SOCIO-ECONOMIC EVOLUTION AS A QUESTION OF SYSTEMS OF BELIEF MORE THAN REALITY

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ABSTRACT

This paper argues that the latest crisis in the operation of the global economic and financial system needs approached from a new theoretical perspective. Paul Samuelson argued that there were three possible approaches to analysis, comparative static, dynamic and historical. We argue that the first two seemed to have run their course. Historical analysis approaches reality a little closer that the other two and new tools dynamic games, simulation and non-linear mathematics exist to address issues evident in the latest crisis that are not easily addressed from other perspectives.

INTRODUCTION

As is well documented John Stuart Mill "unexplicitly" changed position in the 19th Century Central Banking debate from an advocate of intervention to an apparent supporter of rules based non-intervention. Hicks argue there was no change. He supported the appearance of transparency as a speculation discouraging cloak under which active efficacious intervention by the authorities could and should continue. His argument was that market's confident of correcting open intervention would rationally build expectations was that they could act as they willed with no fear of downside consequences on themselves.

In the era following Keynes suggested reversal of this approach in the early 20th Century, open interventionism held sway as it had in the early 19th. This remained so until stagflation became observable. Phelps-Browns argued on historical evidence that in an interventionist Keynesian world the rational expectations of predicted inflation get built into workers wage demands so pre-empting inflation making stabilizing intervention by the authorities ever more difficult.

In each of these cases an evidentially interventionist approach led people quickly to rationally develop expectations that they need not fear the negative consequences of their actions.

Consequently respectively the marginalist and later neo-classical non-interventionist counterrevolution were consequent. These we will argue make the situation worse not better. In each case economics moved to an a priori non-interventionist analysis devoid of a requirement for the analyst to build into their thinking any knowledge of real economic behaviour. The presumptive basis of this based rationally on the "market's expectation", that the state and central banks operated on a transparent naive automatic totally predictable non-interventionist basis.

It was this presumption, and Mill's subterfuge embedded in it, that arguable led to the current crisis. Globally the authorities were intervening in a manner that ensured that a generation of market agents grew up with the beliefs of bulls. The market and with it most of the particular markets of which it is composed only went up never down. In this presumptively self regulatory world bullish beliefs grow to almost total domination.

Fortunately/unfortunately as they become ever bigger such bubbles of belief become ever more fragile. The apparent illogicality of what is going on is increasingly more widely evident. For example regular shares change hands first at 30 then 40 or even 50 times earnings. On the basis of such expected growth in returns speculatively traded shares, like those in the dot.com bubble, trade at infinite price to current earnings ratios and at higher prices to expected earnings ratios than shares performing regularly.

In the UK for a time as elsewhere fortunes were made on property bought on mortgage as an investment based on the presumption of continuing value appreciation even although the mortgage payment was more than the return in rent it could realize (Wilcox, 2007).

In China's Beijing opera market new builds, that on current observation will never be occupied (73% residential occupancy Beijing, China World Trade, Semi-annual Report 2009) are financed entirely on a belief in continued future capital appreciation. What is the price of such property when someone has to pay to knock it down and or the land reverts to the state.

In such a context the fear that the music may stop takes root and grows. Then what? Increasingly more and more bull's base their behaviour on perceiving themselves in a game of pass the parcel not a real belief that this win-win game will continue. The authorities with accelerating difficulty fuel this process with unseen interventionist action. If at any point they stop, or an iconic bull player shifts to a bear position, this bubble of increasingly fragile belief can collapse.

Mills knew, and it is argued here, that neither the classical position or the neoclassical post-Keynes' positions modified or not are correct. Beliefs, expectations, play a crucial role in all this and these, as is evident in the foregoing analysis, are constructed on the basis of a history of "real" experience modulated by that tinge of "epistemological" logic with which modern rational man endows himself through a scientific education see the real physical world as in principle predictable if at times, in the short run, problematic. We understand earthquakes and volcanic eruptions are an inevitable part of plate technonics but are never sure when the bubbles of increasingly irresolvable tensions than cause them will burst in a cataclysmic event.

Samuelson (1949) in "The Foundations of Economic Analysis" distinguished between three approaches to economic analysis comparative statics, dynamics and historical. Effective comparative statics was a child of post classical marginalism and dynamic rational expectations a child of the post-keynesian neo-classical age. Logically therefore, after the recent financial crisis with the latter neo-classical consensus now on the back foot, the intellectual economic child of the G20 marriage of East and West is an historic path dependent world view that permits people to be different in the different evolved circumstances each faces. This paper is an exploration of the potential of such an economic paradigm.

