debt through current account deficits. Obviously, the fact that the US chose this option does not imply that it was the only way it had to "sell" its currency to other countries.

Anyway, the US could have continued indefinitely spending more than what it produced without running out of foreign reserves if the rest of the world had been willing to maintain the dollars it received in the vaults of its own banks. In fact, what happened was that those countries used the dollars they obtained by means of their current account surpluses with the US not to invest in their own productive activities, but to buy more financial assets (debt) issued by that country, that is, to lend even more money to the US that, in time, did not invest the money but increased its imports of consumption goods.

In this way, the recycling towards the US of the dollars that it exported through its current account deficits became a **vicious circle** in which the US functioned as a central bank that fed an excessive growth of dollar liquidity in the world,[25] accumulating a debt that became larger and larger. Were it to continue, a situation of this type would lead to the issuance of more debt only to service the outstanding debt, a situation analogous to a **Ponzi scheme** –which does not imply malice or premeditation–, and that cannot be sustainable in the long run.

However, it is apparent that the crisis did not burst as a result of the breaking of a Ponzi scheme by the US economy–i.e., by the whole country, including households, firms and government. In the case of the government, for example, a fiscal deficit would force it to ask Congress to raise the federal debt limit, and instruct the Treasury Department to offer more bonds into the markets. But if investors –foreign, in particular– refuse to buy more bonds the only alternative open to the Treasury would be to sell them to the Federal Reserve. A refusal by the Federal Reserve to buy those bonds, in order to avoid an increase in the supply of money, would force a government shutdown, which would entail the interruption of the scheme in the case of the government.

[22] Ott (2002).
[23] Reinhart and Rogoff (2009), Ch. 13, emphasize the importance of the current account deficits in the triggering of the crisis, but without discussing the option between current and financial account.
[24] See Stiglitz (2006), pp. 252.
[25] Rüffer and Stracca (2006).

But to have the interruption of the scheme by the whole country it would be necessary that situations like the one we have depicted for the government would simultaneously occur in the case of households and firms. But such case would bring about an apocalypse. What has been observed is that the government has intervened to prevent an interruption of the scheme in the case of big, highly-leveraged banks, in time affected by an interruption in the case of heavily indebted households, and this was enough to generate the crisis.

Once the crisis bursts, everything is complicated by contagion in financial markets, and by the importance of subjective factors both in financial and exchange markets. Subjective factors comprehend phenomena such as *self-fulfilling prophecies* and Dornbusch´s *exchange overshooting*, phenomena that acquired a lot of importance with the expansion of exchange markets, in time associated to financialization and to the increased international mobility of capital.

The preference of the United States for current account deficits

A central question still needing to be explained is why the US decided to meet the international demand for liquidity through current-account instead of capital-account deficits; that is, by borrowing money (selling debt) instead of investing abroad (buying foreign assets). Obviously, this was not a unilateral phenomenon, as the larger size of the US debt required increases in both US supply and foreign demand. Bernanke et al (2011) emphasize the role played by the rise in **foreign demand** for "apparently safe" US assets that encouraged banks to develop products that "transformed" risky loans into highly-rated securities.[26] We are interested here in giving an alternative explanation emphasizing the rise in the **US supply** of financial assets (or demand for foreign financing).

To obtain such explanation we must begin by distinguishing the two basic components of a current account balance: the private balance (surplus or deficit), equal to the difference between private savings and private investment; and the public balance, equal to the difference between tax revenue and fiscal expenditure. That is, both the private sector and the government can contribute to a deterioration of the current account if their balances deteriorate over a given period of time.

In the case of the US government balance, we find a deterioration that resulted from the conjunction of an increase of fiscal expenditures by 3 points of the GDP, and a decline in fiscal revenues also by 3 points of the GDP during the ten years previous to the crisis, phenomenon that –in the same way as the deregulation process– can also be considered basically as a political phenomenon. In the case of the increase in fiscal expenditures, this is reflected by the fact that the single largest contribution to such increase was made by military expenditure, that doubled in the period 2001-2008, a rise equivalent to 1.3 points of GDP,[27] and that can be attributed to a dangerous accumulation of political power by the military-industrial complex. In the same way, the political character of the reduction of tax revenues is revealed by the fact that the largest contribution to such reduction came from the lowering of income and property taxes affecting rich people. These measures –implemented by Republican administrations– reflect a change in the correlation of political forces in that country.

[26] See Bernanke et al (2011).
[27] See *The Economic Report of the President 2010*, Tables B-78 and B-79.

In the case of the private balance, its deterioration implies private savings falling in relation to private investment. In the case of private savings, we must distinguish between firms' savings (non-distributed profits) and households' savings (the difference between disposable income and consumption expenditure). What was observed in the case of the US was a deterioration of the private balance starting in the 1980s that was explained basically by a decline in households' savings, which fell from 8.1 points of the GDP in 1982 to one point in 2005, while, at the same time, the firms' balance (the difference between non-distributed profits and investment) had a slight improvement (0.7 points) during the same period.

The drop in households' savings was made possible by the larger access to credit by consumers, such as it had been pointed out by Parker in 1999, and was highlighted again by Parker and Palumbo in 2009:

> "In the 1960s and 1970s, the two nonfinancial business sectors [non-corporate and corporations], the two government sectors [federal and municipal], and the rest of the world were consistently net borrowers, meaning their rates of investment almost always exceeded their rates of saving. The household and the financial business sectors served as the net lenders to all the other sectors. In the 1980s and 1990s, the primary change was to net lending by foreign institutions… In the 2000s, however, as household switched from being the largest lending sector to the largest borrowing sector, a large inflow of foreign (financial) capital provided the lion's share of net lending, complemented by new lending by nonfinancial corporations".[28]

That is, the larger access to credit by households was financed by a larger inflow of foreign capitals.[29] This drop in households' savings received an impulse from the lowering of interest rates during the second half of the 1980s; from the larger variety of financial instruments; from the "democratization" of credit; from the expansion of an advertising industry with an astonishing capacity to promote conspicuous consumption,[30] etc.

Although the larger access to credit made **possible** for households to increase their debts, it can be more important to understand what made such an increase **necessary**. Robert Reich –President Clinton's Secretary of Labor– sees it as the last mechanism households found to maintain their consumption levels at a time of lagging real wages –the two previous mechanisms having been the incorporation of women to the labor force, and the increase of the number of working hours.[31] It is, then, evident that –given the stagnation of investment and exports–, in order for the US economy to keep growing after the mid-1980s it became necessary to force households to increase their consumption expenses and –given the larger concentration of income and the fall of real wages[32]– to acquire more debt, thus –at the same time– encouraging banks to enter the subprime market, lending money to new and less solvent clients, with the results we already know.[33]

In the case of the firms' balance, although its variation was quantitatively less important than that of the households' –while the firms' deficit contracted by 0.7 points of GDP

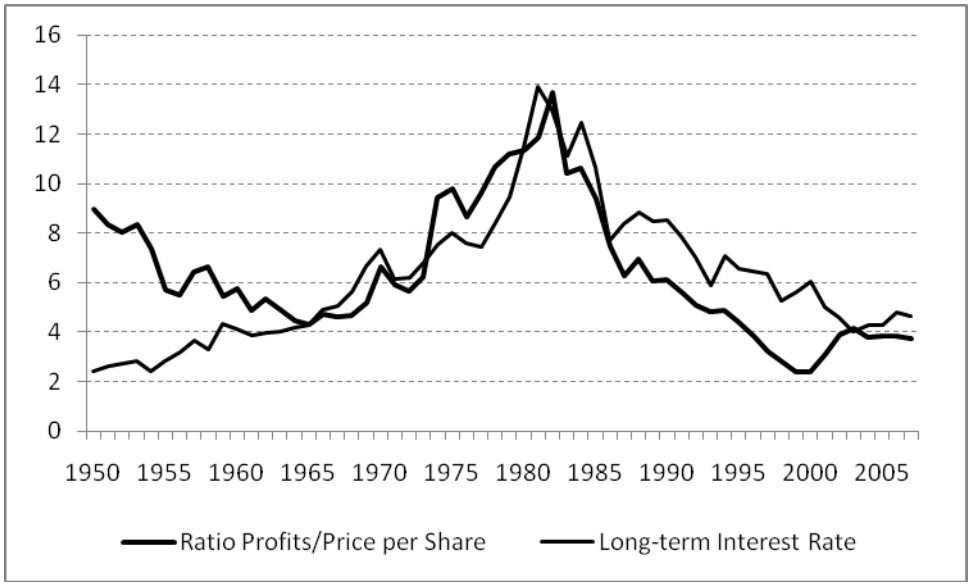
[28] Palumbo y Parker (2009), pp. 7-8.
[29] The importance of this phenomenon is stressed by Bernanke et al (2011).
[30] See Schechter (2008).
[31] See Reich (2008), Ch. 8.
[32] Levy and Tremlin (2007) quote data that show that the richest 1% of tax declarers captured 80% of the total income increase between 1980 and 2005 (p. 5).
[33] This linkage between income distribution and credit expansion is emphasized by authors such as Rajan (2010), Ch. 1.

between 1982 and 2005, the households' surplus fell by 8 points–, the fact that the change was in the opposite direction is very significant. Loeys et al (2005) also present evidence of an increase in the firms' savings rate, as their average financial **surplus** has amounted to 1.7 points of GDP since 2002, after having an average financial **deficit** equivalent to 1.2 points during the previous 40 years, a total change that amounts to almost 3 points of GDP.

Many explanations can be given for why firms did not increase their investment rates concurrently with the increasing foreign financing they were receiving, and one of them is a fall of the rate of return on capital as is suggested, for example, by Amin (1996). That is, US firms did not use the foreign financing available to them to increase their investment expenditures simply because they did not find profitable investment projects to undertake.

A simple way to illustrate the fall of the rate of return on capital is given in Figure 2, which shows the behavior of the ratio annual profits per share/price per share –i.e., the reverse of the Price to Earnings Ratio– for the New York Stock Exchange, whose sharp decline starting around 1980 can be seen as revealing a fall in the rate of return on capital. As the conduct of the ratio profits per share/price per share may be particularly affected by the more volatile behavior of its denominator, it seems appropriate to include in the figure the series long-term interest rate –which should maintain a very close relationship with the rate of return on capital–, and what we find that this series confirms our assertion of falling rates of return on capital, as it has a similar profile.[34]

Figure 2
Profits/Price per Share Ratio and Long Term Interest Rate, 1950-2007



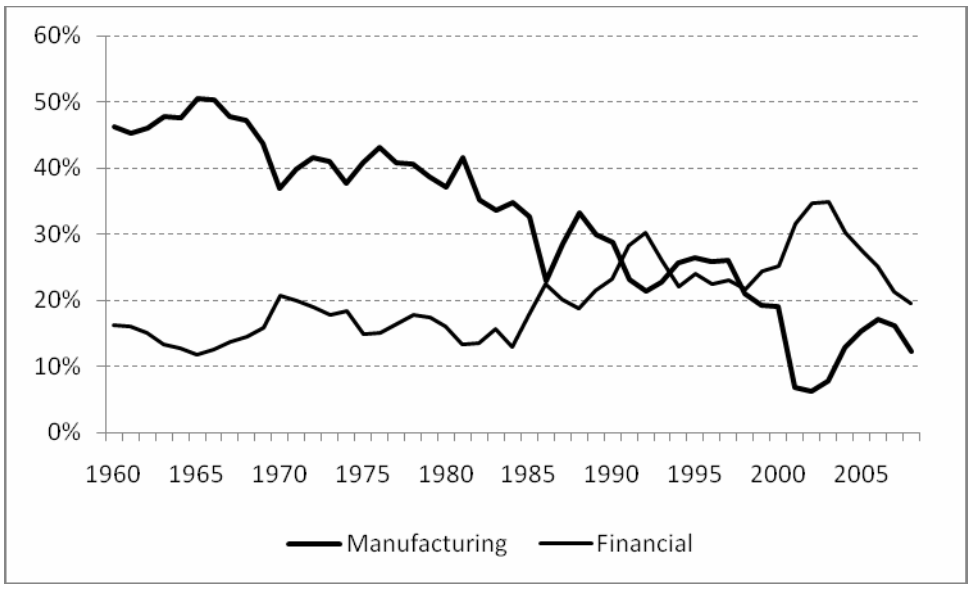
Source: Original data taken from Robert J. Shiller (2005), updated.

As the numerator of the ratio annual profits per share/price per share measures total profits, it does not capture the fact that the real sector of the economy suffered an even more acute fall of its profits rate. One way of illustrating this fact is presented in Figure 3, in which the manufacturing and financial sectors' shares of total profits are compared, showing a steep decline of the manufacturing sector's share of total profits, from 50% in 1964-1965 to less than 10% in 2001-2003. This fall, which accelerated after 1980, reveals that the manufacturing sector was even more affected by the fall of the rate of return on capital

[34] The original data was taken from Schiller (2005).

observed in Figure 2. Even more, the situation becomes bleaker if we take into account that the average share of total manufacturing profits of petrochemical firms rose from 21% during the 1984-1999 period to 50% during the 2000-2008 period.

Figure 3
Manufacturing and Financial Profits, 1960-2009
(% of Total Profits)

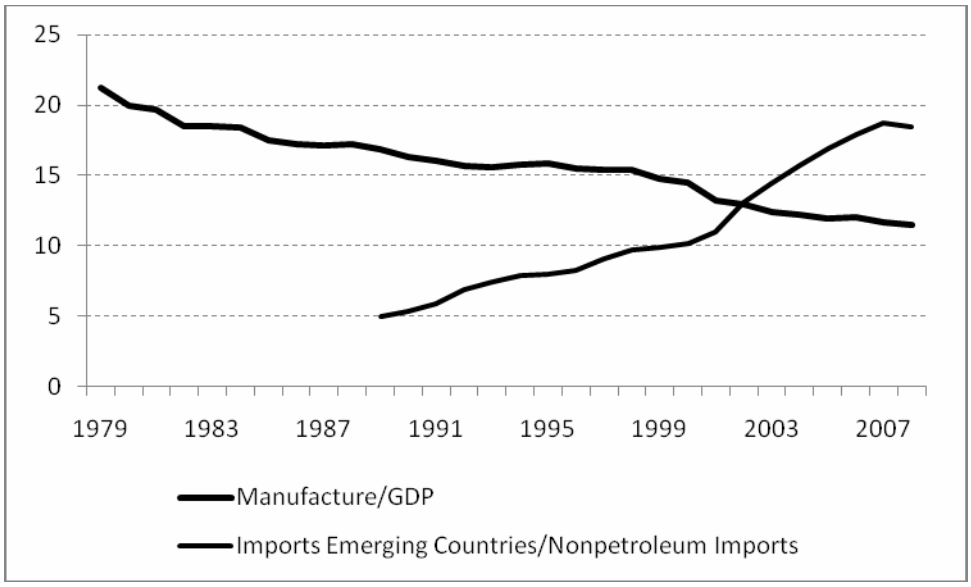


Source: Original data taken from The Economic Report of the President 2010, Table B-91.

We must now suggest explanations of the fall of return on capital in the manufacturing sector. Although there are many factors that may have contributed to engender this situation, we are interested here in emphasizing the role of the increase in competition that resulted from the greater integration of emerging countries to the world economy. One aspect of such increase in the case of the US economy is presented in Figure 4, which shows the growing participation of imports from the emerging countries –basically manufactured products– in the value of nonpetroleum US imports. In effect, such share rose from 5% in 1989 to 19% in 2007, after following a growing trend that accelerated after 2000,[35] while the participation of the manufacturing sector in total GDP lost 9 points between 1979 and 2007, a loss that also accelerated after 2000. These developments can be associated to a loss of competitiveness of the US manufacturing sector, already shaken by the competition from the Asian Tigers, and whose most likely explanation is an unsustainable structure of relative prices: wages in rich countries are exaggeratedly high when compared to those in emerging economies.[36]

[35] The original figures were taken from the U.S. International Trade Administration. It must be pointed out that, in order to obtain those figures, we have assumed, correctly, that the US does not import petroleum from the three emerging countries.
[36] Data on the issue of wage differences is provides by the International Labor Organization (http://laborsta.ilo. org/STP/guest.)

Figure 4
U.S. Manufacturing Product and Imports from Emerging Countries, 1979-2008
(% of GDP and of Nonpetroleum Imports)



Source: Original data taken from The Economic Report of the President 2010, Tables B-104 (nonpetroleum imports), and International Trade Administration, U.S. Department of Commerce (US imports by Country).

The unfeasibility of maintaining this type of situation in the long run is explained by the International Factor-Price Equalization Theorem, which shows that, under certain conditions, the free trade between two countries must equalize the prices of the factors of production –labor and capital– in both countries. The logical consistency of the theorem's basic assumptions was proved by Paul Samuelson (1949) for the case of two countries, two industries and two factors of production, and assuming the same technology and the homogeneity of production factors in both countries, among others.

In this way, the current gap in real wages can be explained by differences in technology and/or the quality of labor, which should lead us to believe that technological progress and a higher qualification of labor in emerging countries –that cause an increase in their wages– will end up eliminating wage differences. However, a more likely evolution is that wage equalization will result from both an increase in wages in emerging economies and their fall in rich countries. In any case, what can be inferred from the theorem is that it is not possible for the current situation to persist indefinitely.

Finally, we must also take into consideration that the closer integration to the world economy of emerging countries poses a challenge to rich countries as they become competitors not only in the world market of manufactures (as competing suppliers), but also in the world market of raw materials (as competing buyers),[37] two facts that must have also had an important effect on the return on capital in the manufacturing sectors of rich countries. This reinforces our argument that the fall of profitability in rich countries is closely related to the efforts made by emerging countries to become more fully integrated to the world economy.

[37] An illustrative example of this last type of competition is given by the complaints presented to the World Trade Organization by the US, Mexico and the European Union concerning the Chinese restraints on exports of rare earth materials. See World Trade Organization (2011), p. 279.

Some consequences and conditions for a recovery

In the case of the results or **consequences** of the crisis, these –to a great extent– are already being observed. The most important ones concern financial regulation; the international monetary system and the role of the dollar –and the United States– in the world economy; trade policies; international capital mobility; economic concentration; income distribution; and also political (in)stability in the United States.

In the case of financial regulation, there is a partial retreat from the movement towards deregulation, basically with the purpose of increasing the financial institutions' capital requirements. At the international level, the most important landmark was the announcement made in 2010 by the Basel Committee on Banking Supervision of a package of reforms changing the rules set by the Basel Accord II of 2004, one of the most important changes being the requirement that lower their leverage ratios and be more safely capitalized. Obviously, this requirement –that is to be implemented by central banks– is generally not welcomed by private banks.[38]

Regarding the international monetary system, demands are being made for the reform of the system (or *non-system*) set up at Bretton Woods, reform that would imply the receding, if not the demise, of the dollar as a reserve currency. Proposals in that sense have been made not only at the United Nations' forums and institutions, but also by countries such as China.[39]

In relation to the dollar, the United States is seeking its depreciation as a way of both closing its external deficit and reducing the burden of paying its (dollar-denominated) debt. Although privatization policies may be seen as an alternative way to facilitate the payment of the debt, they would not help to close the external deficit, and may even provoke an appreciation of the dollar, as foreign investors would increase their demand of dollars in order to bid and pay for US assets being privatized. In any case, the purchasing of Treasury Bonds by the Federal Reserve exposes the intention of seeking a depreciation of the dollar as such purchases push down the value of the dollar by increasing its supply.

Linked to the previous point –and concerning trade policies–, protectionist moves are being made by different countries by means of tactics of exchange manipulation that may trigger "exchange wars", and that might end up giving rise to beggar-thy-neighbor policies.

With regards to international capital mobility, there is certain willingness for introducing –or increasing– restrictions to short-term, speculative, capital flows. Measures with this purpose have already been taken by countries such as Brazil, Thailand, Taiwan, Iceland, among others.[40] "Too much capital may be moving too quickly to emerging markets"

There has also been an increase in economic concentration, particularly in the financial sector, as must be expected from crises of this type, with the predictable consequences that it will have on global economic efficiency. At the same time, an increase in poverty and income inequality can be observed in rich countries, in part resulting from policies of "union-busting" and the deprival of collective-bargaining rights to workers.[41]

[38] See Admati and others (2011).
[39] See United Nations (2009), UNCTAD (2009), and Suominen (2010).
[40] Authers (2010). See also *The Economist*, October 25th, 2010.
[41] See Wealth for the Common Good (2009).

At the international level, the most important political consequence is –or will be– the weakening of American economic and political leadership. The most recent global economic expansion without inflation was made possible by the greater integration to the world economy of emerging countries, which will now demand more important responsibilities in international economic and political organizations. Reflecting this point, at the Seoul G20 summit held in November 2010, an agreement was made transferring 6% of the IMF voting power to India and Brazil.

Finally, a growing distrust in the American political leadership is giving rise to the emergence in the United States of far-right populist movements that seek to take advantage of this sentiment, something that might end up destabilizing politically the world's most important economy. A consequence analogous to the reintroduction of restrictions to international capital mobility is the escalation of the fighting against illegal immigration and the resurgence of anti-immigration feelings.

On the other hand, in the case of the **conditions for a recovery**, we must distinguish between those concerning the financial establishment and those more directly concerning economic efficiency. In the first case, the main condition is the reform of the international monetary system, supplemented with a reduction of the international mobility of short-term capitals, and a more effective set of financial regulations. In the second case, the conditions for an increase of economic efficiency are the dismantling of large monopolies; the reduction of unproductive expenditures; the elimination of price distortions; and policies to promote both technological development and diffusion.

The main reason to carry out a reform of the international monetary system is that –for a number of reasons– the current arrangement is not feasible in a global and integrated economy like the one that has been being built during the last 20 or 30 years. First, because the country issuing the reserve currency (the United States) ends up being the only one enjoying a truly independent monetary policy. The countries of the rest of the world are forced, in the short run, to keep their interest rates linked to those fixed by the Federal Reserve and, in the long run, to also maintain their price levels consistent with those of their main trading partners, two objectives that may not necessarily be in harmony.

Second, because in a monetary system with n different currencies there can only be n-1 independent exchange rates, which implies that there should be at least one country to which markets do not guarantee an exchange rate consistent with both foreign equilibrium and full employment. Obviously, the exchange rates relevant to the world economy are those of the largest economies, and it is one of those countries the most likely to suffer this condition; and if that country is the one that issues the reserve currency the problem becomes even more complicated. This last possibility is very pertinent if we consider that international demand for liquidity will tend to induce an overvaluation of the reserve currency.

Third, because it is very difficult that a monetary system with n currencies and a single reserve currency will be a symmetrical arrangement, not only because it allows the country issuing the reserve currency to collect seigniorage, but also because it may also allow such country to accumulate external deficits almost indefinitely.

A long-term solution requires a major overhaul of the international monetary system, with the final objective of constructing an optimal system, whose main characteristic would be

the creation of a world central bank and the introduction of a single world currency. A movement in this direction was made with the introduction of the SDR's by the IMF in 1969, and, as it has already been mentioned, proposed by several countries as well as United Nations' institutions.[42]

However, a problem with a single world currency is that it requires, among other things, a completely free international mobility of all factors of production because –in the absence of exchange rates– such mobility becomes the only efficient way of adjusting external imbalances. And we call it a problem because free international mobility of labor is not politically acceptable in rich countries. This fact reveals the significance of one of the most important asymmetries in the current world economic order: while capital enjoys almost perfect international mobility, restrictions on labor mobility are becoming more severe every day, although firms in rich countries increasingly resort to outsourcing and subcontracting as a way to dodge such restrictions.

Anyway, the reform of the international monetary system is a necessary but not sufficient condition to prevent crises of this type, as there would remain the problem of an excessive international mobility of short-term capitals. So, as the introduction of a single currency would not end the instability problem, it may become necessary to introduce a tax to international capital flows, of the type proposed by Tobin (1978), as a way to increase the cost of short-term, speculative capital movements.

It is also important to bear in mind that a more effective financial regulation will require a review of the roles of the International Monetary Fund and of the Bank for International Settlements, in order to make them contribute to the standardizing and compliance of financial regulation at the international level. The reassessment of the current role of the IMF –the most important one being the emission of good-behavior certificates to debtor countries that agree to sign letters of intention, which in time are used by private banks as evidence of their solvency– is of special importance, and must entail its more democratic organization and a more equitable assignment of SDR's.[43]

On the other hand, the conditions for an increase of economic efficiency –the elimination of monopolistic power, the reduction of unproductive expenditures, the rectification of relative prices and technological progress– cannot be subject to controversy, and we will only make a few comments concerning their less conventional aspects.

The economic concentration resulting from the prevalence of huge conglomerates and monopolies in certain production sectors –particularly finance, telecommunications, aerospace and petrochemical–[44] is very harmful not only because of its important microeconomic costs resulting from the reduction of the level of competition, but also because of the macroeconomic costs associated to the "too big to fail" problem, and its political consequences, that might end up being even costlier.

A good example concerning the question of political repercussions of economic concentration is the rapid increase in arms expenditure that has resulted from a dangerous

[42] Stiglitz (2006), for example, makes a very straightforward proposal in that sense (see Ch. 8). Of course, there is also the Gold Standard alternative, but lists of its shortcomings can be found in any text of basic international economics.
[43] Concerning this issue, see Stiglitz (2006), Ch. 8.
[44] In the case of the financial sector, Kaufman (2010) points out that "In 1990 the 10 largest US financial institutions held about 10 per cent of US financial assets. Today, the number is well over 70 per cent".

escalation of the political power of the US military-industrial complex. Although a warning concerning this danger had already been made by President Eisenhower in 1961, the corporations integrated to such complex have been able to consolidate their power by means of lobbying activities, contributions to political campaigns, the exaggeration of the danger that some foreign countries represent to the United States, and skillful strategies of geographical distribution of their productive activities in the US territory. And the fact that since the end of the Civil War the US has not entered wars fought in its own territory, so that the average American does not associate wars with economic distress, may also be added to the list of explanations.

The main distortion in relative prices to be eliminated concerns the differences in costs of production –mainly, but not only, wages– between rich countries and the rest of the world, in order to allow rich countries to face the challenge posed by the emerging economies and –at the same time– achieve a more complete integration of the less developed countries to the world economy. This will require the devaluation of the dollar –and other currencies such the euro– and therefore the reduction of real wages in rich countries, something that will complicate the political scenery in those countries.

Technological progress and diffusion are very important not only because an increased productivity would allow rich countries to face their challengers without a significant reduction in their real wages, but also because the limited nature of the world stocks of raw materials may before long begin to be reflected in higher prices. The problem is that research and technological progress usually require important fiscal support, something for which currently there is not political willingness, much less enough money. Besides, the United States –and rich countries in general– do not appear to be willing to facilitate technological diffusion.

Conclusions

In an attempt to prevent the debacle of their financial system, the governments of the United States and other rich countries were forced to intervene, basically transferring huge amounts of public funds to banks and other private corporations on the verge of going broke, something that implied their partial, although temporary, nationalization. This intervention did not have as its only –or main– purpose to rescue banks –or, more precisely, bankers–in trouble, but also to prevent market forces –i.e., foreign capitals– from assuming the task of solving the problem. We can thus say that the objective was to avoid the falling of American banks into the hands of –basically– those Asian and Arab capitalists that have been accumulating huge amounts of American debt during the last 30 years.

Thus, we are in front of a crisis that has been incubated for a long time, and for which there are no short-term solutions, being these fiscal, monetary or exchange adjustments. It is obvious, for example, that mere liquidity increases will be unable to induce an expansion of private investment and expenditure in general. Current interest rates by themselves show that we already have an excess in liquidity.[45]

[45] In the case of the United States, for example, the Federal Reserve Bank of St. Louis reports that the average amount of Excess Reserves of Depository Institutions from September 2008 to August 2010 (US$843 billion) was almost 500 times larger than the average amount during the five previous years. See http://research.stlouisfed.org/fred2/series/EXCRENS/downloaddata?cid=123

In the same way, the fiscal policies option is very troubling, given that at this time there is a conflict between short-term and long-term solutions, as the expansive fiscal policies required to alleviate the problem in the short term might –in the long run– end up aggravating the problem resulting from internal and external disequilibria in rich countries, which do not possess funds in the amount required to finance those policies.

In the case of the exchange adjustments, although the United States may be very interested in the depreciation of the dollar –in order to facilitate the closing of its external deficit and the paying of its public debt– this fact does not imply that such depreciation will be easy to attain. First, because it would imply a higher inflation level and lower real wages in the US.[46] Second, because it would require those countries currently holding huge amounts of dollar reserves to agree to get rid of an important portion of them. Third, because it would allow foreign investors to buy assets in the US paying lower prices. In any case, the US needs an increase in aggregate demand in order to reactivate its level of activity; but as households and the government are deeply indebted –at the same time that firms do not find reasons to increase their level of investment– the increase in demand will have to come from the rest of the world through their purchases of US goods. And that is why exchange rates are so important.

As the only superpower during the last 20 years, the United States had the responsibility of adopting a model of economic growth that could be used as a reference for countries in the rest of the world, a task that –for several reasons– the US was unable or unwilling to undertake. As a result of this failure, the US will now have to give up part of its power, both economic and political. However, it will not be easy to persuade the US to accept a fundamental reform of the international monetary system, something that will make even more difficult to carry out a project that it is not at all an easy task, as it has been pointed out by Stiglitz.[47] But a global, integrated, capitalist economy like the one that has been being built during the last 20 or 30 years does not allow for national boundaries, and the reform of the international monetary system with the introduction of a single currency is a way to recognize it.

Although some authors –Shiller (2005), for example– emphasize the psychological factors involved in the development of the crisis –the *animal spirits*–, it is obvious that the crisis is something more complicated that solely the result of the bad behavior –or *irrational exhuberance*– of economic agents, particularly those in the financial sector. Even though it is very important to have a financial sector that efficiently supports the productive activities in the real sector, we must recognize that we are not witnessing an economic problem concerning solely financial variables, and that a higher efficiency in the real sector may be even more important than a financial reform. And although the channels are obvious –the eradication of giant monopolies, the elimination of relative price distortions, the cutting of unproductive expenses, and technological progress–, none of them will be easy to implement.

