

Report of the 2009 Young Economist of the Year Competition

This year's questions asked: Are economic recessions inevitable?

There were more than 450 entries, well up on last year, from almost 200 schools and colleges. The overall standard impressed the RES Teacher Panel of fifteen judges, who met on 11&12 June. They were: Amanda Campion (RGS Guildford), Amy Chapman (Cheltenham College), Andy Hunting (Uppingham School), Geoff Riley (Eton College), Jen Stimson (Colchester RGS), Jon Mace (Warminster School), Lisa Newton (Westminster School), Liz Veal (Peter Symonds College), Mo Tanweer (Merchant Taylors), Paul Bridges (Tiffin School), Penny Brooks (City of London Freemans), Richard Davidson (St Johns Leatherhead), Ruth Tarrant (Nelson Thornes), Sarah Leonard (Westminster School), Tom White (City of Norwich Girls School).

Thirteen entries made it to the final round of judging (in alphabetical order):

Artur Reszka (Radley College)
Doug Swift (Eton College)
Duong Nguyen (Anglo-Chinese Junior College, Singapore)
Felicity Crowther (Notre Dame High School, Sheffield)
Huu Anh Nguyen (Merchiston Castle School, Edinburgh)
Jinesh Patel (Wilson's School)
Leander McCormick-Goodhart (Eton College)
Nathaniel Clark (Simon Langston Grammar School)
Philip Edmondson-Jones (Berkhamsted School)
Rosemary Nolan (St Mary's College, Blackburn)
Tiffany Young (St Catherine's School, Bramley)
Tom Robertson (Colchester Royal Grammar School)
William Coen (Bishop Wordsworth's School, Salisbury)

A further 38 entries were identified as 'Highly Commended' and announced together with those above on the Tutor2u website.

The final stage was judged by Charlie Bean, Stephanie Flanders and John Vickers. Before conferring, we each independently identified our top three. Four competitors stood out.

We agreed that the best essay was by **Tiffany Young**. It first set out, by way of illuminating charts, the history of output fluctuations around trend growth, and then discussed competing theories of the various causes of downturns, with emphasis on Minsky's account of boom-and-bust. The essay showed an independent line of researching the question and was notable for taking historical data seriously and for its eclectic breadth.

We placed **Doug Swift** second. His essay was striking for its logical rigour (beginning with a discussion of the meaning of 'inevitability'!). Again Minsky found favour, particularly for his 'Ponzi scheme' analysis of cycles, and the recent work of Akerlof and Shiller was discussed in interesting ways too.

We could not separate the contrasting essays of **Philip Edmondson-Jones** and **Leander McCormick-Goodhart** so put them equal third. Philip laid out a multi-equation macro model of a kind not normally encountered before university level, and related it well to the question,

though more emphasis on financial issues would have been welcome. Leander gave perhaps the best-written account in the whole competition, discussing 1929 and the Asian crisis of the 1990s as well as recent events, and with interesting comments on the nature of Economics as a social science and the importance of psychology. But these two essays did not quite have the empirical engagement and rigour of the best two.

The 2009 Young Economist of the Year is therefore **Tiffany Young**, who will receive a prize of £1,000. Runner-up **Doug Swift** will receive £500, and **Philip Edmondson-Jones** and **Leander McCormick-Goodhart** will get £250 each. The plan is to award the prizes to the winners at Partha Dasgupta's annual public lecture in London on 25 November.

Charlie Bean
Stephanie Flanders
Jim Riley (Managing Director, Tutor2u Limited)
John Vickers

31 July 2009

Are economic recessions inevitable?

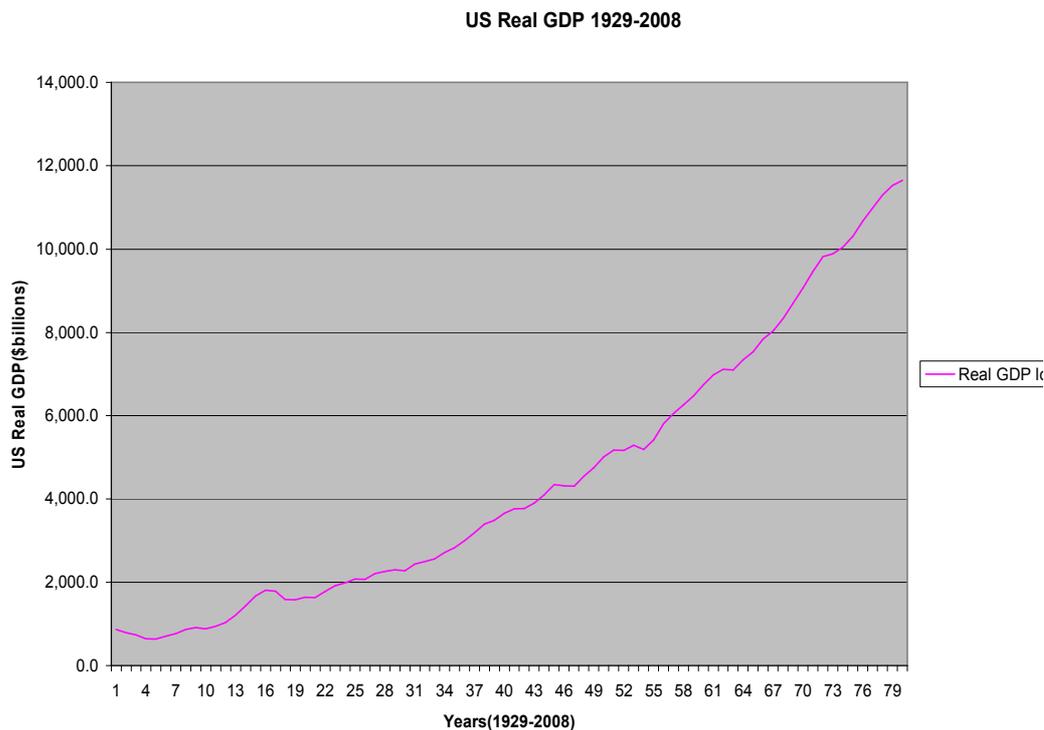
Tiffany Young

Recessions are technically defined as negative GDP growth over two consecutive quarters and are often characterised by a declining demand for services, rising unemployment, reduced consumer spending and loss of business confidence, profit and investment. This is coupled with price discounting due to low inflation and increased government borrowing.

History has shown that recessions are frequent; in the UK there has been one every decade for the last 40 years and in the US every decade for the last 60 years. Before 1940, both countries experienced recessions each decade. History would therefore seem to conclude that recessions are inevitable and from an economic perspective, I would suggest that recessions often appear to represent market corrections and are both inevitable and in some cases to be welcomed in order to transfer factors of production from inefficient activities to efficient ones.

