"This Time It Really Is Different: Europe, the Financial Crisis, and 'Staying on Top' in the 21st Century"

Mark Blyth

Professor of International Political Economy

Brown University

Providence RI 02906

USA

Paper Prepared for Breznitz and Zysman (eds.) "Can the Rich Countries Stay Rich?"

Final Version August 2010.

I wish to thank Cornel Ban, Robert Wade, Mitchell Orenstein, Danny Breznitz and John Zysman for comments on earlier versions of this draft.

Introduction

The editors of this project have tasked the contributing authors with answering one of the most important questions of our time: can the rich countries stay rich? Unfortunately, this question may be impossible to answer definitively, despite its salience. Probabilistically speaking, we have a 50 percent chance of being right (staying rich – yes or no?), when what we really want to know is the magnitude of the answer (frequency times impact). That is, how rich, and relative to whom? And that's where the problems start.

As Nassim Taleb (2008) put it recently, it's a bit like asking whether a country will go to war or not. On one level this is a piece of cake (yes/no is always 50/50), and you will be right at least half the time if you have reasons to think war is possible but not inevitable. But like Rumsfeldt's famous 'unknown unknowns,' whether the war will kill five people or five million is simply unknowable in advance, nor is it, and this is the important bit, deducible from the frequency. Will the 'already rich' stay rich admits this problem insofar as it demands that one pay attention to a complexity of causal factors and possible outcomes that are hard to isolate and identify, all the more so because such factors tend to be highly interactive, nonlinear, and emergent (Blyth 2010).

Nonetheless, the editors have given us a plausible start by suggesting that the twin drivers of globalization, the value-chain revolution in manufacturing and the algorithmic revolution in services, have gone a long way to ensure that if the rich countries can avoid commodification, and thus wholesale copying of these processes, they may stay rich, relatively speaking. However, with countries such as India and China rebounding from the global financial crisis faster than the 'already rich' it may be the case that the boat has

already sailed on such hopes. Add in the editors' additional, and all too reasonable concerns over environmental limits, resource conflicts, and the effects of the recent world financial crisis, and we run into the perennial problem of 'too many variables and not enough cases' where the results seem over-determined in each direction. How then can we shed some light into upon this complex issue? The answer, I suggest, lies in taking the complexity of such processes seriously. The recent financial crisis and its current (and future) impact on Europe offer us one such opportunity.

To make this complexity manageable, the paper centers around two stylized worlds of financial governance: one of risk and one of uncertainty. The point of doing so is to suggest that if the modern financial world is actually more uncertain (a-probabilistic) than it is risky (computable and probabilistic), then writing new rules for finance based upon notions of risk may in fact be a paradoxically 'risky' endeavor. To put it bluntly, one car crash may not kill us, but getting back in the same badly designed car multiple times may do so. Strangely, this is what the 'already rich' countries seem determined to do, and their reactions to the recent 'debt crisis' in Europe has only made this problem more acute. In order to make this case I proceed as follows.

I first outline how we came to think of the financial world as an environment of programmable risk rather than one that is inherently uncertain. Following this, the paper details what actually happened in the recent global financial crisis and suggests from this basis that thinking of the world as an inherently uncertain environment may actually provide a better model of the 'engineering tolerances' of the financial world. In doing so it stresses the causal importance of our ideas about finance, insofar as our desire to see the world as governed by risk rather than uncertainty may have in part blinded us to the

possibility of such moments of crisis being possible in the first place. That is, how we see the world of finance matters since our ideas and models about it are themselves a technology we use to act within it (McKenzie 2006, Blyth 2010).

Following this I examine the effects of the crisis on two European countries, the UK and Germany, and discuss their policy responses, as well as those of the EU governing institutions. I detect within these differential responses to the crisis divergent diagnoses as to what this was a crisis of, namely capital or confidence, and note how these differential diagnoses continue to shape current reform proposals. I then examine the post-crisis reform proposals on the table in each of these cases, and find that despite the correct lessons of the crisis being learned in many respects, we are still writing risk rules for an uncertain world. This problem, I argue, is compounded by European reactions to the Greek sovereign debt crisis, specifically, what the June 2010 G20 communiqué called 'Growth Friendly Fiscal Consolidation. As such, not only will these proposed reforms likely not achieve their desired results, they may backfire spectacularly.

In sum, whether the European 'already rich' can stay rich is contingent upon the post-crisis financial reforms of such countries not making them even more vulnerable to the next financial train wreck. Given that such crises are increasing in both frequency and magnitude (Reinhardt and Rogoff 2009a), what may stop the 'already rich' staying rich may be their own cupidity regarding their financial (and political) affairs as much as transformational forces stemming from revolutions in ICT and the locus and logic of manufacturing, a point I return to in conclusion.

Worlds of Risk and Uncertainty

A world of risk presumes an already constituted and 'knowable' world that agents perceive directly, albeit one hindered by cognitive biases and incomplete information (Abdelal, et al. 2010). In such a world, if informational incompleteness could be overcome, then agents could see the world *as it really is*, and our theories about the world would fully correspond to that world. As such, our capacity to predict would be very strong. Viewing the world in this way allows the further assumption that the world is computable (in a Turing sense) and thus mathematically tractable. Statistical techniques can therefore be applied that allow us to get closer to the world 'as it really is,' and allow us to make probabilistic assessments of likely outcomes based upon past data. With more data and better models we should then be more certain about our world and better able to manage the risks that it produces.[1] This risk-based view of the world lay behind most contemporary financial risk management strategies prior to the crisis, whether at the level of banks or at the level of national regulators.

Our second world, in contrast, is a world of uncertainty. This world is neither 'knowable' nor informationally incomplete. An uncertain world is neither (Turning) programmable, since no search algorithm can assess the probability space dynamically forward, nor is the informational problem one of incompleteness. Rather, the problem is informational *incomputability* given that the system itself is constantly evolving. As such, the assumption of ergodicity that a (normal) statistical worldview presumes becomes problematic (Kaufmann 2008). More specifically, in a world of risk, we assume that

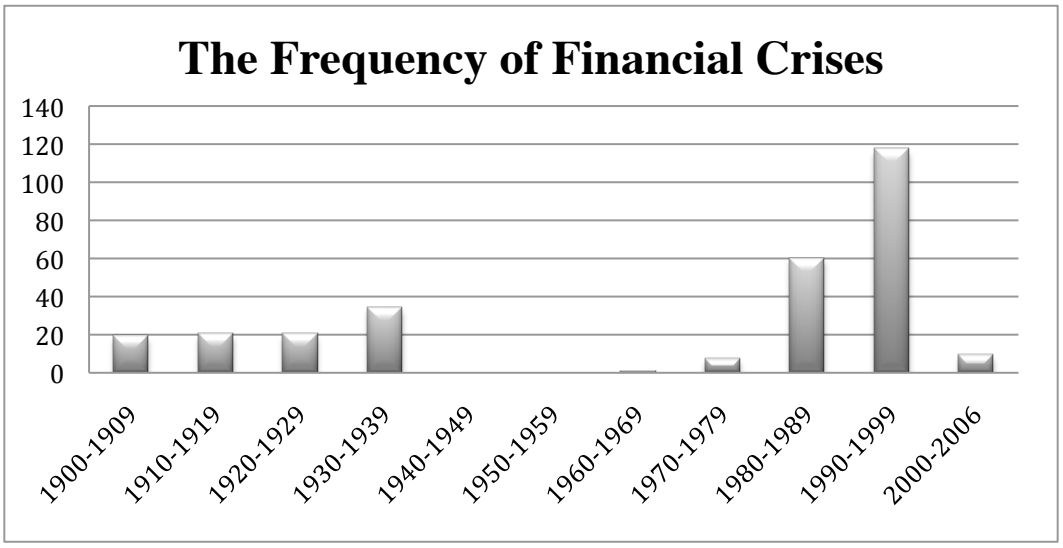
[1] This presumption lies behind the Basel 2 (and 3) capital adequacy accords.

agents assume they can see the generator of outcomes and can plan probabilistically given the sample of events they have. In environments where there are thin tails on the distribution of outcomes, visible generators, and simple payoffs, agents can in fact do this.[2] Yet outside of trips to Las Vegas' craps tables, we may not live in such a world. The global financial system, after all, is hardly a simple linear and predictable system. Participants cannot see the system directly since they cannot stand apart from it while their actions are constitutive of it. Consequently, they can only see the outcomes associated with it, that are themselves produced by highly complex causal mechanisms in turn mediated by our theories about those outcomes.[3]

Now juxtapose these two worlds. A world of risk is a world of visible generators where sampling past outcomes can get you close to the world 'as it really is.' An uncertain world in contrast contains invisible generators that either converge to a Gaussian distribution with extremely fat tails, or it does not converge at all. In an uncertain world "before a catastrophic event [occurs]…extrapolating from past data to future behavior of such a system is *worthless*" (Taleb and Pilpel 2004: 21). In a risky world where there are visible generators, thin tails, simple payoffs and where sampling the past causes convergence to the real mean and real variance, blow ups such as 2008 should be all but impossible. In an uncertain world where there are invisible (and/or non-linear) generators, complex payoffs, fat-tails or non-scalable distributions, and where sampling the past does not converge to a real mean and real variance since no such mean

[2] This of a casino with table limits as an example of such a simple environment.
[3] Compounding the problem of observability is the notion of having an 'adequate sample' of events in order to predict what comes next. The problem is that an adequate sample of rests upon the prior assumption that one knows where the parameter distributions lie, yet to know where they lie one needs an adequate sample. So its not just a question of 'more data' to get us to 'the truth'. Consider the current debate over austerity versus stimulus as an example of this problem.

and variance exists, blow-ups should be all too frequent. The question becomes, which of these two worlds best characterizes the world of modern finance? A quick glance at the periodicity of such blow-ups over the past 100 or so years strongly suggests that they are in fact the rule rather than the exception, and as such, we most likely live in a world of uncertainty rather than risk.[4]



Calculated from Reinhardt and Rogoff (2009a)

Eye-balling the data aside, in order to answer this question we need to dissect this distinction between risk and uncertainty more precisely, since it implies a discrete function where a more continuous set of relationships often seem to be in play. Confusing risk with uncertainty, and as a consequence viewing the world as more stable than it is, is pathology when it comes to writing the new rules of the road for global finance.

[4] Note this is frequency, not magnitude, which would require scaling with logs.