Cutting unproductive expenses, for example, will not be an easy task because the US government is currently involved in two wars –a *war on drugs* declared by President Nixon in 1971,[48] and a *war on terrorism* declared by President Reagan in 1985[49]– in which it will be

[46] A dollar depreciation can also be seen as an appreciation of –for example– the Chinese currency, thus resulting in an export of inflation by that country, that would not be able to continue helping to maintain world inflation low.
[47] See report of the UN Commission chaired by Joseph Stiglitz (2009).
[48] See the 1970 Comprehensive Drug Abuse Prevention and Control Act.
[49] See Chomsky (2002)

very difficult –if at all possible– to obtain definitive victories. These wars are very expensive, not only financially, but also because of the risk that they will end up transforming the US government in an authoritarian, even militaristic regime. Again, as the only superpower during the last 20 years, the United States should have played the role of an impartial judge in the solution of international conflicts, and this is another task that the country was unable or unwilling to assume.

So, we can say that world capitalism requires a substantial restructuring of both its political and economic configuration, in order to stabilize financial markets and to fully integrate new and very important partners –such as China, India, Brazil and Russia– under its sphere. Even if, the incorporation of –or the access to– new markets was considered by Schumpeter as one of the fundamental driving forces of capitalist development –other factors being more consumers, new goods, technological progress, and new forms of industrial organization[50]–, what has been observed in the case of the integration of the emerging countries into the world economy may appear to refute these ideas. However, it is important to understand that the positive effects of the incorporation of new markets do not have to be observed immediately or without any setbacks.

References

- Admati, Anat R. and others: "Only recapitalised banks should pay dividends" (letter) in *Financial Times*, February 15 2011.

- Amin, Samir: *Economic, Social and Political Distortion in the Modern World*. 1996.

- Amromin, Eugene and Sujit Chakravorti: *What Is the Impact of Credit Cards on Demand for Money?* Federal Reserve Bank of Chicago, Working Paper 2007- 4.

- Anand, Sudhir y Paul Segal: "What Do We Know about Global Income Inequality?", pp. 57-94, *Journal of Economic Literature*, Vol. XLVI, Num. 1. March 2008.

- Authers, John: *The Fearful Rise of Markets*. FT Press. Upper Saddle River, New Jersey. 2010.

- Bank for International Settlements: *Basel II: International Convergence of Capital Measurement and Capital Standards: A Revised Framework - Comprehensive Version*. June 2006. http://www.bis.org/publ/bcbs128.htm.

- Bernanke, Ben S., Carol Bertaut, Laurie Pounder DeMarco, and Steven Kamin: *International Capital Flows and the Returns to Safe Assets in the United States, 2003-2007*. Board of Governors of the Federal Reserve System, International Finance Discussion Papers Number 1014. February 2011.

- Brockway, George P.: "On speculation: a footnote to Keynes", pp. 515-522, *Journal of Post Keynesian Economics*, Vol. 5, Num. 4, Summer 1983.

- Chomsky, Noam: "The Journalist from Mars", in *Media Control*, 2nd Edition. Seven Stories Press. New York. 2002.

- Cooper, George: *The origin of financial crisis. Central banks, credit bubbles and the efficient market fallacy*. Harriman House LTD. Petersfield, Hampshire. 2008.

- Dadkhah, Kamran: *The Evolution of Macroeconomic Theory and Policy*. Springer. Berlin. 2009.

[50] Schumpeter (1975), pp. 82-85.

- Dodd, Randall: "Derivatives Markets: Sources of Vulnerability in US Financial Markets", Ch. 6 in G. Epstein (Ed.): *Financialization and the World Economy*. Elgar. Northampton, MA. 2005.

- Dornbusch, Rudiger: "Expectations and Exchange Rate Dynamics", *Journal of Political Economy*. 1976.

- Eichengreen, Barry, Ricardo Hausmann and Ugo Panizza: "Original Sin: The Pain, the Mystery, and the Road to Redemption". Paper prepared for the conference "Currency and Maturity Matchmaking: Redeeming Debt from Original Sin," Inter-American Development Bank, Washington, D.C., 21-22 November 2002.

- Epstein, Gerald: "Introduction", Ch. 1 in G. Epstein (Ed.): *Financialization and the World Economy*. Elgar. Northampton, MA. 2005.

- International Monetary Fund: *IMF Factsheet – Special Drawing Rights*. In www.imf.org/external/np/exr/facts/sdr.HTM.

- Guttentag, Jack and Richard Herring: "Emergency Liquidity Assistance for International Banks", Ch. 5 in R. Portes and A. Swoboda (Eds.): *Threats to International Financial Stability*. Centre for International Policy Research. Cambridge University Press. Cambridge. 1987.

- Kaufman, Henry: "America must start again on financial regulation". *Financial Times*, December 16, 2010.

- Kindleberger, Charles P.: *Manias, Panics and Crashes. A History of Financial Crises*. Basic Books. New York. 1978.

- Levy, Frank y Peter Temlin: *Inequality and Institutions in 20th Century America*. MIT Industrial Performance Center. June 2007.

- Loeys, Jan, D. Mackie, P. Meggyesi and N. Panigirtzoglou: *Corporates are Driving the Global Saving Glut*. JPMorgan Research. London. June 24, 2005.

- Minsky, Hyman: "The financial-instability hypothesis: capitalist processes and the behavior of the economy", Ch. 2 in C.P. Kindleberger and J-P Laffargue (eds.), *Financial crises. Theory, history and policy*. Cambridge University Press. Cambridge. 1982.

- Mishkin, Frederic: *The Economics of Money, Banking and Financial Markets*. 9th. Ed. Addison-Wesley. Boston. 2009.

- Morgan, Jamie: 'How should we conceive the continued resilience of the US Dollar as a reserve currency?', *Review of Radical Political Economics* 41(1) 43-61. 2009.

- Niskanen, William A.: "Economic Deregulation in the United States: Lessons for America, Lessons for China", pp. 657-668, *Cato Journal*, Vol. 8, Num. 3. 1989.

- Obstfeld, Maurice: International Capital Mobility in the 1990s. NBER Working Paper #4534. 1993.
- Ott, Mack: *Foreign Investment in the United States*. The Concise Encyclopedia of Economics. www.econlib.org/library/Enc1/ForeignInvestmentintheUnitedStates.html. 2002.

- Palumbo, Michael G. and J. A. Parker: *The integrated financial and real system of national accounts for the United States: Does it presage the financial crisis?* NBER Working Paper 14663. 2009.

- Parker, Jonathan: *Spendthrift in America? On two decades of decline in the U.S. saving rate*. NBER Working Paper 7238. 1999.

- Partnoy, Frank: *How and Why Credit Rating Agencies Are not Like other Gatekeepers*. Legal Studies Research Paper Series. Research Paper No. 07-46. May 2006.

- Rajan, Raghuram: *Fault Lines*. Princeton University Press. Princeton. 2010.

- Reich, Robert B.: *Aftershock. The Next Economy and America's Future*. Knopf. New York. 2010.

- Reinhart, Carmen M. and Kenneth S. Rogoff: This Time is Different. Eight Centuries of Financial Folly. Princeton University Press. Princeton, N.J. 2009.

- Rüffer, Rasmus y Livio Stracca: *What is global excess liquidity, and does it matter?* European Central Bank, Working Paper Series Num. 696. November 2006.

- Samuelson, Paul A.: "International Factor-Price Equalisation Once Again", pp. 181-197, *The Economic Journal*, Vol. 59, Num. 234. June 1949.

- Schechter, Danny: *In debt we trust*. Film. Altacliff. 2008.

- Schumpeter, Joseph: *Capitalism, Socialism and Democracy*. New York: Harper, 1975 (originally published in 1942).

- Shiller, Robert: *Irrational Exuberance*. Princeton University Press. 2005.

- Stiglitz, Joseph: *Making Globalization Work*. W.W. Norton. New York. 2006.

- Suominen, Kati: *The dollar question: Where are we?* July 9, 2010. http://www.voxeu.org

- Tobin, James: *A Proposal for International Monetary Reform*. Presidential address at the 1978 conference of the Eastern Economic Association. Washington, D.C. 1978.- Triffin, Robert: *Gold and the Dollar Crisis: The future of convertibility*. 1960

- UNCTAD: *United Nations Conference on Trade and Development Report*. Geneva. 2009.

- United Nations: *Report of the Commission of Experts of the President of the United Nations General Assembly on Reforms of the International Monetary and Financial System, J.* Stiglitz, Chair. New York. 2009.

- Wealth for the Common Good: *The IPS Program on Inequality and the Common Good*: *Inequality by the Numbers*. wealthforcommongood.org/wp-content/uploads/2009/12/ inequality-by-the-numbers-2009.pdf. October 2009.

- World Trade Organization: *China – Measures Related to the Exportation of Various Raw Materials - Reports of the Panel*. July 2011.

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Waiting for the next crash: the Minskyan lessons we failed to learn

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Introduction

As the media cycle churns along, public discussion of the roots of the financial crisis has faded into the background. Likewise, the political moment for restructuring the financial system and its institutions has passed. The already tame measures of Dodd-Frank are being further enfeebled as an empowered congressional minority threatens to withhold funds from new regulatory agencies; major players in the financial world continue to avoid prosecution for their fraud-stained roles in the crisis; and Wall Street bounces back to claim its 40 percent share of all corporate profits. Business as usual has returned to the financial sector.

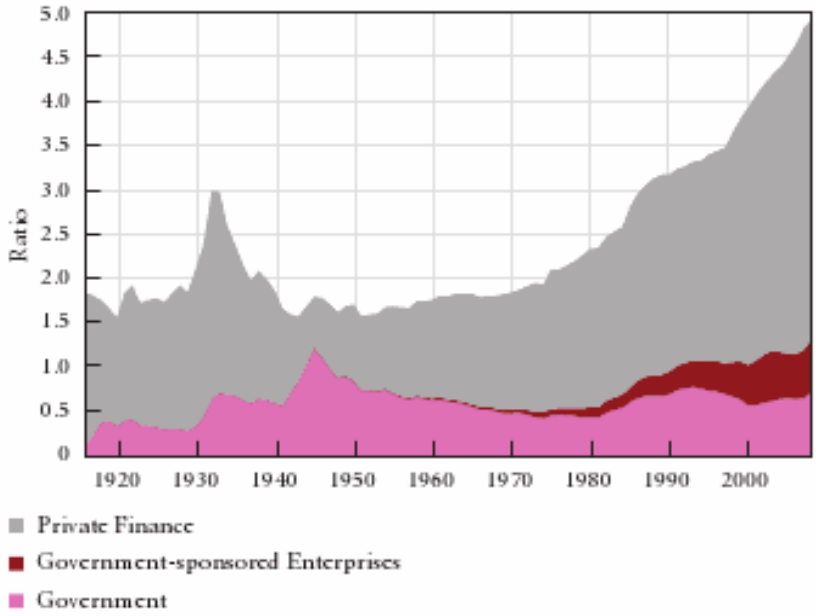
The real-world economic devastation wrought by the crisis, however, lingers on—as does the underlying brittleness of the financial system. We have not learned the lessons we ought to have learned from the global financial crisis (GFC), and have thus squandered our chance to engage in the real restructuring of the financial system that is necessary to prevent another crash. Although the prospects of further reform are now dead, we can at the very least prepare ourselves for the next crisis—and for the next opportunity to revive the financial structure debate—by learning the right lessons from the last crisis.

Doing so, however, requires figuring out what went wrong in the first place. The work of Hyman P. Minsky allows us to look beyond the details of the subprime mortgage crisis to the underlying conditions that have made the economy susceptible to the "shock of the moment." His work also suggests a possible blueprint, should the political opportunity ever present itself, for restructuring the financial system and rebalancing the economy—in a move away from speculation and fraud and toward real improvements in living standards.

What went wrong?

The high rate of defaults in subprime mortgages was the trigger for this latest crisis, but for anyone interested in preventing the next one, the problems run much deeper than the subprime mess. In fact, the financial system was already so fragile that, with respect to the triggering event, it could have been anything. At less than $2 trillion, the total subprime universe was modest relative to US GDP; the number of defaults was not, on its own, sufficient to explain a crash of the magnitude that occurred. What allowed this event to activate a global financial panic and a resulting debt deflation was a long-term transformation of the economy toward instability, a shift traced by Minsky since the 1950s. It is only by addressing this underlying structural instability that we can prevent "It"—a financial crisis in conjunction with an economic downturn—from happening again. In the absence of such fundamental reform, we should expect the next crisis to be right around the corner, and for it to be worse than the last one.

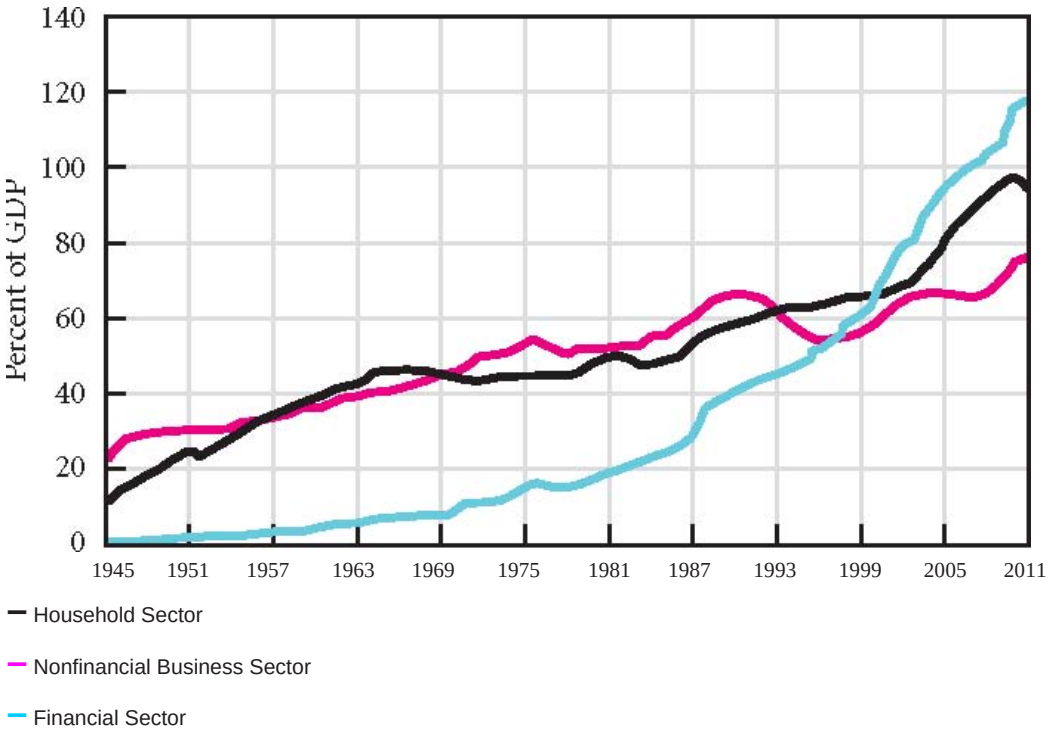
Figure 1 Total Financial Liabilities Relative to GDP, 1916–2008



Sources: Carter et al. 2006; National Income and Product Accounts (NIPA); Federal Reserve Flow of Funds Accounts (1945–)

The story of the GFC cannot be told without several chapters devoted to the "financialization" of the economy—to the rising share of GDP flowing to the financial sector. Total US debt (of all types) rose from just above 150 percent of GDP at the end of World War II to almost five times GDP in 2008; the previous peak, in 1929, was three times GDP (Figure 1). Financialization is marked by increased leverage, with debt piled on top of debt, and more and more complex linkages between financial institutions—essentially, an explosion of financial layering in which financial institutions borrow from one another to lend. These linkages create the conditions under which the failure of an institution like Bear Stearns or Lehman Brothers can result in the sort of toppling of dominoes that occurred in the financial sector. A look at the ratio of financial institution liabilities to GDP, a decent measure of financialization, reveals a telling acceleration in the last couple of decades (Figure 2).

Figure 2 USA Credit Market Debt Outstanding, 1945–2011 (in percent of GDP)



Source: NIPA; Federal Reserve Flow of Funds Accounts

Minsky's earliest work from the 1950s focused on the expanding role of financial institutions, and he noticed an increase in debt layering as early as the mid-1960s—a development, he warned, that could ultimately make "It" happen again. Minsky's financial instability hypothesis came to be focused on the long-term transformation of the economy toward a stage he called "money manager capitalism" (Minsky 1986, 1992a, 1992b, 1992c, 1992d; Minsky and Whalen 1996; Wray 2008, 2009). Money manager capitalism is marked by the potential for deep instability, with massive pools of funds, directed by professionals seeking the highest possible returns, generating successive speculative bubbles in stocks, real estate, and commodities. Examples include pension funds, sovereign wealth funds, mutual funds, and insurance funds. Pension funds alone reached about three-quarters the size of GDP. These huge pools of managed money, including those overseen by highly leveraged "shadow banks," were (1) for the most part unregulated and (2) able to compete with regulated banks. Deregulation in the banking sector was in part a reaction to this competition from shadow banks. The creation of highly leveraged and largely unregulated special purpose vehicles, for instance, can be attributed to an attempt by banks to keep up with the shadow banking sector, which did not labor under minimum capital and reserve requirements. The creation of these off-balance-sheet entities ended up being crucial to the recent collapse, as these entities took huge risks without supervision; those risks came back to banks when the crisis hit. It is difficult to imagine how we could have had the recent GFC without the rise of money managers and shadow banks.

Alongside the move toward greater financialization and development of the money manager stage of capitalism were the effects of stagnating real wages and rising inequality. Real median wage growth has been nearly flat since the early 1970s, as productivity gains flowed largely to the top of the income distribution. This stagnation led to increasing household indebtedness as the average family struggled to maintain its living standards (Wray 2005). For a while, increasing the number of workers per family (mostly women with children) helped to support consumption, but as lending standards relaxed and housing prices boomed, consumption was fueled by home equity loans. In fact, roughly half of subprime and "Alt-A" (a step below prime) loans were for second mortgages or cash-out re-fi's used to finance consumption, not ownership.

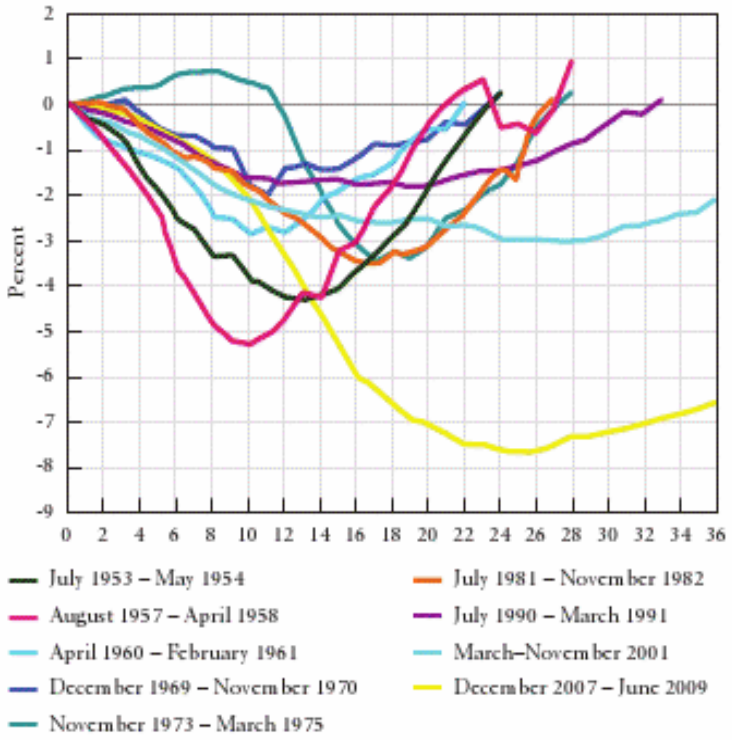
In other words, as finance metastasized, the "real" economy was withering—with the latter phenomenon feeding into the former. High inequality and stagnant wage growth tends to promote "living beyond one's means," as consumers try to keep up with the lifestyles of the rich and famous. Combine this with lax regulation and supervision of banking, and you have a debt-fueled consumption boom. Add a fraud-fueled real estate boom, and you have the fragile financial environment that made the GFC possible.

The lessons we should have learned

Minsky's view is that the transformation of the economy and its financial structure from robust to fragile is due, not to external market factors like government intervention and regulation, but to the "normal" operations and incentives of financial capitalism. This potential for negative transformation is ever present. Minsky argued that the very "success" of this economy—its upward euphoric booms—accounts for its truly dangerous instability because it makes a 1929-style crash possible.

Similarly, the market alone cannot be relied upon to provide stable employment growth and broadly shared income gains. There are no automatic forces, in the Minsky-Keynes view, pushing the economy toward full employment. Although the GFC has occasioned a dramatic employment crisis, we should not ignore the longer-term trends. The jobless recovery is an extreme example of a trend that has been observed for the last few decades: the seeming decoupling of economic growth from employment. Growth on its own is no longer a guarantee of full employment. Earlier postwar recessions were marked by robust recoveries in terms of job creation. In the last couple of decades, however, the recuperation of jobs in the aftermath of a recession has lagged (Figure 3). After the 1990–91 recession, for example, it took almost 32 months for employment to return to its pre-recession level; after the 2001 recession, 36 months. The current recession features an even more dramatic lag: 36 months after it began, employment still remains 7 percent short of its prerecession level.

Figure 3 Change in Employment 36 Months after Beginning of Recession, Relative to Prerecession Level (in percent)



Source: Bureau of Labor Statistics

Note: Some lines reach zero; that is, employment reverts to its prerecession level in less than 36 months.

The solutions to these problems, in both finance and the real economy, lie beyond markets. Rebalancing the economy requires a restructuring and reregulation of the financial system, along with government policies to promote and guarantee full employment. Before we turn to these solutions, however, we need to dwell on a few of the more particular lessons we ought to have learned from the previous GFC.

First, while some analysts blame the Federal Reserve for keeping the interest rate too low and thus promoting speculation, this view is mostly wrong. As John Kenneth Galbraith (1961) pointed out in his analysis of the Great Crash, low interest rates do not necessarily fuel speculation. In any case, the Fed had already begun raising interest rates in 2004, and most of the worst real estate market abuses occurred later. Raising interest rates in a bubble will not have much impact, since the prospective earnings swamp any 400-basis-points increase—a rather large rate hike that would take a couple of years to phase in (since the Fed moved to a policy of "gradualism," or a series of small hikes, when it adopted the New Monetary Consensus in the mid-1990s).

Second, this was not a liquidity crisis, but rather a massive insolvency across the largest banks, shadow and otherwise. The banks had an insufficient supply of good assets to offer as collateral against loans—just trashy real estate derivatives plus loans to one another, all backed by nothing other than a fog of deceit. All it took was for one gambling banker to call the bluff. As default rates rose, banks realized not only that they held shoddy mortgage products but that other banks and financial institutions did as well. Consequently, they refused to roll over short-term liabilities and stopped lending to one another, and the whole financial layering–supported scheme collapsed. This was not a matter of some "global missed payment." In fact, the major banks are probably still insolvent, propped up only by the backing provided by the US Treasury and the Fed.

Third, the "efficient markets hypothesis," which tells us (among other things) that markets will discover the proper prices of securitized loans, failed. There is, in other words, no substitute for good underwriting; for a solid process of determining creditworthiness and creating incentives for predictable repayment. Over the last decade, the largest institutions involved in home finance reduced their underwriting standards, or they eliminated them entirely—hence the absurd "Ninja loans" (no income, no job, no assets). Underwriting standards, when they depend upon "market discipline" alone, should be expected to deteriorate, as they did in this latest crisis and those before it. When some asset class is booming, lenders come to expect that the prices of those assets will continue to rise. They will then lend more relative to value, current income, and expected cash flow because asset price appreciation makes most loans good. If things do not work out, loans can be refinanced or the collateral seized and sold. It goes on until someone questions the boom—and starts to sell assets or refuses to roll over debt. The discovery that assets are probably overvalued causes prices to reverse course and then to collapse, so borrowers sink underwater and lenders are left insolvent. A run on uninsured liabilities then begins.

In the GFC, "depositors" in money market mutual funds began to worry about "breaking the buck" (i.e., the funds would not be able to guarantee that a dollar of their liabilities would be worth a dollar), causing a run. Similarly, shadow banks that relied on "rolling over" very short-term liabilities (including commercial paper) encountered rising "haircuts" (the discount applied to their collateral) and could not refinance their asset positions. That led to "fire sales" of assets, declining asset prices, and a general liquidity crisis. More important, it was recognized that assets had been tremendously overvalued, so that, even with Treasury extensions of guarantees (to money market mutual funds, for example) and trillions of dollars in lender-of-last-resort activity by the Fed, no one wanted to refinance banks and shadow banks. Financial institutions, which relied on one another (rather than on depositors) for funding, discovered the dangers of "interconnectedness." They began to delever, selling their toxic assets to the Fed (in the first round of quantitative easing) and unwinding their positions.

The current tightening of loan standards is not evidence that banks have learned their lesson but simply a natural reaction to the crisis. Absent any serious regulatory measures ensuring otherwise, underwriting standards will gradually (and predictably) wither away and disappear as the next euphoric boom emerges. "Market discipline," such as it is, perversely leads to insufficient underwriting and, in turn, inadequate lending, when underwriting and liquidity are needed most (underwriting at the height of euphoria, and liquidity in the wreckage of a bust).

Finally, policymakers must recognize that the activities leading up to and through the crisis were riddled with fraud. Fraud, at multiple levels, became normal business practice—from lender fraud and foreclosure fraud to the practice of duping investors into buying toxic securities with bait-and-switch tactics, while simultaneously betting against those securities using credit default swaps. Every layer in the home finance food chain was not only complex but also fraudulent, from the real estate agents to the appraisers and mortgage brokers who overpriced properties and induced borrowers into terms they could not afford, to the investment banks and their subsidiary trusts that securitized the mortgages, to the credit rating agencies and accounting firms that validated values and practices, to the servicers and judges who allowed banks to steal homes, and on to the CEOs and lawyers who signed off on the fraud. Once a bank has made a "liar's loan," every other link in the chain must be tainted. And that means every transaction, every certification, every rating, and every signature all the way up to that of the investment bank CEO is part of the cover-up.

During the thrift fiasco in the late '80s and early '90s, the fraudsters were finally shut down, more than a thousand were jailed, and the Bush (Senior) administration resolved the crisis with an infusion of about $200 billion, using the newly created Resolution Trust Corporation. While this "bailout" was imperfect, at least it stopped the fraud, closed the worst thrifts, and jailed many of the crooks. So far, in this much bigger crisis, we have done none of those things.

Preparing for the next crisis

Should the next crisis create the necessary sense of urgency, the following reforms in both finance and the "real" economy should be considered. The long-run US trend has been to consolidate a wide range of services within the affiliates of a bank holding company. The New Deal reforms separated institutions by function (and state laws against branching provided geographic constraints). Natural evolution plus deregulation allowed the growth of a handful of dominant behemoths that now play a key role in providing all of these services. Generally speaking, since economies of scale exhaust themselves fairly quickly in banking, as Minsky and others have argued, there ought to be a presumption in favor of limiting the size of banks. Larger institutions are much harder to regulate and supervise, creating incentives for the development of control fraud, in which owners are duped while managers are enriched. The supposed benefits and "synergies" that were to flow from bank consolidation and extension of scope have mostly been opportunities for institutions to bet against their own customers. Charles Keating's Lincoln Savings and Loan used its FDIC seal of approval to sell risky and ultimately worthless assets to elderly widows who thought they were buying insured certificates of deposit. More recently, Goldman Sachs allowed hedge fund manager John Paulson to design sure-to-fail synthetic collateralized debt obligations that Goldman sold to its own customers, allowing both Goldman and Paulson to bet on failure using credit default swaps (Eisinger and Bernstein 2010).

Financial institutions should be offered a stark choice between either holding a bank charter or engaging in speculative trading. In this scenario, investment banks would not be allowed to "play with house money" (FDIC-insured deposits) and chartered banks would be prohibited from securitizing. Chartered banks ought to be conceived of as public utilities, serving public purposes, and as such, they should not be engaged in the kind of securitized lending that undermines solid underwriting if they are going to have access to government guarantees and Fed lending. In this vein, banks ought to be required to hold loans to maturity. There is no legitimate reason for banks to move assets off their balance sheets. There is also no need to make securitization itself illegal, but banks should not be allowed to engage in it.

Banks should ultimately have a narrow focus and a limited set of operations. For instance, business functions not related to commercial and residential real estate mortgages and the making of short-term commercial loans should be excised from a bank's operations. Other financial institutions may engage in activities beyond this narrow scope, but if they do so, they should not be provided with government backstops or guarantees.

For those institutions that will engage in trading, including investment banks, we must change their incentive structure in order to promote better underwriting. It will be very difficult to reorient investment banking toward a long-term horizon with proper underwriting when debt is securitized and subject to lax oversight, the average stock is held less than a year, and the stock market as a whole is a negative source of capital asset funding (since firms are caught up in the casino, purchasing their own equity to share in the gains of a speculative bubble). Still, it is necessary to do so. Compensation for managers and traders at investment banks should be linked to long-term results. For instance, compensation could be tied to five-year income flows, with "clawbacks" in the case of losses. Investment banks should ultimately be reoriented toward playing more of an intermediary role, holding long-term debt and issuing their own debt to savers. Attempts to impose higher capital ratios, such as those mandated in Basel III, do not provide the necessary discipline—investment banks that "originate to distribute" do not hold the relevant assets on their books anyway.