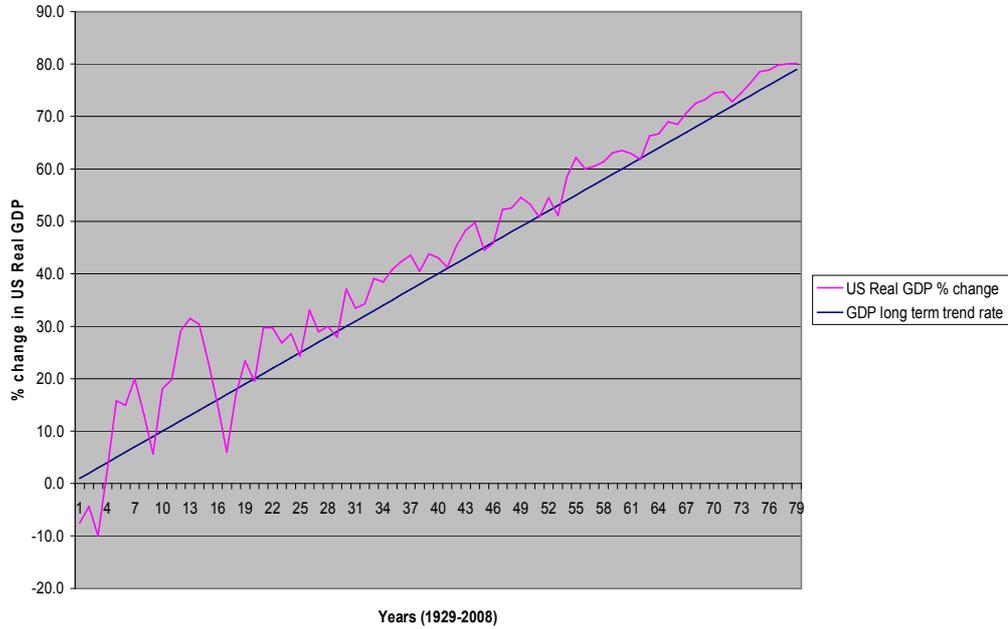
Recessions act to return trend rate to GDP equilibrium?

Each recession is triggered by a specific event or series of events which often acts to correct economies that have become dysfunctional or unsustainable, and have deviated significantly from the GDP long term trend rate.



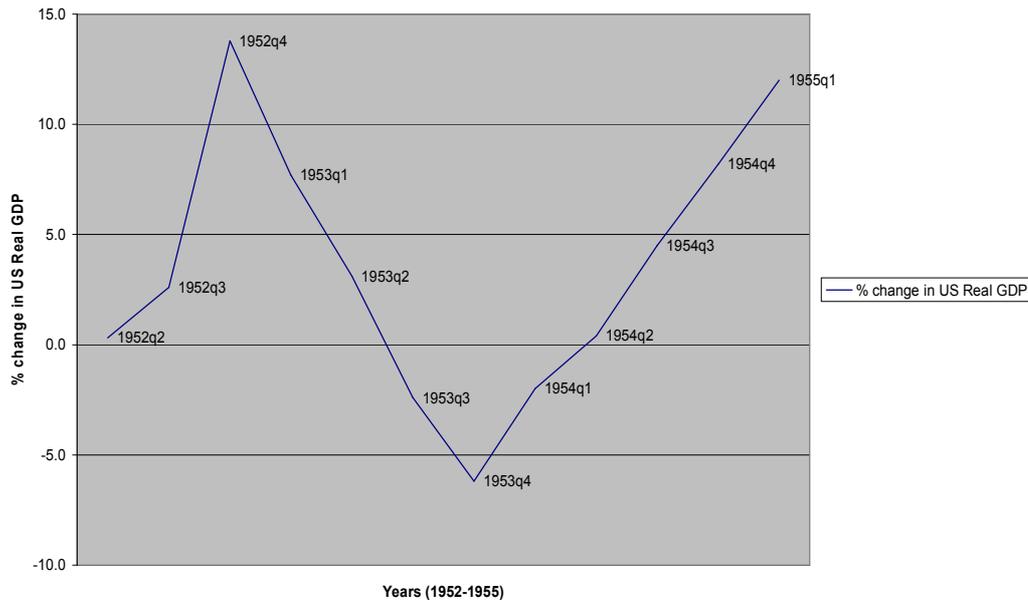
The graph above plots US real GDP since 1929. The empirical data demonstrates the smooth upward GDP trend that over time does not markedly deviate.

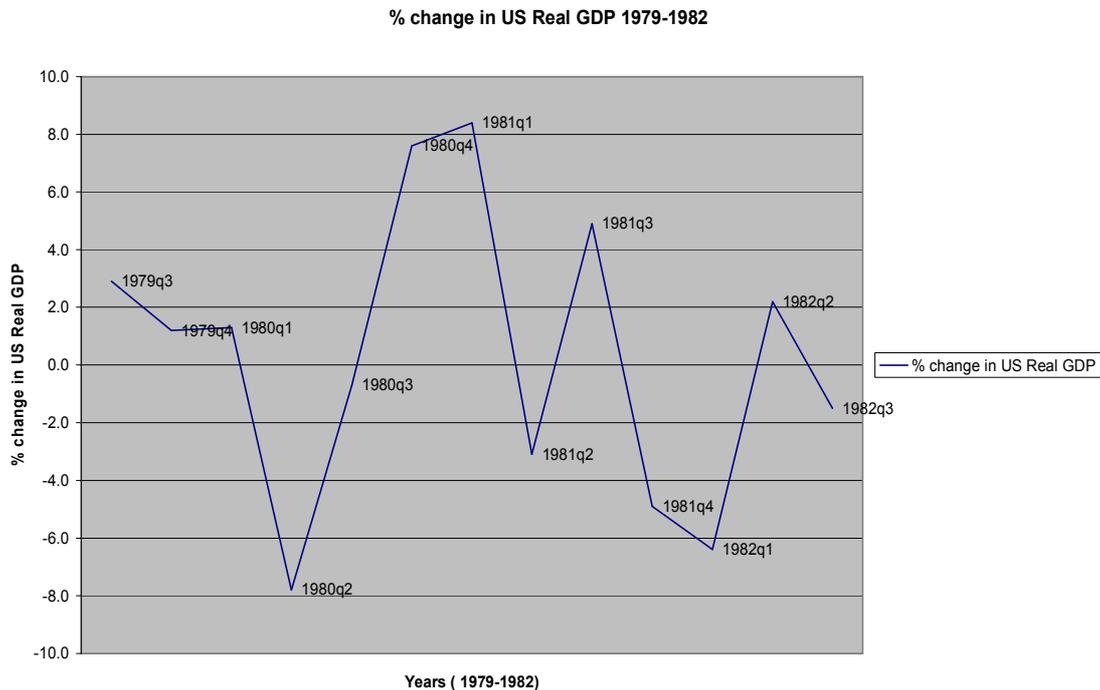
% change in US Real GDP 1929-2008



The data for annual % change in GDP (illustrated above) however shows striking year on year variations. It is clear that recessions have acted to bring the trend back to the GDP equilibrium. The graph illustrates the negative output gaps when the Real GDP % change falls below that of the long term trend rate.

% change in US Real GDP 1952-1955





An example of this is the 1953 and 1980's US recession which is shown in more detail in the third and fourth graphs above, which plots % change in US Real GDP each quarter from 1952 to 1955 and 1979 to 1982 respectively. Preceding the drop in GDP has been a period of significant growth. The same pattern is repeated in the other US recessionary periods, namely; 1929, 1957, 1960, 1975, 1990 and 2001.