The Four Postulates of Risk: Equilibrium

The first postulate of risk, insofar as it relates to questions of financial regulation, is that in the absence of externalities or exogenous shocks, financial markets tend to an equilibrium that is both stable and efficient. In brief, beginning in the early 1980s, financial theorists began to convince regulators that our understandings of aggregates, such as 'financial markets,' had to be grounded in credible accounts of the behavior of individuals. That is, theories of financial markets (and hence how they are regulated) should be grounded in appropriate 'micro-foundations' that contain the two main assumptions of neoclassical economics; that individuals are self-interested maximizers and that markets clear (Eatwell 1997, Blyth 2003).

Financial theorists based this claim upon the formalization of the intuitive observation that it was highly unlikely that investors would make systematic errors in the valuation and trading of financial assets, since if they did, they would go broke. As such, errors would be random, not systematic, and agents would invest in being correct in order to stay solvent (Wiles 1981). Therefore, while individual market participants may make mistakes, systematic mistakes by markets (as the sum of individually rational decisions) would be impossible. This would produce 'efficient' markets where 'the price is always right' and where 'there is no free lunch' (Thayer 2009, Cassidy 2009).

If agents experience the same model of the economy, then in the absence of large informational asymmetries expectations about possible future states of the economy should converge and promote a stable and self-enforcing equilibrium (Blaney 1985, Fox

2009).[5] Developing these insights Eugene Fama (1970) famously formulated 'the efficient markets hypothesis' where asset price discrepancies are revealed in market movements such that prices are driven by arbitrage into equilibrium. In such an 'efficient market' "financial assets embody the true value of their real counterparts, creating an environment in which individuals trading in these assets can make Pareto efficient decisions," resulting in superior economic outcomes (Eatwell 2997: 10). Regulation in such a world, equally obviously, either gets in the way by distorting price signals, or would be irrelevant if the markets know its coming.[6] Either way, two lessons needed to be learned. First, government intervention in markets is pointless, or toxic, or both. Second, 'light-touch' or 'market enhancing' rather than 'market reforming' regulations should be the only game in town.

Causal Linearity

The second postulate of a risk-based financial world, less explicitly acknowledged, it is a corollary of our first concerning market efficiency and equilibrium; that causation in the financial world is linear. That is, for any and all factors (independent variables) X, under necessary and sufficient conditions (a-n), causation can be assumed to occur and impact factor Y (our dependent variable of interest) linearly. One does not have to be a naïve positivist to accept this premise. In such explanations, a + b (and maybe c) -> c/d, albeit through perhaps many intervening variables, modeling steps and transformations, but the idea that causes are knowable and linear follows.

[5] For a period critique of this line of thinking see Blaney (1985). For a post crisis rediscovery see Fox (2009).
[6] This is the effect of the policy irrelevance proposition plus Ricardian equivalence.

Given this belief in market efficiency, micro-foundations, and linear causality, it follows that what financial actors say that they are worried about, a potentially quantifiable and ontologically identifiable thing called risk, (credit, default, market, liquidity, etc.) must also be an individual property, of either an asset (some assets are more risky than others), or an individual/firm, or a strategy (in a game theoretic sense). If risk is then a single divisible property that is best managed by those holding the asset, then the only real policy problem becomes how to avoid moral hazard. That is, if individual institutions make bad bets and go bust, bailing them out simply encourages other firms to assume that they will also be bailed out, so the optimal, and indeed only necessary policy is 'no bail outs' (Blyth 2009).

In short, risk is individual, sliceable, quantifiable, and regulation is best left to the banks themselves since they are the ones with 'skin in the game.' So long as you don't start bailing them out, all will be fine. Financial governance before the crisis this became a question of *micro*-prudential regulation that used banks' own internal risk models and capital adequacy requirements to ascertain where risk is, usually observed (after the fact) as a discoverable function of each individual bank's sum exposures.[7] In such a world the *macro* disappears and the non-linear becomes an error term in a world that we assume can be adequately measured and whose outcomes can be predicted.[8]

[7] As we shall see below, this is precisely where we ended up with the Basel banking conventions as the global regulatory architecture.

[8] This is not, I stress, to say one can have non-linear models. Of course one can. The problem lies in the calibration of the models to the estimated parameters when we cannot estimate the 'true' parameters, and related phenomena such as correlation effects, which are extremely hard to detect *a priori*.

Change is Exogenous

The third postulate of a risky world, that change is exogenous, follows once again from these prior steps. If markets are stable in the absence of shocks and unanticipated policy interventions (again, given agents' rational expectations), and if financial assets embody the true value of their real counterparts as expressed in prices, then equilibrium becomes a rather unproblematic state. Unlike the dynamic equilibria we find in the natural world where homeostasis is pitched in constant struggle against entropy, if financial equilibria are left to their own devices they are presumed to form, stabilize, and produce all the good things that markets can; unless something (usually government) gets in the way.

So what then would change this happy state of affairs? It would, by definition, have to be something exogenous to a system itself that can only produce good things. That could be a supply shock, a war, or most likely, an unanticipated attempt by governments to push markets to produce specific outcomes, which would be, by definition, 'off the equilibrium path' and decidedly not efficient. Change thus assumes a discontinuous function. It should be random. It should come from outside the system itself, and like the meteor that killed the dinosaurs, appear decidedly rare and exogenous.

Distributions are Normal (or at least can be treated as such…)

The fourth postulate of a risky world, given the foregoing, is that outcomes in this world are 'normally distributed.' That is, if the world is in equilibrium, causes are linear, and large changes are rare, discontinuous, and exogenous, then such events would count as deviations; and the more destabilizing such events are, the more they should deviate

from the mean. Outcomes in this world should then at least approximate a normal distribution, with most of the action falling in the middle of the distribution with big events becoming increasingly rare the further we deviate out from the mean. However, to arrive at such a position as a basis for understanding the financial world seems particularly odd when one considers that financial outcomes of significance are hardly ever normally distributed.

Consider a few examples. Half of the decline in the US Dollar vis-à-vis the Yen between 1986 and 2003 happened over ten days, or on just 0.21 percent of the trading time, while twenty stocks explain forty percent of the performance of the S&P 500 (Taleb 2005). Recall that Suharto's 'crony capitalism' and other East Asian regimes were being lauded by IFI's such as the World Bank for fostering economic development weeks before the entire East Asian political economy collapsed (Stiglitz 1998). Consider that the current global financial crisis saw a fifty percent drop in stock market values that was followed by a sixty percent rally from that base followed, to date, by a twenty percent reversion. Finally, remember that when the DJIA hit a high of 14164 in October 2008 you would have had a great many buyers for an option betting that the index would fall to 6500 by March 2009 since hardly anyone thought such an event remotely likely.[9] None of these rather significant outcomes in any way approximate a normal distribution. Yet despite all this, the financial world is assumed to conform to a normally distributed packet of discrete risks that can be hedged, managed, and that self-stabilize.

These presumptions matter greatly because if the rules we write to govern finance take these four postulates to be the engineering principles governing of the financial

[9] The few who did are detailed in Lewis (2010).

world we may be building collapse into the building design. What if, in fact, opposing forces pertain? What if the world is instead one of disequilibrium, non-linearity, deep endogeneity, and non-normality? Then writing another set of risk-rules for an uncertain world may prove far more damaging to the long-term health of the already-rich countries than the rise of a dozen Chinas and Indias.

Re-Thinking Risk in the Light of the Crisis

Being a global financial crisis, there is no one simple way to account for it. One could begin with global imbalances and go from there to excess liquidity and then to mortgages and still further forms of crisis (Wolf 2008, Schwartz 2009). One could alternatively start inside a bank and go from there to mortgages and then to global imbalances (Tett 2009). There are, to say the least, multiple points of entry. Here I juxtapose two complimentary versions of the crisis: one that starts with the demand for complex instruments (micro) (Blyth 2010b) and one that starts with the supply of compounding bubbles (macro) (Blyth 2008). Both end together, and badly. The purpose of retelling the crisis in this particular way is to demonstrate that risk-based rules have very little to do with how the financial world actually behaves, and why this matters for the 'already rich' staying rich given their current policy choices.

Instruments and Accidents

Our micro point of entry to the crisis has to start with over-investment in real estate made possible, in part, by the transformation of relatively simply mortgage backed securities (MBSs), a mainstay of US capital markets for decades (Seabrooke 2006), into

complex multi-tranched collateralized debt obligations (CDOs). Demand for such securities exploded during the 1990s as US housing prices nearly doubled between 1997 and 2008 (ERP 2010: 40). Since a decade of price series linearity somehow 'proved' that housing prices could only go up, such securities became thought of as safe investments by institutional investors.[10] Furthermore, because of their tranched structure, they could diversify away correlation in the underlying bond while maintaining a very strong upside. Given such features, these products became an increasingly popular way of juicing returns, and for foreigners, a nice way to recycle surplus foreign dollars as the decade wore on (Schwartz 2009, Germain 2010).[11]

Indeed, when the security in question could be sold with an attached credit default swap (CDS), which insured the holder against the credit risk of the issuer, it made these instrument appear even more safe. Credit ratings agencies were now happy to assign an AAA investment grade rating to the security if it had a CDS attached, thereby pumping-up demand still further, despite the fact that such securities were, by the middle of the decade, increasingly made out of NINJA mortgages collateralized by the E-Bay earnings of mortgage applicants (Goodman 2010), or 'synthetic' CDOs made out of the income streams of the CDS payments that replicated the underlying (but supply limited) bonds (Tett 2009, Lewis 2010).