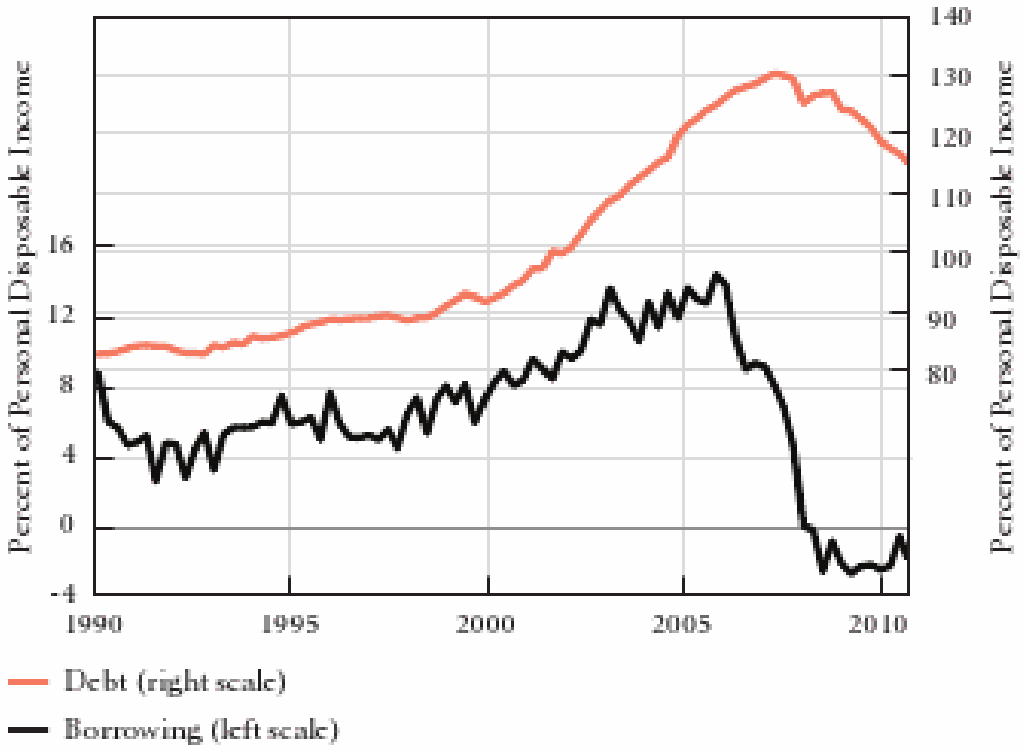
Along with these financial sector reforms, we must also address the cyclical and long-term unemployment problem. Minsky developed an "employer of last resort" (ELR) policy, in which government would provide a job guarantee to all who were willing and able to work (Minsky 1965, 1986; Wray 1998; Kelton and Wray 2004). An ELR program would offer a job at the minimum wage, plus benefits, with no time limits and no income, gender, education, or experience requirements. Funding would be provided by the federal government and administration would be decentralized, with state and local governments, as well as nonprofits, proposing projects. Proposals would be evaluated on the following criteria: (1) value to the community, (2) value to the participants, (3) likelihood of successful implementation of the project, and (4) contribution to preparing workers for non-program employment.

Rather than a one-shot solution to a cyclical downturn, an ELR program of this kind is designed to be a permanent feature supporting the labor market. In an expansion, employers would recruit and hire workers from the program "pool"; in a downturn, the jobs guarantee would ensure a secure flow of income for those who were laid off. It would also provide training and experience for those who could not otherwise find a job. By encouraging full employment, an ELR policy would help reduce inequality and promote income-supported (rather than private debt–fueled) consumption.

Conclusion

The conditions that held in 2007 have been replicated, and the next GFC is just waiting for a trigger. The bailout has increased the linkages among the top four or five banks, making the system even more fragile. We've lost eight million jobs, opening a demand gap of about $1 trillion. Although some households have defaulted on their debts, and others have repaid portions of theirs, most of the household debt held in 2007 still exists (Figure 4).

Figure 4 Household Borrowing and Debt, 1990–2011



Sources: Federal Reserve; Bureau of Economic Analysis

Against this background, there are multiple events that could trigger a new, potentially deeper crisis. Should information leak out that one of the major US banks is insolvent (a proposition believed by many analysts), another massive liquidity crisis would be likely. Alternatively, the problems could start in Europe and ripple into the United States: for example, there is a plausible path that can be traced from US money market mutual fund holdings of eurobank assets (i.e., $3 trillion of extremely short-term liabilities that are like deposits but not insured) to a new global financial shock. Last time, the US government extended its guarantee to all of them; Dodd-Frank now outlaws such intervention. So the appearance of a problem among eurobanks could bring down that whole market—which is about twice the size of the US subprime mortgage market that brought on the global financial crisis last time.

Far-reaching reform along the Minskyan lines traced above will likely be conceivable only in the aftermath of the next crisis. Unfortunately, that opportunity may be right around the corner.

References

Carter, S. B., et al., eds. 2006. The Historical Statistics of the United States: Earliest Times to the Present. Millennial Edition. New York: Cambridge University Press.

Eisinger, J., and J. Bernstein. 2010. "The Magnetar Trade: How One Hedge Fund Helped Keep the Bubble Going." ProPublica, April 9.

Galbraith, J. K. 1961. The Great Crash, 1929. 2nd ed. Boston: Houghton Mifflin.

Kelton, S., and L. R. Wray. 2004. "The War on Poverty after 40 Years: A Minskyan Assessment." Public Policy Brief No. 78. Annandale-on-Hudson, N.Y.: Levy Economics Institute of Bard College. June.

Minsky, H. P. 1965. "The Role of Employment Policy." In Margaret S. Gordon, ed. Poverty in America: Proceedings of a National Conference Held at the University of California, Berkeley, February 26–28, 1965. San Francisco: Chandler Publishing Company.

———. 1986. Stabilizing an Unstable Economy. New Haven, Conn.: Yale University Press.

———. 1992a. "Reconstituting the United States' Financial Structure: Some Fundamental Issues." Working Paper No. 69. Annandale-on-Hudson, N.Y.: Levy Economics Institute of Bard College. January.

———. 1992b. "The Capital Development of the Economy and the Structure of Financial Institutions." Working Paper No. 72. Annandale-on-Hudson, N.Y.: Levy Economics Institute of Bard College. January.

———. 1992c. "The Economic Problem at the End of the Second Millennium: Creating Capitalism, Reforming Capitalism and Making Capitalism Work." Unpublished manuscript (prospective chapter), May 13. Minsky Archive. Levy Economics Institute of Bard College, Annandale-on-Hudson, N.Y. (hereafter, Minsky Archive).

———. 1992d. "Reconstituting the Financial Structure: The United States." Unpublished manuscript (prospective chapter, in four parts), May 13. Minsky Archive.

Minsky, H. P., and C. Whalen. 1996. "Economic Insecurity and the Institutional Prerequisites for Successful Capitalism." Working Paper No. 165. Annandale-on-Hudson, N.Y.: Levy Economics Institute of Bard College. May.

Wray, L. R. 1998. Understanding Modern Money: The Key to Full Employment and Price Stability. Northampton, Mass.: Edward Elgar Publishing.

———. 2005. "The Ownership Society: Social Security Is Only the Beginning." Public Policy Brief No. 82. Annandale-on-Hudson, N.Y.: Levy Economics Institute of Bard College. August.

———. 2008. "Lessons from the Subprime Meltdown." Challenge 51, no. 2 (March): 40–68.

———. 2009. "The Rise and Fall of Money Manager Capitalism: A Minskian Approach." Special Issue, Cambridge Journal of Economics 33, no. 4 (July): 807–28.

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Europe's non-solution: the 'bazooka' turned on itself

Marshall Auerback [Levy Institute, USA]

To judge from the euphoric actions of the equity markets recently, it would appear that Europe's policy makers have finally grasped the nettle, and resolved the problems of the European Monetary Union (EMU) once and for all. And when have we heard that before? Truth be told, it is hard to get excited about any of the "solutions" on offer, because they steadfastly refuse to acknowledge that the eurozone's problem is fundamentally one of flawed financial architecture. The banking "problems", and corresponding "need" for urgent recapitalization, are simply symptoms of that problem. Offering the "cure" of banking recapitalization for a disease which is ultimately one of national solvency (of which the banking crisis is but a symptom) is akin to offering chemotherapy to resolve a heart ailment. It might look like the doctor is offering good medicine, but it does not address the underlying problem. By the same token, despite the current "thumbs-up" from the equity markets in response to last week's agreement, the treatment is likely to exacerbate the disease, rather than represent the cure. And the price action in Italy's bond auction in the aftermath of the latest "solution" does suggest something far more ominous.

Coming back to core principles. We agree that the concern about Portugal, Ireland, Italy, Greece and Spain (PIIGS), indeed ALL other Euronations is justified. But using PIIGS countries as analogues to the US is a result of the failure of deficit critics to understand the differences between the monetary arrangements of sovereign and non-sovereign nations. Greece, Italy, France, and yes, Germany, are all USERS of the euro—not an issuer (as is the US or, say, Canada). In that respect, they are more like California, Massachusetts, indeed, any American state or Canadian province, all of which are users of their respective national government's dollar.

But the eurozone's chief policy makers continue to ignore this fundamental point and therefore, steadfastly avoid utilizing the one institution – the European Central Bank – which has the capacity to create unlimited euros, and therefore provides the only credible backstop to markets which continue to query the solvency of individual nation states within the euro zone. They are, as Professor Paul de Grauwe suggests, like generals who refuse to go into combat fully armed ("European Summits in Ivory Towers" - http://www.voxeu.org/index.php?q=node/7158):

> The generals… announce that they actually hate the whole thing and that they will limit the shooting as much as possible. Some of the generals are so upset by the prospect of going to war that they resign from the army. The remaining generals then tell the enemy that the shooting will only be temporary, and that the army will go home as soon as possible. What is the likely outcome of this war? You guessed it. Utter defeat by the enemy.
>
> The ECB has been behaving like the generals. When it announced its programme of government bond buying it made it known to the financial markets (the enemy) that it thoroughly dislikes it and that it will discontinue it as soon as possible. Some members of the Governing Council of the ECB resigned in disgust at the prospect of having to buy bad bonds. Like the army, the ECB has overwhelming (in

> fact unlimited) firepower but it made it clear that it is not prepared to use the full strength of its money-creating capacity. What is the likely outcome of such a programme? You guessed it. Defeat by the financial markets.

By the same token, the ECB is so loath for everybody to agree on a Greek default, on the grounds that they bear "the loss" even though it is a notional accounting loss that has no bearing on their ability to create euros until the cows come home. By contrast, when you get national governments funding the European Financial Stability Fund (EFSF), then it does ultimately threaten the credit ratings of France and Germany once the markets begin to call their bluff on how far they're prepared to go to support this political fig-leaf called the EFSF. And because NONE of these countries is sovereign in respect to their currency (they USE the euro, but they don't ISSUE it), it expands the potential insolvency problem, taking Germany down along with the rest.

Other than the obvious screams of "Weimar", and "hyperinflation" is there any other reason to explain the ECB's reluctance to continue its existing bond buying programs? Questions have been raised both about the ECB's ultimate solvency and the legal constraints which govern its mandate. To deal with the solvency issue first: has anyone bothered to ask themselves what the concept of solvency means for a central bank that creates its own money? If one takes the 30 seconds required to ponder this question, surely we can understand that the concept of solvency is totally and thoroughly irrelevant to a central bank with a sovereign currency (i.e. not convertible on demand into a fixed quantity of other currencies or a commodity). Willem Buiter noted in his 2008 Discussion Paper – Can Central Banks Go Broke? – that in "the usual nation state setting" there is a unique "national fiscal authority" (treasury) which "stands behind a single national central bank". He concludes in this situation that:

> There can be no doubt … the fiscal authorities are, from a technical, administrative and economic management point of view, capable of extracting and transferring to the central bank the resources required to ensure capital adequacy of the central bank should the central bank suffer a severe depletion of capital in the performance of its lender of last resort and market maker of last resort functions.

Does this mean that central banks cannot go broke? Answer: no. Willem Buiter provides the qualification that is essential:

> [T]he central bank can always bail out any entity – including itself – through the issuance of base money – if the entity's liabilities are denominated in domestic current and nominally denominated (that is, not index-linked). If the liabilities of the entity in question are foreign-currency-denominated or index-linked, a bail-out by the central bank may not be possible.

Which is the standard definition of a risk-free sovereign government – one that only issues liabilities in its own currency. If the consolidated government sector – the central bank and the treasury – issue liabilities (for example, take on debt) – that is denominated in a foreign currency, then insolvency becomes a possibility.

What about the Eurozone, where there is no fiscal authority? In the Eurozone, the pecking order is that the member state treasuries are deemed to guarantee their own national central banks which "own" the ECB and which provide lender of last resort facilities to their

own banking systems. There is no fiscal authority backing the ECB but despite all the legal niceties (complexities) involved in how the national central banks might carry out their lender of last resort duties, the reality is that the ECB is the ultimate lender of last resort in the EMU The other point to note is the following:

> [It] is not necessarily the case that a central bank goes bankrupt even if its equity capital is completely depleted by its engagement in unorthodox monetary policies. The reason is that there are differences between central banks and commercial banks and a static visual inspection of the central bank balance sheet does not convey a complete picture. http://bilbo.economicoutlook.net/blog/?p=1610

Consider the example of the US Federal Reserve which could buy up the entire outstanding stock of privately held US Federal debt today, i.e. it could be able to monetise the public debt and if the Fed loses capital it will not go bankrupt like a regular company: it will just print the money to make up the difference – and this is meant literally.

Similarly, the ECB cannot go bankrupt according to common comprehension because it is sitting at the fountain-head of money which it can create by itself. Something else logically flows from this analysis. As the monopoly supplier of currency, the ECB (like the Fed) can always determine price. Yet when it announced its programme of government bond buying it made it known to the financial markets (the enemy) that it thoroughly disliked it would discontinue it as soon as possible. That turns a potential bazooka into a pea-gun.

While the mainstream economists would consider this to be dangerously inflationary if the central bank acted in this way the point is that at least that observation (erroneous or not) takes the debate beyond the inane level of insolvency. The ECB and others who resist its involvement in the salvation of the common currency continue to think and act as if it is a central bank operating under a gold standard. That is insane, and certifiably so.

In regard to the legal requirements:

- The ECB does not have a statutory minimum capital requirement.
- It transfers profits to national governments but in times of losses it can only request a capital injection should its capital be depleted.
- The European Council (which is representative of elected governments) is not compelled to accede to this request.
- Hence, the ECB is a perfect balance sheet to warehouse risk since its losses need not become fiscal transfer as it can rebuild its profits via seigniorage over a number of years. In that sense, its role is analogous to that of the Swiss National Bank effectively warehoused its Swiss banks' bad paper during the height of the crisis in 2008.

Of course, the ECB would HATE this and the risk is that its losses would limit its willingness to maintain its bond buying program. But it remains the only game in town. The bond buying is precisely what gives them leverage and, paradoxically, preserves the quality of its balance sheet, since the purchases themselves ensure that the distressed bonds of

countries such as Greece do not lose value because the ECB prevents them from defaulting. As brutal as it sounds, the ECB effectively uses the income of the Greeks (and others) to rebuild its capital base.

The minute the EFSF is introduced (as it apparently will be in November), along with the notion of haircuts, the ECB loses its leverage and the credit risk contagion shifts to the core countries of the EU, which WILL threaten their AAA ratings.

It also means this whole issue of banking recapitalization is a big red herring. In reality, banks don't really need recapitalization. What most depositors care about is being able to get their deposit money out of their bank, so whether they are solvent or not is not their primary concern. Arguably, all of the US banks were insolvent in 1982, but the FDIC guarantees worked to stabilize the system.

Bank capital is always available at a price. The 'market process' is for net interest margins to widen to the point where earnings attract capital. Except this all assumes credit worthiness isn't an issue.

The problem with current policy is that it is turning both the public and private sector into a 'credit event' which will make it extremely difficult for the borrowers to switch lenders. The market pressures are most acute today in respect of Greece, but the broader concern is that speculators will eventually look toward the bigger PIIGS, such as Italy, and this is where the issue of the European Financial Stability Fund's structural weaknesses come into play. This is ludicrous: Italy has been told to reach a balanced budget by 2013, even though it already has a primary surplus, and one of the lower debt levels (public and private) in the OECD club – lower than AAA rated France, in fact, according to Albert Edwards of Societe Generale. The anticipated austerity policy being forced on the Italians risks pushing the country into a slump that could set off the destructive debt dynamic so feared, as has just occurred in Greece.

Let us not get bogged down in numbers. The EFSF could have 440 billion euros behind, 1 trillion, 2 trillion, even 10 trillion euros, but it all comes back to the funding sources. The French are right: it makes no sense to implement this program without the backstop of the ECB, which is the only entity that could make any guarantees credible, by virtue of its ability to create unlimited quantities of Euros, as Paul de Grauwe forcefully argues.

Both the leading policy makers within the euro zone and market participants continue to conflate two distinct, but related issues: that of national solvency and insufficient aggregate demand. Policy makers want the ECB to do both, but in fact, the ECB is only required to deal with the solvency issue. When you do that in a credible way, then you get the capital markets re-opened and you give countries a better chance to fund themselves again via the capital markets. It means you do not actually need several trillion dollars, because you have a credible backstop in place – a central bank that can create literally trillions of euros via keyboard strokes and thereby address the markets' concerns about national solvency. At this point, the bonds of the various nation states become less distressed and the corresponding need for massive banking recapitalization goes away.

Banking recapitalization is being demanded because the eurozone keeps demanding "voluntary" hair cuts" on Greek debt. The 50% haircut is "voluntary" to the extent that a bank

teller "voluntarily" gives up money from the bank vaults to someone who points a gun at him/her. And restructuring Greece's debt in this manner will not end Europe's crisis and will not allow Germany and other core nations to brush themselves off and move merrily on their way. Instead, it ultimately extends the contagion effect to the core countries, because – via the EFSF – they are now in the debt guarantee business.

Getting France and Germany into the sovereign debt guarantee business via the EFSF (which is what happens if the ECB has no role) ultimately contaminates their own national "balance sheets", thereby causing the markets to query their solvency as well and extending the contagion effects well beyond the PIIGS. We will have a situation akin to Ireland, whereby a country which had fundamentally solid government finances taken down via ill-considered guarantees to its insolvent banking system. Peripheral EMU is to core EMU as Irish banks once were to Ireland. By getting into the guarantee business, Ireland drove down a policy cul de sac from which it is still trying to extricate itself and smeared itself with correlated risk that required it to seek a bailout.

By contrast, were the ECB to continue to fund Greece via its bond purchases and not allow Athens to default, then Greece would continue to make these payments. But the ECB has this weird idea that somehow continuing their bond buying operation allows Greece (and other "fiscal deviants") to avoid their "fiscal responsibilities" (i.e. continued fiscal austerity). The reality (however misguided), is that the bond buying operations actually provide the ECB with its leverage to force Greece and others to continue their "reforms". It means ECB can buy sufficient quantities of Greek bonds in the secondary markets to allow Greece to fund itself in the short term markets at reasonable interest rates. And it gets even better than that for the ECB, as the ECB also substantially enhances its profitability by continuing to buy deeply discounted Greek bonds and using Greece's income stream to build the ECB's stated capital. As long as it continues to buy Greek debt, Greece remains solvent, and the ECB continues to increase its accrual of profits that flow to capital.

In the current environment you have a solvency crisis which is feeding into the banking system because a large proportion of their assets are Euro denominated government bonds. Going down the path of "voluntary" hair cuts and forced recapitalization will simply set off a massive debt deflation spiral. We will see bank's fire selling assets left and right - management will not issue equity at these miserably low price to book values. Which in turn will depress economic activity even further, widen the very public deficits which are so exorcising the Eurozone's policy making elite, and bring us back to Square One. Already the guns are being turned on Italy, now that Greece is on the threshold of being "solved".

Bond buying by the ECB has hitherto changed the whole dynamic from doing Greece a favor to disciplining Greece by not allowing them to default and allowing the ECB to collect a significant income stream from the Greeks in the meantime. This is all gone with the new "final solution". With the haircuts, and the cessation of a bond buying role for the ECB, what is the incentive for ongoing Greek compliance? More to the point: what is to stop the other "problem children" from demanding the same terms, despite protestations from the deal's architects that Greece is a "one-off".

What is amazing as one listens to the commentary is the number of people who keep defining this as a banking crisis. Worse is the commentary which suggests a desire to punish the banks, all of which were told at the Euro's inception that one national bond was as good

as another. The system would not have functioned (or, rather, its flaws would have become manifest sooner) if the national banks had proceeded on the basis that, say, Italian bonds were not as good as German bunds. But today, the rules are being re-written and the "irresponsible" bankers are to be punished.

True, many bankers have been irresponsible in a multitude of areas, many of which have already been documented in numerous blogs and newspapers. Fraud, dodgy financial engineering, shady accounting, these are all areas where the banks could and should be disciplined. But here they are being punished for the wrong things. This is ultimately a national solvency crisis, not a banking crisis, so how does punishing the bankers and their shareholders help here?

Everybody in Europe, save the Germans, appears to understand this right now. Until the last German "Nein", the French held out for an ongoing role for the ECB. This was nixed in Berlin. Why? Every time something unconventional is urged on the Germans, they scream "Weimar". One of the indicators of development - intellectual and national and otherwise is to appreciate history and be able to decompose it into components.

The Germans appear unable to make that simple distinction. But if we think about the Weimar Republic for a moment, the problems for Germay began long before the hyperinflation, which really went off in 1923. In a sadly ironic parallel to what the Mediterranean periphery countries (Greece, Spain, soon, Italy) are facing today, the reparations payments following World War I required under the Versailles Treaty squeezed the Berlin government so badly that they eventually defaulted. The Treaty was just a bloody-minded pay-back by the victors of the war.

Undoubtedly, the Reichsbank had a hand in the Weimar hyperinflation, having become accustomed to "monetizing" German government debt during the WWI after gold convertibility was severed. However, while price levels quintupled between the armistice and February 1920, currency in circulation only doubled, leading many politicians to blithely claim monetary policy could not be blamed for inflation. An increase in money velocity must have played a role, although the monetary arrangements of the Reichsbank became increasingly suspect.

The Reichsbank had pegged the discount rate at 5%, and accepted private commercial debt for discounting under what was known as the real bills doctrine of the time. Money creation to finance production was not believed to carry an inflationary impulse. Direct loans to businesses were ramped up by the central bank after December 1921 when private financial institutions began to withhold credit as inflation accelerated. The assassination of Foreign Minister Rathenau in 1922 set off a selling spree by foreign investors of German bonds, and the central bank was once again forced to offset the run with more purchases of German government obligations.

Central bank mayhem aside, the final culminating chapter of the Weimar hyperinflation does appear closely related to the response to reparation demands. The May 1921 so called London ultimatum required annual installment payments of $2b in gold or foreign currency, in addition to a claim on just over a quarter of the value of German exports. Germany attempted to accumulate foreign exchange by paying with treasury bills and commercial debts denominated in Marks, but the Mark simply went into free fall on foreign exchange markets as this ploy fell flat. The January 1923 occupation of the Ruhr by Belgian

and French troops seeking to secure reparation payments in goods – since the Mark was nearly worthless - was the final straw. German production was lost as workers employed a passive resistance response, and money was printed by the Weimar government to continue to pay workers despite their production halt. Within months, the German monetary system collapsed.

But think carefully about the causality here – it was not a normal situation at all where a sovereign government was trying to finance the saving desire of the non-government sector and keep employment and output levels high.

The other alternative is even less pleasant to contemplate, which is that there might be some Machiavellian genius behind the German position: perhaps their goal is to see the rest of Europe economically deflated into the ground, at which point, they will scoop up the pieces on the cheap, bit by bit. So Germany's motives are either misguided, or more sinister than is now apparent.

As a lasting, credible first step to offset the Eurozone's inherent structural flaws, its policy makers must first deal with the core issue, which is the solvency issue. After that, everything else falls into place. It will not restart economic growth, but it will get most of the EMU nations (Greece, perhaps being a conspicuous exception) out of the fiscal straitjacket because once the markets are persuaded that the individual countries are fundamentally solvent. The markets will lend again at sensible interest rates, which in turn can help to deal with today's problem of insufficient aggregate demand.. And this means the banks and markets do not have to worry about massive haircuts on the debt; the bonds are trading at distressed levels precisely because the markets do not believe these countries have a credible solution for the problem of national solvency.

The revenue sharing proposal which was proposed in last month's paper is the most operationally efficient manner to involve the ECB, with a minimum of legal disruption. Additionally, it is not inflationary, as it mere substitutes national bonds with reserves in the banking system and building banking reserves is not inflationary, as the BIS and NY Fed have both acknowledged.

But that is not on the cards right now. Still a primary role for the ECB is essential. To quote Professor de Grauwe again:

> There is no sillier way to implement a bond purchase programme than the ECB way. By making it clear from the beginning that it does not trust its own programme, the ECB guaranteed its failure. By signalling that it distrusted the bonds it was buying, it also signalled to investors that they should distrust these too.
>
> Surely once the ECB decided to buy government bonds, there was a better way to run the programme. The ECB should have announced that it was fully committed to using all its firepower to buy government bonds and that it would not allow the bond prices to drop below a given level. In doing so, it would create confidence. Investors know that the ECB has superior firepower, and when they get convinced that the ECB will not hesitate to use it, they will be holding on to their bonds. The beauty of this result is that the ECB won't have to buy many bonds.

Well, if the ECB continues to operate from the perspective of Weimar phobia and disregards its equally important role as lender of last resort, then the Eurozone does not have much of a future. The central bank will continue to snatch defeat from the jaws of victory and the entire currency union will continue to bump along, moving fitfully from crisis to crisis until all grasp the nettle. The Eurozone's policy makers insist that they have finally constructed a credible bazooka. Even if it were true (unlikely), it is one which remains pointed at the policy makers themselves.

In the words of Italy's greatest poet: "Lasciate ogne speranza, voi ch'intrate."*

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*Abandon hope all ye who enter here – Dante, *The Inferno*

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The Eurozone crisis:

Looking through the financial fog with Keynesian glasses

Jorge Buzaglo [Sweden]

It is easy to become confused about what is really happening to the European economies. The media are totally focused on financial surface phenomena. Attention is given only to the developments in the financial markets, in particular the growing difficulties of the so called PIIGS countries (Portugal, Ireland, Italy, Greece and Spain) for keeping on financing their government spending by increasing debt — as reflected by increasing spreads in interest rates (e.g. compared with German rates).

However, looking just below the surface one discovers that the Eurozone is suffering from a kind of disequilibrium that is similar to the type of imbalance existing in the trade relationship between the US and China.

The origin of the US-China imbalance can be found in the huge expansion of credit and debt in the US (a Minsky-type process), which financed a large consumption and import boom — including a boom in imports from China in particular. The vast import boom caused in turn a large US trade deficit and a growing external debt. External debts cannot grow indefinitely; at some point markets judge them unsustainable.

With a de facto fixed exchange rate between the dollar and the yuan, the only way available for the economy to stop the unsustainable growth of debt is through recession, which was induced by a financial panic. When the process of credit and debt expansion reaches what is believed to be an unsustainable level, the markets panic.

There is also a fixed exchange rate regime within the Eurozone, a common currency. There was also a wide Minsky process of credit and debt expansion in the EU. As in the US, the lending boom financed a large expansion of consumption. Wide availability of credit generated in PIIGS a large debt-financed increase in consumption (both public and private), with growing imports and large trade deficits as a consequence.[1] In the last several years, current account deficits for PIIGS were often at levels which within a flexible exchange regime would have caused large depreciations (see Table 1). Germany, on the other hand, had during these same years large current account surpluses.

[1] As in the case of the US "toxic asset" bubble, the European lending boom also had an important element of fraud. This must be the case when a creditor lends to a borrower knowing that s/he is insolvent. In that case, the idea behind the loan must be to take over the property of the debtor, or that the State (i.e., the EU) will step in. Several books document "debt-pushing" and other criminal activities within the wide global financial underground (see e.g., J. Stiglitz, *Globalization and Its Discontents;* J. Henry, *The Blood Bankers: Tales from the Underground Global Economy*; J. Perkins, *Confessions of an Economic Hit Man*).

Table 1
Germany and PIIGS: Current account balance (% of GDP)

	2005	2006	2007	2008	2009	2010
Germany	5.0	6.3	7.5	6.3	5.7	5.7
Greece	-7.5	-11.1	-14.3	-14.8	-11.0	-10.6
Ireland	3.5	-3.5	-5.3	-5.8	-2.8	-0.5
Italy	-1.7	-2.6	-2.4	-2.9	-1.9	-3.5
Portugal	-10.4	-10.7	-10.1	-12.6	-10.9	-10.4
Spain	-7.4	-9.0	-10.0	-9.7	-5.1	-4.6

Source: World dataBank

As we implicitly did in the case of the US-China relationship, we can for simplicity assume, as an approximation, that there is a situation of bilateral trade between Germany and PIIGS, in which German exports are PIIGS imports and vice-versa. Credit expansion in the Eurozone generated a demand expansion in PIIGS. The expansion of demand included the expansion of the demand for imports. The import demand expansion in PIIGS allowed for rapid growth of German exports. On the other hand, German aggregate demand (and in particular, import demand), was severely constrained by a strict wage restraint policy.[2] As a result, Germany's trade surpluses increased. Export-oriented growth, based on stagnating domestic demand and wages, also implied for Germany deteriorating overall wage-shares and income distribution.[3]

The demand generating function of PIIGS, and their role of absorbing growing German exports, resembles the US demand creating and export absorbing role *vis-à-vis* China. Only that in the European case it is the richer country, Germany, which applies a policy of export oriented growth dependent on external demand growth, and based on wage and domestic demand restraint, with the same negative effects on functional and personal income distribution.

PIIGS's role of demand creators within the Eurozone, that is, their role of permanent net importers, resulted in their rapid accumulation of huge external debts. As shown in Table 2, until 2010, in the five years since 2005, external debts for PIIGS increased between 50 and 100% — 80% in (unweighted) average.

[2] The German wage restraint policy, a kind of "structural undervaluation policy" can thus be compared with the Chinese policy of own currency undervaluation.

[3] "As measured by commonly used indices, inequality and poverty increased considerably between 2000 and 2006. For example, the ratio between the 90 percent and the 10 percent quantile increased from roughly 3.3 in 2000 to 3.9 in 2006, while the Gini increased from .26 to .30." (p.3 in M. Biewen and A. Juhasz, "Understanding Rising Income Inequality in Germany," IZA Discussion Paper No. 5062, July 2010). The wage share decreased in Germany from 71.4% in 1980-85 to 66.2% in 2008-09 (Table 2 in ILO, *Global Wage Report 2010/11*).