Conflicting economic theories

Hyman Minsky, a US economics professor believed, "the normal functioning of our economy leads to financial crises, inflation, currency depreciation and unemployment". Minsky showed that speculative bubbles and the financial collapses and recessions that follow them are an integral part of modern capitalism and a recurrent feature of economic life; not the results of accidents or poor decision making. He pointed out that given "sustained economic growth there was a tendency for the finance system to move from a situation where everything is under control to a spectacular situation which is precarious".

The hypothesis that recessions will ultimately correct themselves and economies assume a general tendency towards equilibrium is certainly supported by classical economists who believe that recessions are not inevitable in the long run. Classical economists follow Says Law, which states that supply creates its own demand, so that an overall excess would therefore be impossible; it also refutes that recessions are caused by a lack of aggregate demand. Classicalists would be challenged by Keynesian economists on this last point who contend that in some situations, no strong automatic mechanism moves output and employment towards full employment levels. Keynes argues that the solution to recession is government intervention to stimulate aggregate demand in the economy through demand management policies including slack monetary policy and expansionary

fiscal policy. With the correct intervention, Keynesians believe that recessions are not inevitable in the long run. This increase in the volume of money into the circular flow of income results in more spending, which in turn stimulates more production and investment involving still more income and spending. Using fiscal and monetary policy to prevent recessions however is not straight forward and requires certain conditions to be effective. These would include; low government borrowing, responsive consumers who increase spending and low private sector spending.

However this does not always work, as was seen in Japan in the 1990's when interest rates were 0%, yet still failed to stimulate the economy. The US government and Federal Reserve and the UK government and The Bank of England have tried hard to avoid a recession in the current climate using both fiscal and monetary policies and their steps may have minimised its severity; but, factors like the credit crunch and housing bubble have made it very difficult. Interestingly, Minsky's proposed solution to the financial crisis and recession was state intervention similar to the approach recently adopted in the UK, US and Eurozone. He believed the only permanent solution to preventing the economic crisis and recessions was the socialisation of the banking system.

Reality isn't rational

Recessions are extraordinarily difficult to predict, since global economies are not under the control of any one body which also adds to their inevitability. George Soros in his theory of reflexivity disagrees that markets tend towards equilibrium believing that "markets move away from a theoretical equilibrium almost as often as they move towards it and can get caught up in initially self reinforcing but eventually self defeating processes". A current example of reflexivity is the collapse of the housing market in the US, leading to a credit crunch and banking collapse. This was initiated, not by our political leaders, but by greedy short term bankers who despite the high risks continued to offer unsecured lending to US householders and compounded that risk by bundling the debt and selling it on. This was a climate that became universally acceptable in the global banking world and was not understood sufficiently by regulators or politicians. Soros would describe this behaviour as "biases of individuals acting on the basis of imperfect understanding".

It is often perceived that economics is all mathematics, however, it involves much psychology; we think of ourselves as independent, rational decision-makers yet behavioural science suggests that our emotions exert more control than our cognitive senses. History shows that we tend to run in herds. Social psychologists have observed that when we are faced with something unfamiliar, we copy each other. This can result in certain inappropriate behaviours becoming acceptable at both government and corporate levels; as exemplified by the dot com boom and the recent CDO debacle. Soros believes that it's due to these irrational behaviours that markets gyrate over time, under and over shooting the equilibrium. Recessions act to correct this behaviour as currently demonstrated by addressing unsustainable behaviours, such as growing debt.

Powerful external forces

The current economic situation is also a reminder that in a market economy, such as the US and UK, the economy is beyond the control of any single entity, so the government cannot simply implement policies to either prevent or correct what they see as a potential recession looming. Despite their fiscal or monetary policies, the economy is affected by the actions of millions of consumers and producers. In addition, due to forces of globalisation and the interdependence of world economies, a recession in one country often causes a recession in others. For example, a recession in the EU, would affect the UK economy because the EU is our main export market. Financial markets in many countries are closely watched in other countries, and many investors are making investments on an international scale. Exports and imports have become more important to business enterprises, who must now deal with global competition. As a result periods of recession are likely to encompass many countries concurrently, slowing foreign demand for exports. Globalisation for example created the current US and UK debt bubbles. Our increasing reliance on the emerging economies of India and China means that we are more affected than previously by their economic cycles.

However despite governments' lack of control over preventing recessions, I would suggest that governments have the capacity to cause recession through irresponsible economic policy. An example of this is the Lawson Boom in the late 1980's when the UK economy grew rapidly due to tax cuts and low interest rates. When growth increased above 4%, the government did little to slow down an overheating economy in the belief that the long run trend rate of economic growth had miraculously increased from 2.5% to 4%+ resulting in high inflation and a recession in 1991.

I would also suggest that governments are inherently too short term to be able to plan and prevent recessions. The best way to avoid a boom and bust scenario is for the government and monetary authorities to avoid a boom; if the economy expands too rapidly (without first expanding supply to avoid demand pull inflation) and inflation occurs, there comes a point when it is almost impossible to avoid a recession. If economic growth is kept close to the long run trend rate and speculative bubbles avoided in the housing market, this would go some way to avoiding a recession. This is however unlikely as the approach is often counter intuitive; governments find it difficult to implement long term solutions which may be unpopular, uncompetitive and politically suicidal. Some economic factors are also beyond their control. A rapid rise in oil prices for example, creates a situation of stagflation; rising inflation and falling living standards. It presents a difficult situation. The Central bank is caught between raising interest rates to control inflation and cutting interest rates to boost growth. There is a limit to what can be done, when there is a supply side shock. Whatever policy is implemented there is likely to be a worse trade off. It is often very difficult to avoid both inflation and recession because they are caused by the same variable, which is spending.

So should governments intervene?

History shows that government effort has not influenced the frequency of recessions, however it does show that intervention has caused a reduction in their length and an increase in periods of expansion. Some have credited independent monetary policy as helping to minimise trade cycles. However, governments can be credited for playing a bigger role in moderating recessions, especially since the thirties. Unemployment benefits and insurance have helped to reduce the loss of income during recessions, and monetary policy has been used to reduce interest rates and make credit more accessible. Another factor contributing to this trend is the growth of the service industries, such as trade and transportation, where employment is usually more stable than in manufacturing, leading to the whole economy becoming more stable and less susceptible to recession.

In conclusion, history has demonstrated that recessions are frequent, unpredictable and initiated by a diverse range of causes from rising oil prices, poor monetary & fiscal policies, loss of consumer confidence and unpredicted events. The very differing nature of these recessions demonstrates how difficult it would have been to run economies in order to pre-empt such events. These situations also illustrate how recessions are initiated globally and the limited influence of domestic politicians. They also provide examples of how recessions are influenced by those outside of government whose actions are often driven by emotional rather than rational instinct. Politicians have however proved to be able to influence recessions, both negatively and positively, but history has not shown any indication of prevention.