Rather than hold any of this 'risk' on their books, CDO issuers set up an 'originate to distribute' system where the funding and issuance of these securities was moved off-book to a special investment vehicle (SIV) "whose sole purpose was to collect

[10] That is, any downside is limited while the upside is unlimited (in theory).
[11] The tranche structure pooled different mortgages into different risk bundles and assembled them in different risk/return combinations. It was assumed that this structure reduced correlation risk. See Tett 2009, McKenzie 2009.

the principal and interest…and pass them on to the owners of the various tranches" (Brunnheimer 2008: 8). These off-book issuers, most famously AIG Financial Products (an SIV) fell over themselves to issue these securities with little or no capital backstop since they were 'off-book' and thus freed from what little regulations were being applied to their parent entities.[12] As a result, the parent entity to the SIV, in the most (in)famous case AIG Insurance, was heavily leveraged without it being transparent to the market or even the parent company. Furthermore, since many of these securities were not exchange traded, especially CDS of subprime CDOs, counterparty exposures were especially opaque.[13]

When credit markets froze in September 2008 prices for these securities, which were by then major components of banks' portfolios, became hard to find. This constricted credit further, beginning a process of serial deleveraging where as banks' risk assessment (Value at Risk (VaR)) numbers shot up, each bank sought to sell good assets to cover bad (toxic) asset losses. Unfortunately, while it is individually rational for any single bank to calculate and act upon its VaR numbers to manage risk, in an interlinked and pro-cyclical system it is collectively disastrous for all banks to do so if there is serial correlation in the 'super-portfolio' of all banks, as there was with CDOs and CDS exposures (Persaud 2000). That is, if each bank holds essentially similar assets and liabilities, and they each attempt to get rid of them all at once, prices will fall through the

[12] AIG financial products was located in London but its regulator was the insurance regulator of Pennsylvania. This is a perfect example of what Tett calls "dancing round the regulators."
[13] That is, while many CDS issuers were writing insurance on the counterparties to their trades, who was actually 'holding the bag' in terms of risk exposure became more and more opaque as risk as 'daisy chained' around the system.

floor; and they did just that.[14] Once this deleveraging cycle took hold it showed us that while any one bank may be diversified, the system as a whole may not be, which makes the system as a whole meltdown all the faster.[15] As John Maynard Keynes warned us over sixty years ago,

> "[o]f the maxims of orthodox finance none, surely, is more anti-social than the fetish of liquidity, the doctrine that it is a positive virtue on the part of investment institutions to concentrate their resources upon the holding of 'liquid' securities. It forgets that there is no such thing as liquidity of investment for the community as a whole" (Keynes 1936: 155).

Why Are We Forever Blowing Bubbles?

In theory, there shouldn't be any bubbles, or at least they should be competed away by rational agents operating in efficient markets. So why are there bubbles in such a supposedly efficient system? This is the macro side of the story, which begins almost 30 years ago when the world's major financial centers deregulated their domestic credit markets and opened up their financial accounts, which gave a massive boost to global liquidity as previously isolated markets became much more interdependent (Helleiner 1994, Abdelal 2006).

This growth in global liquidity was compounded by the growth of new financial instruments, particularly the development of derivatives. Originally employed to manage interest rate and foreign exchange risk, these instruments were soon being applied in fields as diverse as housing and healthcare. The spread of these instruments, and the leveraged positions that they allowed, pumped global liquidity all the more, and long and

[14] Add to this the problem of correlation in the super-senior (safest) tranche of CDOs (that many banks ended up keeping on-book) and what was supposed to be a diversification technique (tranching) ended up creating correlation among assets such that when one went down, they all went down, with disastrous results (Tett 2009, McKenzie 2010).
[15] A classic fallacy of composition where the whole does not equal the sum of the parts.

short-term interest rates began to fall precipitously as a result. Beginning in 1991 the U.S. prime and Federal Funds rates (and thus global interest rates) began their long decline out of double figures to historic lows.[16]

This rise in global liquidity, and consequent global search for yield, persisted when the Federal Reserve under Alan Greenspan aggressively reduced interest rates following the bursting of the dot.com bubble in 1999 and again after the 9/11 attacks in 2001. Given these changes, bank credit skyrocketed at the same time as the privatization of former state responsibilities, especially in pensions, had encouraged the growth of large non-bank institutional investors, who were all seeking "above-average" returns given the competitive nature of the new system.[17] And to stoke this fire just a little higher, Americans basically gave up on saving since other countries seems only to willing to lend them back their own money (Wolf 2008, Schwartz 2009, ERP 2010). Add all this together and the financial system as a whole had to find some way of finding "above-average" returns to stay in business: a moving average problem of planetary proportions.[18]

The problem here is one of asset classes: the limited number of categories of assets from which investors could seek such returns. There are only a few such classes around: equities (stock), cash (money market), fixed income (bonds), real estate, and commodities. If equities, bonds, and money market instruments are regarded as fungible

[16] See http://research.stlouisfed.org/fred2/series/FEDFUNDS?cid=118 and http://research.stlouisfed.org/fred2/series/CD6M?cid=121. Accessed August 30th 2010 4:48pm.
[17] See http://research.stlouisfed.org/fred2/series/FREQ5?cid=93 and http://research.stlouisfed.org/fred2/series/CONSUMER?cid=100 and http://research.stlouisfed.org/fred2/series/REALLN?cid=49. Accessed August 30th 2010 4:50pm.
[18] To see why moving average (bidding-up) creates risk problems consider this example. If you work in finance and your bonus depends upon beating a benchmark average, and all your competitors are buying the same assets and hedges as you, then the only way to beat the average returns is to take more risk into the portfolio. But if everyone does this to beat the average the result is sadly all too obvious.

equivalents, then global stock markets, relatively under-priced in the early 1990s, became the first port of call to find these above-average returns. Once that particular bubble burst however, neither bonds nor fixed-income alone would provide the above-average returns that the markets now expected. The next stop for investors was therefore the next most obvious asset class, real estate, hence the global housing boom, which began just as the tech-stock bubble deflated in the late 1990s. By 2008 this housing bubble had ran out of (good) borrowers and investors were looking for a new source of yield, with the result that the remaining class of assets, commodities, became the next bubble, with oil quadrupling in price and basic foodstuffs rising between 40 and 70 percent in a little over a year.[19] However, with the exception of oil these were comparatively tiny markets, too small to sustain such volumes of liquidity, and these bubbles burst quickly. Their collapse combined with losses in the subprime sector of the mortgage derivatives market, our micro story, to trigger the current crisis.

Bad Ideas, Wrong Regulation, and a Town Called Basel

While much blame has been handed around for creating the crisis, with captured regulators getting much of the blame, what this story obscures is how banks came to be their own regulators in the run up to the crisis.[20] Like the bubbles example above, the story begins with the move from fixed to flexible exchange rates in the late 1970s, which

[19] While real demand factors play a role here, it is not as if the population of China—the main culprit in the financial press—has quadrupled in size or doubled income in the past year and a half and then lost half that increase in the next six months. For differing views see Masters OECD (2010), Better Markets (2010).
[20] I am not saying that the Basel 1 and 2 regulations caused the crisis in a linear sense. Rather, I am claiming that the move to self-regulation is emblematic of viewing the world as one of programmable risk. As such, designing risk management schemes that assumed such programmability was and still is a one-way bet if the world turns out to be a world of uncertainty.

transferred exchange rate risk from public to private sector actors (Eatwell 1996). Given the deregulatory impulse of the governments of the day in the US and the UK, driven in part by the attractiveness of a set of ideas about 'efficient markets' and 'inefficient states', the private sector was encouraged to pick up this risk, and several new ones. Technological change in the form of 'big-bangs,' exchange automation, virtual round-the-clock trading, and the further development of complex finance played their part too. And when the European Union made opening the capital account a prerequisite of membership in the 1990s, this deregulated risk-trading system spread itself, and the risks it was holding, still further (Abdelal 2006).

But what really pushed this process along was the same set of ideas noted above. After all, if markets found equilibrium in the absence of intervention, why intervene? If financial firms acted as rational agents who balanced risk and reward in order to maximize profit, then who better than the firms themselves to guard against risk? Indeed, why not let bankers, or at least their very captured regulators, write their own rules? (Warwick Commission 2009, Tsingou 2009). It was in this context that the Basle 1 (1988) and Basle (2004) capital accords were conceived; with Basle 1 establishing the principle that banks were the best judges of the risks they were running. Consequently, to make the system safe, all you had do was to make the individual component banks safe (and of course avoid bail-outs). Basel 2 took this to a step further, effectively allowing the largest banks to become their own regulators.

The 1988 Basle banking accords (Basel 1) were designed to stop banks setting aside too little capital to cover unexpected losses (the effect of the failure of several internationally-exposed banks in the 1970s and the near meltdown of the US banking

sector in the Latin American debt crisis of the 1980s) and to halt a regulatory 'race to the bottom' by setting minimum supervisory standards as capital became more globally mobile. Basel 1 set minimum capital adequacy requirements for banks comprised of so-called Tier-one (highly liquid) and Tier-two capital (less liquid) that were risk weighted by category of asset. This allowed banks to set a 'target standard ratio' of both tiers of capital, composed of a variety of different assets. What it also did was to put banks in the driving seat regarding their own risk assessments, with national authorities, mainly central banks, delegated to a surveillance role (Balin 2008: 3-4).[21]

Building on Basel 1, Basel 2 (2004) took bank self-regulation to a whole other level. Rather than assigning crude weights to different classes of assets, banks could use published ratings by rating agencies (Standard and Poor, Moodys, and Fitch) to weight their risk assessments. Furthermore, Basel 2, which was all but written by the banks themselves (Tsingou 2008, 2009), set up a system of internal risk ratings based around in-house VaR analyses where "the banks themselves, rather than the regulators, determine the assumptions of proprietary credit models" with the result that "low risk weightings translate into lower reserve requirements" (Balin 2008: 8).

In sum, effective regulation gave way to light-touch regulation as Basel 2 gave a capital adequacy free-lunch to banks who could build very big risk assessment departments choc-full of sophisticated computer models and risk managers. Since only the biggest banks could afford to do this it gave them a cost-of-capital advantage over their rivals, while at the same time making them ever more sensitive to shifts in their leverage ratios since their lack of capital was (in theory) made safe by their ability to

[21] It also encouraged the securitization trend that turbo-charged mortgages since securitizing less risky loans and turning them into income streams reduced the *de jure* risk of the bank's loan book (Balin 2008: 5).

price risk better than the smaller banks (Warwick Commission 2009). Basically, banks got to govern themselves, with the biggest banks being allowed to hedge their exposures the least, so long as they could model their risks, using of course, parameters that they themselves provided.

Risky Rules in an Uncertain World

This was the architecture within which banks structured their activities in the run up to the crash. Markets were seen as self-equilibrating and efficient, to the point that regulatory authorities refused to even acknowledge the colossal asset bubbles forming in their economies. After all, the stagflation of the 1970s had taught us that so long as price inflation was low, then there really was nothing else to do. Banks and regulators both believed that derivatives diversified risk around the system in calculable ways, and that the interaction effects of instruments were knowable *a priori* through knowledge of positions and leverage (who was holding what), while such risks could be adequately measured via VaR and similar techniques.