Table 2
PIIGS: Gross external debt (billion euros)

	2005	2006	2007	2008	2009	2010	2010/ 2005
Greece	263	330	454	505	588	547	2.1
Ireland	1,136	1,763	2,267	2,356	2,385	2,303	2.0
Italy	1,676	2,108	2,549	2,395	2,551	2,435	1.5
Portugal	302	381	484	485	549	529	1.7
Spain	1,350	1,805	2,302	2,327	2,539	2,317	1.7

Source: World dataBank

The repayment capacity or solvency of countries, that is, their ability to pay back their debts, is often measured by the ratio of the external debt to the annual exports of goods and services, because it is the income from exports that must pay for the service of the debt. In the context of the debt crises of developing countries, an empirical standard of risk emerged, of critical debt-to-export ratios in the range of 2-3. Most debt crises episodes happened when that threshold was exceeded.

PIIGS are of course not developing countries, and they are not either totally independent economies, but belong to the common political and economic co-operative framework of the EU and the Eurozone. Debt-to-exports ratios as those shown Table 3, which are several times the empirical benchmark for developing countries, and are also fast growing, are however a symptom of unsustainable tensions.[4] The problem is that within the Eurozone there are no rules about when and how trade imbalances are to be addressed. In fact, the whole constitutive approach of the EU is based on the idea that such a problem does not exist — there is not such a thing as an imbalance or disequilibrium.

Table 3
PIIGS: gross external debt/exports (goods and services) ratios

	2005	2006	2007	2008	2009
Greece	6.0	6.9	8.9	9.0	13.4
Ireland	8.5	12.5	14.9	5.7	16.4
Italy	4.5	5.1	5.7	5.3	7.0
Portugal	7.0	7.6	8.8	8.7	11.7
Spain	5.8	7.0	8.1	8.1	10.3

Source: World dataBank

The whole approach of the Eurozone has been that of *laissez faire*, the neoliberal approach for which markets, left to themselves, constantly find the equilibrium values corresponding to an optimal solution of the resource allocation problem. In the neoclassical Utopia, all you need are free markets and egotistic individuals. There is no unemployment. No debts.

The free market belief is even more strongly held in the case of the financial markets, assumed to be of an almost divine omniscience — the "efficient markets hypothesis."

[4] Another common solvency indicator is the debt-to-GDP ratio. In the context of the debt crises of developing countries, external debt-to-GDP ratios above 0.5 were considered critical values above which the risk of payments' crises increased drastically. External debt-to-GDP ratios for PIIGS were in 2010 respectively: 2.4, 15.0, 1.6, 3.0, and 2.2 (source: World dataBank).

Interfering with these omniscient markets is believed to be a kind of sacrilege which is severely punished by the financial gods. As far away from Keynes as can ever be. How is it that such efficient markets become so openly possessed by herd euphoria? How can they become prey to "irrational exuberance"? How can they ignore the warning signals of all unsustainability indicators? How can such efficient markets suddenly enter the depressive mode and collapse? Are manic-depressive markets inhabited by agents with "rational expectations"? Is collective bipolar psychosis rational?

Unfortunately, these problems are not only and not principally problems of economic theory. They are real-world problems, with difficult and even dangerous consequences. The *laissez faire* approach to crisis resolution in the Eurozone will increase unemployment and generate harsh social and political unrest. Nationalism and racism, and the tendency to put the blame for the crisis on foreigners and minorities will also grow. There is already an astonishing tendency in public opinion and the media to adhere to "national character" explanations of the crisis, and to attribute it to the fixed idiosyncrasies of different peoples (Greeks are lazy, Germans always wanted to take over Europe, etc.). Nationalist and xenophobic parties are gaining influence everywhere, including in Greece, where the extreme right-wing party LAOS is now even part of the new government.

As Keynes observed when considering the European problems of the 1930s, it is as a result of naïve and confused thinking that we believe that the best policy for promoting peace is to rely on international fixed exchange rates (or in the present case, on a common currency) and on *laissez faire* in international lending (in our case, unregulated financial markets and a conservative monetary authority).[5] Keynes warns that within such a system, "there is no orthodox means open to the authorities for countering unemployment at home except by struggling for an export surplus … Never in history was there a method of such efficacy for setting each country's advantage at variance with its neighbours' … For it made domestic prosperity dependent on a competitive pursuit of markets … [W]ith the growth of wealth and the diminishing marginal propensity to consume, it has tended to become increasingly internecine."[6]

There are several ideas in Keynes which are still relevant to address the two outstanding components underlying the present European crisis. As in Keynes's times, still today "[t]he outstanding faults of the economic society in which we live are its failure to provide for full employment and its arbitrary and inequitable distribution of wealth and incomes."[7]

Central to Keynes thinking in *The General Theory* is the crucial role of investment activity in capitalism. Investment is too important in determining employment and income levels to be allowed to become "the bubble on a whirlpool of speculation. When the capital development of a country becomes the by-product of the activities of a casino, the job is likely to be ill-done."[8] The capital development of Europe is being ill-done indeed by the European branch of the global financial casino.

Keynes's alternative to casino capitalism, still relevant today, is the policy of programming investment towards an optimum level of employment, and of a monetary policy

[5] *The General Theory of Employment, Interest, and Money*, p. 348.
[6] *General Theory*, p. 348-9.
[7] *General Theory*, p. 372.
[8] *General Theory*, p. 159.

unimpeded by international preoccupations.[9] Such a Keynesian investment fund should be created within the EU, with the mandate of organising investment "on long views and on the basis of the general social advantage," taking into account the efficiency of investments.[10] A long view of the social advantage would today in Europe explicitly include also avoiding climate change and environmental degradation.

Such a visionary investment organizing fund should be accompanied by an enlightened monetary policy by the European Central Bank. Monetary policy, if not totally "unimpeded by international preoccupations," should at least not be permanently chained to the vagaries of the financial markets, and the permanent threats of capital flight and speculative attacks. The ECB should announce a monetary expansion plan of several points of Euro-GDP, consistent with the ambitious investment program of the investment programming authority. This should have an immediate effect on economic expectations, shifting upwards Keynes's "marginal efficiency of capital" schedule, and increasing employment and incomes.

The ECB, or a parallel financial authority, should also exert close financial supervision in order to ensure the safety of financial products — financial regulators should be mandated to ascertain the safety and appropriate use of financial instruments and practices. All types of financial institutions (including credit rating agencies) and instruments (including derivatives) should be supervised and regulated. Financial supervision should also prevent financial fraud and illicit flows (such as financial flows related to drug and arms trafficking, tax evasion, and illegal capital flight).

In view of the present severe trade imbalances between debtor and creditor countries, a further urgent remedy is needed, discussed by Keynes in the preparatory work for the IMF. The (common currency) equivalent of a European Clearing Union is necessary, with the function of avoiding large imbalances and unsustainable foreign debt accumulation. A non-recessive system of adjustment should be introduced, which would symmetrically treat surplus and deficit nations. That is, both export and import surplus countries should share in the re-balancing effort.

In the present debt crisis context, the first urgent task of this "European Clearing Union" or financial authority should be to restructure and reduce debts to sustainability levels. The sovereign debt restructuring mechanism should be charged in the first place with checking the legality of debts, securing the elimination of fraudulent and "odious" debts.

As put by Keynes,"[t]he introduction of a substantial Government transfer tax on all [financial] transactions might prove the most serviceable reform available, with a view to mitigating the predominance of speculation over enterprise […]."[11] That is, there is already in Keynes the idea of the so called Tobin tax, as an important policy instrument for reducing volatility and instability in financial markets, increasing economic policy sovereignty, and removing the recessive bias introduced by unregulated financial flows. The revenues of such a tax should contribute to address at the European and global levels "[t]he outstanding faults of the economic society in which we live, [namely] its failure to provide for full employment and its arbitrary and inequitable distribution of wealth and incomes."[12]

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[9] *General Theory*, p. 349.
[10] *General Theory*, p. 164.
[11] *General Theory*, p. 160.
[12] *General Theory*, p. 372.

However, "sand in the wheels" of international financial markets in the form of the Keynes-Tobin tax should not substitute for the possibility of introducing different types of controls when capital flows and speculative attacks seem to drive the Eurozone system or particular member economies out of control.

Conclusions

Behind the financial turbulence of the present Eurozone crisis there are real economy imbalances and disequilibria. One important class of imbalances are those related to the trade relationships within the Eurozone. In the context of a common currency zone, deficit countries (PIIGS) accumulated large external debts. Export surplus countries (particularly Germany) followed an export oriented policy, with low wage and demand growth — a kind of "structural undervaluation policy." Within neoliberal *laissez faire*, this is an unstable arrangement, and imbalances tend to be solved by recession. A Keynesian approach to the design of a more stable arrangement would include:

1. An ambitious common investment policy, on long views and on the basis of the general social and ecological advantage.
2. An expansive monetary policy by the ECB, in accord with the common socio-ecological investment strategy.
3. A European Financial Authority in charge of: a) operating a non-recessive system of adjustment, symmetrically treating surplus and deficit nations, b) managing a sovereign debt restructuring mechanism, c) exerting overall financial supervision and fraud prevention, d) introducing capital controls when necessary.
4. A European Fiscal Authority in charge of the introduction and operation of the Keynes-Tobin tax on financial transactions.

These several ideas of Keynes' should be a good starting point to address what he saw (and we still see) as the outstanding faults of the economic system in which we live, namely its failure to provide for full employment, and its arbitrary and inequitable distribution of wealth and incomes. These ideas might also have large popular support, thus being the starting point of a real democratization of the EU.

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A new international Bretton Woods System?

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Abstract
The aim of this brief article is to argue the case for a new international Bretton Woods system of payments and exchange rate regime. The lessons of the 1930s breakdown of the international monetary system provide important historical parallels with the current crisis. A brief history of the birth and the causes of the demise of the post-war Bretton Woods regime are also examined. The final section explores the possibilities of implementing the more modest Davidson Plan, which acquires its inspiration from Keynes's original "Bancor" proposals during the negotiations that preceded the formal Bretton Woods agreements.

JEL: B5, B14, B16, B23. Key Words: money; debt; crisis; Bretton Woods, Bancor, capital; monetary.

Introduction

The only solution to the current crisis lies in the transformation of the existing international monetary and financial architecture. Unfortunately, economic theory has become disconnected from history. Much of the present malaise has been the result of historical amnesia and myopia. As the historical memories of the Great Depression have receded, so too have the lessons of that era been neglected. Yet history can only solve those problems for which there are some precedents. It seems that the bitter lessons of the 1930s depression will need to be revisited. This implies that the prevailing economic orthodoxies should be subjected to an imminent and comprehensive critique. The myth of the efficacy of the free market can no longer be legitimised. Equally, prevailing neoclassical and monetarist theories have lost most of their credibility in the face of the present crisis. As long as these orthodoxies continue to inform economic policies, these recurrent crises will inevitably re-appear with even greater destructive consequences.

The guiding principles to this transformation should be the "socialisation of investment" and the "euthanasia of the rentier". This implies the re-regulation and nationalisation of the financial system. In other words, the time has come to overthrow the ruling neoliberal order and reinstate state intervention and forms of indicative planning to re-activate a sustained recovery and restore full employment as the cornerstone of macroeconomic policy. The restoration and maintenance of full employment, however, presupposes that each nation cannot engage in "beggar-thy-neighbour" type policies by running successive balance of payments surpluses and thereby "exporting" unemployment onto its rivals. This problem was quite rampant during the 1930s depression and its solution formed the basis of Keynes's proposals for an international clearing union, or the "Bancor" regime during the Bretton Woods negotiations in 1944 (Lucarelli, 2011). A very brief analysis of these trade and payments imbalances and the collapse of the gold standard regime during the 1930s might provide a useful context and also reveal some striking parallels with the asymmetries afflicting the existing international monetary system.

Keynes's original "Bancor" plan

The collapse of the international monetary system under the aegis of the gold standard was the central event in the prolongation of the 1930s depression. Deprived of a universally accepted means of payments and reserve asset, the international financial system

experienced a period of anarchy, which spilled over into the rise of economic nationalism and autarchic trading blocs. After the stock market crash of 1929, a scramble for liquidity ensued in which US investors recalled their funds from abroad. This action merely triggered a vicious cycle of protectionist "beggar-thy-neighbour" policies as the indebted countries of Europe and the primary producing countries sought to protect their own domestic markets. A cumulative process of severe deflation, accompanied by a sudden collapse in income and output, characterised this depressive spiral as each country imposed import restrictions and capital controls. The outbreak of this "tariff mania" after the Hawley-Smoot Tariff enacted by the US authorities in 1930, culminated in the emergence of protectionist trading blocs and the ascendancy of national autarchic policies. In the words of H.W. Arndt (1963):

> The combined effect of the fall in world prices, the contraction of international trade, the recall of short-term funds and the failure of continued American long-term investment brought about financial and economic crises in almost every country and in most of them set going cumulative processes of decline similar to that which was going on in the USA. The worst hit were the overseas primary producing countries which were brought to the verge of bankruptcy by the fall in agricultural and commodity prices, and the European debtor states, whose economic prosperity had been built up on continued foreign borrowing. Pressure on its gold and foreign exchange reserves forced one country after another to protect its currency by exchange rate depreciation or exchange control. At the same time, the efforts of every country to maintain its exports and protect its balance of payments by imposing increasing tariffs and import restrictions still further diminished the flow of international trade and increased the difficulties of every other country. The American slump and depression cannot be said to have caused the world depression, but they upset the unstable economic equilibrium of the world and gave the impetus to a similar economic decline in other countries. (Arndt, 1963: 19)

The existence of the gold standard regime made it more difficult for deficit countries to adjust to these external shocks. Under this regime it was not possible, in theory at least, for countries to adjust their respective exchange rates in the event of a capital flight or adverse terms of trade. Since the relative value of all currencies was kept stable in terms of the gold standard, any imbalances in their international payments could not be corrected by an adjustment in the exchange rate but had to be corrected by an adjustment of national price or income levels. In other words, the fixed exchange rate pegged to the gold standard, tended to impart a powerful deflationary tendency in the deficit countries. The whole edifice of the gold standard had been constructed on the foundations of a competitive market economy. In this regime, the price mechanism constituted the sole means of exchange rate adjustment. Before World War I, the gold standard had functioned quite smoothly as the free convertibility of national currencies fostered a multilateral settlement of international payments. If a country incurred a trade deficit, it would automatically experience a deflationary adjustment and an outflow of gold reserves. Conversely, a trade surplus would attract an inflow of gold reserves and a rise in nominal incomes and prices.

After World War I, however, this international trade and payments equilibrium had disappeared. The United States emerged as the principal creditor nation to replace Britain as the major international investor. Despite the emergence of the United States as the principal creditor nation, its status as a reserve currency nation and "central banker" for the international payments system did not evolve until after World War II with the signing of the Bretton Woods Agreements which established a fixed, though flexible exchange rate system

based on gold/dollar convertibility. During the inter-war years, however, the decline of Britain and the gold standard had only accentuated the chronic instability in international monetary relations. The UK itself had become a net debtor country and could no longer act as the "central banker" for the international capitalist economy. The inevitable breakdown of the gold standard in 1931-33 was caused by the acute disequilibrium in the international balances of payments as countries resorted to autarchic "beggar-thy-neighbour" policies and competitive devaluations.

The Keynes plan proposed during the Bretton Woods negotiations in 1944 involved the creation of an International Clearing Union, which would act as an international central bank and issue its own currency, the Bancor, the value of which would be determined at a fixed price to gold. Each member country would establish a fixed but adjustable exchange rate in relation to the Bancor. International payments balances would be settled by using the Bancor as a unit of account. The Bancor would have very limited convertibility; countries could purchase Bancors but could not convert them into gold. In other words, Bancor reserves would remain within the system to avoid the possibility of a drain on reserves. Each country would also be allocated a quota of Bancor based upon their levels of imports and exports. The essential aim of Keynes's international clearing union was to prevent the onset of competitive devaluations and to mitigate the deflationary tendencies caused by the reluctance of surplus countries to reflate and stimulate aggregate demand for the deficit countries. The pre-war system had imparted a contractionary bias which forced the deficit countries to adjust internally by imposing deflationary policies. Keynes had envisaged an international system which would reverse this deflationary bias and impart an expansionary impetus which would allow deficit countries to pursue full employment policies. This necessarily implied that the surplus countries would be obliged to incur more of the burden of adjustment.

The dilemma arose that the surplus countries could continue to accumulate foreign exchange reserves almost without limit, as long as the central bank could sterilise the inflationary effects. The deficit countries, on the other hand, would eventually run out of foreign exchange reserves and be exposed to speculative attacks on their currencies. In this sense, the burden of adjustment would be borne almost entirely by the deficit countries, which would be forced to enact contractionary policies and experience higher levels of unemployment. These asymmetrical shocks would ultimately depress international effective demand and have an adverse effect on the exports of the surplus countries themselves. As Crotty contends:

> There can be no doubt that the international financial system that Keynes proposed and defended in the early 1940s had as a major objective the facilitation of high rates of growth and low rates of unemployment in its constituent countries. Under the prevailing system, serious payments imbalances created deflationary pressures on deficit countries. The ensuing contractions that developed in these countries could then spread to surplus countries through the erosion of their export markets. In the extreme instance, this chain of events had the power to generate a world-wide slump. (Crotty, 1983: 62)

The Keynes plan had proposed that any country which experienced severe and prolonged balance of payments deficits (equivalent to half of its Bancor overdraft), would be charged interest on its Bancor account. It would also be obliged to devalue in order to prevent the outflow of capital. On the other hand, the surplus countries would be forced to reduce their

balances of payments surpluses and revalue their respective exchange rates. To prevent the deficit countries from incurring the entire burden of adjustment, Keynes proposed that the surplus countries, which had accumulated a Bancor balance equivalent to more than half of their overdraft credits, would be charged interest at 10 per cent per annum. If their credit balance exceeded the total value of their permitted overdraft at the end of the financial year, the surplus would be confiscated. The overriding aim of these rules was to force surplus countries to clear their international balances and force them to incur some of the burden of adjustment. Unfortunately, Keynes's Bancor plan was defeated by US opposition, led by their delegate H.D. White, at the Bretton Woods conference. The US dollar, tied to gold at a fixed price of 35 dollars per ounce, would instead perform the functions of reserve asset, unit of account and means of payments for the international monetary system based upon fixed but adjustable exchange rates (Skidelsky, 2000).

The Davidson Plan

The dollar/gold convertibility regime established by the Bretton Woods agreements had inherited a serious flaw, which became more evident as the US economy began to experience growing balance of payments deficits during the late 1960s. Robert Triffin (1961) was one of the first prominent economists to warn of the impending demise of the Bretton Woods system as a result of the role performed by the US dollar as an international means of payments and international reserve asset. The “Triffin dilemma” as it became known, essentially states that in order to supply the international economy with US dollars, the US itself would be obliged to run burgeoning balance of payments deficits to avoid a drain on international liquidity. But the very growth of these US deficits would ultimately undermine the role of the US dollar and hasten a series of crises. This contradiction would set in motion cycles of expansion and contraction of international liquidity and generate systemic instability.

After the demise of the Bretton Woods system in 1971-73, these destabilising flows of short-term speculative capital became more pervasive as countries abolished capital controls and deregulated their financial markets. As the issuer of the global reserve currency, the US enjoyed the enormous benefits of dollar seigniorage. In other words, the US was no longer constrained by dollar/gold convertibility. Unlike the rest of the capitalist countries, the US could finance its burgeoning balance of payments deficits by the issuing of US dollar-denominated bonds and securities without the limits imposed by the accumulation of foreign exchange reserves. US policy makers could now pursue an unfettered strategy of restoring their international competitiveness by resorting to successive dollar devaluations. The dollar crisis therefore not only imparted an inflationary impulse, which forced other countries to impose quite severe deflationary policies, but successive dollar devaluations also threatened to erode the competitiveness of their capitalist rivals in Europe and Asia (Parboni, 1981).

The problem of growing international payments imbalances has since emerged as a major source of financial instability. Indeed, the current crisis is quite unique because international “money” ceases to have a standard unit of value, analogous to the dollar/gold convertibility system or the 19th century gold standard regime under the aegis of *Pax Britannica*. In the absence of an objective standard of value, currencies only possess “fiat” values, which are governed by future expectations under the guise of hedging and speculative operations performed by the foreign exchange and derivatives markets. In the event of a credit crunch, the US dollar assumes its role as a safe haven and reserve asset. Paradoxically, even though the international economy might experience an increase in the

supply of US dollars as a result of the easing of US monetary policy, the velocity of circulation tends to fall as US dollars are hoarded. As long as deflationary forces remain quite robust, an increase in international liquidity is thwarted (Vasudevan, 2009: 31). It can be surmised that the existing system of deregulated financial markets and worsening payments imbalances cannot be sustained. Sooner or later, an irreversible dollar crisis will appear which will signify the end of the existing fiat money regime. At this moment, the political imperatives for international monetary reform will become irresistible.

In the tradition of the Keynes plan, Davidson (1992-93) has devised a more simplified plan to reform the international financial and monetary architecture. Davidson proposes an International Money Clearing Union (IMCU), similar to the original Keynesian Bancor system. Although a fixed exchange rate regime is proposed, countries would be allowed to adjust their respective parities to reflect permanent structural changes in unit labour costs and current account deficits at full employment equilibrium (Arestis, 1999). At the same time, nation states would not surrender their control of the national banking system and would preserve their ability to pursue independent fiscal policies to maintain full employment. According to Davidson, the basic architecture of the IMCU would be designed:

1. to prevent a lack of global effective demand due to any nation(s) either holding excessive idle reserves or draining reserves from the system;
2. to provide an automatic mechanism for placing a major burden of adjustment on the surplus nations;
3. to provide each nation with the ability to monitor and, if desired, to control movements of flight capital; and finally
4. to expand the quantity of the liquid asset of ultimate international redemption as global capacity warrants (Davidson, 1992-93: 158).

The basic features of the Davidson plan involve the issuing of an international reserve asset to provide liquidity in the form of the International Money Clearing Unit (IMCU), which would be held exclusively by central banks. IMCUs would only be convertible into the deposits of a nation's currency in the clearing union and act as a unit of account between central banks. An overdraft facility would also be created for short-term creditor balances and a trigger mechanism established to prevent creditor nations from accumulating excessive credit balances as a result of running persistent current account surpluses: The excessive credits can be spent in 3 ways:

1. on the products of any other member of the clearing union;
2. on new direct investment projects and/or
3. to provide unilateral transfers (foreign aid) to deficit members (Davidson, 1992-93: 160).

Davidson also recommends the forcible confiscation and redistribution of the surplus countries' credits to the deficit countries in the unlikely event that these credits are not eliminated. On the other hand, if a deficit country experiences persistent current account deficits at full employment, this would constitute evidence that the country is living beyond its means and cannot maintain its existing standard of living. In this case, the deficit country would be obliged to undertake an internal adjustment with the imposition of contractionary policies. Davidson's plan effectively abandons Keynes's original idea of a world central bank and substitutes a more modest international clearing union, which would issue IMCUs. However, the basic Keynesian idea of shifting the burden of adjustment to the surplus

countries forms the cornerstone of the Davidson plan. These arrangements would doubtless impart an expansionary rather than a contractionary impetus to the global economy.

Conclusion

It should be conceded that despite the desirability and urgency of these reforms, the outcome will be ultimately determined by the configuration of political power and geo-political imperatives. It appears that the US monetary authorities would be very reluctant to surrender their privileges of dollar seigniorage until the outbreak of a major irreversible dollar crisis. The present international monetary system hinges upon very fragile and perilous foundations. The whole system is based upon the willingness of surplus countries (mostly in East Asia) to continue to accumulate US dollar reserves in order to finance successive and cumulative US balance of payments deficits. This very delicate "balance of financial terror" to paraphrase Summers (2004) can be described in Gramscian terms as a state of "catastrophic equilibrium" which is propagated purely on the basis of political convenience but which could quite easily unravel with devastating consequences reminiscent of the 1930s experience.

References:

Arndt, H. W. (1963), *The Economic Lessons of the 1930s*, Royal Institute of International Affairs, London: Frank Cass.

Arestis, P. (1999), 'The European Central Bank: Keynesian alternatives', Working Paper No. 274, The Jerome Levy Institute of Bard College, New York.

Crotty, J. (1983), 'On Keynes and capital flight', *Journal of Economic Literature*, 21 (1), 59–65.

Davidson, P. (1992–93), 'Reforming the world's money', *Journal of Post Keynesian Economics*, 15 (2), 153–79.

Lucarelli, B. (2011) *The Economics of Financial Turbulence*, Cheltenham, UK: Edward Elgar.

Parboni, R. (1981), *The Dollar and Its Rivals*, London: New Left Books.

Skidelsky, R. (2000), *John Maynard Keynes: Fighting for Freedom, Vol. 3*, New York: Viking.

Summers, L. H. (2004), 'The US current account deficit and the global economy', Per Jacobsson Lecture, September, available at: http://www.perjacobsson-rg/2004/100304.pdf (accessed 12 October, 2007).

Triffin, R. (1961), *Gold and the Dollar Crisis*, New York: Yale University Press.

Vasudevan, R. (2009), 'The credit crisis: is the international role of the dollar at stake?', *Monthly Review*, 60 (11), 24–35.

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Ethos and reform of finance systems, a tentative argument

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The idea of regulation as part of creating a practically operative system of finance opens up the issue of the ethos of the system. Behaviours and practices within a system are conditioned by more than the individual institutional forms within which those behaviours and practices occur: specific habits, laws, rules and so forth. They are conditioned by the more general oxygenation of those institutional forms: the bias of principle within the system i.e. it's ethos. Games have an overall complexity that makes sense of their individual rules. Social forms and specific systems have an ethos that colours what habits, laws and rules exist and how they are followed and iterated. This in part flows from dominant knowledge forms and what they tend to suggest regarding the nature and need for regulation.

A key aspect of a private finance organization is to adapt itself to the control mechanisms placed upon it i.e. in a negative sense to subvert the intention of the regulation that exists and also seek out gaps, lacunae etc in the regulation that exists.[1] A question one might apply here is what ethos does this tendency rely upon? One might state that it relies upon an ethos whose balance is towards *whatever is not formally prevented is allowed*. However, in so far as this ethos is a bias of principle it is not a rigid principle. As a systemic ethos it is multiple in its manifestations and thus blurred in its real meaning if not its substantive definition. The ethos that *whatever is not formally prevented is allowed* has not, for example, always been the absence of the seeking of permissions but rather a way in which inquiry is situated and actions justified.

One of the key underlying causes of the Global Financial Collapse (GFC) was the growth of credit derivatives – the use of credit default swaps and the growth of synthetic CDOs, specifically based on mortgage-backed assets. Credit derivatives were an innovation developed between 1991 and 1995. They were originally focused around collectivised corporate lending (which has very different characteristics than collectivised mortgages). They were intended to do three things for the originating banks. They created a new profit source by extending the possibilities of 'intra-financial' multiplication. They moved risk off a financial organization's balance sheet because any underlying default had been passed on, either to the counter-party in a credit default swap or to the holder of a constructed asset such as a synthetic CDO. And they created the potential for a financial organization's capital reserves to be proportionally reduced based on the reduction in 'risk exposure' because underlying defaults had been passed on (in turn allowing greater volumes of lending). In the context of capital reserve regulation, reducing capital reserves because of a financial innovation required permission from the relevant authority.[2] In the US capital reserves were overseen by

[1] Note that 'subvert' does not always entail an intent that is subversion but rather an outcome that has subverted. The context in which some given focus is considered to be subversive can be various (up to and including the eventual systemic significance of practices or products.

[2] The 1988 Basel 1 accord stipulated an 8% capital reserve (weighted for risk). This 8% essentially represented the expected risk of losses i.e. what would need to be covered if loans went bad. It then followed that if a credit derivative was constructed that removed the risk of 8% of the volume of any given lending to another party then that derivative had effectively offset the risk represented by the capital reserve, removing the need for that capital reserve (since the anticipated losses based on defaults would be absorbed by other parties rather than the originating bank). Banks could thus radically

the Fed and by the Office of the Comptroller of the Currency (OCC). In 1996 the Fed indicated that credit derivatives could be used to reduce capital reserves. What is significant here is that permission was not in the context of whether credit derivatives were allowable but rather what credit derivatives would then allow a financial organization to do. The innovation was in a primary sense uncontested. There was no clear sense in which it first had to be allowed because this was systemically required. There was nothing to prevent it thereafter being extended to mortgage markets based on completely different underlying characteristics.

Furthermore, the fact that it did not first have to be permitted was one situated to the way in which dominant knowledge affected the shape of finance markets. Derivatives in general had become a subject of regulatory debate in the early 1990s, and there was growing criticism of the problems they might create when in 1994 the Fed unexpectedly shifted the direction of interest rate policy causing losses on interest rate swaps that affected local government funds in the US that had used them as investment tools. Despite these problems derivatives markets remained self-regulated using rules initially devised by the International Swaps and Derivatives Association (ISDA). They were thus formally unregulated by anything other than 'the market'. The ISDA, moreover, was able to resist a series of attempts to impose formal regulation over the next decade. It was aided and abetted in this by the deep ontological role of 'market efficiency' discourse thinking in symbiosis with ethos.

The ethos of *whatever is not formally prevented is allowed* flows from a predominant emphasis on negative liberty. Negative liberty is freedom from constraint or interference in one's decisions and conduct. This predominance prioritises liberty, in an economic sense, as a space energised by entrepreneurial activity. It presupposes that change is beneficial providing innovation with positive connotations. Those positive connotations imbricate with the mechanisms of an idealised market: the process of selection of innovation is competitive and competitive processes are disciplined to produce economic goods that are also social goods. In the case of derivatives prior to the GFC, regulation was considered not to be required because expert counter-party surveillance was held to create discipline at the same time as derivatives themselves create a product for risk dispersion that actually helps to complete the efficiency of all other markets by placing risk where it is most appropriately held (by those who rationally choose it based on good information and sound contracts). One can then readily see how there is a mutuality between specific approaches to regulation, general dominant knowledge forms, and the bias of principle in the system. These combine to continue to shape that system as a real process.