Furthermore there are conflicting economic and management philosophies on the appropriate level of government intervention in terms of monetary and fiscal policies. I would support Minsky's views and suggest that recessions are a natural part of the economic cycle, often a self correction and re-balancing back to a long term GDP trend rate. Soros' theory of reflexivity would also support this supposition on the basis that all human constructs are flawed and it is therefore natural to under and over shoot the so called market equilibrium. I therefore believe that recessions are inevitable and may be positive and constructive rather than destructive events that need to be prevented.

Bibliography:

I started the essay by looking at developing a hypothesis around the inevitability of recessions. From my A' Level work I was already familiar with the classicists and Keynesian theories. So I started looking at other economists who had differing opinions. I thoroughly enjoy the writing of George Soros and his latest book introduced me to his theory of reflexivity and from there I started to develop a different train of thought. I added to this after reading an article by Hyman Minsky who intrigued me as he has been much maligned, yet appears rather prophetic, believing that speculative bubbles and financial collapses are an integral part of modern capitalism. Talib's book 'fooled by randomness' basically suggests that most actions that we believe to be skilled, talented, rational or considered are actually lucky, coincidental happenings. This made me consider the human element of recessions in more detail and also add this thinking to Soros' who also believes individuals act on imperfect information. I then went on to seek

objective data on recessions, so looked at GDP figures going back in time, provided by bea and nber, looking at trends and patterns. I looked at the history and frequency of recessions over the past century from some of the web sites below. Collectively, I started to build a strong picture of a genuine hypothesis supported by data as well as respected economists and opinion leaders. This was compounded by Paul Krugman's hangover theory that suggests that recessions are effectively 'tough love'; a necessary punishment for the excesses of the previous expansion. The empirical data certainly bore this out.

- The Bureau of economic analysis (www.bea.gov): current dollar and real GDP
- The Financial Instability Hypothesis, Hyman Minsky, working paper no 74.
- The New Paradigm for Financial Markets; George Soros
- Fooled by Randomness: The Hidden Role of Chance in Life and in the Markets; Nicholas Nassim Taleb
- The Hangover theory; Paul Krugman (www.slate.com)
- Bernanke at Jackson Hole, 2007 Economic Symposium, A History of Recessions
- Recession.org: a history of economic recessions
- National Bureau of Economic Research: Business Cycles Expansions and Contractions (www.nber.org)
- Economicshelp.org: The Lawson Boom of the late 1980's

Are Economic Recessions Inevitable?

The philosophy behind the concept of inevitability is too long for 2000 words. So let's agree on a simple logical pathway, the completion of which will affirm that recessions are or are not inevitable. If we can pinpoint an ever-present occurrence in the run-up to recessions, then this signal will have to fulfil three criteria to make its consequence inevitable. Firstly, it would have to appear in every previous downturn. In addition, a recession would have to follow *whenever* the signal was present and finally, the signal *itself* must be unavoidable to the extent that we cannot say it will never happen again. In finding such a signal, I will turn to the work of the economist Hyman Minsky. He would have, I feel, defined a recession as something like this:

A collapse in confidence based upon the mutual realisation that the rate of growth in the market is unsustainable and the consequent deterioration of the national economy.

Now to find this sure-fire recession indicator central to downturn inevitability. Contrary to stock economic opinion which maintains that "crises [i.e. recessions] only occur because of outside ("exogenous" in econospeak) shocks to the system"¹, Minsky's principles are based around the slogan that "stability is unstable". Occasionally, exogenous shocks can disrupt the system and provide the initial trigger, but a recession only results in this instance if the economy is based upon weak and unstable foundations. Clearly, many unstable economies do collapse, but the real question concerns the ability of even the most stable of economies to fall into recession. Crucially, Minsky believed that "*stable* economies sow the seeds of their own destruction"².

This counter-intuitive proposal was the basis for much of Robert Barbera's work in *The Cost of Capitalism*. One of Barbera's central themes which draws heavily from Minsky asserts that "Late in economic expansions, dubious investments and reckless financing strategies are the central drivers for recessions around the world."³ Minsky developed an analysis of the economic cycle using three stages, which I believe to be absolutely central to the divergence of markets from their trend growth rate. The first stage is essentially the recovery from the previous downturn, with the second stage building on these foundations with a more ambitious economic outlook. The third stage is the phase where investments and debt commitments are fully *reliant upon*

¹ *Inefficient Market: Stabilising an unstable economy: What would Minsky do?* An essay by E. Chancellor

² Minsky quoted in *The Economist*, April 2nd 2009, *Minsky's Moment*

³ *The Cost Of Capitalism*, Robert J. Barbera 2009 p. 7

long-term expected future price rises – classic examples of which are the homebuyers who took on mortgages worth 125% of the value of their home at the height of the property boom. These three stages are known as the ‘Hedge finance’, ‘Speculative finance’ and ‘Ponzi finance’ stages respectively. It is this ‘Ponzi’ stage that I want to focus on particularly.

In this progression, a long period of strong economic growth convinces investors to seek larger returns with *bigger risks* and *greater leverage*. Then, the culmination of these risky investments is an instable environment whose collapse can be triggered by *small disappointments*. This exactly mirrors the 2008-09 financial crisis. Fed rates were only 1%, so investors looked elsewhere for higher returns, and eventually found the sub-prime mortgage industry. The returns initially justified the risk as house prices were rising, so the asset gained if the householder defaulted was valuable. However, the rise in real house prices (itself partly caused by the wide availability of cheap credit) was unsustainable, and when the market was flooded with the sales of the defaulted homes, prices started to drop and in this unstable environment, this ‘small disappointment’ initiated the collapse of the financial system and resulted in the current recession. Even so, while the slowdown in the housing market may have been the trigger, it certainly was not the underlying *cause* of the recession. This slowdown would not have triggered such a spectacular collapse had we not already dug ourselves deep into Minsky’s ‘Ponzi’ phase.

There we have it, our indicator seems to be Minsky’s ‘Ponzi’ stage of the cycle, but as I mentioned at the beginning, this assumption needs to be reinforced by other past recessions, and where better to look than the biggest financial collapse. In the world. Ever.

The ‘Great Crash’ of 1929 by J. Galbraith is a succinct analysis of what is widely regarded to be the greatest bust to have occurred in economics as we know it. He cites the rise in ‘speculative investment’ as the central cause for the initial stock market crash. President Coolidge said in December 1928, “No congress of the United States ever assembled...has met with a more pleasing prospect than that which appears at the present time”⁴ yet barely 6 months later, the 1929-1933 downturn had begun.

The 1929 stock market crash was a return to reality for investors who were as detached from their investments as was possible, reducing their assets to ‘ownership on margin’. Competition among firms is a defining feature of Capitalism and in order to prolong competitiveness (in 2009 just as much as in 1929) they employ *leverage* – among other things – to maximise profits. The scale of such structures and their

⁴ J. Galbraith – *The Great Crash of 1929*, p.30 of 1992 reprinted edition.

purchases soon boomed, and with the boom investors began to build future price rises into their current calculations to an ever-increasing extent. This represents another of Minsky's themes which regards the way in which markets will tend to anticipate future rises in asset prices and build them into the calculations of financing today's purchase, driving current affordability beyond what is sustainable. In effect, this takes away imaginary/predicted future capital gains for the subsidising of current costs.