To put it in the language of the first part of this paper, causes in the system were predictable and linear, hence big banks got to model their own risks. Moreover, the decision by regulators to not regulate instruments and leverage directly, but to rely instead on banks' enlightened self-interest to do the job, as shown in, for example, the Commodity Futures Modernization Act of 2000, highlights the importance of the belief in self-equilibration flowing from individual self-interest, coupled to the belief that risk is an individual, divisible, and normally distributed property. The problem was of course that the crisis itself threw these beliefs about how markets worked into the trash. The banks

may have built their house with risk in mind, but it was a storm of uncertainty that blew them down.[22]

Rather than equilibrium following from self-interested action, the deleveraging of 2008-2009 showed dynamic disequilibrium to be the norm as what rose together on the upside fell together on the downside with catastrophic distributional costs. Financial crises may differ in the details; the triggering event, the asset class involved, etc., but the disequilibrium pattern remains across cases. Some change in the system produces an initial redistribution of assets across portfolios, which alters profit opportunities. If this occurs in a period of relative stability banks become less risk averse and expand credit in response to demand in light of these new opportunities.[23] This leads to price increases in the speculative asset class that in turn encourages more credit, thus fuelling the upswing. The specific signal that 'its time to get out' will vary, but when it occurs (subprime losses, the implosion of Bear Stearns) investors all try to get out of the same assets at the same time. This drops market prices to below modeled prices, which in turn results in the liquidation of other (good) assets to cover losses in the original portfolio. The resulting cannibalization of assets is the bust that always follows the boom. This pattern has occurred at least 50 times in the history of modern capitalism (Reinhardt and Rogoff 2010, Kindleberger 1985). It is the rule not the exception. It also shows equilibrium assumptions to be deeply problematic.

Second, the causes of this crisis, whether on the micro or macro level were neither exogenous nor normally distributed. The crisis was only a twelve-sigma event if one

[22] Although at the time of writing it has become increasingly apparent that since none of them were allowed to book any substantial real losses, the case becomes, from the point of view of the banks, 'Crisis? What Crisis?'

[23] 'Stability produces risk and risk produces stability,' as Hyman Minsky once put it.

thought the likelihood of such a blow up was normally distributed, but it was not. The fact that so many 'sophisticated participants' were blind to this fact shows the power of financial ideas, rather than financial data and 'fundamentals' to structure the financial world (Blyth 2003).[24]

Third, the crisis was not the financial equivalent of a meteor from space. It was deeply endogenous, developing out of the interaction of complex instruments and volatile liquidity in a manner that suggests emergent rather than linear relationships. To take one example, even in tranched form a mortgage bond is an innocuous instrument. Similarly, a CDS is pretty much an insurance policy with an embedded option (to generate an income stream). They were designed to, and assumed to, reinforce one another's good sides. But place them in an environment where all the liquidity in the world dries up and the former turns into a correlation bomb while the latter turns into a naked-short that lights the fuse. Such causation is emergent and inherently unpredictable, not linear and efficient (Kauffman 2008).[25] What the crisis showed us all too clearly was that while bankers and regulators may have believed that risk governed the world and that they governed risk, the crisis, a giant natural experiment that tested the robustness of these ideas, showed that quite the opposite forces in fact pertained. The world is in fact decidedly non-linear, dis-equilibrial, non-normal and endogenously unstable; that is, uncertain.

You might think then that those designing the new rules of the financial game for a post-crisis world this lesson would be front and center and that we would try and not

[24] Indeed, according to Reinhart and Rogoff (2009b) this self same pattern has occurred eighteen times since 1977 with increasing frequency and severity in the developed world alone. As such, any claim to statistical normality for such events, and thus the utility of techniques that assume it to be a property of the world, falls further into question.

[25] After all, there is nothing in the data that would suggest you should stress your VaR with a scenario where all the liquidity in the world dries up.

write essentially the same risk rules for an uncertain world once again. You might think this, but you would be at best half right. Ideas, like the institutions that they give rise to, are sticky. 'Cognitive locking' into one paradigm or way of thinking often exhibits increasing returns, even in the face of empirical anomalies and disconfirming information (Blyth 2001).

What we see today in Europe is a pattern where the regulators and some of the politicians seem to understand 'what went wrong and what to do about it,' in that they have authored a series of reports that acknowledged these failings (DeLarosierre 2009, Turner 2009, Woolley 2010). However, the adoption of the new rules recommended therein has been somewhere been partial and hamstrung. Partial, in that these new rules will reduce the profitability of a very powerful lobby – finance – and hamstrung in that governments' own understanding of the crisis as one of 'too much debt' that now requires a period of austerity in the midst of a recession will likely make these quite sensible reform efforts backfire. Finally, what supra-national regulation that is emerging, such as Basel 3 and the new risk management committees of the European Union do not really seem to be based all that much on what we have actually learned from the crisis. We still tend to treat the financial world as world of risk.

Like a car manufacturer that fails to correct a design flaw, it is not a question of whether; it is a question of when the accident happens again. The only problem is that with massively increased debt to GDP ratios due to the cost of the bailouts, and public deficits of 10-12 percent of GDP fattening yields on bond spreads across the 'already rich' world, its far from clear that the next crisis will not do more damage than the previous, and already hideously expensive, crisis. Examining the effects of the crisis on,

and the proposed regulatory responses of, the UK, Germany, and the EU to the crisis shows that despite many lessons being learned, we are still writing risk rules for an uncertain world.

The Crisis Hits Europe

The impact on Europe was swift, uneven, and uniformly unpleasant. Countries with very large housing bubbles, such as Spain and Ireland, suffered significant increases in unemployment and losses in consumption. Export oriented countries like Germany seemed to escape the crisis until it became apparent that their banks were just as capable of getting into a mortgage mess, even if it was currency mismatches and over-lending to Eastern Europe, rather than US subprime securities, that lay at the root of the problem.[26] Countries that had large housing bubbles, were weak exporters, and were highly financialized had the roughest ride of all, with the United Kingdom and Iceland leading the way. The following comparison of the UK and Germany is revealing in so far as it tells us how these governments saw the crisis, and thus responded in specific ways.

[26] Although the regional Landesbanks, made redundant by EU competition law, managed to load up on US subprime, this was only apparent late in the day.

Percentage of GDP committed to Bank Rescues	Capital Injections[27]	Asset Purchases and lending by Treasury[28]	Asset Purchases and Swaps by Central Bank[29]	Guarantees[30]	Central Bank Refunding by Treasury	Total
United Kingdom	6.4	13.8	28.2	17.2	12.8[31]	78.4
Germany	1.2	0.4	0.0	40.0	N/A[32]	41.6

Figures from IMF (2009a 2009b and 2010)

As we can see British and German responses to the crisis took two forms, corresponding in part to how they saw the crisis. For the British, the crisis was deep, structural, and required a direct recapitalization of the financial sector as well as the provision of emergency liquidity and the extension of extensive guarantees. The crisis was seen as one of solvency and hence direct recapitalization emerged as the policy response. The UK took the lead in direct asset purchases as a percentage of GDP (turning the Treasury into a bad bank) and other forms of central bank support (quantitative easing). For the Germans the crisis was altogether different. Very limited recapitalization, no liquidity provision, and narrow guarantees were the order of the day. Given such

[27] IMF Cross Country Fiscal Monitor May 2010, Table 4. Page 17, Column 1 'utilized capital injections.' Available at http://www.imf.org/external/pubs/ft/fm/2010/fm1001.pdf.
[28] IMF Cross Country Fiscal Monitor November 2009, Annex Table 3, p. 37, Column 2 'purchases of assets and lending by the treasury' and IMF, Fiscal Implications of the Global Economic and Financial Crisis, June 2009, Table 2.1, p. 17, column 2, 'purchases of assets and lending by the treasury.' Available at http://www.imf.org/external/pubs/ft/spn/2009/spn0925.pdf
[29] IMF Cross Country Fiscal Monitor May 2010, Table 4. Page 17, Column 5 'asset swap and purchase of financial assets, including treasuries, by central bank.' Available at http://www.imf.org/external/pubs/ft/fm/2010/fm1001.pdf.
[30] IMF Cross Country Fiscal Monitor May 2010, Table 4. Page 17, Column 4 'Guarantees.' Available at http://www.imf.org/external/pubs/ft/fm/2010/fm1001.pdf.
[31] IMF Cross Country Fiscal Monitor, November 2009, Annex Table 3, p. 37, footnote 2. Available at http://www.imf.org/external/pubs/ft/spn/2009/spn0925.pdf
[32] The ECB is not funded by the Bundesbank, strictly speaking.

divergence in the response to 'what went wrong and what to do about it' it is little wonder that reform efforts in each country initially followed quite distinct paths.

The British Response: Add Capital and Print Money

Given the interdependences between London and New York as the worlds' twin financial capitals, and the sheer prominence of finance in the UK economy, contagion from the subprime debacle in the US was always on the cards, despite the attempts of the British authorities to limit its effects.[33] The first big casualty was Northern Rock, a mortgage lender that borrowed overnight to fund thirty year mortgages. When their liquidity dried up, so did their business model. Other smaller lenders, and even bigger banks that had expanded aggressively during the boom such as Bradford and Bingley and the Halifax Bank of Scotland group, all had to be rescued at taxpayer expense. Since then the news for the UK has been uniformly bad.