If one considers the effects of ethos on the system then *whatever is not formally prevented is allowed* creates particular problems for the context of reform of the finance system. If there is no primary systemic injunction regarding new practices and products then the need for permissions is piecemeal. As such the scope for scrutiny of products and

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reduce their capital reserves whilst only passing on a small proportion of the original lending in some form through credit derivatives. This potentially enabled great expansions in lending (based on freed capital as well as wholesale sources) whilst keeping 92% of the lending risk on the books. However, since actual volumes of lending could then increase greatly the absolute levels of losses if defaults (or in fact simply writedowns if assets with mark-to-market values are involved) exceeded 8% could be large and could be uncovered by any capital reserve (this was termed 'super-senior risk'). Thus, the existence of credit derivatives opened up a whole new form of real risk exposure in the name of precise risk management. The actual basis of this was slightly modified since the OCC and Fed required the banks to hold 20% of the 8% i.e. instead of $80,000 per $1m, $16,000 per $1m and required the credit derivatives on which the transmission of risk was based to involve AAA ratings. This began the pressure on credit rating agencies to produce high ratings for credit derivatives and was also one reason why the banks began to look for ways of justifying high ratings for these new products.

practices as they emerge is fractured and the scope for those products and practices to become embedded, despite any adverse potential they may have, is actually ingrained in the system. Moreover, if there is no primary systemic injunction then it follows that there is no necessary presumption that private financial organizations must seek a relevant regulatory body to pass judgement on new practices and products or, if none exists, highlight that none exists, *because the ethos of the system makes it necessary that they do so*. They may manufacture their own organization as a legitimating entity but this is not the same. Furthermore, if the prevailing ethos is *whatever is not formally prevented is allowed* then once practices and products are within the system there is no necessary basis for limitations on the extension of those practices and products to new areas of business. In all these cases, injunction relies specifically on the existence of specific organizations with specific remits that are already targeting specific potential problem areas. As such, ethos as an aspect of the design of the system itself is not an aid to organizational form for regulation and supervision but an actual hindrance to it.

This hindrance effect manifests itself in multiple problems for the role of information in the system of regulation. It creates a problem because available information can be disempowered. The ethos of the system leads to a situation where the remit of each organization is likely to have to involve highly specific codifications of powers to impose effects on private financial organizations. This is because the burden or obligation of regulation rests with the stated duties of the regulator rather than is inhered in general obligations or duties imposed on the regulated. They are free to act except where constrained rather than required to constrain themselves except where *freed* to act. As such, regulators are motivated to create highly specified powers of constraint to target specific activities as they occur and those regulated are prompted to respond by viewing regulation as exactly that set of specified powers that can be evaded precisely by relying on what is not in those specifications. They can adhere to the letter but evade the intent because the systemic bias of principle enables this or they can step outside the letter because where the target is not aimed is free space. In either case, the information focus of the regulator can disempower that regulator by the way in which information is systemically operative – it becomes a tool of manipulation.

Not only can available information be disempowered, information itself can be made unavailable since it is effectively privatised by the presumption of the bias of principle in the system. One aspect of organizational reform of regulators is to extend their coverage to more kinds of financial organization: hedge funds, private equity etc. Another is to require greater transparency from these, including information on trading positions. The problem remains that effectiveness inheres in the effectiveness of the regulatory organization rather than in the system. That effectiveness is subject to the possibility of blind spots – particularly if the basis is a new kind of financial organization not currently specified (in the way say SIVs were new a decade ago). Moreover, even though specific organizational reforms are moves towards more available information this need not be the reversal of the privatisation of information because what the reforms ultimately involve is a requirement to produce data for the regulator from which strategies can be inferred and from which ideas about practices and the effects and flows of products can be constructed. The presumption is not that a practice or product is not allowed until such time as it has been fully justified and then permitted. At best, the inquiry concerns how the products and practices are already being used.

The net effect is that ethos has been a contributor to the widely recognized phenomena that regulation has tended to find itself fighting the last war. Regulation has been

oriented on the specific problems of the previous period of recognized instability and its manifestations of crisis. This has led to the view that regulators are trapped in an arms race with the regulated, constantly responding to what has been done rather than what is being done. This has created scope for critique of pervasive regulation on the basis that it is often ineffectual because it is backwards looking and it is potentially dangerous because in intervening to meet old problems that markets have or would have rectified themselves it has simply created a new distortion from which further subversions flow to create new adverse outcomes (regulators are responsible for the next phase of instability).

So, ethos is an important issue to explore because it is a prime source of analysis for how a system creates a context for regulation, information, and the discursive critique of the imposition of regulation. A focus on ethos allows one to look at these in a different way. In each case a primary problem is the systemic presumption that change is allowed unless formally prevented.

One way forward is to explore the implications of reversing the dominant ethos to create a systemic bias of principle based on *whatever is not formally allowed is prevented*. Doing so would create a quite different framework in which private finance organization activity tended to pursue subversive adaptations to control mechanisms placed upon them. The ethos of the system would constitute a counter-balance to this tendency in various ways. The need for permissions would no longer be piecemeal but rather ingrained in the system. In this framework permissions would come before implementations rather than as a corollary to some aspect of implementation. This would also hold for extensions of practices and products to new areas of business. Not only would the privatisation of information be reversed but the tendency for information to be disempowered would also be balanced.

If the ethos were *what is not formally allowed is prevented* then injunction would not rely on the existence of specific organizations and there would be an obligation on private financial organizations to seek out an organization or highlight its lack. Moreover, since the nature of obligation was general to the system and, the burden or weight of obligation or duty rested with the regulated rather than the regulator, then regulation could more easily become general in its form without losing effectiveness in its expression. The regulated would be required to constrain themselves except where free to act. The regulated would, therefore, be the one now pushing for clarification and would be the one offering more information and argument. In so far as this shift is possible then the regulator would not be trapped in an arms race with the regulated in quite the way that has been the case over the period of liberalised finance. Their relationship would be repositioned, giving the issue of the specific design of regulation for finance new inflections. As such the meaning frame within which actual real stability-instability processes occurred in a market system would be changed. It would then follow that the basis of any process of interventional stabilisation would be altered. Furthermore the possibility that problems could be foreseen would become a quite different issue because the shape of the system within which forecasting occurred would be qualitatively affected.

Key here is whether ethos as an aspect of the design of the system itself is now an aid rather than a hindrance to the organizational form of regulation and supervision. There are two challenges here, a negative and a positive one. The negative one is the counter-argument that an ethos of *whatever is not formally allowed is prevented* creates an overly bureaucratic system that is sclerotic, expensive to administer, overly conservative, subject to capture by the needs and interests of administrators, and replaces the good self-interested decisions of

market participants with the poor uninterested decisions of state (or other political entity's) employees. These are all potential problems but not necessarily actual problems. Whether they are depends upon the way the ethos can be and is inhered in the system. This is the positive challenge. It rests on a combination of changes to law and changes to organizations based on a clear overall attempt to cohere change in terms of the reversal of ethos.

For example, one might think about the use of principles of jurisdiction to provide concrete expressions of ethos. If a particular form of practice or product has not been allowed in a jurisdiction then the construction of a contract that then tries to enact it within that jurisdiction or based on original assets within that jurisdiction can be deemed unenforceable. This would create sufficient ambiguity such that counterparties or clients would be extremely disinclined to enter into contracts under these conditions. The jurisdiction need do no more than this. Clients and counterparties *may* undertake and fulfil contracts but will do so in a void that is quite different than liberalised finance where the absence of the state from the market is still a tacit guarantee of the market (a simulation of trust because of the legal infrastructure). Here the legal infrastructure removes that simulation and thus by *actively* doing nothing the law fails to tacitly guarantee the market.

A more fundamental reply to the negative challenge is to question the basis on which the ethos of *whatever is not formally prevented is allowed* provides a means to question the need for a practical expression of the alternative ethos. *Whatever is not formally prevented is allowed* is an ethos that relies upon markets simulating processes that they don't actually engage in. Efficiency assumes that markets demand and receive information and use it on an individual basis for individual purposes in a way that produces a collective outcome that is in some sense the best that could be attained (where best means optimal or if not optimal then better than what would be achieved through some non-market process). In essence the presumption is that market actions simulate what a collective discussion would agree to be the ideal economic and social outcome and this obviates the need for such discussion. This is conceptually problematic and manifestly empirically questionable.

What a reversal in ethos does is actually create conditions for such a collective discussion where that information can be genuinely put to collective debate and scrutiny. It replaces blind calculative rationality (putting aside the realism of such an assumption) with reason in which ideas of what is an economic good and a social good must be defined and defended rather than simply assumed to spontaneously emerge in a way that need not be defined or debated because it is self-evident. What this reversal in ethos does not demand by virtue of its form, however, is that once a product or practice has been subject to such scrutiny it will then be administered rather than marketised. This does not necessarily follow from the reversal of ethos. Whether it does is an additional argument regarding the role of regulation and monitoring in specific approaches to sets of reforms. As such, if a product or practice is genuinely an economic and social good in the context of the finance system then its originators need not fear its scrutiny on the basis that it will be prevented.

This does, however, raise further practical issues regarding the nature of finance based on such an ethos since the real basis of profitability for many products and practices is not their role as innovations creating market efficiencies per se but rather the restricted market in them based on the control of the innovation. Put another way it is precisely the nature of privatising information that creates the profitability of practice and product construction. There is a clear contradiction here between the idea of efficiency and the reality of practice and that, in turn, may be one reason why a product or practice is prevented (or

may be a reason for its public dissemination if its good is more than its current profit margin potential). In either case a variety of further issues are raised, for example, whether a financial patent system might be an appropriate way to match public needs and private motives. This, in turn raises new issues of the reification of power in regulatory reform. What it does not do, however, is close down the potential of thinking in terms of issues of ethos.

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Reform of finance education in US business schools: An historian's view

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Abstract:
This paper revisits the theme broached in the book *Confronting Managerialism: How The Business Elite and Their Schools Threw Our Lives Out of Balance* (Zedbooks, 2011). There the authors (Robert R Locke and J-C Spender) blamed mathematical models of markets devised by finance professors in business schools for market collapse, that is unbounded rationalism was held responsible for the unhappy outcomes. Here the argument is refined, with the conclusion that not scientific knowledge alone or in itself but insufficient scientific knowledge combined with ruinous intent induced the financial rout. The nature of the argument is extended, thereby, from "science" to ideology and bad education. The refined argument also clarifies recommendations for finance educational reform

Since the subject is historically specific (US finance education at end of the 20th century), the analysis that supports the conclusions is based on historical specificities, namely a comparison of the development of mathematical neo-classical economics in French engineering schools and in US business school departments of finance, with the claim that historical methodology clarifies the issue of reform in finance education much better than the "abstract analytical categories" of social science.

Keywords: engineer-economist, Ecole polytechnique, French university economists, Maurice Allais, Ford Foundation, reforms of US business schools, operations research, financial analysts, business ethics, mathematical cultures, and historical method

Principally because of the Enron debacle, the subprime mortgage crisis, and the collapse of financial markets in 2008-09, the US business school model has attracted special scrutiny with respect to its usefulness in teaching MBA students ethics, a sense of corporate social responsibility, and a regard for the sustainability of businesses, as opposed to measuring success in terms of a firm's short-term profits and its stock's current price on equity markets. (Cf. Wright and Bennett, 2011). In the work co-authored with J-C Spender, *Confronting Managerialism,* we line up with business school critics. In this paper, the argument is developed, using the same historical approach, with a focus on finance in US business schools after their adoption post World War 2 of the ideology of neo-liberalism and an econometric- mathematical toolkit.

In order to illuminate deficiencies in knowledge and ethics in US finance education and practice and clarify the way to reform, comparisons are made between finance education in US business schools and a different educational traditions, that of the engineer-economists in France. The historical argumentation is important because the shortcoming of the use of mathematics seems to reside in historical specificities (when, why, and where it is applied) rather than in anything inherent in the formal science of mathematics. Historical comparisons underscore the point.

French grandes écoles of engineering and the engineer-economists

It does not hurt to remind people in business schools, especially in US business schools where they know so little of it, about the alternative institutional tradition in the French grandes écoles of engineering that made major contributions to the development of operation research methodologies in economics and finance. The French engineering school especially

of interest here is the Ecole polytechnique, which already in the 19th century was renowned. After graduating from it, the best former students attended the schools of application (in the 19th century the Ecole des Mines and the Ecole des Ponts et Chaussées) from whence most entered the state technical bureaucracies (Les grands corps d'état) charged with supervising the mining industry and civil engineering projects.

In all the technical grands corps d'état the engineers dominated (Mines, Bridges and Roads, and later Telecommunications, Aeronautics, etc). The only students from a grande école that rivaled them in state ministries after WW 2 were the Enarques, graduates from the Ecole nationale d'administration founded in 1946, prominent in the Ministry of Finance and the Bank of France.

The peculiarity of the French educational system is that the best students in these grandes écoles of engineering entered state service, on fast track appointments, working for ministers in their "cabinets" and in the grands corps d'état (like Mines) or in a prefecture. They also move from high places in the state administration to top jobs in private industry and back to state positions again (*Pantouflage*). They form a club of 10,000 who ran (and run) what the French call *la grande industrie*.

French *Polytechniciens*, because of the dreaded concours, a competition for school admission, which emphasized it, were well-schooled in mathematics. By the mid-nineteenth century already some of them began to think mathematically in economics about practical problem solving. Jules Dupuit (1804-1865) one of the pioneers and the most famous early example of an engineer-economist, published studies on market segmentation in the *Annales des Ponts et Chaussees i*n the 1840s. The publication venue hid his, and similar articles on economics by other French engineers appearing in their periodicals, from mainline mathematical economists outside France, who did not read French engineering journals and who, in any event, were unaccustomed to engineers getting involved in economics. The "foreign" economists' "discovery" of Dupuit occurred in the 1930s when five of his articles were published in a book (1933) edited by an Italian economists, and when Harold Hotelling's article about him appeared in *Econometrics i*n 1938. (Nelson, VI) Hotelling's piece finally provoked international debate among economists about marginal pricing, a debate ironically from which French engineer economists, despite their previous work, were cut off by the isolation of their country after the defeat of 1940.

Before 1940 the French engineers who did think about economics did not amount to a "school." As François Etner explains in his doctoral thesis they worked in the earlier period mostly alone. In his words: "The view that an *engineer-economist tradition* fought against another tradition (literary-economics) in order to impose a 'scientific' approach to economics…is false up to 1930." (Etner, 146). After France's defeat and in postwar rebuilding, however, a group quickly emerged. The specificity of historical method allows the investigator to discover the importance of French engineer economists in postwar applied economics policy making.

Undoubtedly the chief instigator for the gathering of these engineer-economists was Professor Maurice Allais. His book, *A la recherche d'une discipline économique* (1943), especially, gave impetus to marginal utility analysis; it presented a modern and complete explanation of Pareto's theory of the optimum (under the nomenclature theory of social return), which relied particularly on marginal cost analysis.

Shortly after the war, recently nationalized industries demanded sophisticated management expertise. At Electricité de France an OR group under Jacques Massé, a *Polytechnicien*, applied economic theory to management problems. None of the EDF group had degrees in economics but they knew their mathematics or could rapidly assimilate what they needed to know. As Allais noted: "The statistical and mathematical techniques which the engineer-economists need are not techniques specific to economics; their application is general and these techniques apply to all natural sciences." (Allais, 1952, 267) Massé's group embarked on the most far-reaching analyses. Studies were done on tariff construction and price policy, on consumption, on operating policy, and on investment policy, which applied marginal utility economics to problems, whose solution required quite sophisticated mathematical statistics. (Locke, 1989, 125-26) In December 1953, a two volume study published by the Director of Equipment in the Electricité de France revealed that Massé's group was a first-rate team whose work bore practical fruit in the form of EDF's Green Tariff of 1956. (Massé) Clearly the Tariff was based on marginal cost theory and amounted to decision making according to economic scientific rationale in a major industry. The engineer economists, to use Professor Allais's phraseology again, "applied a general knowledge of economic science to the study of the particular problems posed to management in firms and did that by calling upon the most elaborate techniques currently at our disposal." (Allais, In Lesourne, 1972) Allais was Lesourne's mentor).

The EDF group sparked emulation in other nationalized industries. The Coal Board (Charbonnage de France) commissioned Professor Allais to do a study on the economics of coal mining. (Allais, 1953) The study concluded strongly in favor of marginal cost pricing. The same board also commissioned J. Audibert and A. Terra to analyze short-and long-term investment policies in the same industry. At the Gas Board (Gaz de France) the definition and the calculation of marginal costs were done by F. Gardent and his colleagues; at the national railroad (SNCF), Roger Hutter evaluated marketing problems and rates schedules on marginal principles. (Hutter) When in 1959 Jacques Massé became Chief French Planner (commissaire général de plan d'équipment et de la productivité) for the Third Plan, the influence of the engineer-economists spread; Jean Mothes moved from Gaz de France to SNCF, to SEMA (Société de mathématiques et d'économie appliquée), a consultancy; Jacques Lesourne from the Coal Board to SEMA, Pierre Maillet from being project manager (*chef des travaux*) in the Ecole Polytechnique (1950-53) to a study group preparing the Third and Fourth Plans for the modernization and equipment of France.

With few exception, and the exceptions were mostly mathematicians and statisticians, these men were graduates of *the Ecole polytechnique. Many of them had also studied with Professor Allais at the Ecole des mines or at the Institut de statistiques in the University of Paris,* where he was also a professor. Allais pointed out that many of the biggest names among the engineer-economists had been his students. He had much to do with steering these engineering students into applied economics, since his tenure of the chair in applied economics at the Ecoles des mines began in 1944.

Beneficiaries of this educational heritage, the engineer-economists also became its benefactors. A cycle of studies, created by M. Guillbard, R. Henon, E. Morice, and J. Mothes at the Institut de statistiques, University of Paris, repaired deficiencies in the subject. All the problems current in industry, which this educational elite often knew by direct experience, were discussed in Allais's seminar at the Ecole des mines, in R. Roys' seminar on econometrics, and in the first seminar on operations research, founded by the director of the

Institut de statistiques, M. Guilbaud. A new periodical (Revue de statistique appliquée NUMDAM), organized by this close-knit group, proselytized the new methods.

Since it was an engineering tradition, especially for *Polytechniciens* in the grands corps d'état, to liaison with the grandes écoles of engineering, many of Allais's disciples interrupted their working careers to become researchers and teachers. Among them, Jacques Lesourne, who, after his studies at the Coal Board, taught economics and statistics at the Ecole des mines St-Etienne before moving to the Institut de statistiques and then on to the Conservatoire national des arts et métiers; Jean Mothes worked at the Institut de statistiques with Marcel Boiteux, who lectured at the Ecoles des Ponts et Chaussées; Edmond Malinvaud directed the Institut de statistiques; Pierre Maillet became a professor of economics at Lille.

The engineer-economists were not just mathematically and scientifically prepared to understand and apply neoclassical economic theory and exploit the toolkit of operations research but, in the French management scheme of things, at the top of the French industrial management ladder and in a position, therefore, to use theory and the toolkit to solve practical management problems

French engineer-economists thought highly of themselves in this regard and of their work, for, in Professor Allais' opinion (1958), "the work done by French engineer-economists in the last fifteen years…lifts France into the first rank, very far ahead, in my view, of Great Britain and the United States in the domain of the economy of the firm." (Allais Introduction to Lesourne, p. Xxxix, Also see Drèze)

The achievements of French engineer-economists were recognized more by American postwar economists than French economists, which is somewhat of a paradox since Allais' work was never appreciated enough in the US for it ever to be translated into English. (Genrot) The contradiction is easily explained, however; the French engineer-economists were a somewhat isolated club in France that was not co-extensive with the group people call "economists." Most French economists in mid twentieth century had in fact nontechnical educations; they had studied political economy in the faculties of law or at the School of Political Science ("Science Po") almost exclusively in the literary, juristic, or sociological tradition. If it is remembered that most of the people in the nontechnical *grands corps* (Conseil d'état, Cour des comptes, etc.) were educated at "Science Po," this signified that the French nontechnical *hauts fonctionnaires* (civil servants), even if they had studied economics had learned precious little about marginal utility or general equilibrium theory, or mathematical economics. The same was true of students who heard lectures from these nontechnical economists in the business schools (grandes écoles de commerce and the Ecole des Hautes Etudes Commerciale). (Locke, 1989, pp. 151-55) Economics Professor G. H. Bosquet recalled: "I did all my studies at the Paris Law faculty and at 'Science Po' without anybody ever citing the name Walras to me." (Bosquet, 691)

There were exceptions. Albert Aupetit, a disciple of Léon Walras, taught economics at "Science Po" during the interwar years. The people who worked at the Institut de statistiques were doing very valuable work. Many of them were engineer-economists but there were university professors among them as well. Attempts were made immediately after the war, moreover, to enlighten law faculty professors about modern economics. The *Revue d'économie politique*, spokesman for the university economists, put Professor Maurice Allais on its editorial board and when he won a medal from the American Management Science

Association for his work on marginal pricing, the award was proudly reported to the review's subscribers. (Fonction et avenir, 167) But few of them could have understood Allais's work.

The truth is that the university economists and those in the nontechnical state service were isolated from the engineer-economists in their schools of engineering and their management positions in *la grande industries*, even though so many of them were housed just up the street in Paris from each other. When the nonmathematical French economists set out to repair their "scientific" deficiencies in the 1960s they looked not to their own engineer-economists but across the Atlantic to neoclassical economists, who were avidly proselytizing their own mathematical toolkit. Ironically, the education of French university economists was drawn into the vortex of the postwar Americanization of economic science worldwide. But before US economists could do that, they had had in the first two decades after the war to set their own house in order.

Incorporating scientism into US economic studies and business school education

US engineers principally in schools of industrial administration (MIT, Carnegie Institute of Technology, Georgia Institute of Technology, etc.) propagated the scientific toolkit of operations research. But their interaction with corporate management differed considerably from what took place in France. In 1900 when Frederick Winslow Taylor began the scientific management movement, engineers on the shop floor were deeply involved. But by the second quarter of the 20th century a revolution in corporate governance was well underway. Its historian, Alfred D. Chandler, Jr., most famously in *The Visible Hand* (1977), describes this rise of new managerial hierarchies in giant corporations whose managerial needs were quite different from those Taylorism induced. Because top corporate management concentrated on money more than product management, it required staff that could deal with financial reporting and marketing, that could oversee money flows through the various corporate divisions -- information that was much more vital to decision making in a multifaceted strategic setting than product knowledge. It required accountants and controllers to design and run the management system; they replaced the engineers previously at the top. At General Motors Alfred P. Sloan installed systems of financial reporting to headquarters "based heavily on analysis of managerial accounting data," (Rother, 63). Sloan noted that GM was in the business of making money not automobiles. Other multiple division corporations followed suit. In 1929 The Controllers' institute was founded in the United States because of their increasing managerial importance.

French engineers at the head of industry, preoccupied with renewing a rundown industrial park in order to save their country from backwardness, succeeded in their task during what the French call "The Thirty Glorious Years" of postwar modernization (1945-75). American managers succeeded, too, in making lots of money. But there was little in the educational background of most top managers in US industrial corporations that permitted them to work closely with operational research scientists and economists like in the system of French engineering education and industrial leadership. US corporate moneymen lacked the scientific and mathematical knowledge needed to grasp quickly what operations research people and neo-classical economists were talking about.

In fact, in the US, private industry projects did not drive the development of OR and its methodological toolkit. The principle catalyst was the government and the Pentagon, with its affiliate agencies. The team of British scientists and engineers that worked on the

'operational use of radar information' at Air Ministry (Bawdsey Manor) could hardly have guessed their efforts to solve operational problems would have such consequences. Their success spawned operation research groups throughout the military on both sides of the Atlantic. C-H. Waddington, who was involved in anti-submarine operations along with two Nobel Prize winners and four other fellows of the Royal Society, wrote: "Never before has science been used by responsible executive authorities for such a thorough and such an unrestricted analysis of practical affairs as it was by the Royal Air Force from 1941 onward (Cited in Locke, 1989, 25)."

OR projects adopted statistical and mathematically informed techniques, such as queue and transportation theories that were particularly suited to maximizing efficiency in large-scale military operations (Fortun and Schweben, 1993). After a brief respite the use of science in military connected agencies expanded during the Cold War (Waring, 1995). In 1946 the Army Air Corps funded a new think tank, The Rand Corporation, to help solve operations problems. In 1947 George B. Dantzig and his Rand associates developed the simplex linear programming algorithms for decision-making. The procedure utilized modern mathematics (vector algebra, matrix theory, symbolic logic) and statistical technique in their effort to take the guesswork out of decision-making.

French engineer-economists readily assimilated and propagated the methods that scientists, mathematicians, and engineers developed in the US. But US neo classical economists could not immediately do so because of their educational deficiencies. Nonetheless, the postwar economists appreciated their importance when they encountered the methods utilized in government work and set about introducing them into their discipline. At Rand in 1948, the economist Kenneth Arrow used Dantzig's simplex linear programming techniques in his work on Rational Choice Theory. His book, *Social Choice and Individual Value* (1951), was the "first real classic" on what "is now taken as a given in economics and has spread out into many neighboring disciplines." (Bellah, 2000, 7) The neoclassical economists Joseph Dorfman, Paul Samuelson, and Robert Solow applied linear programming to their subject as well (in *Linear Programming and Economic Analysis*). In 1954, Kenneth Arrow and Gerard Debreu, a Frenchman who had studied with Allais, announced that they had achieved a mathematical solution of general equilibrium, "the theoretical core of neo-classical economics," which Edward Fullbrook states "has become the central showpiece of academic economics ever since." (Fullbrook, 2003, 5)

These were glory days for neo-classical economists. The Rand Corporation introduced scholarships and post-doctoral funding to help raise mathematical competence and added to the prestige of the discipline within the social sciences. That prestige grew even more when the Bank of Sweden created a "Nobel Prize" in economics in 1969. Most of the resulting Nobel's were handed out to them (Arrow, Samuelson, Solow, etc.). They, their students, and disciples, took over teaching and research in most American university economics departments from which their influence spread overseas through the Department of Defense into NATO, through government programs like the Marshall Plan, and through private agencies like the Ford Foundation.

In 2003 Fullbrook wrote of these neo-classical economists:

> They control the three most prestigious economics journals in which papers by their staff and PhDs predominate. Of the over 800 economists employed by the World Bank, a majority have been trained at one of the Big Eight (California-Berkeley, Harvard, Stanford, Yale, Chicago, Columbia, Princeton, and MIT). The International

> Monetary Fund is similarly provided, as are the other highly ranked economics departments in the US and in some cases in other countries. The 2003 edition of Penguin's *Dictionary of Economics* … has entries for 29 living economists. Of these, 26 … are from the US or have had all of the most important part of their careers there. Of the 26, 100 percent have either taught at or received their PhD from one of the Big Eight." (Fullbrook 2003, 6)

In contrast to French business schools that left scientific operations research to the grandes écoles of engineering, the engineer-economists, and their co-frères in industrial management, US neo-classical economists not only embraced the new scientific techniques but played a major role, along with business schools deans, and philanthropic foundation bureaucrats, in pushing the adoption of these methodologies in US elite business schools. (Khruana, "The Institutionalization of Business School – 1941-1970")

Most commentators trace the radical content change in business school curricula to the impact of two reports on business education that appeared in 1959, and the efforts of the Ford Foundation to promote management education reform, (Gordon and Howell; Pierson and Finberg; Khurana). An explosive growth of graduate business schools and MBAs began. In 1960 4,814 were granted, 23,400 in 1970, 49,000 in 1980, and 70,000 in 1990, with more than 200,000 plus per annum at the century's end. The Ford Foundation programs provided funds for upgrading graduate business school faculties, in order to get rid of "unimaginative, non-theoretical teaching from descriptive practice-oriented texts to classes of second-rate vocationally-minded students." (Locke, 1989, 161)

The limited impact on US business practice of MBA programs in mathematical economics

Professor Khurana ran into the work of the proselytizers at the Ford Foundation , which he described skillfully in his book on the history of US business schools. There are several aspects of their efforts, however, that histories mostly ignore. Although departments of operations research in schools of industrial administration were heavily involved in OR projects, the business schools proper did not have close contacts with industry, of the sort that French engineering schools and French engineer economist did. Consequently, business schools did not participate very much in the industrial transformation of America. They did not, for example, play a role in the Total Quality Management movement. Robert S. Kaplan, former dean of Carnegie-Mellon Business School and a Harvard Business School professor underlined their failure in manufacturing. After reviewing articles published in leading operations management journals and examining research and teaching in business schools, he concluded that "American business school research and teaching contributed almost nothing to the most significant development in the business world over the past half century – the quality revolution." (Kaplan, 1991, 1) Considering the magnitude of the threat from Japan, the failure of the business schools to throw themselves into the fight to save manufacturing is astonishing and a leadership failure of major importance. (Locke, 1996, pp. 169-70)

US business school MBAs also did not especially promote the digital revolution, which was America's most significant industrial achievement postwar. To some extent this was unavoidable during the pre1975 phase of IT development, because business schools deal primarily with the private sector. And pre1975 IT development was almost exclusively a

government project. The economist Werner Sombart claimed in 1925 that "the growth of large-scale nationalistic warfare" was the root cause of economic development, since the demand for more effective weapons, offensive and defensive, stimulates technology and invention (quoted in Castells and Hall, 1994, 17). One group of scholars observed: "From the explosion of the first Soviet atomic bomb in 1949 until the mid-1960s, the driving force for science policy remained the military-technological competition with the Soviet Union." (Alic et al, 1992, 97) The people involved were scientists and engineers working for the pentagon and on government projects, not MBAs. Accordingly, as Rheingold concluded,

> "If necessity is the mother of invention, it must be added that the Defense Department is the father of technology: from the Army's first electronic digital computer in the 1940s to the Air Force research on head-mounted displays in the 1980s, the U.S military has always been the prime contractor for the most significant innovations in computer technology." (Rheingold, 1991, 80)

Low intensity MBA involvement was also true during the commercial phase of IT exploitation after 1975. In the start-up enterprises mushrooming in the Silicon Valley habitat, scientists and engineers were the heroes. Those from Stanford's Computer Science Department illustrate their importance. Andy Bechtolsheim, a founder of Sun Microsystems, John Hennessy, a founder of MIPS Technologies, Inc., Jim Clark, a founder of Silicon Graphics and Netscape, Jerry Kaplan, a founder of Techknowledge, Go, and Onsale, Forrest Basket, technical officer at MIPs, Len Bosack, a founder at Cisco Systems, and David Cheriton, a founder of Graniote Market Value all came out of there. In 2004 the combined worth of their companies amounted to about $90 billion. The scientists and engineers possessed the indispensable mathematical and scientific knowhow for the great product ideas essential to start-up IT firms.