These factors detached the true value of the assets from the going market rate for the speculators' investments, and this exaggerated the extent to which the 'Ponzi' stage could be exploited by every investor on Wall Street. 'New era' talk such as Irving Fisher's infamous proclamation that "stock prices have reached what looks like a permanently high plateau"⁵ was widespread. Eventually, the unsustainability of the market was realised and investors concluded that actual asset values had diverged from the market rate. Again, in this unstable environment, a slight slow in the growth of the market caused widespread panic and the recession – which later developed into the 'great depression'.

So, in (arguably) the two biggest backward economic leaps the world has taken, the 'Ponzi' stage has been present and undeniably significant in the build-up to said downturns. Now, having answered the question of whether recessions always stem from 'Ponzi' finance, we must quickly address whether 'Ponzi' has ever happened and *not* resulted in a downturn, and if not, why not. Thankfully, the need for repeated historical analysis is superseded by the efficiency of another logical inference as follows. Having established that the 'Ponzi' phase takes us far over and above our trend growth rate, we can safely surmise that, in the very nature of a trend rate, we *will* return to trend or below-trend levels at some point. Our potential output cannot keep pace with 'Ponzi' growth in demand. So the mantra goes – 'booms always bust'. The correction inevitably comes and its scale depends on the extent to which we have engaged in 'Ponzi' finance.

While the similarities are obvious, there is a significant difference in the 'Ponzi' stage of the current recession and the downturn of 1929. Investors 80 years ago did not *fully* appreciate the risks associated with such gung-ho speculation. In the last couple of years, the risks were realised, calculated and ignored – the decisions were *still taken*. This peculiarity has been attributed to numerous different sources. Primarily greed – investors seeking higher returns than markets can sustain. Another is forgetfulness – the inability to acknowledge the consequences suffered in 1929. Another is naivety – the widespread belief that *this time* the market *could* sustain high returns and maintain its composure when signs of frailty first appeared. Indeed,

⁵ I. Fisher quoted in *Devil Take the Hindmost* by E. Chancellor, p. 191

Stephen Landsburg's famous quote "people respond to incentives"⁶ is an inconvenient truth in modern economics. The incentives of high-return and seemingly low-risk investment in the sub-prime mortgage sector were responded to to such an extent that it became a major factor in the slowdown (and now collapse) in real house prices.

Now, if we find that the themes which link (potentially) the two greatest economic deteriorations of modern times are unavoidable and/or irreversible, it follows that the deteriorations themselves, too, are unavoidable and therefore *inevitable*. This notion provides an irreconcilable contrast with Adam Smith's proposal of 'the invisible hand'. This phrase represents the method by which economic actions are undertaken by rationally-thinking individuals seeking to maximise their personal well-being. This theory has been increasingly challenged by economists, including Dan Ariely who coined the term "predictably irrational", a phrase which neatly summarises our macroeconomic behaviour just as much as our microeconomic habits. I feel that this seemingly misguided irrationality can be attributed to Keynes' proposal of the existence of 'Animal Spirits'.

Two economists, George Akerlof and Robert Schiller, together wrote a book, itself titled *Animal Spirits*. They also assert that their "line of thinking parallels that of Minsky"⁷. In this work, they contend that of course "people rationally pursue their economic interests", but that Smith "fails to take into account the extent to which people are also guided by non-economic motivations...or are irrational or misguided".⁸ These irrationalities are varied and difficult to quantify, yet they can have massive impacts on the macro-economy. In particular, the two authors cite confidence as a crucial factor in the 'Ponzi' stage. We have said that a small disappointment can trigger collapse in this phase of the cycle and these authors put this simple truth down to "confidence and its multipliers."⁹ They argue that confidence is exponential both in its expansion and its contraction. Each boom – as Chancellor points out in *Devil Take The Hindmost* – is invariably accompanied by "new era optimism".¹⁰ This was seen from all corners in 1929, as economists of all descriptions queued up barely weeks before the crash to say "the world seems on the verge of a great forward movement"¹¹ or words to a similar effect. This helps to explain market overcompensation on the ups *and* downs of the cycle and allows us to understand how it seems impossible for the economy to permanently maintain a 'Hedge' or 'Speculative' finance position.

⁶ *Armchair Economist: Economics & Everyday Life* tagline by Stephen Landsburg

⁷ *Animal Spirits*, Akerlof & Schiller, Notes p. 177

⁸ *Ibid.* Introduction p.3

⁹ *Ibid.* Chapter 1

¹⁰ *Devil Take The Hindmost*, E. Chancellor, p.194

¹¹ J. Galbraith – *The Great Crash of 1929*, p.30 of 1992 reprinted edition.

This optimism does not cause downturns but provides a signal that the market is in the 'Ponzi' phase, and is therefore a sure-fire indicator of a downturn approaching.

The next solution often proposed after remembering our past mistakes is to construct a network of financial regulation, but as Schiller stated recently: "The US government is actually a world leader in financial regulation"¹², yet this clearly did not hinder the sub-prime mortgage sector. Indeed, I would argue that no amount of regulation can curb the market because everyone wants a piece of the action, demand drives prices which gives the market momentum and leads to confidence, and in a confident environment, more people want a piece of the action. This mini-cycle – 'confidence feeds demand feeds momentum feeds confidence' – is at the heart of all booms. In short, prosperity is invariably associated with greater risk-taking and a more leveraged financial environment, where borrowing is reliant upon prolonged future growth, and therefore carries the seeds of its own ultimate demise.

Therefore, we have seen that Minsky's ideas as regards the economic cycle fit the current downturn exquisitely. If we could avoid the 'Ponzi' stage of the cycle, we could maintain real market growth rates closer to that of trend GDP growth, and avoid a negative gradient. Confidence plays a crucial part in the human drive to burst into greater leveraged structures and the small disappointments themselves are also unavoidable as no market has ever been seen to continually maintain ever-constant growth. This all leads us to the logical deduction that recessions are inevitable and – in the words of Hyman Minsky himself "there is no possibility that we can ever set things right once again and for all; instability put to rest by one set of reforms will, after time, emerge in a new guise."¹³

1997 words (excluding footnotes)

All references are quoted at the bottom of each page.

¹² *The McKinsey Quarterly*, R. Schiller

¹³ Minsky quoted by E. Chancellor in his essay "*Inefficient Market: Stabilising an unstable economy: What would Minsky do?*"

Are Economic Recessions Inevitable?

We have witnessed the end of an era. The age of complacency is over. Worldwide, governments have been obliged to intervene in free markets, rescuing venerable industries and institutions from perdition. Many politicians and economists have been labouring under the impression that the business cycle has been tamed- tamed to the point of existing no longer as a substantial threat, merely as a benign irritant to economies across the globe. However, recent months have unequivocally proven that the cycle is not obsolete. Although unknown to my own generation, recessions are not unthinkable. They must be considered not only as an immediate reality, but also as an inevitable correction commensurate to the capitalist economy.