Theory: Path Dependence an Economic Pathology?

Unfortunately for those with a major investment in analytically orientated skills a path dependent world is fully of highly non-linear complexity. To study this you need real world understanding of economic behaviour not mathematically simplifications of it. The work by Hicks and Phelps Brown already referred to was based on historical analysis. Two recent classics exemplifying this approach are Avner Greif's (1993) iconoclastically historically based AER paper on the Magribi Traders Federation and Paul David's (2007), theoretically rooted piece "Path dependence, its critics and the quest for 'historical economics'"

David's (2000) argues cogently for a new historical economics. He provides clear mathematically based but not expressed arguments against the Cato Institute work of Margolis and Leibowitz (1994, 1995 a,b,c)who sought in these various papers to dismiss the case for such an historical based economics.

First David tells us it is not clear that the latter authors understand that path dependence is a general property of *stochastic* sequential processes and that path independence is the pathological case not the converse. They compound this category error in three ways. First they associate path dependence with *deterministic* chaos and its' property of 'sensitive dependence in initial conditions'. The coupling of path dependence with chaos constitutes the first of the three assertions. David states it reflects:-

> *"a too common predilection among mainstream economic writers for transposing concepts and arguments that are probabilistic in nature into simple deterministic models."*

This thinking is seriously misleading. If the real world is not as the neo-classical consensus surmises then the certainty equivalence and central limit theorems required for their kind of econometric analysis as used to support their theory simply do not apply a priori.

The second and third assertions disclose further why they have to denounce path dependence as problematic. They allege that a dynamic system in which there is 'memory' will be unpredictable and worse from their perspective will generate inefficient resource allocations. Both these are in principle incorrect. However if the real world is as they fear, they will, as indicated, be unable ever to justify their position empirically. Fortunately they are wrong as some classes of non-ergodic stochastic processes are predictable and anyway it is vital to distinguish path dependence from any general association with a pathological tendency to 'market failure'. Real markets we would argue are endemically path dependent yet they generally work effectively. When they do not, as in the present crisis, one has to understand the underlying real path dependent historical processes underlying this failure in their full real actuality if one wishes to suggest effective policy responses to the catastrophic results that resulting from the non-linear positive feedback of speculative bubble's which in the end inevitably burst in manner totally destroying the statistical continuity their empirical results rely on. They cannot deal with such discontinuity by before and after dummies as the underlying parameters on which statistical expectations are constructed are understandable changed institutionally by the historical experience of the catastrophic event. The City's underlying potential institutional strength comes from the institutional constructs it has effected over two and half centuries of such experiences.

<u>Theory: Path Dependence Basics A Classical Economic Perspective</u>
(the following based on Hilton 1983)

Consider the simplest two good environment with one individual, Robinson Crusoe, parachuted into it. This individual can fish or hunt for what is a verbraushgut to survive. Each have the same real probability of yielding survival utility. Robinson Crusoe successively samples each route to food. At any point in time this individual uses his rational expectations based on his previous experience, history, of success or failure in each to assess whither hunting or fishing is the most productive use of his time. By the

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Two Armed Bandit Theorem (1973) such a singular naive neo-classical Robinson Crusoe will have a positive probability of becoming exclusively a fisherman or a hunter. This is a subjective perceptual equilibrium. To an omnipresent objective observer it is an example of sub-optimal market failure.

If we populate this world with many such individuals and they are allowed to trade. At the individual level this initially exacerbates this objective market failure. Individual will produce the product they subjectively believe is the cheaper and buy from those who believe the alternative is. The population is then split, locked, into two sub-populations of fishermen and hunters. Each learn by the division of labour the “true” probability of success in their own activity but remain ignorant of the success probability in the alternate. Socially by an invisible hand labour is used efficiently but individuals do not have perfect information. Paradoxically “market failure” makes this naive economy socially but not individually efficient.

The above is in the short run. In the long run, when, remembering Keynes dictum, “we are all dead”, competition among fisherman and hunters will drive the market price to the point at which one unit of hunted product will trade for that unit of fish that represents the real probability of success in fishing. Why wait for the long run? Rationality tells us that if all participants are forced to pool their experience of success in a non-incentive compatible way to a central authority sampling would be at a higher rate than that individually achievable. Using their omnipresence the authorities can direct labour far more efficiently than this market. QED socialist central direction is likely to be more efficient.

Theory Consequences:

The view at the end of the last section is replete with both neo-classical and classical socialist errors. First it assumes individuals are as motivated when directed by others as by themselves. Second it assumes the environment faced is the same for all.. Neither one of these is true and third it ignores the potential of the very long run when technology changes.