From the first quarter of 2008 through the first quarter of 2009 the UK lost 3 percentage points of GDP while manufacturing output fell by the same margin. Since manufacturing is a smaller component of GDP in the UK than in Germany and Sweden this should offset decline. However, since the UK is so dependent upon financial sector activity to pump-prime retail and other service activities, the UK economy was hit harder than many of its European peers when finance imploded. Indeed, full a quarter of all British tax receipts came from the financial sector. It was little surprise than that total government revenues fell by 18.1 percent between 2008 and 2009. Company liquidations

[33] Paradoxically, the British tried to protect themselves by not allowing Barclay's to buy Lehman, which of course brought about its immediate collapse. See (Sorkin 2009).

were up throughout 2009 but fell in 2010, while unemployment rose from a lower level than the European average to a higher level than its peer group by the end of 2009 where it has remained at around eight percent.[34] The most recent data stress a partial recovery in manufacturing, but this may have a very limited employment and consumption impact coming as it does from such a low level of activity.[35]

Meanwhile, net government borrowing exploded given the collapse of revenues from the financial sector, plus the effect of the British economy's automatic stabilizers, with 10 percent of GDP being the 2010 minimum deficit.[36] Given that British consumers were heavily leveraged at the time of the crisis, personal consumption has fallen precipitously while "the savings ratio has risen by six percentage points in two years"[37] as households deleveraged. The result, with the public sector levering up as a consequence of the private sector leveling down, has been a severe rise in British government debt issues to plug these gaps to 63.7 percent of GDP.[38]

While net government debt interest payments across the OECD are expected to rise from 1.9 to 3.5 percent of GDP by 2014, according to IMF estimates, the scenario for the UK is particularly dire where "the interest rate bill…nearly doubles." Indeed, "just the increase in interest spending in the United Kingdom is…equivalent to annual

[34] Figures on the UK from Britain in 2010 (London: Economic and Social research Council 2009: 60-61), http://www.insolvency.gov.uk/otherinformation/statistics/201008/index.htm. Accessed August 29th 2010 1:15pm, and http://www.statistics.gov.uk/cci/nugget.asp?id=12. Accessed August 29th 2010 1:17pm.
[35] http://www.ft.com/cms/s/0/d69c3b30-0f9a-11df-b10f-00144feabdc0.html Accessed April 6th 2010 12:11pm, and http://kn.theiet.org/news/aug10/manufacturing-recovering.cfm accessed August 29th 2010 1:27pm.
[36] Britain in 2010 (2009: 61)
[37] Nordic Outlook (2010: 27)
[38] http://www.statistics.gov.uk/cci/nugget.asp?id=206 Accessed August 29th 1:35pm

spending on transportation."[39] In the case of the UK then, simply allowing fiscal stimulus spending to expire will not bring debt and deficits to sustainable levels as higher debt over time will lead to still higher interest payments, which will further slow down domestic economic activity.[40] The IMF estimates that to get average OECD debt to GDP ratios down to 60 percent requires a fiscal correction of around 8 percent of GDP over ten years. To get the United Kingdom to this level would require a correction of 12 percent of GDP.[41] In comparison, the German fiscal position requires a 3.4 percent correction.[42] In short, Britain may have had to turn on the fiscal and monetary floodgates to save its financial sector, but in doing so it has made the path back towards stability and growth extremely difficult.

The German Response: Guarantees without "Crass Keynesianism"

Germany saw the first signs of trouble in August 2007 when IKB, a Dusseldorf-based Mittlestand lender, had to be rescued after suffering large subprime related losses (Germain 2009). Following this debacle, it seemed that German banks had by-and-large avoided the subprime crisis until the state had to step in and rescue the Hypo Real Estate bank a year later due to loans to Eastern European mortgagers drying up as East European exchange rates fell by up to fifty percent and their ability to pay back Euro denominated loans evaporated (ERP 2010: 86). Germany was also exposed through the backdoor via Austrian banks lending over fifty percent of Austrian GDP to Eastern

[39] IMF, State of Public Finances: Cross Country Fiscal Monitor November 2009 p. 18. Available at http://www.imf.org/external/pubs/ft/spn/2009/spn0925.pdf
[40] This is the same debt trap that Greece currently finds itself in.
[41] Revised in the 2010 IMF calculations to nine percent (IMF 2010).
[42] Ibid. p. 23, 24.

Europe for still more mortgages, thereby creating their own subprime problem since most of these mortgages were rather suddenly underwater.[43] Indeed, German banks exposures to Central and Eastern Europe, by February 2009, totaled around $181 billion USD.[44]

In late 2008 in an effort to contain the potential damage from such exposures the German government announced a 500 Billion Euro bank bailout fund named "Soffin." This promise of emergency funding failed to restore confidence and restart interbank lending, and by early 2009 it was feared that export financing would get more expensive at the same time as exports were in decline. By early 2009 the state was considering a separate 'bad bank(s)' solution to deal with toxic assets and get short-term credit markets flowing again. Such a scheme was however ultimately rendered less important by the provision of IMF support for Eastern Europe, which had the effect of forestalling the crisis as internal deflation in these countries plus extra IMF liquidity took stress off German (and Swedish) banks, at least for the time being.[45]

Moreover, as 2009 wore on it became apparent that the toxic asset crisis wasn't confined to Germany's Eastern exposures. Rather, the Landesbanken, the seven public-private regional development banks, had been busy juicing their returns with US toxic assets. As such, the state sector of the banking system was in as much trouble as its private sector. By the end of 2009 the German banking system was stable, yet far from being removed from the critical list. Some banks were posting record profits from their

[43] The good news was that by the end of 2009 a combination of good luck and IMF interventions had stabilized losses on these loans (ERP 2010: 86). The extent to which this is a permanent condition remains unclear since Austrian banks are still on the hook for nearly a quarter of a trillion dollars.

[44] FT http://www.ft.com/cms/s/0/ea19fec8-028e-11de-b58b-000077b07658.html. Accessed August 30th 2010 5:03pm.

[45] See http://www.bis.org/statistics/provbstats.pdf?noframes=1 Table 9B for outstanding liabilities and asset position changes. I Thank Cornell ban for this insight and these data. Accessed August 30th 2010 5:05pm.

investment banking arms as they picked up fire sale assets and cashed in on the 2009 equity rally – Deutsche Bank – while others – Commerzbank – continued to make more loan loss provisions against Eastern exposures.[46]

Turing to the export sector, export financing did indeed become more expensive as foreign demand fell precipitously. In the fourth quarter of 2008 German exports contributed 8.1 percent of an overall 9.1 percent annualized decline in GDP (ERP 2010: 87). It was little surprise then that by mid 2009 the Bundesbank forecast a six percent GDP contraction by the end of the year. However, robust demand in Asia made up for declines in the Euro area and by 2010 German exports were rebounding rapidly with industrial orders, a leading indicator, rising throughout 2009.[47] Similarly, investor confidence by August 2009 rose to its highest point highest in three years.[48]

In contrast to the finance-dependent growth model of the UK, the export led growth model of Germany rebounded extremely well in 2010. Exports increased, but most surprisingly so did imports. Most significantly, traditionally anemic domestic consumption shot up. Part of this comes from Germany's better fiscal position compared to the UK, but it is also partly exogenous with non-EU trade rising to over fifty percent of the accounted surplus.[49] As we shall see, Germany's rebound is not an unmitigated blessing for the rest of Europe.

---

[46] http://www.ft.com/cms/s/0/b2f7100a-c9e1-11de-a5b5-00144feabdc0.html. Accessed August 30th 2010 5:03pm. As we shall see loans to Greece provide another twist to this tale.
[47] FT http://www.ft.com/cms/s/0/bc8d7888-8513-11de-9a64-00144feabdc0.html and http://www.bundesbank.de/download/statistik/saisonbwirt/i470.pdf. Accessed August 30th 2010 5:09pm.
[48] http://www.zew.de/en/topthemen/meldung_show.php?LFDNR=1255&KATEGORIE=TOP. Accessed August 30th 2010 5:12pm.
[49] http://www.ft.com/cms/s/0/187cf8ce-a4b4-11df-8c9f-00144feabdc0.html. Accessed August 29th 2:03pm

In terms of fiscal policy Germany was widely criticized for fretting about inflation in the middle of a deflation and effectively free-riding off its neighbors and trading partners' stimulus packages. While it is the case that Germany did not commit to spend as much and as quickly as did the UK, when one corrects for the effect of automatic stabilizers, the GDP boost from fiscal policy approximates that of the UK, without the same degree of stress on the long term structural balance (IMF 2010, ERP 2010). Nonetheless, Germany did indeed fret about pumping more liquidity into already hyper-liquid markets, temporary liquidity crunches notwithstanding. As Chancellor Merkel put it in late 2008, "cheap money in the US was a driver of this crisis…I am deeply concerned…[with]…reinforcing this trend…[and wonder]…whether we could find ourselves back in five years facing the same crisis."[50]

Germany has therefore been criticized for neither stimulating nor consuming enough to drag the continent out of recession, in effect free-riding on the rest of Europe's fiscal stimuli, and not providing the rest of Europe with import demand while earning its own way out of the crisis through exports to Asia.[51] There is a certain degree of truth to this, but it also, as Newman (2010) points out, such a policy stance also speaks to the very different conception of risk that German policymakers operate with, in contradistinction to that of Anglo-American financial markets. In the Anglo-American case, risk, as we have seen, is something to be sliced, diced and embraced. For the Germans risk is something best avoided, hence the focus on guarantees for the system rather than throwing money at the problem. Adding fiscal fuel to the risky fire was not on

[50] Angela Merkel quoted in Newman (2010: 9).
[51] See Martin Wolf http://www.ft.com/cms/s/0/50ca0e3e-15e3-11df-b65b-00144feab49a.html. Accessed August 30th 2010 5:10pm.

the German agenda, much to the chagrin of the rest of recessionary Europe. Instead, what emerged was a very different policy response that began to take shape in late 2008 and was pushed to the forefront with the Greek debt crisis of early 2009: a policy of fiscal austerity as the way forward.

Greeks, Debt, and Euros: The Return of Orthodox Ideas

Robert Skidelsky, the venerable biographer of Keynes, pronounced state responses to the crisis as heralding "The Return of the Master" (Skidelsky 2009). That is, while everyone was a 'market fundamentalist' on the way up, on the way down we all (re)discovered Keynesian deficit financing. He was right, up to a point. The point being that thirty plus years of the ideas detailed in the first part of this essay are hard to shake, especially in bastions of orthodoxy such as the European Central Bank. The European sovereign debt crisis that began in early 2010 proved a Godsend to those orthodox voices, such as the ECB, seemingly discredited by the crisis.