Economists have attempted to explain the causation of the business cycle with a plethora of factors. In the words of Paul Krugman, “a recession is a very peculiar thing indeed”. Recessions have been attributed to external shocks, excess supply and inept policy makers. Many believe that two consecutive quarters of negative GDP growth are engendered by unforeseen external shocks to the economy¹. For example, some have argued that the UK recession of 1981- the most severe since WWII until now- was due to the global spike in oil prices. If one were to attribute recessions to unexpected shocks, they would be unpredictable and unavoidable. However, I believe the advanced economies of today are increasingly flexible and capable of absorbing the repercussions of shocks. Instead, I believe the Keynesian theory to be the most convincing model of the economic cycle. Predicated upon the idea of “animal spirits”, it attributes recessions to the inherent dependence of investment upon the ephemeral human spirit.

In 2003, Robert Lucas (professor at the University of Chicago and winner of the 1995 Nobel Prize for Economics) asserted that “the central problem of recession-prevention has been solved for all practical purposes”. Although he did not claim that the business cycle was over, he suggested that it had been sufficiently reined in so that any further taming would be frivolous. It was premature to deem the business cycle conquered by modern policy. However, recently the economic cycle has become more subdued. In the century preceding WWII the American economy was in recession almost 40% of the time, but in the 20 years leading up to the current downturn America was in recession for only 10% of the time (18 months). This can be explained for several reasons. Volatility has decreased as developed economies have progressed from being predicated on agriculture- inconsistent harvests serving to make this the most volatile sector- to manufacturing and ultimately services, argued to be the least volatile sector. Moreover, increasing international trade resulting from globalisation- which operates like a safety valve to moderate swings in domestic demand through the control of imports and exports- and improved inventory management have together served to reduce volatility. With the development of smart technology, producers are able to obtain more accurate and immediate information about the position of buyers. This permits firms to match supply more precisely with changing demand, thereby allowing firms to reduce the size of large inventories- mismanagement of which could lead to great market instability.

¹ “Of shocks and horrors”. *The Economist*. September 26th, 2002.

Leander McCormick-Goodhart

According to *The Economist*, “over the past 50 years, changes in inventory investment have, on average, accounted for more than half of the fall of GDP in recessions”.

Recently, economists have placed too much confidence in the ability of modern macro-economic policy to mollify the business cycle. Let us consider the response to the collapse of Long Term Capital Management just a decade ago in 1998. LTCM had grown to such a size that if it were to fail, policy makers feared pandemic panic. After investors were convinced to take control of the majority stake in the company, a 0.25% cut of the base rate by the Fed in September seemed merely to aggravate the panic. JP Morgan predicted recession in 1999. However, a further 0.25% reduction a month later miraculously commuted the systemic panic into renewed confidence and the NYSE was scaling new heights by the winter of 1998. We are still unsure how the Fed was able to rescue the economy and we should not have become so reliant on luck to avert recession.

Monetary and fiscal policy cannot be used with adequate precision. After changes in the base rate, there are significant time lags before market rates are affected and there is uncertainty about the size of the output gap which means that Central Banks could attempt to stabilise output at an excessive level, giving rise to inflation. Traditional Keynesian economists have argued that Fiscal Policy can be used to evade economic downturns resulting in recession. In his 1936 masterpiece, *The General Theory of Employment, Interest, and Money*, Keynes proposed that recessions were caused by deficient demand. In the event of a slump, governments should fill the void left by reduced private spending. However, in accordance with the “Ricardian equivalence”² effect, the stimulus can be offset by increased household savings in expectation of future tax increases due to a higher level of government borrowing. It is also extremely difficult to time a stimulus correctly. After potentially taking months for approval, a stimulus could be too late to avert a recession but instead fuel inflation in a recovery. Automatic fiscal stabilisers, reducing taxes whilst increasing unemployment benefits, might be more effective in a counter-cyclical role as they serve to stabilise incomes. However, the shortcomings of both fiscal and monetary policy were evident during the collapse of Japan’s bubble in the 1990s.

The Japanese collapse typifies the Keynesian model of the business cycle. During the late 1980s, land and stock prices increased by over 300% driven by speculative excesses, financed by bank loans. No changes in the fundamentals of Japan’s economy justified such a bubble. Japan followed a policy of financial deregulation during the 1980s. However, increased freedom encouraged banks to take greater risks, lending at lower, more competitive rates and fuelling the speculative boom. The Bank of Japan began to raise the base rate in 1990 with the intention of gradually deflating the bubble. Unfortunately they burst it. Within several years, the value of real estate and stocks was down almost 60% from its peak and Japan fell into a “liquidity trap”. The Government tried spending to prop up the economy, going from a 2.9% budget surplus in 1991 to a 4.3% budget deficit in 1996. Spending failed and by 1997 Japan was in recession. In the words of Alan Greenspan, collapse of “irrational exuberance” seems to have driven the economy from boom to bust.

² “Weapons of mass distraction”. *The Economist*. September 26th, 2002.

Many have come to blame recessions on the acute lack of appropriate regulation. It is ludicrous to assert that recently there has been no regulation- Britain has the FSA and America the SEC. However, regulation has retreated in past decades. This began with the advent of the Reagan-Thatcher era of the 1970s. They firmly believed that freer markets would promote economic prosperity, primarily through the expansion of the availability of mortgages by opening up the market for home-loans. Banks have always occupied the regulatory forefront due to the disparity between their assets and liabilities. The Basel Accord of 1988 enforced a minimum capital requirement. However, most recently, policy makers have chosen not to regulate the development of two important systems- the market for credit default swaps and so-called “shadow banks”³. The absence of regulation enabled increased risk taking whilst in possession of minimal assets. This fuelled an epidemic of “moral hazard” which propelled the subprime lending market and thereby the housing bubble which was so quick to collapse when public sentiment reversed.

Indeed, irrational behaviour on the part of investors likely engendered the Southeast Asian crash in 1997. Thailand experienced a boom in the early 1990s during which it grew up to 8% a year, driven by export sales and foreign investment. As the supply of cheap credit increased along with the influx of foreign loans, domestic investment mushroomed. Some of this investment was channelled into infrastructure projects, but much was purely speculative. As Mark Twain is supposed to have said, “History doesn’t repeat itself, but it sure rhymes”. The Thai boom definitely reflected the Japanese bubble economy of the late 1980s. However, as speculators went bust, the supply of foreign credit dwindled and the investment boom slowed. In order to prevent a slump turning into a recession, the Government decided to let the exchange rate slip to boost exports. This elicited a panicked collapse of confidence and within months the value of the Baht had fallen 50% against the dollar. Financial meltdown and falling confidence fuelled each other. Soon, both South Korea and Indonesia were suffering from capital flight, which ultimately led to recession, as if they were inherently linked- they were. They were linked irrationally in the psyche of investors. Investors associated malaise in one Asian economy with systemic trouble in all of them. As with Japan, the evanescent mood of investors seems to have engendered collapse.