As we have seen each individual will have their own unique historical experience of sampling the environment. In the short and medium term they must entertain “wrong” subjective perceptions of it. In consequence they are bound to believe the authorities are allocating resources inappropriately. They will be demotivated. Socialist realism suggests that in the long run, “when we are all dead”, people will realise the wisdom of rational socialist decision making. They will then transit to becoming non personally acquisitive communists who are not individualist in outlook. Harmony will rule. The long run is however a very long time as Chou then Mao found in the

"Let a hundred flowers bloom; let a hundred schools of thought contend."

campaign launched in 1957. This was too quick it appears, after only seven years of socialism and the destruction of the capitalist class, for communism to hold sway. Whiel they were maybe not capitalists many still had decision effecting memories of pre-communist times. Instead of constructively debating as Chou hoped how the communist agenda could be taken forward they destructively criticised it as going against the wisdom of traditional Chinese culture and the scientific logic of Western style markets. This indicates how long individual's histories of experience last and that these do matter. In an attempt to destroy such histories the Cultural Revolution did produce an immediate effect but longer term even a cursory look at modern China indicates the effects of China's long history on current attitudes and expectations has not yet been eradicated.

It is self evident that the world perceived by an individual is different from that perceived by others. This would not matter if all faced the same underlying subjective environment. Then while different individuals would have distinct experiences and so beliefs the average individual would have the true measure of the environment. However people never face, even as a first approximation, the same subjective environment. People can never be in the same space at the same time in the same sequence. An individual may have the same perceptive probability of a success in an activity but as a result of their sequence of experience a very different view of their skill and future prospects as compared to others with more experience or less variance in their outcomes. History still matters.

However the underlying "real" world can still be conceived as homogenous. It is not. It is not only changing itself but it is changing in a co-evolutionary way with its exploiters. Fishing and hunting impact on the prey species. The tragedy of the commons can not only result in whole populations being wiped out, e.g. cod on the Grand Banks of Newfoundland but in changes in the distribution of the prey, geographically and temporally. This results in different fisherman and hunters experiencing truly different heterogeneous environments. These are created in part by their individual and collective actions.

In the face of such dynamic co-evolution central resource allocation based on naive accumulations of data based in iid. assumptions will be in gross error and thus inefficient. In such environments local knowledge as to time and place gives those working in a market context the short and long term edge over the real world measured in terms of instantaneous efficiency.

However two post modern phenomena upset even this apple cart.

First stocks of prey can be fished and hunted out of existence by efficiency. A priori the historical analytical perspective suggests that dynamic co-evolutionary stability, what we call sustainable development has to be the end game. Individualistic efficiency leads to the tragedy of a commons hunted or fished out and destitute fisherman and hunters.

This it has to be acknowledge cannot be handled by comparative static or even a simply dynamic regulatory response. Historical reality requires an historical approach to regulation as well as analysis. Such an approach has to be based on synthesis i.e. the systemic logic of complexity not the analytical logic of simplicity constructed in real science in laboratory experiments or in social sciences through the use of thought experiments which are by definition counterfactual.

Secondly and most importantly, our world is no longer one in which physical factors, land, labour and capital, are the primary drivers of value. We are in an age where information and "knowledge" are the primary drivers of decisions and values. In such a world value is not truly known prior to purchase neither is it truly shown by experience after purchase. Modern goods are increasingly "credence goods". The value of these depends solely on belief either individual or as socially constructed.

Nowhere is this more evident than in financial markets. Here the value of assets and liabilities are entirely ethereal. Things are worth what people believe they are worth. There is no true objective real world basis for value in such markets except at a very far distant remove from the forces driving day to day decisions. It is true values are now often ostensibly assessed with regards to ethical environmental social sustainability but nevertheless even here these beliefs are supported by subjective perceptions of reality as accessibly reported or experienced by individuals.

In financial illustration of this consider the certificates of gold deposit that "fraudulently" circulated as paper money in the middle ages. These in the end did not represent deposits of gold. Only the amount of real gold that, in "normal times", people would wish to withdraw. If credence could be maintained in the useful subjective belief of the value they purport to represent then no problem ensued. Such paper specie in modern times totally separated from any real material underpinning is regularly accepted for its purported value. In the past the moment confidence was dented in this believed value any attempt to turn such certificates into real gold had no more chance of success than had a desire to turn securitized bundles of mortgages into cash in the middle of last year's crisis in financial confidence. Belief in a things value is everything not its objective scientific measurement. Modern finance and its analysis is socially useful human sophistry not reality to be analyzed scientifically.