The basic problem that the Eurozone countries faced lay in the design of the Euro itself. As George Soros noted, "the Euro boasts a common central bank, but lacks a common treasury" (Soros 2010). This creates a problem in that when the Eurozone economy is on the upswing, the European Central Bank (ECB's) mandate of 'fight inflation' makes sense. However, when crisis and deflation rather than inflation is the order of the day, the ECB resembles less an effective central bank and more an under-collateralized currency board, since it is limited both constitutionally and legally from active fiscal measures and is bound by numerical debt and deficit targets that make little sense in such an environment. The ECB, also like a currency board, disavows either

inflation or devaluation as policy responses. Thus, when it became apparent in early 2009 that the Greeks had been less than forthcoming about the true state of their public finances, bond markets demanded a premium to hold their debt since the true risk of the asset was not reflected in its price.[52] Yields shot up, spreads against German debt widened, and CDS prices ballooned, all creating arbitrage opportunities.[53]

At this point hedge funds and other arbitrageurs, those who 'efficiently' drive markets into equilibrium began a 'piñata strategy' to profit from the fact that the debt of Southern Eurozone members was denominated the same as the debt of Northern Eurozone members, and traded (historically) for a few basis points more.[54] As such, by pounding on the narrowly traded Greek bonds and widening the spread between them and German bonds, profits could be earned on both the CDS and margin-calls that underpin the trades. Once proven to work on Greek debts, it then became a question of time and opportunity regarding when to do the same thing to other weaker Eurozone members.[55]

The 'externality' associated with this strategy, and why this is not 'efficient' for those bearing the costs, is the weakness of the underlying European banking system. Again, as Soros notes, "the continental European banking system was never properly cleansed after the crash of 2008. Bad assets have not been marked-to-market...and are instead being held to maturity" (Soros 2010: 4). This is a problem when much of the

[52] http://www.ft.com/cms/s/0/97311356-f999-11de-8085-00144feab49a.html, and http://www.bloomberg.com/news/2010-04-21/papandreou-caught-between-strikes-and-imf-as-bond-yields-surge-to-record.html. Accessed August 30th 2010 5:11pm.
[53] http://www.ft.com/cms/s/0/953bfda8-117d-11df-9195-00144feab49a.html. Accessed August 30th 2010 5:12pm.
[54] On the piñata strategy see http://www.ft.com/cms/s/0/e7168fc6-1740-11df-94f6-00144feab49a.html. Accessed August 30th 2010 5:15pm.
[55] As Vivien Schmidt notes, "leaving the bailout to the IMF created a market hazard [rather than a moral hazard], with the development of an entire market betting against the rescue of any of [the EUs] member states." See Schmidt (2010).

banking systems remaining good assets are sovereign debt, which is now selling below par. As such, the total debt, and most importantly, the perceived credit risk of the European banking system, and thus of the Eurozone states themselves, increased, with the end result that the European "interbank market…has drie[d] up and banks have turned to the ECB for short term financing" (Soros 2010: 4). Indeed, this short term financing is now a $750 billion Euro guarantee fund that shows no sign of being wound down.[56]

Why this matters for our discussion of financial reform, risk, and uncertainty is that it creates both a constraint and an opportunity. It is a constraint in that if one sees these events through an orthodox 'credibility plus rational expectations' lens, then the crisis of the banking system is ultimately a sovereign debt crisis.[57] As such, the only way to get the arbitrageurs off your back is to reduce government debt, which means the end of 'profligate' government spending (aka 'all governments are Greek governments') and the embrace of fiscal austerity.[58] Such a stance however also creates an opportunity for the financial sector to resist any far-reaching reforms. After all, you wouldn't want to 'punish' the sector and 'limit liquidity' and 'make credit more expensive' by foisting more regulation on an already vulnerable sector – would you?[59]

---

[56] http://www.ft.com/cms/s/0/bf25c964-b385-11df-81aa-00144feabdc0.html. Accessed August 29th 2010 3:10pm.

[57] Which actually reverses causation. Government debt increased because the banking system exploded and private credit evaporated: not the other way round.

[58] What this also overlooks unfortunately is that of the 39.1 percent of 'extra' government debt (as a percentage of GDP) the 'average' G20 country has added on to its balance sheet, only 12 percent of that debt is extra spending. Eighty eight percent of the debt is the cost of bailing out the banks, revenue losses and extra interest charges (IMF 2010, p. 14). As such, those paying for the debt are not the ones who generated it.

[59] For a discussion of such claim making by banks see http://www.ft.com/cms/s/0/6d4c92a4-6c26-11df-86c5-00144feab49a.html and http://www.ft.com/cms/s/0/92a3e422-747c-11df-b3f1-00144feabdc0.html. Accessed August 30th 2010 5:17pm.

Good Bye Keynes, Hello Ricardo: The Cognitive Locking of European Elites

By the spring of 2010 eulogies to Keynes were being replaced by some rather shrill sound money arguments. Commentators and economists of a conservative bent such as Niall Ferguson, Jeffrey Sachs and Gregory Mankiw began to preach the virtue of austerity politics early in the year (Blyth and Shenai 2010). These arguments stressed the balance sheet liabilities common across countries and suggested that what was going on in Greece could happen anywhere, even to the US.

Germany, as noted above, had taken a different track to the UK over the roles of stimulus and liquidity provision as tonics for the crisis. Germany had from the beginning stressed the role of debt and cheap money in causing the crisis and had also, as the Eurozone guardian, stressed the importance of fiscal probity in any crisis response. Moreover, since their banking exposures were, until the Greek crisis arrived, limited to Eastern Europe, the Germans increasingly took up the torch for fiscal consolidation.

Pushing this change in ideas along still further was the change in governing party in the United Kingdom in May 2010. The New Labour government of Gordon Brown, which in the run up to the crisis gave honors to Alan Greenspan and never met an efficient market it didn't like, quickly became latter-day Keynesians as soon as the crisis struck. In opposition, the Conservative party under David Cameron and Gideon 'George' Osbourne supported the government's stance. However, once the Greek crisis arrived and the Germans and the ECB began to ring the austerity bell, the newly elected Conservative government became aggressive champions of budget consolidation and austerity politics, calling for a forty percent reduction in government spending over the life of the new

parliament.[60] Thus, in an unlikely turn of events, German and British forces came together at the G20 meeting in Toronto in June 2010 to outflank American calls for continued spending. Austerity was now the way forward.[61]

The Toronto G20 communiqué called for "growth friendly consolidation": a two-step logic of fiscal reform.[62] First, it was argued that continuing high debt and deficit levels would become long run drags on future growth, so they had to be reduced. Second, and more implicit, was a classical crowding out argument, that with governments issuing so much debt, the private sector cannot compete for funds, and as such investment and output must fall. The first point has merit. We cannot all be Japan and finance huge amounts of debt domestically. But the second point is contestable. For it to be true we would have to see bond yields on major currencies increasing, reflecting sensitivity to increased default risk, and interests rates increasing to account for the scarcity of capital. But with real interest rates close to zero and with major currency bond yields falling, the evidence seems to cut the other way.[63]

Facts are however, nothing to let in the way of a good ideology, especially one that has served those in power well for the past thirty years. As discussed above the ideology of the past thirty years has been that 'markets are good' and 'governments are bad.' Therefore, if private debt is bad, government debt must be really bad, and it must be eliminated for growth to occur. But while it may make sense for any one state to clean its

[60] http://www.guardian.co.uk/politics/2010/jul/03/treasury-orders-cabinet-plan-40-percent-cuts. Accessed August 30th 2010 5:20pm.
[61] The only problem is that if austerity hurts, austerity in the middle of a recession really hurts. Luckily however, those bearing the costs, those relying on government services, are not those who voted for conservative parties, so their electoral exposure and impact is limited.
[62] http://www.g20.org/Documents/g20_declaration_en.pdf. Accessed August 30th 2010 5:22pm.
[63] http://www.ft.com/cms/s/0/ecabb2e0-afc5-11df-b45b-00144feabdc0.html and http://www.federalreserve.gov/releases/h15/current/h15.htm. Accessed August 30th 2010 5:23pm.

balance sheet, it becomes suicidal if all try it at once. Fallacies of composition notwithstanding, the ECB has since its June 2010 report advocated for aggressive fiscal consolidation, arguing for a series of extremely dubious "Ricardian effects," which assume offsetting private expenditures for public cutbacks based upon a series of rather limited small country examples.[64] Jean Claude Trichet, the ECB governor, became increasing shrill in promoting these ideas throughout 2010[65] and the effects of these policies are already beginning to bite. They have not yet done much to enhance growth.[66]

The European sovereign debt crisis has then added an important twist to financial reform efforts in Europe since it made bank regulation in areas that would increase the cost of capital (adequacy ratios) or limit leverage much less likely. After all, if one is trying to kick-start an economy by depriving it of public spending when private spending is falling and the banks are dangerously underwater, then adding 'onerous' new regulations that further hamper growth when interest rates are already on the floor appears rather unlikely. In the terms we laid out at the beginning of the essay, and in terms of actual and proposed reforms to date, what we see is a situation where the regulators 'get the problem' and recommend implementing a set of rules that take uncertainty seriously. Yet what we have ended up with is a set of reforms that are still based upon a risk based view of the world, which is in turn compounded by a fiscal stance that allows the banks to avoid more substantive reforms. The problem in doing so is that such policies leave Europe dangerously vulnerable to a secondary banking crisis

[64] European Central Bank, Monthly Bulletin June 2010, especially pp. 83-86. Available at http://www.ecb.int/pub/pdf/mobu/mb201006en.pdf

[65] See Jean Claude Trichet, FT comment http://www.ft.com/cms/s/0/1b3ae97e-95c6-11df-b5ad-00144feab49a.html, and http://www.ft.com/cms/s/0/ecb93ca4-b208-11df-b2d9-00144feabdc0.html. Accessed August 30th 2010 at 5:25pm.

[66] http://www.ft.com/cms/s/0/22618c94-ae99-11df-9f31-00144feabdc0.html. Accessed August 30th 2010 at 5:25pm.

that the new risk-based rules will not obviate: the second car crash in the same badly designed car I warned about earlier.

Reforming the Rules: Risky Rules, Uncertain Futures, and Probable Accidents

Economic conditions in Europe range from the dire (the UK) and the desperate (Greece) to the comparatively fortunate (Germany). Nonetheless, European regulators were quick off the mark to diagnose what went wrong and what to do about it. In this regard two reports stand out, the UK's Turner Report, issued by its soon to be defunct banking regulator, the Financial Services Authority (FSA), and the EU's deLarosiere Commission's report, the Report of the High Level Group on Financial Supervision, both published in 2009. What we see in both of these reports is a willingness to question the risk-based assumptions that had ruled finance to date, but strangely, what followed this learning process was a set of policies and proposals that suggest a new regulatory architecture has not taken root, a problem that the austerity fixation has only compounded.

The Turner Report hits out hard at the fetish of micro-regulation and the absence of attention to the macro of the type described above. It argues against over reliance on mathematical models, particularly VaR analysis, staing that "short-term observation periods plus [the] assumption of normal distribution[s] can lead to [a] large underestimation of the probability of extreme loss events."[67] Moreover, "systemic risk may be highest when measured risk is lowest, since low measured risk encourages

[67] Turner Report (2009: 25, 47)

behaviour which creates increased systemic risks."[68] Echoing the points made earlier in this essay, the Turner report explicitly questions "the intellectual assumptions on which previous regulatory approaches have largely been built."[69] Building upon this critique, the Turner Report makes many sensible suggestions for reform that take uncertainty seriously. Unfortunately, for such policies to work, the wider institutional context in which they are embedded would have to be reformed too. That lies, sadly, in the hands of the politicians, who are most unlikely to do this.