Nonetheless, one would have thought that MBAs might have been heavily involved in the nontechnical aspects of IT innovation. Scholars investigating the high tech habitats have concluded, however, that the mathematical neo-classical new look in economics absorbed in business schools education little suited the IT entrepreneurial environment. The economist Gunnar Eliasson for one observed that "the bulk of subjects on the teaching agenda of business schools, like investment calculation and financial economics, rest on the assumption of [a formal knowledge] model." (Eliasson, 1998, 6) AnnaLee Saxenian, after investigating the Silicon Valley habitat pointed out that the informal networks of moneyed angels brought technical skills, operating experience, and a myriad of industry contacts – as well as cash – to the ventures they funded, abilities that MBAs from the elite business schools did not have. (Saxenian, 1994, 184) Closeness to local technology networks was the key to success. Quoting a former Wall Street executive about entrepreneurship, Saxenian wrote: "In New York, the money is generally managed by professional or financial promoter types. Out here [Silicon Valley] the venture capitalists tend to be entrepreneurs who created and built a company and then sold out. When problems occur with any of their investments, they can step into the business and help." The angel investors that funded IT start-ups had to know the "territory" for their investments to do well. Accordingly tacit knowledge about Silicon Valley money networks constituted venture capital competence more than formal knowledge of financial and investment techniques learned in business school finance courses.

Much of the top-down management techniques learned in business schools was also useless in IT organizations after start-up. The specialist chipmakers, the big hitters in IT, discarded the control mechanism, taught to MBAs in business schools, for network organizations, "where people teams, and sometimes whole organizations," as AnnaLee

Saxenian affirmed, "act as independent nodes, form multiple links across boundaries, support one another, share common values, and report to a matrix of leaders who act as coaches and mentors more than line managers." (Saxenian, 1994, 90)

The entrepreneurs who developed Silicon Valley in the post-1975 commercial phase were in fact a diverse crowd drawn from all over the world. Most were educated in technical subjects and mathematics. Few of them were MBAs (Locke, 2004) Many were immigrants from Asia, who had come to study mathematics, science, and/or technology in American universities and then stayed on to work in firms, start their own companies, or both. Saxenian told their story based on the 1990 census. (Saxenian, 2000) At the century's end Asian immigrant entrepreneurs had founded seventeen percent of Silicon Valley high-tech start-ups. Almost simultaneously, IT centers developed in their homelands – in Taiwan, in Singapore, in Bangalore – incited through the Silicon Valley connection.

If, after the Ford Foundation reforms, US business schools did not teach subjects compatible with an IT entrepreneurial environment, once the schools awoke to the IT habitat's entrepreneurial demands they belatedly began out of sheer opportunism to develop centers of entrepreneurship. Professors and students in these add-on business school entrepreneurship centers participated in the activities of habitat start-up networking and the like But the faculties in the top research business school finance departments resisted, in the name of science, efforts to make entrepreneurship an academic discipline Indeed, Stanford's business school faculty is notorious for having rejected the endowment of a chair in entrepreneurship from a rich benefactor because they considered the subject scientifically unworthy. There were no Nobel prizes in economics to be won in entrepreneurship.

Finance -- The big business school exception

Although the reformed business schools did not pull their weight in the Quality Revolution (which the engineers handled in manufacturing) or in the development of IT, their adoption of the Ford Foundation-driven research and teaching agenda in mathematical economics permitted them to play a major role in the massive expansion of the US financial world during post-communist globalization. The pre-eminent pioneer in finance mathematics was probably Harry Markowitz, a Chicago student and eventual winner of the Nobel Prize in economics, who used quantitative methods to show how investors can maximize returns and lower their risks by diversifying their portfolios. But the development of the derivatives market proceeded not from this so much as from three other significant academic events. The first occurred in 1969 when Robert Merton introduced stochastic calculus into the study of finance; the second in 1973 with the publication of the Black-Scholes Formula for Pricing European Calls and Puts; the third in 1981 when Harrison-Plasma used the general theory of continuous-time stochastic processes to put the Black-Scholes option pricing formula on a theoretical footing, and consequently, demonstrated how to price numerous other derivatives. (Korn, 2010) This permitted mathematics to be used in all four branches of finance mathematics: modeling, optimal investment calculations, option pricing, and risk management. With these tools trading in derivatives could be modeled and market behavior reasonably predicted.

Although these were considerable individual achievements (for which Merton and Scholes won Nobel Prizes in economics in 1997 – Black was by then deceased) their invention really resulted from the transformation in the 1960s and 1970s of business schools

during the Ford Foundation-sponsored reforms. The road of transformation began in operations research in World War II, invaded schools of industrial administration immediately thereafter, from whence it traveled into the social sciences. The academic careers of three professors involved in the significant events just mentioned tracked this development pattern. Robert Merton, who earned a bachelor of science in engineering mathematics at Columbia and a master of science at the California Institute of Technology, migrated into economics from engineering when he wrote a doctoral dissertation at the Massachusetts Institute of Technology under Paul Samuelson, who had himself drawn on OR methods developed at the Rand Corporation when he applied linear programming equations to neo-classical marginal analysis.

Stanley R Pliska's and J Michael Harrison's careers followed the path from operations research into social science even more directly. Both did PhDs in operations research at Stanford University, Harrison in 1970, and Pliska in 1972, before moving into mathematical finance, Harrison at Stanford's Graduate School of Business, and Pliska in the business school at the University of Illinois, Chicago Circle. Accordingly, their first job experiences and academic papers handled typical OR problems in firms before their interest shifted to quantitative analysis of derivative markets in a landmark collaboration.

Myron Scholes and Fischer Black did not start in operations research, but they worked with people who did. At MIT, where they entered into their famous collaboration, scientists had been preoccupied with operations research during and after the war.

In finance the relationships between business schools professors and practicing managers resembled those between the French engineer-economists and people in industrial management. Finance professors in top schools were not shy about establishing contacts with people in praxis. Milton Friedman, for example, lobbied for the establishment of an options exchange in Chicago. On 26 April 1975, a month before the Black-Scholes paper appeared, the Chicago Board of Options Exchange opened. Texas Instruments made a hand calculator that allowed financial dealers to price options using the Black-Scholes formula. Black, whose preoccupation with derivatives started while working for Arthur D. Little, which at the time had developed a great interest in OR, later took a job with Goldman Sachs (in 1984) designing derivative architecture (Magee, 2002). Professor Emanuel Derman, head of mathematical finance at Columbia University, worked at Goldman Sachs with Black. These examples illustrate the symbiotic relationship that developed between business school professors and people in praxis. (Chan, 2010)

Finance departments in business schools also solidified their contacts with praxis on the instructional level. The need for quantitative analysts prompted the schools in a very short time to develop specialized master's and PhD courses in financial engineering, mathematical finance, and in computational finance – and to create new degrees. Cass Business School near London's financial district, introduced quantitative finance programs. It established an MSci in quantitative finance, an MSci in financial mathematics and a MSci in mathematical trading and finance. In the UK Paul Wilmott taught the first mathematical finance course at Oxford University. Afterwards he developed the largest European training program in London, a one-year course that led to a widely accepted Certificate in Quantification Finance.

Not surprisingly, because it had been a leader under Dean Bach in developing the Ford Foundation's program, Carnegie Institute of Technology's Graduate School of Industrial

Administration (to become the Tepper School of Business in 2003) set up a Financial Analyst Security Trading Center (FAST) in 1989, one of the first US educational institutions to replicate successfully the live international data feeds and sophisticated software of Wall Street trading firms. (Bach, 1958) The business school at Carnegie Mellon introduced an MBA in computational finance, an MS in quantitative economics and an MS in computation finance in which the students studied equities, bond portfolio management, and the stochastic models upon which derivative trading, i.e., the Black-Scholes formula, is based. Although early off the mark, there was nothing exceptional in the last decade of the 20th century about the program in mathematical finance at Carnegie-Mellon; all the top business schools developed them.

MBAs increasingly found jobs in the banks, hedge funds, and investment houses of the expanding sector. Khurana's study of Harvard Business School MBAs cites a survey of first jobs for graduating Harvard Business School students: Between 1965 and 1985 students' entry into financial services and consulting "rose from 23 percent to 52 percent" of graduates (Khurana, 2007, 328-29). The same shift happened in "other elite schools, such as Wharton and the business schools at Stanford and the University of Chicago." By 2005 "among the 180 principals and managing directors in the 20 largest investment firms, 73…[held] an MBA from one of the six elite schools (Harvard 51, Chicago 7, Columbia 6, Stanford 5, Dartmouth's Tuck 3, and Northwestern 1." (349)

Difference between the institutionalization of French engineer-economics in grandes écoles and finance analysis in US business schools.

It is at this point that the specificities of history become important. Although networking between the finance-analyst and the finance community resembled networking between French engineer-economist and industrial management, two points must be made about how these communities actually differed.

The first concerns the culture of mathematics. French engineer-economists had no deep-seated problems with the mathematical knowledge extant in the grandes écoles of engineering and in *la grande industrie*. French Polytechniciens were among the finest mathematician in France. But even they, perhaps because of their mathematical awareness, realized the limitations of mathematics in economics. Maurice Allais observed in 1954 that "It is absolutely necessary to avoid the development of a complex mathematical apparatus when it is strictly speaking not indispensable." (Maurice Allais, 68) And he added that if it is acknowledged that "mathmatization is a necessary condition for the development of economic science, one cannot know how to be an economist if one is only an econometrician. The error of certain mathematicians sometimes is to make something a goal, which is perhaps only a means." (p. 59)

In America the Ford Foundation program and the Rand Corporation scholarships were necessary because of the abysmal mathematical knowledge circa 1950 of business school professors and students. After the reforms finance professors and their MBA students might have been able to use mathematics but their knowledge of the subject could never match that of the French Polytechniciens. Moreover, there is ample evidence that business school professors, students, and finance investors did not comprehend mathematics enough to see its limitation as a tool in the modeling of financial markets. Nicholas Bouleau, from the Ecole des Ponts et Chaussées, explains how the finance analysts' insufficient grasp of the

epistemology of mathematical-science led them astray.(Bouleau) When the financial crisis came, surprised finance analysts, immediately after the fact, more or less admitted as much. In January 2009 Paul Wilmott and Emanuel Derman issued The Financial Modelers Manifesto, which opened with words reminiscent of Karl Marx: "A specter is haunting markets – the specter of illiquidity, frozen credit, and the failure of financial models." Then followed the admission:

> "Physics, because of its astonishing success at predicting the future behavior of material objects from their present state, has inspired most financial modeling. Physicists study the world by repeating the same experiments over and over again to discover forces and their almost magical mathematical laws. … It's a different story with finance and economics, which are concerned with the mental world of monetary value. Financial theory has tried hard to emulate the style and elegance of physics in order to discover its own laws. … The truth is that there are no fundamental laws in finance." (Quoted in Patterson, 2010, 294, see also, Dobbin and Jung)

That Bouleau and other doubters about the modeler's mathematical applications (Mandelbrot and Taleb) were educated in France suggests that the country had a more highly developed mathematical culture than that of the US neoclassical finance-economists.

Benoist Mandelbrot detected the flaw in Chicago Business School Professor Eugene Fama's Efficiency Market Hypothesis and the Black-Scholes pricing formula before they were even published (Cootner, 1964). His studies of cotton prices and income distribution revealed wild disparate leaps in prices that did not follow mathematical theories of predictable market behavior. He published the findings ("The Variation of Certain Speculative Prices") in an internal research memo at IBM. Then he worked out an alternative method to measure the erratic behavior of prices, based on the mathematics he learned in Paris under Paul Lévy. Mandelbrot's essay struck at the heart of the quantification revolution in finance because he challenged the core idea the revolution advanced -- that the market moved in tiny incremental predictable ticks. Ignoring Mandelbrot, Wall Street quantifiers decided to adopt strategies based on the Black-Scholes formula in order to shelter their highly leveraged ventures in derivative trading.

Nassim Taleb, another determined French educated critic of mathematical finance market models. stated that investors who believed markets moved according to a random walk and are, consequently, statistically predictable, are "fooled by randomness." (Taleb, 2001, Patterson, 2010, 59) There are wild, unexpected swings in markets, which he called "Black Swans." If mathematics-schooled traders used models based on historical trends and expectations of a random walk (models of predictable pricing), it would lead them to disaster. And there are "more Black Swans out there than people think." A little mathematical knowledge in US financial economics seems to have been a dangerous thing.

Financial mathematicians had naively sent misleading signals to non-mathematicians in the investment community, which promoted the belief that everything can be modeled. They had glorified simplistic modeling as state-of-the art; they had thought about risk measures and forgot about risk management. (Korn, 2010) They have taken high risk derivatives (Triple B rated securities) and stacked them into financial packages (Collateralized Debt Obligations, CDOs) that, under their coaxing, rating firms designated Triple A risks, that is no risk, and then sold them as such to pension plans, insurance companies, and other institutional investors globally. They created their own derivative world, without much reference in fact to business and industry, and sold it to the investor public.

Yaris Varoufakis, economists from the University of Athens, educated in mathematical economics in the United Kingdom, described their shenanigans:

> In more technical language, the formula used to assemble the CDOs assumed that the correlation coefficient between the probability of default across a CDO's different tranches or slices was constant, small and knowable. ... Doubt about the constancy of the correlation coefficient would have cost them their jobs, particularly as their supervisors did not really understand the formula but were receiving huge bonuses while it was being used. (Varoufakis, 233)

This combination of recklessness, bred from mathematical artlessness and greed, precipitated the subprime mortgage crisis in 2007 and the general financial systems meltdown that followed. Business school professors and finance mathematicians who designed these packages should have known, if their supervisors (unlike the Polytechniciens running French industry) did not, that what they were doing was fraudulent or at least a questionable application of mathematics. They did it on a grand scale. (Adams and Smith, 2010)

The second institutional difference that the historical comparison reveals between finance education in US business schools and that of postwar French engineer economists involves questions of morality. Recent cases of gross immorality in the financial world prompted business schools to respond with courses on business ethics. But a survey of 100 top business schools, after all the fuss, showed only half of MBA programs have managed to make ethics a required course, and only 6% of them dealt with issues of sustainability in their core curricula. (Wright and Bennett, 641-645) William C. Frederick lists seven reasons for the reluctance of business schools to adopt ethics courses. (Frederick, 1-2) They are

1. The failure of business schools accreditation agencies (AACSB) to require ethics courses as a condition of accreditation
2. The ineffectiveness of conventional principle-based instruction.
3. Fixation on behavioral models derived from neoclassical economic orthodoxy – emphasis on rational self interest….
4. Protection of faculty vested interest in conventional topics in the business curriculum (topics without ethical content)
5. An agency based conception of professional responsibility that omits consideration of complex social-cultural factors influencing business decisions.
6. Dean and faculty indifference, skepticism, or opposition, to the feasibility of influencing the values or ethical orientations of adult business students.
7. Perpetuation of an amoral sense of self through a failure to realize bio-neurological normative impulses.

The ineffectiveness of conventional principle-based instruction is a good reason **not** to take ethics courses seriously because principle-based instruction is the approach that is invariably followed. Besides, there is no reason to think that ethics courses in themselves are actually needed. Ethics has never been included in French engineering education inasmuch as nobody perceived the necessity. This suggests that formal courses in ethics for students are not essential to ethical education in professional schools. They are not because morality if personal and universal is nonetheless always situated in a particular social and institutional order, knowledge about which is the key to understanding the status of ethics in professional education. Once again, this time in the sphere of morality, the specificity of comparative institutional experience is instructive.

Frederick's six other reasons for business school resistance to the introduction of ethics courses shed light on historical institutional contexts, for they reveal the views of the power brokers in the business school establishment. The power brokers consist of the greater academic environment in which business schools are situated (the accrediting agencies) and the business school deans and faculties that devise and give life to curricula and define institutional purpose, that is to say the ideology through which the manner (or content) of thinking characteristic of the institution is expressed.

Reason 3, for example: "Fixation on behavioral models derived from neoclassical economic orthodoxy – emphasis on rational self-interest." US management emerged from World War 2 in an uneasy compromise with big labor, celebrated in numerous studies of American industrial democracy published in the Inter-University Labor Relations Program (Locke and Spender, 80-81). This tentative academic postwar recognition of industrial democracy gave way in business schools after the mid1970s to a neo-liberal ideological outlook, preached at the Chicago Business School, that managers had no responsibility other than to maximize profits for company stockholders. (Khurana, 363-383)

Reason 3 combined with reason 5 – "An agency based concept of professional responsibility that omits consideration of complex social-cultural factors influencing business decisions" – eliminates the institutionalization of ethics in business school education. French engineer-economists, it could be argued, subscribed to reason 3 but not to reason 5. These engineer-economists had embarked with their colleagues in industry on a noble mission after the war – to modernize French industry and the economy. They had, to use words in the title of Khurana's book, "higher aims." that were professional and patriotic: "Science and knowledge for the nation," is the credo of the Ecole polytechnique and they took it seriously. In a deeper sense perhaps, an engineer-economist also differed from a financial analyst because the former deals with artifacts and the latter with money. Ninety percent of French engineering students, responding to a recent survey, stressed the importance of the impact of technology on society and of sustainable development. (Pourrat and Dufour , 285)

That business school deans and faculty believe business knowledge serves the private interest of their clients, without considering the public good, automatically marginalizes ethics. Business maximizes return on investment, and business finance courses teach how to do it. Students learn this in the finance class, after attending a lectures on ethics, unless the lecture is an elective in their school, The resulting cynicism does not stem from the amorality of science but from making a public institution servile to a particular interest, that of the managerial caste (Locke and Spender, XI), which serves no interest other than personal enrichment and aggrandizement. No public institution worthy of the name would let the general interest be captured by a special interest driven by greed, which is what reason 5 indicates happened to US business schools, aided and abetted by an environment lacking a sense of the individual as a moral being (reason 7: "Perpetuation of an amoral sense of self through a failure to realize bio-neurological normative impulses). When professional schools lost any pretense of serving a public purpose, which is what Khurana claims happened to US business schools at the end of the 20th century, they succumbed to the limiting purpose of producing MBAs as "hired hands" working to fill the coffers of a business community driven by the ideology of neo-liberalism.

Reforming business school education

This comparative exercise turns out well for the French engineer-economists. But the paper does not advocate that the Americans follow the French pattern and let the engineers do heavily mathematized finance economics. If we, however, are to retain business schools as places that educate people in finance, this comparative historical analysis indicates that two reforms are in order.

- Since French Polytechniciens are among the best mathematicians in France, they hardly need to be watched over in order to detect deficiencies in the subject. But US business schools should be more strongly supervised especially in finance because of its close connections with the financial world and stock markets and their importance in economic life. To that end business school finance departments need to beef up their faculties with more mathematicians and/or establish cross-discipline committees that could hinder the use of simplistic mathematic model building.

- The second reform focuses on ethics. Since the problem involves curricula, the ideology of the faculty, and its narrow conception of professional responsibility that omits consideration of complex socio-cultural factor in decision-making, something needs to be done about all three. There is no reason why business schools could not serve the public good. Neo-liberalism is a pernicious ideology that should be publically flogged. Many religious affiliated business schools (Catholic and Protestant) do spurn neo-liberalism in their emphasis on educating the whole person. Only anti-neo-liberalism has to be pushed vigorously in non-denominational business schools, which includes the more prestigious business schools in the US. The target is not student ignorance but the faculty's moral failure, expressed in the way their amorality is institutionalized in teaching and research regimes. Deans and faculty should be the focus of reform rather than the students.

Figuring out how to induce faculty to understand that business school education is a social-cultural commitment as much as a commitment to the research and teaching of scientific specialties is a difficult problem. Perhaps faculty should broaden their contacts with people who are managed as well as to their managers, in order to understand that the managed have interests that cannot be trumped by science in any sustainable management order.

It might in fact be preferable to create much more inclusive systems of business education, like the system in the German speaking world, where business economists teach and research but do not, in their faculties, claim to educate a professional management elite. German faculties of business economics are not professional schools. This permits business economists, under the German regime of co-determination management, to service the educational needs of a broad range of partners involved in co-management, members of works councils, employee representative on supervisory boards, as well as regular management cadres. Such a broad ranging reform of US business education, of course, would be resisted strenuously in US business schools and management circles.

US business schools have to give up the idea that what they do is scientifically neutral and in the hands of scientifically trained managers, "objective." German trade unionists, even in ostensibly scientific matters, prefer that each interested party in a discussion bring its own scientists to the discussion table. (Leminsky, 370) And they prefer to

tap into the German educational system in order to acquire the knowledge necessary for them to discuss management problems with management intelligently. (Locke, 1996, Ch 2, "German Obstinacy") This American labor unions cannot do because US business schools are places that educate a management elite exclusively. To make US business schools give up professional management school pretentions for a broader spectrum of education, they would have to change their educational methods radically.

Bibliography

Adams, T. and Y. Smith (2010). "CDO Market -- Rife with Collusion and Manipulation?" *Huffingtonpost* (23 April 23).

Alic, J. A., L. Branscomb, H. Brooks, A. Carter (1992). *Beyond Spinoff: Military and Commercial Technologies in a Changing World*. Boston: Harvard Business School Press.

Allais, Maurice (1943). A la recherche d'une discipline économique. (Paris: Anonymous)

_____(1952). Traité d'économie pure . Paris, 1952)

_____(1953). La gestion des houillères nationlisées et la théorie économique. Paris:

_____ (1954). "Croissance et danger de l'utilisation de l'outil mathématique en économique," Econometrica, 22 (1), 58-71.

_____(1970). "Introduction" in Jacques Lesourne. *Techniques économiques et gestion industrielle. 2nd.* ed. Paris, Dunod.

Arrow, K. and G. Debreu (1954). "Existence of a Competitive Equilibrium for a Competitive

Economy." *Econometrica*. 22 (3), 265-290.

Bach, G. L. (1958). "Some Observations on the Business School of Tomorrow." *Management Science*. 4 (4); (July), 351-64.

Bellah, R. N. (2000). "The True Scholar." *Academe, 86*. (January and February), 1-10.

Bosquet, G. H. (1947) "Gaètan Pirot et l'Ecole de Lausanne," *Revue d'économie politique* 57, 689-701.

Bouleau, N. (2011). "Mathematics and Real World Knowledge" *Real-World Economics Review*, 57, 6 Sept. , 90-105.

Castells, M. & P. Hall (1994). *Technopoles of the World: The Making of Twenty-First Century Industrial Complexes*. London, Routledge.

Chan, S. (2010). "Academic Economists to Consider Ethics Code." *Business Day. New York Times.* (31 December).

Chandler, A. D., Jr. (1977). *The Visible Hand: The Managerial Revolution in American Business.* Cambridge, Mass.: The Belknap Press.

Cootner, P. (Ed.). (1964). *The Random Character of Stock Market Prices*. Boston: MIT Press.

Dobbin, F. and J. Jung (2010). "The Misapplication of Mr. Michael Jensen: How Agency theory Brought Down the Economy and Why It Might Again." In Lounsburg, M. & P. M. . Hirsch (Eds.)

(2010). Markets *on Trial: The Economic Sociology of the U.S. Financial Crisis*. Bingley, Yorks: Emerald Group Publishing. pp. 29-64.

Dorfman, J., P. Samuelson & R. Solows (1958). *Linear Programming and Economic Analysis*. New York: McGraw Hill.

Drèze, J. (1964), "Some Postwar Contributions of French Economists to theory and public policy." *American Economics Review*, 64:2, 1-64.

Eliasson, G. (1998). "The nature of economic change and management in the knowledge-based information economy," Paper. *KTH Stockholm. Department of Industrial Management*.

Etner, F. (1978). Les Ingénieurs-Economistes Français ,1841-1950, Thèse pour l'obtention de titre de docteur "science économique." Université de Paris IX-Dauphine.

Fonction et avenir de l'économie d'entreprise," (1965*) Revue d'économie politique* 75, 258-69.

Fortun, M. & S. S. Schweben (1993). "Scientists and the Legacy of World War II: The Case of Operations Research (OR). *Social Studies of Science*. 23 (4) (Nov.) 595-642

Frederick, W. C. (2008). "Let's hear it for these accountants and business ethicists!" A commentary on *Advancing Business Ethics Education,* by Diane L. Swanson & Dann G. Fisher (Eds). (2008). Charlotte, NC: Information Age Publishers, 1-4. Retrieved from Frederick's website: williamcfrederick.com

Fullbrook, E. (Ed.) (2003). *The Crisis in Economics: The Post-Autistic Economics Movement – The first 600 days*. London and New York: Routledge.

Gendrot, M. (2010). "Maurice Allais, Un économiste, un scientifique, et un authentique européen," online publication. Retrieved from http://allais.maurice.free.fr/index.htm

Gordon, R. A. and J. E. Howell (1959). *Higher Education for Business*. New York: Columbia University Press.

Leminsky, G. (1979). „Erfahrungen bei der Verwertung und Umsetzung vom Wissenschasft im Arbeitnehmerinterresse." In Hans-Dieter Bamberg, Hans Jűrgen Kröger, und Rheinhard Kuhlmann, eds. (1979). *Hochschulen und Gerwerkschaften: Erfahrungen, Analysen und Perspektiven. (London: Gewerkschaftliches Kooperationspraxis*), 367-77.

Hutter, R. (1950). „La théorie économique et la gestion commereciale des chemins de fer," *Revue génerale des chemins de fer ," 318-52, 443-60.*

Kaplan, R.S. (1991). *Quality in Business School Education and Research.* Paper Presented to the Annual Meeting of the American Assembly of Collegiate Schools of Business, St. Louis, MO. (Apr. 22).

Khurana, R. (2007). *From Higher Aims to Hired Hands: The Social Transformation of American Business Schools and the Unfulfilled Promise of Management as a Profession.* Princeton: Princeton University Press.

Korn, R. (2010). "Financial Mathematics: Between Stochastic Differential Equations and Financial Crisis." In Devroye, L., B. Karfasözen, M. Kohler, & R. Korn (Eds.) (2010). *Recent Developments in Applied Probability and Statistics.* New York: Physica Verlag. pp. 223-228.

Locke, Robert R. (1989). *Management and Higher Education Since 1940*. Cambridge University Press

_____(2004). "American Business School Education and the Revolution in Interactive Information Technology<" in Paul Jeffcutt, Ed. (2004). *The Foundation of Management Knowledge* London: Routledge, 66-82.

_____ & K. Schöne (2004). *The Entrepreneurial Shift: Americanization in European High-Technology Management Education.* Cambridge: Cambridge University Press.

Massé, P. (1958). „Quelques incidences économique du tariff vert," Revue française de l'énergie (May) 392-95.

Nelson, J. R.(Ed.) (1964), Introduction to *Marginal Cost Pricing in Practice.* Englewood Clifts: NJ: Prentice-Hall.

Patterson, S. (2010). *The Quants: How a Small Band of Maths Wizards Took over Wall Street and Nearly Destroyed It.* New York: Random House Business Books.

Pierson, F. & B. D. Finberg (1959). *The Education of American Businessmen: A Study of University-College Programs for Business Administration.* New York, Toronto and London: McGraw-Hill, Inc.

Pourrat, Y. and F. Dufour (2011). "Perception of French Students in engineering about the ethics of their profession." Paper present at the conference "Learning Environment and Ecosystems in Engineering Education. April 4-6, 2010, Amman, Jordan.

Rheingold, H. (1991). *Virtual Reality*. New York: Summit Books.

Rother, M. (2010). *Toyota Kata: Managing People for Improvement, Adaptiveness and Superior Results.* New York: McGraw Hill.

Saxenian, A. (1994). *Regional Advantages*. Cambridge, Mass., Harvard University Press.

_____ (2000). Networks of immigrant entrepreneurs. In Lee, C.-M, Miller, W, Gong-Hancock, M. & Rowan, S. (Eds.). *The Silicon Valley Edge: A Habitat for Innovation and Entrepreneurship* (pp. 248-75). Stanford: Stanford University Press.

Swanson, D. L. and D. G. Fisher, eds. (2008) *Advancing Business Ethics Education. Charlotte, NC:* Information Age Publishers.

Taleb, N. N. (2001). *Fooled by Randomness: The Hidden Role of Chance in Life and in the Markets (2nd ed.)*. New York: Random House.

_____(2010). "Did the Nobel Prize help Trigger the Worst Financial Crisis Since the Great Depression?" Reuters. Stockholm (28 September). Retrieved from http://www.reuters.com/article/2010/09/28/us-nobel-crisis-interviewidUSTRE68R2SK20100928

Varoufakis, Y. (2011). *The Global Minotaur: America, the True Origins of the Financial Crisis and the Future of the World Economy.* London: Zedbooks.

Waring, S. (1995). "Cold Calculus: The Cold War and Operations Research.' *Radical History Review*. 63, 28-51.

Wright, N. S. & H. Bennet, (Eds.) (2011). "Education for Sustainability and CSR: What is the role of business schools." Special Issue of Journal of Management and Organization 17:5.)

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Neuroeconomics: A sceptical view[1]

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Introduction

Neuroeconomics has been hailed by its advocates as affording "ground-breaking" insights into human behaviour and significant theoretical advances through conceptual trading with neuroscience. The prospect of the discovery of the proximate causes of behaviour by measuring thoughts, feelings, and hence utility is, according to neuroeconomists, within reach. Thus, neuroeconomics will permit the completion of the work of the Classical School in providing a unified theory of human behaviour, and avoiding the problems of "as if" reasoning in standard economics – so its advocates declare.