In certain circumstances, as Keynes rightly observed, those inefficiently really "in money" as opposed to subjectively "in the money" would be peculiarly uninterested in the interest rate or any other proffered inducement to get out of it. They would be richly rewarded for taking this position of liquidity preference on an ever increasing basis by the deflation their actions induce in any crisis in the credence of the value of real investment.

On our recent experience of this it is true that at least governments kept their heads based on observation not direct experience of the past and used this knowledge it seems to re-build confidence fairly quickly. However even then many did not follow Keynes recommendations for such situations. They at first did not spend directly in the real economy or allow consumers to do so with tax cuts. Instead many gave banks even more cash from which to make money by doing nothing. The banks that survived when the music stopped have sensibly proceeded to hang onto it while the dust settled thus exacerbating the impact of the situation on the real economy while they themselves, on the evidence, make considerable rewards.

Generally unregulated financial markets left to many subjective histories of successful individualistic games of pass the parcel in an unrealistically long bull market each with huge pay-offs are unlikely to want to stop a game they are so richly rewarded for playing. However despite Mervyn King's(2009) recent statement the players all now know that, as Lehman brother's failure demonstrates, the authorities can and will in the end pull a chair out and stop the music. It is this knowledge that builds the fear that eventually burst the bubbles inevitable in any market managed as is now the norm.

History does matter in finance as in the real economy. All financial markets successful in the long and very long run have a capacity to deal with both bulls and bears. Playing pass the parcel in a bull market is a lovely game even when a chair is removed and the music stops. As Mervyn King (2009) observes even the chairless individual does not truly come to great harm with the authorities willing to intervene in the way they have. However a bear market even one that is in the end underwritten by the authorities is a very scary game few know how to play and in which institutions with a long unforgotten history win.

The only modern surviving market with institutions with such a long experience is the City of London. However even here competition based on comparative static neoclassical thinking can and did have a capacity to dominate for a time. In an attempt to avoid being eclipsed by competitive US institutions like Lloyd's by being undercapitalized in the face of terrorism, and modern day natural disasters competed with the limited liability of New York and the NASDAQ and sailed into the way of danger so recently made manifest by letting go of all the historically based institutions it had constructed to combat the dangers now so evident, merchant banking, market making and brokering were totally forbidden within one enterprise. However competition with the naive US markets reserve requirements were relaxed all round and just about anybody including savings and loans were permitted to become banks empowered as previously they were not to borrow short and lend long on a bankers basis of liquidity given the lure of mortgage securitization.

These changes were all known from its 300 years of financial history at least by some as well known recipes for disaster in a bear market. The events of history forced these safeguards out of the system on the basis that the very long run of technological innovation, cheap electronic training had arrived and history no longer mattered in the interests of short run survival. Trades based on huge assessments of subjective value could be made very fast, in milliseconds on the NASDAQ, and very cheaply so it was not only not possible to turn the clock back competitively but perhaps the lessons of the past were irrelevant in this brave new world.

This had proved not to be the case but as yet we have not fused such historical institutional dynamics into the technologically enhanced comparative static neo-classical supported style of hypercompetitive trading that is now possible.

In such an historically evolving world they, the regulators, have to be engaged, as Mill so consistently believed, but this should be in the adventurous explorative manner of which they are perfectly capable if allowed to do so rather by being suppressed in doing so by heavy incoming fire of high powered neo-classical naivety of the type inappropriately foisted by Sachs on the Russians in the 1990s. History does matter. Russia is no more 20th Century America than China is 19th Century Britain although the latter does have a lot of the characteristics of Britain in its fastest periods of development in the early 19th Century. The Speenhamland system of Poor Law is much akin to the Chinese Hou Kow and the Chartist Riots in Manchester not dissimilar to recent events of disorder in an otherwise outwardly self confident China.

Neo-classical market concepts can no more be the basis for solving the problems of marketising Russia in the 1990s than can even more submarine social direction be for the Chinese economy of the 21st Century. History always matter and as we have seen one size cannot fit all. History has carved out a global or more correctly transnational economy and there are growing signs of a recognition that this has perhaps to become supra-national. Globalizing pressures clearly exist but there is little point in the face of historically different experiences of abandoning the institutions, states, designed to deal with evolved localizations. Appropriate subsidiarity makes sense while the global government of everything in an heterogeneous world does not.