For example, some of the proposed reforms are uncontestable good-things, such as establishing "clearing and central counterparty systems…to cover the majority of CDS trading" and counter-cyclical capital charges.[70] But while increasing capital adequacy ratios and establishing counter-cyclical capital charges are unquestioningly wise, for such rules to be effective depends upon a rule based framework of policy designed to lean against the upswing of the cycle. Given that there is no downside to the upside of a bubble for politicians, such a policy assumes away the very political acquiescence that it may founder upon.[71] Similarly, if VaR and similar techniques are inherently unreliable, then supplementing them with other methods while asking the FSA to keep an eye on systemic risk, all the while using the same tools as the banks themselves, is likely to bring about the very pro-cyclicality via position and model homogeneity that these reforms hope to guard against.

Furthermore, when we move from the Turner Report to what the British

[68] Ibid.
[69] Ibid. 39
[70] Ibid. p. 8
[71] The problem is similar to the key political weakness of the Keynesian regime of the 1960; expecting politicians to vote for tax increases to cool the cycle. In the words of Homer Simpson, "That'll never happen…"

government has actually implemented to date and now proposes, there seems to be even less recognition that risk assumptions need to be rethought.[72] The former Labour chancellor Alisdair Darling's's one-time tax on bank bonuses and his attempt to exclude British banks from the US's new 'Volker rule' proposals were at best temporizing steps within the same framework.[73]

The new Conservative government's proposed reforms are more fundamental in some respects but more conservative (sic) in others. Their July 2010 consultative document stressed the failure of the old tripartite framework (Bank of England, Financial Services Authority, HM Treasury) and has proposed the establishment of a new systemic risk monitoring council to be placed back in the Bank of England that will be equipped with the tools to monitor and deflate asset bubbles. While this sounds promising, such a policy takes as axiomatic that knowledge of players' positions and leverage, aka 'greater transparency,' will be sufficient to alert policymakers to future crises. Yet just as the crisis showed us how CDS and CDOs could together unexpectedly turn into correlation bombs given systemic nonlinearities, so knowledge of positions is insufficient to solve this problem. In an evolving system causes are not linear, they cannot be reduced to their constituent causes. Finance is a complex adaptive system. It is not and cannot be made linear by the simple provision of 'more information.' As argued above, the issue is one of programmability, not transparency (Blyth 2010b).[74]

---

[72] Which suggests that the regulators knowing what to do doesn't mean that they get to do it. It is at best a necessary, but insufficient, condition of action.

[73] The same can be said of the UK Treasury's October 2009 statement on liquidity standards. They were very tough, until one read that they would not be implemented until the crisis was over; by which time the government will be out of office.

[74] Similarly, former Prime Minister Brown's continued boosting of a Tobin tax on banks as a way forward is tantamount to an admission that the next crisis is bound to happen and the best we can do is to get the banks to self-insure, which is perhaps why leading bankers are beginning to be drawn to the idea. See

The EU's Report makes much the same complaints and then goes on to show the same limits in its policy recommendations.[75] While not as sophisticated as the Turner Report in its analysis it endorses the same set of principles, but then goes on to advocate strengthening of EU level supervisory arrangements as the key to resolving the crisis. That is, to get "more and better information" as the policy goal – again. The main proposal to come out of the report, taking the seven current EU level financial oversight committees and dividing them into two new mega-boards; a systemic risk board charged with macro-prudential regulation and a European System of Financial Supervisors focusing on the micro-prudential side of things, more or less recreates the UK's proposed risk-based 'information plus' system on an EU wide scale.

Moreover, as Randall Germain has noted "no financial crisis has ever been resolved at an international level."[76] Indeed, recovery has occurred at the level of national states, not at the level of regional or via some international forum. Why the EU is seen as the appropriate level for regulation, especially in light of the ECB's performance in the crisis, probably says more about the need for the EU to be seen to 'doing something' than the need for solutions stemming from this level. As Elliot Posner argues, the drive to regulate finance at the EU level has historically had as much to do with the political goal of integration as it has had with the economic goal of getting a better financial system.[77] Indeed, as Posner reports, while the EU has been busy in that "since the middle of 2008, EU policymakers have passed (or are considering) legislation (either directives,

---

http://www.ft.com/cms/s/0/38b58dfa-1147-11df-a6d6-00144feab49a.html. Accessed August 30th 2010 at 5:25pm.

[75] Report of the High Level Group on Financial Supervision (2009). Available at http://ec.europa.eu/internal_market/finances/docs/de_larosiere_report_en.pdf. Accessed August 30th 2010 5:32pm

[76] Germain 2009: 15

[77] Posner 2010: 185-186.

regulations or rules) on such matters as credit rating agencies, accounting standards, insurance, clearing and settlement, bank capital requirements, alternative investment funds, packaged retail investment funds, and remuneration of directors of listed companies and employees of financial services firms,"[78] when one examines these new directives, regulations and rules, the whole is much less than the sum of its parts.[79] Add to this the desire of the ECB to enforce budget cuts across all of Europe and such reforms appear as ever more marginal.

German financial *aussenpolitik* is heavily embedded in the larger EU project. As a consequence, German politicians both lead and follow the EU in terms of regulation. Having gained prominence for taking the lead on austerity politics, the German government has effectively delegated reform to the EU while singing from the same austerity hymn-sheet. Germany is waiting for the Basel committee and the EU to write new rules on capital adequacy, but these new rules will be essentially the same old rules, and the same old models of risk, with marginally higher thresholds.[80]

One aspect that is different is the new law on bonuses, which effectively ESCROWs them for three years, thereby making them into savings policies and encouraging thrift. The embrace of anything approaching macro-prudential regulation is conspicuous by its absence. Other German reform proposals, such as railing against

[78] Elliot Posner "Is a European Approach to Financial Regulation Emerging from the Crisis?" in Eric Helleiner (ed.) 2010: 184.
[79] Take the new settlement clearing proposals. These clearly state that, "the Commission evaluated the two directives in 2005 and 2006 respectively. Following extensive consultation the Commission concluded that both directives work well…The Commission does therefore not propose any substantial changes but propose to amend them in limited areas in order bring them in line with regulatory and market developments having occurred since the time of their drafting and adoption. See http://europa.eu/rapid/pressReleasesAction.do?reference=MEMO/08/267&format=HTML&aged=0&language=EN&guiLanguage=en. Accessed August 30th 2010 5:40pm.
[80] See http://www.ft.com/cms/s/0/ff0c9b18-abc2-11df-9f02-00144feabdc0.html. Accessed August 30th 2010 5:40pm.

Anglo-Saxon banking cultures, tweaking hedge fund regulations and fretting about tax havens, are cheap talk that leaves the overall system intact. This re-engineering of the current system with a few transparency bells and whistles, despite the more ambitious goals of the regulators' reports, is of course further limited by the desire to embrace austerity as the way forward. Germany announced a four-year program of spending cuts in August 2010.[81] In such an environment, making borrowing more expensive is clearly not on the cards.

In sum, reform approaches and recommendations from London to Berlin presume that more and better application of the same old rules, with a few twists, will solve the problems of the system without really considering that these problems may be endogenous to the system itself. Despite cracks appearing in our understandings of how markets work, and therefore how they should be governed, European countries, the 'already rich,' have as yet to make any fundamental break with those ideas and practices. As I shall argue in conclusion, such a stance is likely to bite the 'already rich' in the backside far faster than they expect.

Conclusion: Looking Under the Lamppost for Greater Transparency

Financial crises have severe real costs. As Reinhardt and Rogoff (2009) have recently demonstrated, across all developed world (post-1977) financial crises (18 cases), asset price collapses of the order of 35 percent for housing and 55 percent for equities and unemployment increases of 9 percentage points above base are the norm during the bust phase of the cycle, which can by up to six years depending on the asset class. Given this,

[81] http://www.ft.com/cms/s/0/1f011f36-87ae-11df-9f37-00144feabdc0.html. Accessed August 30th 2010 5:42pm.

it is little surprise then that government debts surge by an average of over 80 percent as current tax receipts collapse and deficits expand as the private sector deleverages and the public sector levers-up through bail-outs to compensate. We have seen exactly this process in this crisis, banking crisis followed by sovereign debt crisis,' and yet it somehow came as a surprise to all involved. This 'twin crisis' has made the fiscal and monetary positions of many of the 'already rich' countries are extremely precarious. Yet at the same time, given the bailouts, the banking systems of these countries have had, by some measures, their most profitable ever year in 2009. Meanwhile, those who paid for the bailouts are being told to get ready to pay again in the form of fiscal austerity. Consequently, the impetus for fundamental reform fades fast. There will doubtless be some kind of reform, but it will, for the reasons discussed above, be the wrong type of reforms.

If we build the post-crisis system to the same risk-rule specifications as before, we will likely increase the impact of the next crisis. We will do so because, unable to think in uncertain terms, and tweaking the system only as far as building an risk-based world allows, we will not make the system robust enough. Given the position of 'already rich' public finances for the next several years, any such crisis could signal a real disaster. The system is now too big to bail rather than too big to fail, and the bottom line is that while banks can run 35:1 leverage rations without attracting attention, when states lever up 1:1, which we are approaching all across the OECD today, the costs of borrowing for the next bust may bust the state itself. The reason we fall into this trap is that, like the proverbial drunk looking for his keys under the lamppost "because that's where the light is" our sticky acceptance of a world of risk as the world we actually live in, and a world of fiscal

consolidation as the correct response, despite all the evidence to the contrary, will blind us to what may come next. Consider the following two examples of what might tear right through these proposed new regulatory architectures.

The first example comes from the current crisis over Greek public finances and speaks to the poverty of rule-based and informational solutions. German politicians and financial modelers have one thing in common. They think in terms of rational agents that follow rules. As such, both EMU convergence criteria and the economic literature on rules versus discretion assume that rules are better than discretion, and that politicians should have as much of the former and as little of the latter as they can handle. The problem is of course neither German bureaucrats nor financial modelers thought it at all likely that private sector actors such as Goldman Sachs would tell politicians how to appear to abide by rules while developing the technology to break them without being caught. That type of non-linearity can't be modeled.