These striking claims are ultimately founded in the empirical application of a variety of neuro-imaging and neuro-pharmacological experimental techniques, including: electroncencephalogram (EEG); positron emission topography (PET); (repeated) trans-cranial magnetic stimulation ((r)TMS); functional magnetic resonance imaging (fMRI); single neuron electrophysiology experiments, which attempt to establish the specialized neurons in decision making processes, and the measurement of specific neuro-hormones in blood samples.

The growth of neuroeconomics has been significant. The Society for Neuroeconomics (http://neuroeconomics.org/) was founded in 2005 with the purpose of fostering research on the foundations of economic behaviour through the facilitation of scholarly collaboration between economists, neural scientists and psychologists, and the "continued advancement of the field". Considerable investment has been made in the area with dedicated neuroeconomics facilities having been established at more than a dozen, mainly US, academic institutions. This has been accompanied by a ten-fold increase in publications relating to neuroeconomics in a decade (Glimcher, 2008). It has also generated special issues of *Economics and Philosophy* and the *Journal of Economic Methodology*, and has stimulated interest from heterodox and non-mainstream economists (Davis, 2011; Herrmann-Pillath, 2009; Martins, 2011).

Glimcher (2008) traces the first attempt to combine neuroscientific data with social science to Shizgal and Conover in 1996. This was then followed by the publication of two papers in 2001 by Breitner *et al* and McCabe *et al*. Glimcher considers that the "critical insight" from these studies concerned the mapping of decision-making in the brain as a two-part system: the first is composed of the frontal cortex and basal ganglia, considered to be the sites of valuation, which are then transferred to fronto-parietal circuits that are claimed to judge and then direct the motor system for execution of the decision (see also Camerer, *et al*, 2004; Zak, 2004). These studies were based on imaging techniques, a new dimension in neuroeconomic procedures was presented by Kosfeld, *et al* (2005) who in a letter to *Nature* argued that neuropharmalogical studies revealed that changes in the level of the

[1] This paper draws on on-going collaborative work with Francesca Cavallaro, and Marco Novarese. The latter is based at the Centre for Cognitive Economics, Università del Piemonte Orientale, Italy. The arguments presented here do not necessarily reflect the views of my colleagues.

neuropeptide oxytocin plays a "central" role in the regulation of behaviour (see the subsequent work of Zak, 2004, 2008a, b, 2011; Vercoe and Zak, 2010).

However, the innovative application of such techniques has drawn criticisms from within standard economics, especially relating to neuroeconomic empirical procedures, sample size, data dissemination (see for example, Harrison and Ross, 2010), and indeed its relevance to mainstream economics (Gul and Pessendorfer, 2005). Harrison (2008: 41) contests that neuroeconomics is beset by "marketing hype" and that confounding evidential problems, a lack of empirical transparency, and "poor economics" will transpire to make it, "even harder for anyone to know what poses for scientific knowledge in economics and what is just story-telling". Nonetheless, there is recognition of the potential of neuroeconomics to inform economics (for example, Bernstein, 2009; Mäki, 2010), and that any new scientific endeavour is likely to be subject to initial methodological and procedural difficulties (Mäki, 2010).

This short paper sets out to provide a brief outline of neuroeconomics, its claims, and to subject these claims to some scrutiny from a non-mainstream economic perspective. Neuroeconomics is typically presented as a fairly unified emerging approach, but this is contested here in an attempt to lend credence to the argument that neuroeconomics' empirical basis is fundamentally underdetermined. Accordingly, the view expressed is rather sceptical as the framing of the 'economics' in 'neuroeconomics' is profoundly reductionist and incapable of providing the explanatory depth its proponents claim. The following section considers the nature of neuroeconomics; this is then followed by an outline of the main claims made by its advocates. The following two sections highlight tensions within the literature and offer some critical observations. The paper is not intended to be comprehensive nor exhaustive, but to contribute to a process of heterodox economic critical engagement.

The nature of neuroeconomics

According to the originator of the term – Paul Zak – neuroeconomics seeks to combine the methods of neuroscience, endocrinology, psychology, and economics as a means of comprehending and explaining social decision-making[2]. It is the "consilience of brain and decision" (Glimcher and Rustichini, 2004). For another prominent advocate, Paul Glimcher (2008: 2):

> "The goal of Neuroeconomics is to combine … three approaches (economics, neuroscience and psychology) into a single discipline that employs constraints and insights from each level of analysis [to understand how we make decisions]".

The overarching aspect to neuroeconomics is the relationship between the biological and social sciences. Reflections of this are evident in marketing, politics and sociology, and there has been much attention devoted to the so-called "new behavioural turn" in economics (Sent, 2004). This "turn" primarily seeks to re-engage economics with psychology (Davis, 2011; Hands, 2010; Sent, 2004) following a drift between the two over the course of the twentieth century, and as a means of advancing economic theory. Kahneman and Tversky's (1979) article on the seeming irrationalities of decision-making under risk and subjective valuation is frequently viewed as a defining moment (see for example, Glimcher, 2008; Sent, 2004) in that

[2] See Zak's website: http://www.neuroeconomicstudies.org/

it prompted further investigation of the psychology of rational choice and evidence appearing contrary to the tenet of standard economic behavioural theory. This (new) behavioural literature, however, retains the rational choice tenet; seeking instead to develop variations of it (Hands, 2010; Zafirovski, 2000) in conjunction with analyses of the impact of "irrational" emotions, information asymmetries or impediments.

Following this another prominent advocate, Colin Camerer, describes neuroeconomics as:

> "The use of data on brain processes to suggest new underpinnings for economic theories, which explain how much people save, why there are strikes, why the stock market fluctuates, the nature of consumer confidence and its effect on the economy, and so forth. This means that we will eventually be able to replace the simple mathematical ideas that have been used in economics with more neurally-detailed descriptions" (Camerer, 2004: *Neuroeconomics*, http://www.hss.caltech.edu/%7Ecamerer/web_material/n.html)

The "neurally-detailed descriptions" to which Camerer refers are applied in conjunction with a variety of game theoretic experiments, and endeavour to interrogate a host of behavioural phenomena, including: preferences, utility and rewards; co-operation, fairness, trust and altruism, and learning and strategy (for example, Camerer, *et al*, 2004, 2005; Glimcher, 2003; Glimcher *et al*, 2005; Kenning and Plassman, 2005; Vercoe and Zak, 2010; Zak, 2004, 2010).

The measurement of brain processes frequently applies experimental game theoretic techniques, in both imaging and neuro-pharmacology. Popular among those procedures is the 'ultimatum' game, which attempts to assess and measure co-operative behaviour between subjects, and may be decomposed into two elements – intentional and random games; the latter acting as a "control". In the intentional game subjects are rewarded a small sum of money, typically in the region of $10, for attending the experiment and are randomly assigned to two roles – decision maker 1, who is required to make the initial decision (the "proposer") and decision maker 2 (the "responder") the subsequent decision. Subjects are informed that their decisions and those of their fellow decision maker will determine how much money they will earn. Individuals are randomly paired, and pairings are anonymised – all interactions are made via a computer interface. The proposer is invited, by the computer, to make some payment out their $10 to the responder (this could include zero). All participating subjects are informed that whatever is sent by the proposer to the responder will be tripled by the organiser. After informing the responder of the amount transferred this subject is then prompted to send an amount of their choosing, again including zero, to the first subject. Each decision is made serially and after all decisions were made subjects were paid. The second experiment consists of a random draw from an urn containing eleven balls numbered from 0 to 10. This draw held constant the amount of money received by the responder from the initiator, but importantly, removes the intentional signal from the interaction (see, for example, McCabe, *et al*, 2001; Vercoe and Zak, 2010, and Camerer, *et al*, 2005 for a survey).

In studies of the relationship between the hormone oxytocin and trust and co-operation Zak (2008a), Zak and Knack (2001), and Zak *et al* (2004; 2007) employed experimental techniques mainly based on the ultimatum game. The results of these experiments consistently found nearly twice the amount of oxytocin in the blood of second responders participating in the intentional game (Zak, 2008a; Zak *et al*, 2004; Zak *et al*, 2007). The findings suggest a positive relationship between oxytocin levels and "pro-social

behaviour" via the "social signal of trust" (Zak, *et al*, 2004: 226). Zak *et al* emphasise the amount transferred in their "intentional game" provides some measure of trustworthiness in that some financial sacrifice is inherent to signalling trust and expectations of reciprocity. The authors argue that oxytocin activates the parasympathetic system which is associated with co-operative behaviour and is accordingly an important element of human physiology. Therefore, the initial trustworthy signal induces the production of oxytocin which reinforces trust and reciprocal co-operative behaviour. This they argue supports an earlier study by Zak and Knack (2001) which concluded trust, through its impact on investment and trade, was an important predictor of economic performance.

In later studies Zak *et al* (2007) and Vercoe and Zak (2010) administer oxytocin and other substances, such as arginine vasopressin and testosterone[3] to subjects. They argue their findings suggest subjects highly dosed with oxytocin transfer greater sums in the trust game even "controlling" for risk and attitudes to risk. Other findings include an absence of any relationship between arginine vasopressin and generosity or punishment, and no difference in the "moralistic punishment threshold" (in men) with administrations of arginine vasopressin and testosterone. From these results Vercoe and Zak (2010), and Zak (2011) develop an empathy-generosity-punishment model characterised as a "brain circuit": Human Oxytocin Mediated Empathy (HOME), which they claim offer economics both an improved comprehension of human behaviour through experimentation with drugs to cause changes in brain activities, and by exposing economic method to inductive reasoning.

Neuroeconomic claims

Based on these "groundbreaking" (and other subsequent) studies (Glimcher, 2008), neuroeconomists make several notable claims both that economics will be enriched methodologically in that greater levels of precision and explanatory depths can be provided; it renders "as if" reasoning redundant (Camerer, *et al*, 2005; Camerer, 2007). This is an aspect of conventional economic method highlighted by Fine (1999) as a key dimension to economics' "colonising" trait. Fine argued that economics applied the "as if" notion of rationality and co-ordination "as if" by the market to the social domain, such as the family, politics and civil institutions. If Camerer, *et al* are correct in their assertion then, *prima facie*, it appears that Fine's case is weakened. A richer psychological profile of the individual can be modelled that goes beyond the stereo-typical *homo economicus*. This also suggests that the attainment of a unified theory of behaviour is significantly closer: it is no longer any need to "sidestep" psychological detail. For example, Camerer (2007), in positively ebullient tones, argues that neuroscience enables the *direct* measurement of thoughts, feelings and hence utility. Rustichini (2005: 203-204) further notes that the more ambitious aim for neuroeconomics is: "to complete the research program that the early classics (in particular Hume and Smith) set out … to provide a unified theory of human behaviour". Thus, neuroeconomists claim to confound William Jevons' (1874) classic argument that the quantification of feeling was not possible. Jevons had claimed: "Every mind is … inscrutable to every other mind, and no common denominator of feeling seems to be possible" (1874: 85). Neuroeconomics would appear then to offer the prospect of discovering Jevons' missing

[3] Arginine vasopressin is important in maintain water balance in the body, and when released in the brain is associated with "per-reproductive" behaviour, especially in males. This may be manifest as bonding to offspring and mates and aggressive behaviour to others (especially males). The aggressive aspect is emphasised: high testosterone levels are claimed to be associated with anti-social behaviours (Vercoe and Zak, 2010).

common denominator. Indeed, further, it also claims to have discovered the "moral molecule" in oxytocin (Zak, 2008b) – the measurement of thoughts and morals appears to be in our grasp! Thus, as contract theory opened up the "black box" of the firm in microeconomics – neuroeconomics is claimed to offer comprehension of the "ultimate black box": the brain (Camerer, 2007).

Specifically, for Camerer *et al*, neuroeconomics potentially makes two types of contributions to economics – incremental and radical. In the former, standard models are supplemented by the addition of variables with greater empirical support, thereby resonating with Kahneman and Tversky's approach. For instance, Camerer *et al* note how the neurobiology of addiction constrains the utility from the future consumption of other commodities and the impact of environmental cues on demand. The radical contribution offers a more direct challenge to the benefit-cost calculus of *homo economicus* by emphasising emotionally-based behaviour as an "automatic" process.

Camerer *et al* stress two neuroscientific findings that could have profound implications for the calculative rational persona of *homo economicus*: First, the human brain implements "automatic" processes more quickly than conscious deliberation or calculation, where these processes have emerged to address problems of "evolutionary importance rather than respect logical dicta" (Camerer, *et al*, 2005: 11). Second, human behaviour is strongly influenced by emotions; the "affective" system. For Camerer, *et al* (2004) this challenges conventional conceptions of the ubiquity of cost-benefit decisions and analysis, Bayesian updating, time preference assumptions, and therefore central aspects of game theory. Nevertheless, the authors are reluctant to endorse a "radical" approach.

Camerer, *et al's* (2004, 2005) neural architecture draws from cognitive localisation theories: different parts of the brain are primarily, but not exclusively, responsible for specific functions. For instance, the amygdala is associated with "positive and negative emotions" (see also Zak, 2004); the hippocampus with long-term memory; the cingulated cortex with attention and error detection, and the olfactory cortex with smell, and so forth. Camerer *et al* present the notion of the brain as two competing systems: the "affective", reflects emotions, and the "cognitive", referring to rational thought. There are echoes of this in Zak's work (for example, 2008a, b, 2011). Zak identifies the emotional-moral processes in behaviour, associating these with Adam Smith's *Theory of Moral Sentiments*, and contrasts this with rational deliberation, redolent of the behaviour (self-regarding) identified in Smith's *Wealth of Nations*. He, however, dilutes the oppositional dimension of self (rational) and other regarding (emotional-moral) behaviours arguing that the two are not mutually exclusive and the dominance of one may be context dependent.

Zak (2008b) makes some remarkable claims on the basis of his (and others') work in this area. He notes that exchange is predicated on particular "character values", such as honesty, fairness, trust, and reliability, and argues strongly that markets are moral in that they both rely upon and promote such character values by punishing transgressors. Reducing transaction costs through "social behaviour" promotes social capital: a potent virtuous cycle is predicted by Zak. With reference to game theoretic experiments, Zak challenges standard agency theory in arguing that employee autonomy does not imply shirking. He goes further in contesting (2008b: *xiv*):

> "Because of genetic heterogeneity, the claimed equal sharing of resources [he associates with 'socialism'] triggered a race-to-the-bottom in work effort [in the former

> 'socialist' economies] – my genes are little, if at all, helped by extra effort, so why bother. The design of market economies, then, is congruent with our evolved genetic predispositions".

Internal tensions?

The foregoing, however, masks the evolution of neuroeconomics along potentially divergent paths, from Camerer *et al's* variation of "behavioural economics in the scanner" (Harrison and Ross, 2010) a possible challenge to rational choice, to Glimcher's (2003) variation, which Ross (2005) has termed "neurocellular economics", supportive of rational choice. Zak's (2004; 2008b) neuropharamlogical approach, which presents markets as sites of morality, offers a further dimension.

Given this, there may be doubts over the coherence of neuroeconomics that may undermine claims to present a unified theory of behaviour. Fumagalli (2010), for instance, outlines a "labyrinth" and "panoply" of differences (see also Harrison and Ross, 2010). By contrast, Vromen (2008) considers fracture points as exaggerated with neuroeconomics possessing a fixed reference point: rational choice. Nonetheless, potentially significant differences appear to be evident at two levels – neural architecture and departures from utility maximisation.

Ross's (2005) "neurocellular economics" theorises brains as distributed information-processing networks.

He considers the (mammalian) brain controls behaviour through learning about associations between reward predictors and categories of actions, and hence in this way brains and markets are claimed to share an important property – they are parallel processors of information and valuations. Ross believes the brain network can be readily modelled by constrained maximisation game theoretic experiments and simulations (see Glimcher, 2003).

Arguably, Ross's analytical entry point is the notion of multiple selves: individuals are collections of sub-individual optimising neurons that symbiotically interact in co-ordination games (Davis, 2011). Thus, a person is the result of both *intra* and *inter* personal (evolutionary) games; they are "sculpted" and "re-sculpted" over time with language playing a prominent role (Ross, 2005). Ross (2005: 248) argues that neuroscience instructs us that neurons and neural structures demonstrate the property of servosystematicity, which in essence refers to the ability to maintain themselves as relatively autonomous entities. After all, arguably the starting point of neuroscientific approaches is the segmented brain structure. Thus, for Ross agency resides in the optimising neuron.

This is also the case with Glimcher (2003), who rejects the competing systems frame of Camerer *et al*. In this Glimcher acknowledges the influence of the computer scientist David Marr. In modelling neurobiological architecture Marr considered that the most obvious entry point was to pose the question as to what a particular architecture was attempting to accomplish. Thus, (mainstream) economics permits the specification of the computational goal – (expected) utility maximisation – of the brain as it furnishes the benchmark for survival and reproductive success in human and non-human species. Indeed, in using experimental analysis of monkeys' choice behaviour and the behaviour of individual parietal neurons Glimcher (2003) offers the prospect of a *literal* application of the rational choice model. *Utility*

maximisation occurs at the neural level and hence throughout the brain. *Pace* Camerer *et al*, Glimcher and his colleagues contest that there is no evidence to substantiate the case for two "independent" systems – emotional or irrational and rational – within the brain. Indeed, in his book, *Decisions, Uncertainty, and the Brain*, Glimcher (2003) makes no reference to emotions.

Thus, the rationality debate within neuroeconomics is partly derived from seemingly divergent ontological positions regarding the structure of the brain. For instance, Camerer *et al's* dualistic systemic view of the brain's structure adopts a localisation position that there are distinct decision-making modules within anatomical regions of the brain arising from differing evolutionary origins (see also, Zak, 2011. Contrastingly, Glimcher promotes a monistic ontology; conceiving a unitary neural structure, which is shaped by evolution in a fashion that promotes a unified behavioural pattern tailored to maximise reproductive success given environmental conditions.

An example of how the foregoing can lead to divergent interpretations of the same results is provided by experiments into the production of dopamine in monkeys in response to a reward, conducted by a team led by the neuroscientist Wolfram Schultz, and cited by both Camerer and Glimcher (Camerer, *et al*, 2005; Glimcher, 2003 and Glimcher *et al*, 2005). The experiment involved the measurement of neural activity in monkeys sitting passively in a quiet environment to establish the baseline resting state of neuron firing. "Quite" thirsty monkeys in the same environment and condition were then subjected to a "tone" followed by a "squirt" of juice directly into their mouths. No difference was observed in neural activity (of dopamine neurons), which Glimcher *et al* describe as *prima facie* "a curious result" given that the fruit juice is "reinforcing to thirsty monkeys" (Glimcher *et al*, 2005: 242). Without warning the magnitude of the juice (or reward) was increased substantially. In response there was a "dramatic increase" in neural activity. The continuance of this increased rate of reward through subsequent rounds led to a diminishing rate of neural activity until it eventually returned to the initial restive state. Additionally, when the tone sounded and was not accompanied by juice the firing rate of neurons diminished. From this the authors concluded that the neuron "seemed" to encode the difference between the expected and actual rewards incorporating any sustained change into modified expectations, which correspondingly, according to Glimcher, demonstrates the innate ability to value.

Camerer *et al* (2005) offer a differing interpretation of the same experiment. They highlight homeostasis: the process by which the body adjusts to external stimuli – such as sweating in relatively warm conditions – to maintain a "set-point". Homeostasis can also, however, involve conscious and deliberate actions, such as putting on a coat when feeling cool. Thus, returning to the "set-point" or "equilibrium" engenders some feeling of satisfaction. On this basis Camerer *et al* (2005: 27) argue that the standard economic approach of utility maximisation "starts in the middle of the neuroscience account". They argue that pleasure should not be viewed as the goal of human behaviour, but as a homoeostatic "cue", or signal. Homeostatic systems are sensitive to changes in stimuli as opposed to their levels. Hence, Camerer *et al* interpret the results of the Schultz monkey experiments also in terms of expectations, but not in the literal application of Glimcher *et al*. Somewhat ironically, Camerer *et al* employ the "as if" clause, thus: "When the juice was expected from the tone, but was not delivered, the neurons fired at a very low rate, *as if* expressing disappointment" (Camerer, *et al*, 2005: 28, emphasis added). For Camerer *et al* homeostasis is important in explaining sensitivities to change and, for instance, how happiness levels may be sensitive to changes in, as opposed to levels of, income.

However, Vromen (2008) contests that the differences represented by Camerer and Glimcher are more illusory than real. Vromen observes that Glimcher's approach relates to computations at the neural level and not the level of the mind. The two are ontologically distinct. Vromen notes Glimcher's argument in no way implies that neural activity is initiated in a deliberative fashion – it is effortless and proceeds in a highly mechanical manner (Glimcher and Rustichini, 2004): expected utility maximisation is the default mode arising from evolution.

As noted, Camerer, *et al*, and Zak define rationality as a deliberative process and note that most behaviour is non-deliberative, and on this basis deduce that it is non-rational in the standard economics sense. For Vromen it is this difference in the definition of "rationality" that leads to the apparent divergences. Indeed, he considers that Glimcher's neural level computations are equivalent to Camerer's affect-driven or automatic (and hence Zak's allusion to the emotional-moral dimension of behaviour). All are effortless and do not involve any deliberation. From this both camps indicate anomalies between "actual behaviour" and the standard rational choice model.

Yet all may not be as it seems. The stratified ontological properties Vromen refers to may be less than watertight. For instance, Zafirovski (2000) usefully distinguishes between 'first and second-class axioms' of rational choice theory. First-order approaches emphasise hyper-rationality or perfect rationality and are 'hard' and 'thin.' Second-order models are characterised by quasi, pseudo, or imperfect rationality and are and 'soft' and 'thick.' The two differ in terms of their teleological definitions – in identifying actors' ends and motives – with first-order models demonstrating utilitarianist agnosticism. In the first order, actors' ends are not specified beyond utility maximization. Following Zafirovski's delineation, *pace* Vromen, Glimcher's neural level computations are not equivalent to Camerer *et al's* affect-driven behaviour, but manifestations of different classes of rationality. Arguably, Camerer *et al's* and Zak's positions are most appropriately represented as second order, given the roles ascribed to the "affective system" and emotions, whereas Glimcher, *et al's* defence suggests a first order orientation. Again, if this is indeed the case then there are grounds for questioning neuroeconomists' contention of presenting a unified theory of behaviour.

Other reasons to be sceptical

The divergent interpretations also suggest that neuroeconomics may be subject to weak underdetermination[4] concerning the saliency of first and second order rational choice. There may also be a case for articulating the first order position, as in Ross's and Glimcher's models, in terms of the strong variant of underdetermination, which implies that utility maximisation is unfalsifiable (McMaster, *et al*, 2011).

[4] Underdetermination is associated with the Duhem-Quine thesis. In the weak form – associated with the French physicist, Pierre Duhem – hypothesis testing is subject to a profound weakness: following from the conjoinment of hypotheses, auxiliary assumptions, and ceteris paribus clauses, it is not possible to test an isolated hypothesis. Any one of the conjoined hypotheses/assumptions/ceteris paribus clauses may be responsible for any test results. In effect, empirical models lack sufficient data for the unequivocal realisation of an interpretation: data can be subject to a variety of interpretations, and are hence underdetermined. The stronger version, associated with Quine, suggests that any hypothesis or description can be rendered unfalsifiable through changes in conjoined auxiliary assumptions.

More specifically, a key assumption in neuroeconomic experimentation, derived for neuroscientific procedure, is subtraction. Imaging techniques apply the "subtraction" method to identify the location of neural activity. Subtraction is based on the measurement of brain activity during a task in the experimental context followed by the elimination of the focus activity during a control task, which is considered to provide a baseline of neural activity (Klein, 2010; Uttal, 2001; Zak, 2004). For example, experimental games in neuroeconomics apply subtraction in order to delineate between intentionality and randomness (see for example, Camerer, *et al*, 2005; Zak, *et al*, 2004). The baseline is the provision of monetary rewards to subjects in the absence of choice (randomness). The subtraction thus attempts to remove that element of neural activity derived from receiving, or anticipating the receipt of, the monetary reward, and then allows access to measure the separable effect induced by the process of choice. The selection of the control task is of considerable importance in establishing the robustness of the experimental process.

Importantly, subtraction methods are predicated on a linear, unidirectional systemic model of the brain. This assumes that neural activities are separable; brain activity is additive, i.e. the exercise of additional tasks involves additional brain function (Klein, 2010; Sidtis, *et al*, 2003; Uttal, 2001); the difference between subtracted recordings is the only source of significance; the components of cognitive function are "true", and the subtracted activity is irrelevant. Brook and Mandik (2007); Coltheart (2006); Damasio (2006); Hardcastle and Stewart (2002); Klein (2010), and Uttal (2001), for example, argue that consensus in the literature beyond localisation studies indicates that the brain and nervous system is a highly complex, non-linear system with extensive feedback loops. Damasio (2006: 93) observes:

> "It is appropriate to say that signals in the stream (of neural connections) move both forward and backward. Instead of a forward-moving stream, one finds loops of feedforward *and* feedback projections, which can create a perpetual recurrence" (original emphasis).

Thus, an important source of potential underdetermination rests on the auxiliary assumptions underpinning a key neuroeconomic empirical procedure and model of the brain (McMaster, *et al*, 2011). At best, this warrants caution in the interpretation of neuroeconomic findings.

This is augmented further by the seemingly limited account of the social dimension afforded by neuroeconomics. This is manifest in several ways, three of which are elaborated here.

In Zak and colleagues' series of experiments, some, *prima facie*, interesting results are attained with reference to the positive association between oxytocin and levels of co-operation and trust. Yet, whilst this study relates to social relations and interactions little discussion is devoted to the social dimension. Zak *et al* do not explicitly define trust, tacitly their account appears to incite co-operation either as a manifestation of trust or a pre-requisite of trust, or *vice versa*. The elasticity of the concept of trust; its innate, conscious, unconscious and institutional properties are conflated and presumed to be measurable.

In effect, trust demonstrates stratified properties emergent from both human biology and social construction. Baier (1986: 235), for example, conveys this:

> "When I trust another, I depend on her good will toward me. I need neither acknowledge this reliance nor believe that she has either invited or acknowledged such trust since there is such a thing as unconscious trust, as unwanted trust, as forced receipt of trust, and as trust which the trusted is unaware of".

Thus, to consciously trust implies that there is some diminution in behavioural uncertainty (Nooteboom, 2002; Zucker, 1986). Parties orient behaviour on the basis of the expectations of the behaviour of others, and their motivations. Moreover, an agent may judge to interact with other agents on the basis of past experience. This engages with degrees of *entrustment*. Concisely, not only is the identity of the individual that is trusted of paramount importance, so is the question – what is to be trusted to them? The extent of any entrustment is influenced by shared values and loyalty (see, for example, Simon, 1991; Zucker, 1986).

At no point in their discussions do Zak *et al* make any reference to the social construction of trust; its learned or instinctive qualities; its fragility, nor its manifestations. Instead, as demonstrated in Vercoe and Zak (2010), the approach tends to the binary – administered or not-administered (a particular drug) leading to high trust-low trust interpretations to accommodate the measurability framing of modelling (or model closure).

Then there are Zak's (2008b) and Ross's (2005) invocations of the market. As noted, Zak makes the claim that markets are moral and promote morality through the enhancement of the "moral molecule", oxytocin. This is all the more remarkable given the on-going financial crisis that commenced in 2007. Moreover, following DeMartino's (2011a; 2011b) insightful analysis of ethics and the economics profession, Zak's allusion seems to be founded on a "maxi-max" position, predicated on utilitarian and perhaps utopian perspectives that relegate individual autonomy and the ethical imperative of professionals exercising care, "to avoid preventable harm" (DeMartino, 2011a: 151). The maxi-max principle emphasises selection on the (consequentialist) basis of superiority of outcome relative to other possible courses of action. It does not, however, adequately account for uncertainty or deontology (DeMartino, 2011a). Given DeMartino's argument, Zak's references appear both naïve and crude.

The same cannot be said of Ross, who presents a more sophisticated and elegant argumentation. Nonetheless, Ross's market-brain analogy – both, according to Ross, are processors of information and valuations – is perhaps over-egged. It acts to de-emphasise the power of institutions. The market merely facilitates the agency of other entities; there is no hint of conditioning. This contrasts with recent institutionalist-oriented accounts, which emphasise the centrality of language to social organisation and activity (Hodgson, 2003; Searle, 2005; ironically see also Ross, 2005, for a neoclassical perspective). In short, the argument places language as the fundamental institution predicating all other institutions through its recursive and communicative qualities, which are key to organizing, partly through language's property of conveying rights and obligations in the reproductive capacities of institutions. Language therefore goes beyond symbolism; it invokes power in the shaping of social relations. Neuroeconomics' neglect for these dimensions of language limits its analysis; there is no explicit recognition of social conditioning on the responses of their subjects (see also, Herrman-Pillath, 2009; Martins, 2011)[5].

[5] This may also reveal a further philosophical (and ontological) problem with Ross's, and Glimcher's, utility maximising neurons. Vromen (2008) convincingly argues that this conferral of agency is subject to a mereological fallacy: imbuing a property only attributable to the whole upon a part.

The social dimension further queries the saliency of Camerer, *et al's* neural architecture in its delineation between two autonomous and competing systems (the "affective" and the "cognitive"), noted above. As Martins (2011) argues, Antonio Damasio's (2006) work on "somatic markers" accents the critical role emotions have in influencing the decision-making process; far from a separable or conflicting 'system' emotions are integral to rational decision-making. Actions and behaviour – how the brain selects mechanisms in framing behaviour and values on types of actions – depend upon emotions (see also Elster, 1998; Herrmann-Pillath, 2009; Twomey, 1998; Wolozin, 2005). Damasio identifies layers of emotion – primary (fear, anger, sadness, etc) and secondary (sympathy, compassion, envy, etc) – where primary are shared by all humans; they are an element of human neurobiology, whereas secondary are partially derived from primary emotions and also socially constructed. This resonates with Thorstein Veblen's advocacy of a stratified mind – conscious deliberation, habit, and instinct (Twomey, 1998)[6].