Russian socialism never ever looked like producing as Marx predicted communism. As the Russian people themselves described the lack of incentive compatibility in their system,

"They pretend to pay us. We pretend to work"

This describes a non incentive compatible non-commutative incomplete space for decision making convergent to any equilibrium.

An appropriate similar expression for modern day China's social market economy with Chinese characteristics could perhaps be,

They produce and direct a Beijing Opera, "The Market". We act in it"
This describes a non incentive compatible non-commutative incomplete space for decision making convergent to a subjective equilibrium.

The US of the recent crisis might be,

"We produce and direct markets the state has unfortunately to farm to support"
This describes an incentive compatible non-commutative incomplete space for decision making convergent to a subjective but nor a real equilibrium.

A true version of the end game might be

"We produce and direct markets and their sustainability. They produce and direct the market and sustainability."

This is an incentive compatible commutative space for decision making convergent to a subjective and real historically valid solution.

REFERENCES

Cecchetti, S. G. " Monetary Policy and the Financial Crisis of 2007-2008", Brandreis, Working Paper, 3 April 2008

Cesarano, F. Expectations And Monetary Policy: A Historical Perspective, Manchester School Vol 66 No. 4 September 1998

Cesarano, F., "The new monetary economics and Keynes' theory of money",

China World Trade Semi-Annual Report, Autumn 2009)

David, Paul A., (2000) "Path dependence, its critics and the quest for 'historical economics' All Souls College, Oxford & Stanford University, June p25 Evolution and Path Dependence in Economic Ideas: Past and Present, edited by P. Garrouste and S. Ioannides, and forthcoming in 2000 Edward. Elgar Publishing, Cheltenham, England.

David, Paul A., 2007. "Path dependence: a foundational concept for historical social science," Cliometrica, Journal of Historical Economics and Econometric History, Association Française de Cliométrie (AFC), vol. 1(2), pages 91-114, July.

Dulleck, U And Kerschbamer, R. "On Doctors, Mechanics, and Computer Specialists: The Economics of Credence Goods, Journal of Economic Literature

Economics, 33(1), April: 1-25.

Ekelund, R. B. Jr; Mixon, Franklin G Jr; Ressler, Rand W, "Advertising and information: An empirical study of search, experience and credence goods", Journal of Economic Studies; 1995; 22, 2; pg. 33

Forget, Evelyn L , "John Stuart Mill's Business Cycle", History of Political Economy, 1990 vol:22 iss:4 pg:62

Greif, A, "Contract enforceability and economic institutions in early trade: The Maghrib Traders Federation."The American Economic Review; Jun 1993; 83, 3;p525

Hicks, J. R. (1967). Critical Essays in Monetary Theory, Oxford, Oxford University Press

Hilton, B. J. "Information, Inference and Decision: A Dynamic Analysis of the Decentralisation v Centralisation Issue" Ph. D. thesis Edinburgh 1983

Journal of Economic Studies; 1994; 21, 3;

Journal of Law, Economics, and Organization, 11(1), April: 205-26.

Liebowitz, S .J., and Stephen E. Margolis (1995b), 'Path dependence, lock-in, and history',

Liebowitz, S. and Stephen E. Margolis (1995c), 'Policy and path dependence: from QWERTY to Windows 95', Regulation: The Cato Review of Business & Government, 1995,

Liebowitz, S.J., and Stephen E. Margolis (1990), 'The fable of the keys', Journal of Law and

Liebowitz, S.J., and Stephen E. Margolis (1994), 'Network externality: an uncommon tragedy',Journal of Economic Perspectives, 8 (2), Spring: 133-50.

Liebowitz, S.J., and Stephen E. Margolis (1995a), 'Are network externalities a new source of

market failure? Research in Law and Economics, 17 (0):1-22.

Mervyn King, Governor Of The Bank Of England to Scottish business organisations, Edinburgh, on Tuesday 20 October 2009

Minsky, M., "Securitization:, Policy Note 2008/2, The Levy Economics Institute Of Bard College

number 3: 33-41.

Phelps-Brown, E. H. "The Analysis of Wage Movements Under Full Employment", Scottish Journal of Political Economy, vol 18, 1971, pages 233-43

Rothschild,M, A Two-Armed Bandit Theory Of Market Pricing, Journal Of Economic Theory 9, Pp.185-202
Samuelson Paul Foundations of Economic Analysis,Harvard University Press,1949
Vol. XLIV (March 2006), pp. 5-42
Wilcox, S. Housing Market Survey, Hometrack October 2007
Williamson, J. G. Globalization, Convergence, And History, The Journal Of Economic History Volume 56 June 1996 Number 2 pp. 277-306