The roaring twenties are an unequivocal exemplification of what J.K. Galbraith called “a world of speculative make-believe”. In the summer leading up to the great crash of 1929, Broker’s Loans- considered an index of speculation- increased by \$400,000,000 a month⁴. Such speculation was not cultivated by the supply of cheap credit, as there has often been cheap credit and limited speculation, but rather the mood of the time. People were susceptible to the pervasive sense of optimism and confidence that the stock market contained boundless rewards in which each individual was meant to share. They were seduced by the idea of the permanence of the boom. Indeed, in the autumn of 1929, Professor Irving Fisher declared that “stock prices have reached what looks like a permanently high plateau”. What first stirred the speculator’s doubts we do not know, but

³Dinallo, Eric. “We modernised ourselves into this ice age”. *The Financial Times*. March 31st, 2009.

⁴ Galbraith, John K. *The Great Crash 1929*. Penguin Books, 1992.

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on Tuesday October 29th, the Times industrial average lost 43 points, nullifying the gains of the previous year. This total collapse of confidence ushered in a decade long depression, and highlights the dependence of the economic cycle upon the transient public sentiment.

We must not forget that economics is a social science, predicated upon confidence. I believe that economists are placing more importance on sums than psychology. In the words of Robert Shiller and George Akerlof, economists “assume that economic events are driven by inscrutable technical factors or erratic government action”. The economic cycle is not driven by formulae; it is driven by greed, illusion and changing confidence. When considering each of the crash of 1929, the Japanese bubble, the Asian crash and the crisis of today, it is clear that people are often driven by “irrational exuberance”. In good times, investors are trusting and filled with optimism, labouring under greed and the illusion that the good times will roll. Illusion replaces reality and Capitalist economies will pursue excess as is evident today. In the insightful words of George W. Bush “Wall Street got drunk”. A circle of price to price feedback develops where increases in asset prices and confidence feed off of each other. However, exuberance driven by “animal spirits” can quickly befit panic. For an often indiscernible reason, suspicion replaces trust and greed becomes fear. Lack of confidence spreads like the contagion of disease and the economy will inevitably fall into recession.

Morality is nigh on impossible to regulate as people will always be easily compelled by “animal spirits”, by fear and by greed. Although the business cycle has been tamed, an obituary is premature. Economic theories need to be amended to include the fundamental role of human psychology in the behaviour of the economy. I believe Recessions are an axiom of the capitalist system, engendered by swings in the public mood from pervasive optimism to pandemic fear. However, they must not be demonised as entirely nocuous. Recessions temper human excess, compelling policy makers to ameliorate flaws in the capitalist system thereby allowing the economies of the world to be reinvented as more efficient and equitable.

Word count: 1999

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“Are economic recessions inevitable?”

A wise man once told me in order to determine the validity of a statement, simply read the opposite. The case of ‘is continued economic growth inevitable’ serves as testament to his wisdom. In order to prove what is intuitive is correct in this incidence, this essay will construct a simple dynamic model of the economy, and mathematically prove that if the assumptions are held, recessions are inevitable. Furthermore, to extend the scope of the proof to those who doubt the ability of mathematics to model aggregated human behaviour, qualitative analysis will prove that when these assumptions are waived, the inescapable conclusion that economic recessions are inevitable irrefutably follows.

The simple model will be defined by 5 equations (noting that the subscript t denotes the values of the variables at a predetermined future time in order to make the model dynamic):

1. $Y_t = \hat{Y}_t - \alpha(r_t - \rho) + \varepsilon_t$ where Y_t is total output of goods and services, \hat{Y}_t is the natural level of output, α is a positive parameter defining how sensitive demand is to interest rate changes, r_t is the real interest rate, ρ is the natural rate of interest, and ε_t is an exogenous random demand shock.
2. $r_t = i_t - E_t \pi_{t+1}$ where the real interest rate r_t equals the nominal interest rate i_t minus the expected rate of future inflation $E_t \pi_{t+1}$. This is a future Fisher equation.
3. $\pi_t = E_{t-1} \pi_t + \phi(Y_t - \hat{Y}_t) + v_t$ where π_t is the rate of inflation, $E_{t-1} \pi_t$ is previously expected inflation at a time $t-1$, ϕ is a positive parameter defining the responsiveness of the level of inflation to output deviations, $(Y_t - \hat{Y}_t)$ measures the deviation of output from its natural level, and v_t is an exogenous random supply shock.
4. $E_{t-1} \pi_t = \pi_{t-1}$ is simply the assumption of adaptive expectations, specifically that expected inflation at time $t-1$ of inflation at time t equals the level of inflation at time $t-1$. The assumption is a simplification, which will be later evaluated.
5. $i_t = \pi_t + \rho + \theta_n(\pi_t - \pi_t^*) + \theta_y(Y_t - \hat{Y}_t)$ explains the determinants of the Monetary Policy Committee’s decision on the nominal interest rate (where θ_n and θ_y are positive parameters defining the how sensitive the interest rate is to changes in inflation or output respectively, and π_t^* is the inflation target).

This notation is similar to that used in Mankiw¹.

Since economic recessions are simply significant downside short-run fluctuations in output, analysis must focus on the equilibrium of dynamic aggregate supply (DAS) and dynamic aggregate demand (DAD) in the short run that determines the level of output and inflation. DAS can be shown by combining equations 3 and 4 to give $\pi_t = \pi_{t-1} + \phi(Y_t - \hat{Y}_t) + v_t$. DAD is a little more awkward to separate, and equates to $Y_t = \hat{Y}_t - [\alpha\theta_n(\pi_t - \pi_t^*) / (1 + \alpha\theta_y)] + [\varepsilon_t / (1 + \alpha\theta_y)]$ with a proof in the appendix. This means that any variations in the natural level of output, (or to a lesser extent the inflation target), or any exogenous supply or demand shocks will cause the short run equilibrium to shift to a different output and level of inflation. Impulse response functions and common sense will

¹ Gregory Mankiw, *Macroeconomics*, 7th edition, ch.14

show that an adverse supply or demand shock will quickly reduce output. The real insight the response functions give, though, is that after a time lag, any positive shocks to supply or demand that initially increase output will cause an eventual decline in output. Laws of statistics will predict that periodically, random shocks or deliberate policy will have sufficiently great a real impact to cause a formally defined recession.

This is not merely theoretical either. Beaudreau would argue² the Great Depression was caused by the positive technology (supply) shock of extremely high throughput continuous flow mass production techniques, which represented a supply shock, a variation in the natural level of output, and sparked a demand shock of a share bubble. More recently, the demand shock of a subprime and corresponding asset backed security boom has been responsible at least in part for the current recession. Barack Obama recently acknowledged this 'we must put an end to the reckless speculation and spending beyond our means; to the bad credit, overleveraged banks and absence of oversight that condemns us to bubbles that inevitably bust'³. This prevalent populist intent to reign in Keynes' 'animal spirits' will prove impossible whilst pecuniary motivation for risk and human fallibility remain indefinitely intact. Even academics such as Blinder and Reis⁴ have acknowledged that reigning in animal spirits during a boom is inferior to a 'mopping up' strategy after a bubble bursts. Whether a boom is based upon technology stocks, collateralized debt obligations, or Dutch tulips⁵, premature moderation will remain a policy impossibility, ensuring that periodically boom based demand shocks will cause recessions (though not regularly as Juglar predicted in his fixed investment cycle).