Veblen's engagement with psychology over one hundred years ago seems remarkably prescient given recent neuroscientific endeavours. Veblen's emphasis on habit and a stratified conception of the mind provides a compelling analytical entry point in appreciating the intimate and complex relationship between habits, emotions and institutions. Again, by partly enabling, constraining and constituting the individual, institutions also influence human emotions, and *vice versa* (Wolozin, 2005). Yet whilst Camerer *et al* explicitly recognise emotions via their conceptualisation of an affective system they do not key into social referents and embeddedness and treat emotion as conceptually oppositional to cognition; there is much work suggesting otherwise.

Given the foregoing, I believe there is a case to question the veracity of neuroeconomics' epistemic claims. This, however, is not the same as saying that there is no value in neuroscience and neuroscietific referents for the study of economics and other social sciences. My scepticism lies in the framing of the 'economics' in 'neuroeconomics'; a framing that appears, perhaps unsurprisingly, to relegate the social and therefore generates lacuna as opposed to addressing them. It is not possible to characterise the human mind without appeal to language, and that language belongs to a linguistic community and accordingly embeds the individual into the social (see Davis, 2011; Dupré, 2005), but neuroeconomics appears if not ignore this then to treat it as a mere triviality. Vercoe and Zak (2010: 143) refer to Veblen's proposition that economics should be an evolutionary science and advocate the construction of "inductive models that are problem driven, rather than imagination driven (as in deduction)". It is a great pity Vercoe and Zak's reference to Veblen is so partial; further reading would have revealed the centrality of the social dimension to Veblen's work and to the comprehension of human behaviour.

References

Baier, A. (1986) Trust and antitrust, *Ethics*, 96, 231-260.

Bernstein, B. D. (2009) On the potential of neuroeconomics: a critical (but hopeful) appraisal, *American Economic Journal Microeconomics*, 1, 1-41.

Breitner, H. C., Aharon, I., Kahneman, D., Dale, A., and Shizgal, P. (2001) Functional imaging of neural responses to expectancy and experience of monetary gains and losses, *Neuron*, 30, 619-639.

[6] Veblen drew from the nineteenth century psychologist William James (see for instance, Wolozin, 2005). James is cited with approval by Damasio (2006: 129) when he states: "William James, whose insights on the human mind have been rivalled only by Shakespeare's and Freud's, produced a truly startling hypothesis on the nature of emotion and feeling".

Brook, A. and Mandik, P. (2007) The philosophy and neuroscience movement, *Analyse & Kritik*, 29, 3-23.
Camerer C. F. (2004) *Neuroeconomics*, http://www.hss.caltech.edu/~camerer/web_material/n.html (site last consulted June 2011).
Camerer, C. F. (2007) Neuroeconomics: using neuroscience to make economic predictions, *Economic Journal*, 117, C26-C42.
Camerer C. F., Loewenstein G., and Prelec D. (2004) Neuroeconomics: why economics needs brains, *Scandinavian Journal of Economics*, 106, 555-579.
Camerer C. F., Loewenstein G., and Prelec D. (2005) Neuroeconomics: how neuroscience can inform economics, *Journal of Economic Literature*, 63, 9-64
Coltheart, M. (2006) What has functional neuroimgaing told us about the mind so far? *Cortex*, (Editorial), 42, 323-331.
Damasio, A. R. (2006) *Descartes' Error: Emotion, Reason and the human Brain*, Vintage: London [originally published 1995]
Davis, J. B. (2011) *Individuals and identity in economics*, Cambridge University Press: Cambridge.
DeMartino, G. F. (2011a) *The Economist's Oath: On the Need for and Content of Professional Economic Ethics*, Oxford University Press: Oxford.
DeMartino, G. F. (2011b) The economist as social engineer: Maxi-max decision, utopia and the need for professional economic ethics, *Real-World Economics Review*, 56, 31-44.
Dupré, J. (2005) *Human Nature and the Limits of Science*, Oxford University Press: Oxford.
Elster, J. (1998) Emotions and economic theory, *Journal of Economic Literature*, 36, 47-74.
Fine, B. (1999) A question of economics: Is it colonising the social sciences? *Economy and Society*, 28: 403-425.
Fumagalli, R. (2010) The disunity of neuroeconomics: a methodological appraisal, *Journal of Economic Methodology* (Special Issue – Neuroeconomics: hype or hope?), 17, 119-131.
Glimcher P. W. (2003) *Decisions, Uncertainty, and the Brain. The Science of Neuroeconomics*, MIT Press: Cambridge, MA
Glimcher, P. W. (2008) Neuroeconomics, *Schloarpedia*, 3: 1759.
Glimcher P. W. and Rustichini A. (2004) Neuroeconomics: the consilience of brain and decision, *Science*, vol. 306, October, 447-452.
Glimcher P. W., Dorris, M. C., and Bayer, H. M. (2005) Physiological utility theory and the neuroeconomics of choice, *Games and Economic Behavior*, 52: 213-256.
Gul, F. and Pesendorfer, W. (2005) The Case for Mindless Economics, http://www.princeton.edu/~pesendor/mindless.pdf
Hands, D. W. (2010) Economics, psychology and the history of consumer choice theory, *Cambridge Journal of Economics*, 34, 633-648.
Hardcastle, V. G. and Stewart, C. M. (2002) What do brain data really show? *Philosophy of Science*, 69, S72-82.
Harrison, G. W. (2008) Neuroeconomics: a critical discussion, *Economics and Philosophy*, 24, 303-344.
Harrison, G. W. and Ross, D. (2010) The methodologies of neuroeconomics, *Journal of Economic Methodology* (Special Issue – Neuroeconomics: hype or hope?), 17, 185-196.
Herrmann-Pillath, C. (2009) Elements of a neo-Veblenian theory of the individual, *Journal of Economic Issues*, 43, 189-214.
Hodgson, G. M. (2003) The hidden persuaders: institutions and individuals in economic theory, *Cambridge Journal of Economics*, 27, 159-175.
Jevons, W. S. (1874) *Principles of Science: A Treatise on Logic and Scientific Method*, Macmillan: London [1900 version/1913 printing].
Kahneman, D. and Tversky, A. (1979) Prospect theory: an analysis of decision under risk, *Econometrica*, 47, 263-291.
Kenning, P. and Plassmann, H. (2005) Neuroeconomics: an overview from an economic perspective, *Brain Research Bulletin*, 67, 343-354.
Klein, C. (2010) Images are not the evidence in neuroimaging, *British Journal of the Philosophy of Science*, 61, 265-278.
Kosfeld, M., Heinrichs, M., Zak, P. J., Fischbacher, U., and Fehr, E. (2005) Oxytocin increases trust in humans, *Nature*, Letters, 435, 673-676.
McCabe, K., Houser D., Ryan L., Smith V. and Trouard T. (2001) A functional imaging study of cooperation in two person reciprocal exchange, *Proceedings of the National Academy of Sciences of the United States of America*, 98, 11832-11835.
McMaster, R., Cavallaro, F., and Novarese, M. (2011) Neuroeconomics' knowledge claims: Underdetermined and unjustified? Unpublished paper.

Mäki, U. (2010) When economics meets neuroscience: hype and hope, *Journal of Economic Methodology* (Special Issue – Neuroeconomics: hype or hope?), 17, 107-117.
Martins, N. (2011) Can neuroscience inform economics? Rationality, emotions and preference formation, *Cambridge Journal of Economics*, 35, 251-267.
Nooteboom, B. (2002) *Trust: Forms, Foundations, Functions, Failures and Figures*, Edward Elgar: Cheltenham.
Ross, D. (2005) *Economic Theory and Cognitive Science: Microexplanation*, MIT Press: Cambridge, MA.
Rustichini, A. (2005) Introduction – neuroeconomics: present and future, *Games and Economic Behavior*, 52, 201-212.
Searle, J. (2005) What is an Institution? *Journal of Institutional Economics*, 1: 1-22.
Sent, E-M. (2004) Behavioral economics: how psychology made its (limited) way back into economics, *History of Political Economy*, 36, 735-760.
Shizgal, P. K. C. and Conover, K. (1996) On the neural computation of utility, *Current Directions in Psychological Science*, 5, 37-43.
Sidtis J. J., Strother S. C., and Rottenberg D.A. (2003) Predicting performance from functional imaging data: methods matter, *Neuroimage*, 20, 615-624
Simon, H. A. (1991) Organizations and markets, *Journal of Economic Perspectives*, 5, 25-44.
Twomey, P. (1998) Reviving Veblenian economic psychology, *Cambridge Journal of Economics*, 22: 433-448.
Uttal, W. R. (2001) *The New Phrenology: The Limits of Localizing Cognitive Processes in the Brain*, MIT Press: Cambridge, MA.
Vercoe, M. and Zak, P. J. (2010) Inductive modelling using causal studies in neuroeconomics: brains on drugs, *Journal of Economic Methodology* (Special Issue – Neuroeconomics: hype or hope?), 17, 133-146.
Vromen, J. J. (2008) Neuroeconomics as a natural extension of bioeconomics: the shifting scope of standard economic theory, *Journal of Bioeconomics*, 9, 145-167.
Wolozin, H. (2005) Thorstein Veblen and human emotions: an unfulfilled prescience, *Journal of Economic Issues*, 41, 727-740.
Zafirovski, M. (2000) Extending the rational choice model from the economy to society, *Economy and Society*, 29, 181-206.
Zak, P. J. (2004) Neuroeconomics, *Philosophical Transactions of the Royal Society of London (Biology)*, 359, 1737-1748.
Zak, P. J. (2008a) The neurobiology of trust, *Scientific American*, June, 88-95.
Zak, P. J. (ed) (2008b) *Moral markets: the critical role of values in the economy*, Princeton University Press: Princeton.
Zak, P. J. (2011) The physiology of moral sentiments, *Journal of Economic Behavior and Organization*, 77, 53-65.
Zak, P. J. and Knack, S. (2001) Trust and growth, *Economic Journal*, 111, 343-365.
Zak, P. J., Kurzban, R. and Matzner, W. T. (2004) The neurobiology of trust, *Annals of New York Academy of Science*, 1032: 224-227.
Zak, P. J., Stanton, A., Admadi, S. (2007) Oxytocin increases generosity in humans, *PloS ONE*, vol. 11, 1-5.
Zucker, L. G. (1987) The production of trust: institutional sources of economic structure, 1840-1920, *Research in Organizational Behavior*, 8, 53-111.

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Other institutionalism for development studies

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Prologue

In the early 1990s, the concept of development as a process of accumulation of capital led to a view which emphasized the strong link between institutions and economic performance. This view assumes that public policies and institutional frameworks are a fundamental part of the growth equation, and the most important explanation of the differences in income between countries (North, 1990; Olson, 1996). This shift from a "theory of development free of institutions" to a "New theory of growth" (Mantzavinos, 2003) generated a profusion of theoretical literature and a multitude of empirical studies on the institutional determinants of economic development. Ha-Joon Chang has been a prominent advocate of this approach but also a critic of some of its manifestations. For example, in a recent paper, "Institutions and economic development: theory, policy and history" in the *Journal of Institutional Economics* (Chang, 2011a), he demonstrates the presence of two distinct lines of research: ideological and political, which rely on very different theoretical legacies and establish distinct economic worldviews. This paper is a timely reminder of Chang's important contribution to institutional economics and development. With this in mind we present a comprehensive and analytical review of a recent significant publication, *Institutional Change and Economic Development* edited by Chang. This book is an essential source for researchers who study the relationship between development and institutions and constitutes one of the most ambitious attempts to study institutions. It offers an "explicitly institutionalist" approach - "Institutional Political Economics" (IPE). This is rooted in the intellectual legacy of Marx, Veblen, Schumpeter, Polanyi and Simon, and proposes a version of institutional change as a physical and cultural project (Chang, 2002).

Introduction

At the beginning of the nineties, a "counter-revolution" in development theory (Toye, 1994) was formalised in a new agenda: the Washington consensus. This was the "orthodox" economy's answer to the strategy followed by developmental states, which during the second half of the Twentieth Century consisted in interventionism and protectionism, and was considered an "historical anomaly" (Rodrik, 2006). Just five years later, doubts about the capacity of the "Consensus" to promote growth began to spread, and it was even argued that a stronger adherence to its postulates would have created a notable decline in economic performance (Easterly, 2001). Russia´s failure in its transit to a market economy, unsuccessful reforms in Latin America, and the Asian financial crisis, were proving that economic liberalization without a solid legal and political apparatus, and a complex safety net, would produce significant negative effects on economic growth (Evans, 1995; Jomo, 2003; Rodrik, 2004). The IMF began to talk about a "reform of the reform" or "second generation reforms". Williamson (2003) proposed to remove "Washington consensus" from all economic discourse, since it had provoked so many disappointments. In short, this so called "road to prosperity" for undeveloped countries had unfulfilled its promises. But, moreover, it had

showed neoclassical economic theory's deficiencies and its inability to understand the specific problems of development (Stiglitz, 2006; Hoff et Stiglitz, 2002).

By that time, in the academic sphere, interest in Development Economy or "Post-consensus Development Economy" was emerging. Much of the literature began to research countries´ rate of development, emphasizing a strong connection between institutions and economic performance. Growth was related to the existence of a series of basic institutional preconditions, and in som cases it was proposed that underdevelopment be studied as an institutional failure (Bardham, 2002). From a comparative historical perspective, progress was linked with the existence of solid institutions that guarantee property rights and contractual liability. Prosperity would not be achieved where property rights were not secure and where elites´ economic and political power was unlimited (North, 1990; Acemoglu, 2003). Rodrik's account (2003) is conclusive: success in economic performance in the developed world is due to an appropriate institutional framework.

This new paradigm's influence has reached multilateral organizations, as the 1998 World Bank report makes clear, "Post-Washington consensus: Institutions matter". Econometric studies about the institutional causes of development and debates about its explanatory scope have proliferated in the academic world (Acemoglu, Johnson et Robinson, 2002, 2005). One of the most controversial aspects is the possibility for institutional transference, which has been questioned from a double perspective: (1) because it is an idealised projection of western institutional experience (Przeworski, 2004; Evans, 2004; Portes, 2007), and (2) because the effectiveness of formal institutions depends significantly on the support of informal institutions (norms, codes, cultural factors), which are of primary importance in traditional societies (Eggertsson, 2005). Despite all efforts that have been taken by New Institutional Economy theorisers, there is as yet no comprehensive theory of institutional change and economic development (North, 2005). Not even a "satisfactory theory of the economic effects of institutions", nor empirical studies that apply these theoretical concepts to other historical experiences (Chang y Evans, 2006). This state of things leaves open the debate about development's fundamental cause (Lavezzolo, 2008; Przeworski, 2004) and about causality in the institutions-development relationship (Chang y Evans, 2006).

Institutional Change and Economic Development, editor: Ha-Joon Chang, Tokyo: United Nations University Press, and London: Anthem Press, 2007.

As Deepak Nayyar states in its Foreword, *Institutional Change* constitutes the most ambitious attempt so far to study institutions in depth and to overcome the limits of any previous works on development. This great work is the result of research funded by the World Institute for Development Economics Research of the United Nations University (UNU-WIDER), begun in 2004, and has been carried out by a team of experts in development economy and, more specifically, institutional development. Its editor, Ha-Joon Chang, professor and researcher at Cambridge, is advisor of some international organizations, agencies and governments, and winner of the Myrdal Prize in 2003 and the Leontief Prize in 2005, which is awarded to some of the most recognised heterodox economists. In his research, he has demystified "orthodox economy" discourse, and questioned neoclassical methodology – based on abstraction and deduction – that upholds that orthodoxy. He has also followed some tenets of Developmentalism, in particular its critical response to modernization and the importance of institutional soundness (Coastworth, 2008). In this sense, drawing inspiration from Bairoch (1994) and especially from Reinert (2007, 1995),

Chang has studied the relationship between prosperity and protectionism or free trade in a historical perspective, and obtained conclusions that contradict orthodox explanations: "good" policies recommended to developing countries by "bad Samaritans" (developed countries) and their executive branch, "the Impious Trinity" of multilateral organizations (IMF, WB, WTO), were concealing a plan which would kick away the ladder of progress. And, regarding "good" policies, he warned about the long and winding road that the evolution and consolidation of modern democratic States had followed (Chang, 2002; López Castellano, 2009; Labandeira, 2009). His works about Asian economies proved that state intervention was needed in order to attain economic development, because State actors applied "hidden" industrial and social policies (Chang, 2004b). More recently, Chang has expressed doubts about the World Bank's and International Monetary Fund´s growing interest in social policies and institutions, which were completely forgotten in their "structural adjustment" programs during the nineties. In his opinion, the excessive emphasis and abundance of literature about the relationship between institutions and development is an orthodox economic attempt to disguise the failure of "good policies" and the theories that support them (Chang, 2006).

The book, which is divided in three parts with a clarifying prologue by the author himself, takes a multidisciplinary approach to research the institutions-development problem, through field studies focusing on different national and historical contexts. The first part (Chapters 2-4) analyses "superficial" institutional literature and deepens the study of the nature of institutions, its implications and relation with economic development. The second part (Chapters 5-9) considers the evolution of specific institutions – such as bureaucracy, central banks or tax systems – in particular countries. The third and final part expounds concrete experiences of institutional evolution across different nations.

Chang (Chapter 2 "Understanding the relationship between institutions and economic development: some key theoretical issues") shows the main deficiencies of the "superficial" approach to institutions. This approach is limited for a number of reasons. It emphasizes institutions as restrictions; it lacks a commonly accepted definition of institution; it does not understand their complexity; and it confuses institutional form (democracy, independent judiciary, bureaucracy) with institutional functions (rule of law, respect for private property, enforceability of contracts). Those deficiencies imply the creation of very subjective indicators and a "Global Standard Institution", ignoring the fact that equal institutions can perform different functions and forms according to their historical, political or social context. Moreover, many countries grew without an orthodox institutional framework and some others took different institutional forms to carry out the same functions. In short, to understand the configuration of an institutional structure, many elements should be considered: ideology, religion or culture and, also, history, colonizations or orography, which makes it essential to continue research in theory and field work. P. B. Evans (Chapter 3, "Extending the institutional turn: Property, politics and development categories") confronts the problematic of measuring institutional quality and researchers´ attempts to overcome it by a "double-finesse model", which lacks empirical validity, with some exceptions such as Acemoglu, Johnson and Robinson´s (2005) and North´s (2005). This first part concludes with a brief history of institutional economic thought, beginning with Bacon and ending with Veblen (E. Reinert, Chapter 4, "Institutionalism ancient, old and new: An historical perspective on institutions and uneven development).

These theoretical reflections give rise to some methodological considerations that serve as a framework for the study of specific institutions. Institutions cannot be transferred, as J. Toye (Chapter 5, "Modern bureaucracy") argues. Bureaucracy can only be understood

in a specific political scenario that will vary from one country to another. G. Epstein (Chapter 6 "Central banks as agents of economic development") concurs with Toye in his analysis of mono-function institutions applied to central banks as agents of economic development in the U. S., Japan and England. W. Lazonick (Chapter 7, "Corporate governance, innovative enterprise, and economic development") shares this view and shows that mono-function institutions can be easily misused for private interests. That is the case with financial politics, which is appropriated by share-holders and speculative investors, harming the rest of society, and so - Lazonick ends – gives rise to the need for regulations that favour social welfare.

The assumption that an institution is a whole, which comprises formal (laws, rules) and informal (culture, values, ideologies) aspects, fails to recognise the difficulty in apprehending the relation between institutions and human behaviour, for this is unpredictable and determined by informal institutions. This implies, firstly, that informal institutions should be studied, because they determine the functions, effectiveness and acceptance of formal institutions in a given context; secondly, that the complex nature of institutions and the possibility of hidden interests in its implementation hamper the chances of producing an accurate prediction of its effects; and, finally, that it is impossible to dissociate the political from the institutional. For M. J-E. Woo (Chapter 9: "The rule of law, legal traditions and economic growth: The East Asian example"), to assume the alleged superiority of Anglo-Saxon formal law system over informal traditional law implies the idea of the necessity of the former to condition the relation between state, economy and society. In his research (Chapter 11, "The role of federalism in developing the US during the nineteenth century globalization"), E. Rauchway maintains that federalism allowed the US to grasp enormous international flows of capital and labour, so that the country obtained local institutions that were best prepared for new situations to come. But, as state economic interests prevailed, a set of regional dysfunctions were created and are still maintained. In chapter 13 (L. Burlamaqui, J.A.P. de Souza, y N.H. Barbosa-Filho, "The rise and halt of economic development in Brazil, 1995-2004: Industrial catching-up, institutional innovation and financial fragility"), the role of state and bureaucracy as agents of institutional change is studied, focusing on the case of Brazil. J. di John (Chapter 8, "The political economy of taxation and tax reform in developing countries") argues that the level of taxation is not merely an economic issue, but a social and political one, for a given tax system implies a particular social contract legitimizing it, and presupposes a certain state capability of implementing it. The comparison between Latin-American and East Asian tax models, gives support to question any tax reforms that evade redistributive measures - such as the one proposed by international organisations in their structural adjustment programs - and to warn countries with inequalities to consolidate long term tax reforms based on direct and progressive taxation.

Case studies reach a clear conclusion: the greatest successes of institution-building were due to a combination of country-specific innovations and developed-countries' policies adapted to national contexts. In this sense, T. Zhu (Chapter 14, "Rethinking import-substituting industrialization: Development strategies and institutions in Taiwan and China") describes China's and Taiwan's economic performance as a state led process, combining import-substituting industrialization and export-oriented industrialization with an active participation of banking institutions, public companies and financial regulations. His recommendation to developing countries is to foster its industrial capacity and exportations by state policies to absorb national production. In turn, J. Kiiza (Chapter 15, "Developmental nationalism and economic performance in Africa: the case of three successful African economies") shows three successful experiences in the African continent: Mauritius, which accomplished a strong growth without any structural transformation, and Bostwana and

Uganda, each of which grew while transforming their industries. In these three cases, a Developmental state - with Weberian bureaucracy and other formal institutions - implemented mercantilist strategies, oriented toward protectionism in some cases or open to the market in others.

P. K. O´Brien (Chapter 10, "State formation and the construction of institutions for the first industrial nation") compares "laissez faire" policies imposed by Washington Consensus with the mercantilist policy of geopolitical expansion that the United Kingdom followed, to unmask the neoliberal myth which fails to correspond to real historical experience. Fiscal architecture, political decisions promoting industry, and technological investments on certain sectors, were part of a strategy that received support from the Royal Navy military conquests. In Chapter 12 ("Institutions and economic growth: the successful experience of Switzerland 1870-1950"), T. David and A. Mach explain how Switzerland used institutions that are now neglected by neoclassical economic theory (patents, central banks autonomy), and how Holland and Belgium followed a quite similar model of development, based on private-public cooperation and a combination of exportation policies with a selective control of their domestic markets.

It can be argued, from the theoretical reflections and case studies proposed, that the results back up those suggested by Chang throughout his career, namely, that historical experience contradicts the main neoclassical myth: that market and trade liberalization alone are the way to prosperity. Industrialized countries became rich through protectionism, aggressive industrial policies and interventionism in the financial sector. The economic success of the "Glorious Thirty" was due to wide intervention programs and strict controls on the flows of international capital, designed to boost economic growth and protect industry. Following "nationalist" policies, developing countries grew more when not merely following liberal policies (Chang, 2007; Sunkel, 2006). Therefore, only a kind of "historical amnesia" or overwriting of history, could explain the oblivion of such paradigmatic experiences as those of "the golden age of capitalism" (1950-1973), and the subsequent turn in macroeconomic programs of the eighties.

To sum up, this book is not only a great antidote to neoliberal determinism, but also suggests different political options depending on the specific conditions of developing countries. As Chang himself pointed out, the work of a development economist is "to find constant historic guidelines, to build theories that explain them and to apply those theories to contemporary problems". In short, this is a relevant text and a mandatory reference point to all those interested in international development and its potential obstacles. To economists, because they will doubt and reflect, to politicians, because they will find elements for analysis, and for citizens, because they will find arguments with which to conduct substantive debate.

References

Acemoglu, D. (2003), "Root Causes: A historical approach to assessing the role of institutions in economic development", Finance and Development, pp. 27-43.

Acemoglu, D., Johnson, S., Robinson, J. A. (2002), "Reversal of Fortune: Geography and Institutions in the Making of the Modern World Income Distribution", Quarterly Journal of Economics, vol. 117, nº. 4, pp. 1231–94

Acemoglu, D., S. Johnson, and J. A. Robinson (2005), 'Institutions as the Fundamental Cause of Long-Run Growth', in P. Aghion and S. Durlauf (eds.), *Handbook of Economic Growth*, New York: North Holland, pp. 385–472.

Bairoch, P. (1994), Mythes et paradoxes de l'histoire économique, La Découverte. Paris

Bardhan, P. (2002), "Conflicts de distribution, action collective et Economíe institutionelle", en G. Meier et J. Stiglitz (drs) (2002), Aux frontières de l'économie du développement. Le futur en perspective, Banco Mundial/Eska, Paris, pp. 225-241

Chang, H.-J. (2011), 'Institutions and Economic Development: Theory, Policy and History', *Journal of Institutional Economics*, **7**(4): doi:10.1017/S1744137410000378.

Chang, H.-J. (ed.) (2007a), *Institutional Change and Economic Development*, Tokyo: United Nations University Press, and London: Anthem Press.

Chang, H-J. (2007b), Bad Samaritans: Rich nations, poor policies and the threat to the developing world, Random House Business

Chang, H-J. (2006), "La relación entre las instituciones y el desarrollo económico. Problemas teóricos claves", Revista de Economía Institucional, vol. 8, nº 14, pp. 125-136.

Chang, H.-J. (2002), Kicking away the ladder: development strategy in historical perspective, Anthem Press

Chang, H-J. (2004b), "The role of social Policy in Economic Development: Some Theoretical Reflections and Lessons from Eastern Asian", in F. Mhandawire (ed), Social Policy in Development, UNRISD/McMillan, London.

Chang, H-J. & Evans, P. (2006), "The Role of Institutions in Economic Change", in Gary Dymski y Silvana de Paula (eds.). Reimagining Growth: Towards a Renewal of Development Theory, Zed Books

Coatsworth, J.H. (2008). 'Inequality, Institutions and Economic Growth in Latin America', *Journal of Latin American Studies*, **40**(3): 545–569

Eggertsson, T. (2005), Imperfect Institutions. Opportunities and Limits for Reform, Michigan University Press, Ann Arbor.

Easterly, W. (2001). "The Lost Decades: Developing Countries' Stagnation in Spite of Policy Reform 1980–1998", Journal of Economic Growth,vol. 6, nº 2, pp.135–157

Evans. P. (2007), Instituciones y desarrollo en la era de la globalización neoliberal,
ILSA. Bogotá

Evans, P. (2004), "Development as institucional change: the Pitfalls of monocropping and potentials of deliberation", Studies in Comparative Institutional Development, nº. 38, pp. 30-53.

Evans, P. (1995), Embedded Autonomy and Industrial Transformation, Princeton University Press, Princeton

Hoff, J. K. et Stiglitz, J. E. (2002), "La théorie économique actuelle et le développement", en G. Meier et J. E. Stiglitz (eds), pp.321-377

Jomo, K.S. & Fine, B. (eds) (2006), The New Development Economics: After the Washington Consensus, Zed Books, London

Labandeira, P. (2009), “Instituciones y desarrollo económico. Un marco conceptual”, Revista de Economía Institucional, vol 11, nº 20, pp. 355-373

Lavezzolo, S. (coord.) (2008), Los determinantes del desarrollo económico. La causalidad en las ciencias sociales, Ed. Pablo Iglesias, Madrid

López Castellano, F. (2009), “Reseña a H-J. Chang: ¿Qué fue del buen samaritano?. Naciones ricas, políticas pobres”, Problemas del Desarrollo, vol 40, nº 157, pp. 207-211

Norh, D. C. (2005), Understanding the Process of Economic Chang, Princeton University Press

North, D. C. (1990), Institutions, Institutional Change and Economic Performance, Cambridge University Press, Cambridge.

Olson, M. (1996), “Big bills left on the sidewalk: why some nations are rich and others poor”, Journal of Economic Perspectives, 10(2): 3–24.

Portes, A. (2007), “Instituciones y desarrollo: una revisión conceptual”, Desarrollo Económico, vol. 46, nº 184, pp. 475-503.

Przeworski, A. (2004), “The Last Instance: Are Institutions the Primary Cause of Growth?”, European Journal of Sociology, vol. 45, nº 2, pp. 165-188

Reinert, E.S. (1995), “El concepto de competitividad y sus predecesores. Una perspectiva nacional de 500 años”, Socialismo y participación, nº 72, pp. 21–40

Reinert, E.S. (2007), La globalización de la pobreza. Cómo se enriquecieron los países ricos…y porque los países pobres siguen siendo pobres, Crítica, Barcelona

Rodrik, D. (2006), “Goodbye Washington Consensus, Hello Washington Confusion”, Journal Of Economic Literature, vol. 44, nº 4. pp. 973-987.

Rodrik, D. (2004), “Estrategias de desarrollo para el nuevo siglo”, en José Antonio Ocampo, ed. (2004), *El desarrollo económico en los albores del siglo XXI, CEPAL/Alfaomega*, Bogotá.

Rodrik, D. (2003), “What do we learn from country narratives?”, in Rodrik, D. (ed), In Search of Prosperity: Analytic Narratives on Economic Growth, Princeton University Press.

Rodrik, D., y Subramanian, A., Trebbi, F. (2004), “Institutions rule: the primacy of institutions over geography and integration in economic development”, Journal of Economic Growth, vol. 9, nº 2, pp. 131-165

Stiglitz, J. E. (2006), Cómo hacer que funcione la globalización, Taurus, Madrid

Sunkel, O. (2006), “En busca del desarrollo perdido”, Problemas del Desarrollo, vol. 37, nº 147, pp. 13-44.

Toye, J. (1994), "¿Hay una nueva economía política del desarrollo?", en Ch. Colclough y J. Manor (comps.), ¿Estados o mercados?. El neoliberalismo y el debate sobre las políticas de desarrollo, Fondo de Cultura Económica, México

Williamson, J. (2003), "Reseña sobre el Consenso de Washington y sobre los pasos a dar", Finanzas&Desarrollo, septiembre, pp.10-13

World Bank (1998), Beyond the Washington Consensus: Instituttions Matter, Washington

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