Similarly, sovereign default risk can indeed be modeled, but which state is going to default first may not be down to the degree of profligacy of states themselves. Rather, which country hedge funds decide to make a piñata out of next by buying boatloads of CDS protection on them and then cashing in on the spread may be the risk factor that the model misses. The same can be said for the whole architecture of central banking and inflation control. By targeting price inflation and ignoring any other measure, just like the drunk under the lamppost, we generated a boom-bust cycle while congratulating ourselves on 'the great moderation.'

The second example is the next financial car-crash waiting in the wings for Europe that stems directly from this embrace of austerity as the way forward. If the

markets were as afraid of government debt and deficit levels spiraling out of control as austerity boosters would have us believe, then, as noted above, the yield on government debt should be much higher than it is and be trending upwards, rather than what it is actually doing, trending downwards.[82] Markets do seem to be as worried, but they seem to be as worried about growth falling off a cliff (because of austerity) as they are about 'unsustainable debt.' But if that were the case the markets would have to be irrational. After all, the markets can't have it both ways; fiscal consolidation and growth, despite G20 fairy stories to the contrary.

To see how far this irrationality goes, imagine you are a major European bank. A lot of your portfolio would be government debt, and you still have a lot of bad assets on your books, and ugly contingent liabilities such as East European mortgages. As such, you would be concerned with government debt levels, and some fiscal consolidation might make you feel more secure in your bond portfolio. But what about your equity positions? Cleaning your books depends upon growth and fiscal consolidation will hurt that. As such, the value of your equity position drops, growth stalls, assets fall in value, and leverage bites back once again on the downside and you are quite suddenly facing a secondary banking crisis. Except this time it is from a much more exposed position and in that the state is just as levered up as you are. This time there will be no bail-out since austerity politics rules that out, even if the European taxpayer could be milked one more time.

None of the reforms proposed or enacted to date will make any difference whatsoever in either of these scenarios. Neither more information, nor greater

[82] See for example, http://www.treas.gov/offices/domestic-finance/debt-management/interest-rate/yield.shtml. Accessed August 30th 2010 5:44pm.

transparency, nor more and better risk models by smarter and larger risk councils will obviate these threats. In fact, treating them as risk problems that can be modeled and anticipated while focusing on fiscal retrenchment will only make us more blind to their possible occurrence. After all, if austerity is a good thing, and if government debt is bad, how can more spending be good? Trapped like drunks under the risk-assessment lamppost, we open ourselves up to being caught again in a crisis of our own making.

While the editors to this book have good reason to put faith in the transformational power of technology, as someone who studies finance, I am acutely aware of the limits of technology and how it can give us a false sense of security. I am therefore less confident that technology alone, as seen in these reforms and the world that they presuppose, will be sufficient to stop the rich countries doing enough damage to themselves to severely limit their future capacity for growth.

The problem is not that it is much more difficult of course to write rules for an uncertain world. In many ways it is simpler. Complex systems need simple rules.[83] But those simple rules, such as countercyclical capital charges tied to growth in particular asset classes would seriously curtail financial innovation and profit seeking opportunities and demand a whole new ethic (and funding model) of politics. But we have to ask ourselves, especially on the heels of a $2 trillion blow up, if the candle is worth the game? Maybe a precautionary principle applied to finance is the way to go in light of current events rather than mere tweaking. But if it is, we will soon run into politics and the very ideas and interests that will make such an option, once again, unthinkable.

[83] Think for example of traffic systems. These are non-linear complex systems. But one simple rule, we all drive on the right, eliminates 90 percent of potential accidents.

Bibliography

Abdelal, Rawi, Blyth, Mark, and Parsons, Craig (eds.) (2010) *Constructing the International Economy*, Ithaca: Cornell University Press.

Abdelal, Rawi (2006) *Capital Rules,* Cambridge: Harvard University Press.

Balin, Bryan (2008) "Basel 1, Basel 2 and Emerging Markets: A Non Technical Analysis." Unpublished Manuscript, the Johns Hopkins School of Advanced International Studies, Washington DC.

Michael Bleaney (1985) *The Rise and Fall of Keynesian Macroeconomics*, London: Macmillan

Blyth, Mark (2010) "Beyond the Standard Model," in Robert Cox and Daniel Beland (eds.) Forthcoming in Robert Cox and Daniel Beland (eds.) *Ideas and Politics in Social Science Research* Oxford University Press

Blyth, Mark (2003) "The Political Power of Financial Ideas: Transparency, Risk and Distribution in Global Finance" in Jonathan Kirshner (ed.) *Monetary Orders*, Cornell University Press, pp. 239-259.

Blyth, Mark and Shenai, Neil (2010) "The G20s Dead Ideas," *Foreign Policy* (web edition), July 2010.

Blyth, Mark (2010b) "Risk, Uncertainty, and the IPE." Contribution to a project organized by Daniel Drezner and Kathleen McNamara for submission to *International Organization*.

Blyth, Mark (2008) "The Politics of Compounding Bubbles: The Global Housing Bubble in Comparative Perspective." *Comparative European Politics*, Fall 2008, pp. 387-406.

Blyth (2001) ""The Transformation of the Swedish Model: Economic Ideas, Distributional Conflict and Institutional Change" *World Politics* 54 (1) October 2001 pp. 1-26.

Cassidy, John (2009) *How Markets Fail: The Logic of Economic Calamities*, New York: Farrar, Strauss and Giroux.

De Larosiere, Jacques (et al.) (2009) "The High level Group on Financial Supervision in the EU," Brussels.

John Eatwell, (1996) *International Financial Liberalization: The Impact on World Development* New York: UNDP Discussion Paper Series Number 64.

Economic Report of the President (2010) Washington DC: Government Printing Office

Fama, Eugene F. (1970) "Efficient Capital Markets: A Review of Theory and Empirical Work" *Journal of Finance*, 25 (2), May: 383-417
Fox, Justin (2009) *The Myth of the Rational Market*, New York: Harpers

Germain, Randall (2010) "Global Politics and Financial Governance After the Great Freeze" Unpublished manuscript.

Goodman, Peter (2010) *Past Due: The End of Easy Money and the Renewal of the American Economy*, New York: Times Books.

Helleiner, Eric (1994) *States and the Reemergence of Global Finance*, Ithaca: Cornell University Press.

IMF (2010) *Cross Country Fiscal Monitor*, IMF: Washington DC, May 10th 2010

IMF (2010) *Cross Country Fiscal Monitor*, IMF: Washington DC, November 3rd, 2009.

Kauffman, Stuart (2008) *Reinventing the Sacred: A New View of Science, Reason and Religion*, New York: Basic Books.

Lewis, Michael (2010) *The Big Short: Inside the Doomsday Machine*, New York: W.W. Norton.

Mackenzie, Donald (2010) "All Those Arrows," London Review of Books, Vol. 31 (12) 20-22.

MacKenzie, Donald (2006) *An Engine, Not a Camera: How Financial Models Shape Markets*. Cambridge: MIT Press

Newman, Abraham (2010) "Flight from Risk: Unified Germany and the Role of Beliefs in the European Response to the Financial Crisis," *German Politics and Society*, 28 (2) 156-164.

Persaud, Avinash (2000) "Sending the Herd of the Cliff Edge" Available at http://www.erisk.com/resourcecenter/erm/persaud.pdf

Posner, Elliot (2009) "Is There a European Approach to Financial Regulation Emerging from the Crisis?" in Eric Helleiner, Stefano Pagliari and Hubert Zimmermann (eds) *Global Finance in Crisis: The Politics of International Regulatory Change*, London: Routledge.

Reinhart, Carmen and Rogoff, Kenneth (2009) "The Aftermath of Financial Crises" Cambridge: NBER, NBER Working Paper No. 14656

Reinhart, Carmen and Rogoff, Kenneth (2008) "This Time is Different: A Panoramic View of Eight Centuries of Financial Crisis" Cambridge: NBER, NBER working paper 13882

Schmidt, Vivien (2010) "EU Economic Solidarity: A Great Leap Forward or a Bridge Too Far" *Neue Gesellschaft-Frankfurter Hefte*, 7 (8).

Schwartz, Herman (2009) *Subprime Nation*, Ithaca: Cornell University Press

SEB Banken (2009) *Nordic Outlook: Recovery While Awaiting Exit Policy*, Stockholm: SE Banken.

Soros, George (2010) "The Crisis and the Euro," *New York Review of Books*, August 19th.

Skidelsky, Robert (2009) *Keynes: The Return of the Master*, New York: Public Affairs Publishers.

Joseph Stiglitz (1998) "Sound Finance and Sustainable Development in Asia" Keynote Address to the Asian Development Forum, Manila, The Philippines, March 12th

Taleb, Nassim N. (2008) "The Fourth Quadrant: A Map of the Limits of Statistics." Available at http://www.edge.org/3rd_culture/taleb08/taleb08_index.html

Taleb, Nassim N. (2007) *The Black Swan: The Impact of the Highly Improbable*. New York: Random House.

Taleb Nassim N. and Avital Pilpel (2004) "On the Very Unfortunate Problem of the Nonobservability of the Probability Distribution" Unpublished Manuscript 2004.

Tett, Gillian (2009) *Fool's Gold: How the Bold Dream of a Small Tribe at J.P. Morgan Was Corrupted by Wall Street Greed and Unleashed a Catastrophe*, New York Free Press.

Tsingou, Eleni (2009) Regulatory Reactions to the Credit Crisis: Analysing a Policy Community Under Stress': book chapter in Eric Helleiner, Stefano Pagliari and Hubert Zimmermann (eds) *Global Finance in Crisis: The Politics of International Regulatory Change*, London: Routledge.

Tsingou, Eleni (2008) 'Transnational private governance and the Basel process: banking regulation, private interests and Basel II', book chapter in Andreas Nölke and Jean-Christophe Graz (eds) *Transnational Private Governance and its Limits*, ECPR/Routledge series, London: Routledge.

Turner, Adair (2009) *The Turner Review: A Regulatory Response to the Global Banking Crisis,* London: Financial Services Authority

Wolf, Martin (2008) *Fixing Global Finance*, Baltimore, Johns Hopkins University Press

Woolley, Paul (et al) (2010) *The Future of Finance and the Theory that Underpins it*, London: LSE Center for Capital Market Dysfunctionality.