Indeed, the entire Real Business Cycle school of thought, defined by Finn Kydland and Edward Prescott's 'Time to Build and Aggregate Fluctuations' (1982) has been focussed on determining which exogenous shocks are responsible for recessions. Periodic testosterone fuelled demand booms, technology led supply booms or any economic policy paradigm shift, all of which are inevitable in a dynamic economy with asymmetric information and fallible agents ensure that according to the dynamic model, and reinforced by historical evidence, economic recessions are inevitable. Furthermore, even small downside fluctuations in output have the power to instigate substantial recessions. The negative multiplier-accelerator effect and negative wealth effects ensure the final decline in output is noticeably greater than the initial fall.

If the model is evaluated to account for theoretical weaknesses, the proof of inevitability is strengthened. Adaptive expectations, being both philosophically and experimentally suspect, is a simplification. If waived, changing inflationary expectations can also contribute to economic fluctuations in both inflation itself and output along a short run Phillips curve. Furthermore, money supply is ignored in the model, and in the short run contractions in the supply of narrow or broad money decrease the level of real money balances, and due to the theory of liquidity preference, the interest rate rises and the LM schedule shifts upwards, lowering output.

² Bernard C Beaudreau, *How the Republicans caused the Stock Market Crash of 1929* op.cit

³ Barack Obama, *The Times*, Wednesday March 25th 2009, p.22

⁴ Blinder and Reis, *Understanding the Greenspan standard*, 2005 op.cit

⁵ Charles MacKay, *Extraordinary popular delusions and the madness of crowds* op.cit

Even dynamic stochastic general equilibrium (DSGE) macroeconomic modelling, the proverbial don of recent macroeconomic forecasting, notably contains the convenient ‘absence of an appropriate way of modelling financial markets’⁶. As Willem Buiter writes recently in his FT blog, ‘it excludes everything relevant to the pursuit of financial stability’⁷. Similarly, the “complete markets paradigm”, a fantasy world co-inhabited by New Keynesians and New Classicist theorists alike, that has theoretically assumed that default, bankruptcy, insolvency and illiquidity were impossible, ‘not only did not allow questions about insolvency and illiquidity to be *answered*, they did not allow such questions to be *asked*’⁸. Clearly, for as long as economists conveniently gloss over such awkward facets of the economy for modelling purposes, lack of complete understanding will inhibit the ability of macroeconomic policy to ensure stability.

Monetary policy, the current means to monetary stability has a time lag of roughly 12 months until the visible response in the real economy. Whilst central bank independence has increased credibility and arguably effectiveness in the ‘great moderation’, policy is not infallible. Global reserve imbalances have recently artificially inhibited the long term interest rate, contributing to and exacerbating the asset bubble. Any deviations from the ‘true’ natural interest rate will clearly cause fluctuations in inflation and output. Additionally, the second responsibility of the Bank of England, to pursue financial stability will continue to be fraught with difficulty.

The Tinbergen principle, that if both monetary and financial stability are pursued as targets, there is a necessity for two policy instruments, describes this problem. The former is clearly targeted by the Bank of England; the latter has created a discussion on a macroprudential policy instrument. That is, a policy framework that makes the economy less susceptible to financial markets and/or makes the banking system less sensitive to the economic cycle. The evident dangers of this policy, namely risk of banking activity shifting to the unregulated sector, reduction in credit access and potential increase in banking inefficiencies mean the inception of this policy is unlikely to pass discussion phase in the near future. Even if such a policy is set up, it will not guard against any of the aforementioned causes of aggregate fluctuations other than the exogenous demand shock. Hence, despite current good intentions to improve the financial system, changes are subject to great inertia and are very unlikely to make future recessions less inevitable.

From a different perspective, a behavioural approach to understanding economics is becoming increasingly popular. An important book by Irving Janis, a Yale social psychologist, called ‘Group Think’⁹ demonstrated that even the smartest and most esteemed members of an intellectual community, when put on an expert panel can make colossal errors. After his time was the spectacular collapse of Long Term Capital Management (LTCM), and the more recent explosion and implosion of financial instruments such as credit default swaps, and collateralized debt obligations that were proof of the ‘animal spirits’ of even the most venerated individuals. A more recent book appropriately named ‘Animal Spirits’ by Akerlof and Shiller further proposes the view that economics cannot entirely be based upon elegant equations¹⁰ – the Black Scholes option pricing formula being a prime example. It may simply be the case that humans are gullible, and unpredictably irrational,

⁶ DSGE models and central banks, BIS working papers no 258, Camilo E Tovar, p. 5

⁷ <http://blogs.ft.com/maverecon/2009/03/the-unfortunate-uselessness-of-most-state-of-the-art-academic-monetary-economics/>

⁸ *ibid*

⁹ Irving Janis, *Group Think op.cit*

¹⁰ George Akerlof and Robert Shiller, *Animal Spirits op.cit*

prone to making enormous mistakes on a huge scale to the detriment of the stability of the economy. More appealing to the human ego is the idea that information asymmetries in financial markets leads to a suboptimal pricing outcome, that misprices risk, misallocates it, and the corresponding correction contributes to a downside fluctuation in financial asset prices that feeds through to the real economy. Whichever view is taken – rationality, irrationality, or the ‘it’s not our fault’ approach, the inescapable conclusion remains that downside output fluctuations will periodically occur, and there is certainty in the fact that institutional failure, irrationality or simply greed will ensure some of these will be substantial enough to instigate a genuine recession.

It is fundamentally clear that in our imperfect world, the unfortunate conclusion must be that economic recessions are inevitable. Whether the dynamic simulation is accepted, extended or ignored; whether aggregate behaviour is rational, irrational or indeterminate; even if our macroeconomic simulation models are engineered to the highest standard, the task of averting recessions seems futile. Though, there is some good news. Detaching from the apparent trend of the ‘dismal science’ to be as morbid as possible, the wise man mentioned at the start of this essay, who without even having seen the essay title knew the answer, was an economist.

There is still hope!

Appendix - proof of DAD equation:

$$Y_t = \hat{Y}_t - \alpha(r_t - \rho) + \varepsilon_t$$

$$Y_t = \hat{Y}_t - \alpha(i_t - E_t \pi_{t+1} - \rho) + \varepsilon_t$$

$$Y_t = \hat{Y}_t - \alpha(\pi_t + \rho + \theta_n(\pi_t - \pi_t) + \theta_v(Y_t - \hat{Y}_t) - E_t \pi_{t+1} - \rho) + \varepsilon_t$$

$$Y_t = \hat{Y}_t - \alpha(\theta_n(\pi_t - \pi_t) + \theta_v(Y_t - \hat{Y}_t)) + \varepsilon_t$$

$$Y_t(1 + \alpha\theta_v) = \hat{Y}_t(1 + \alpha\theta_v) - [\alpha\theta_n(\pi_t - \pi_t)] + \varepsilon_t$$

$$Y_t = \hat{Y}_t - [\alpha\theta_n(\pi_t - \pi_t) / (1 + \alpha\theta_v)] + [\varepsilon_t / (1 + \alpha\theta_v)]$$

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