

# Models of the crisis and policy recipes for getting out of it

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### Introduction

- Monetary and fiscal policies and policy recommendations are based on macroeconomic models which are claimed to be « scientific » in that they provide causal relationships between various economic variables.
- On the basis of these relationships policymakers are advised that « if you do this » then « that will be the result ». They are also used to provide forecasts.
- When the result turns out to be different or the forecasts inaccurate two things are proposed.
- Firstly that « structural reforms » are necessary to make the economy more like the model.
- Secondly that the model should be modified to take account of « market failures » and « market imperfections ».

#### Where did these models come from?

- Economics has systematically adapted itself to a simplistic view of social and political liberalism and this has resulted in the premises on which modern macroeconomic models and those of the financial sector are built.
- For the real economy the premise is that if individuals are left, insofar as possible. to their own devices, the economy will self organise into a state which has satisfactory welfare properties.
- This, I claim is backed neither by empirical evidence nor by theory (see Sonnenschein Mantel and Debreu and Saari and Simon). It has become an assumption.

# How did we get here?

- Adam Smith's « Invisible Hand » is regularly cited as the first justification for economic liberalism or « laissez faire ».
- Examination of what he actually said and his « Theory of Moral Sentiments » leads one to doubt this.
- But the progress of the free trade argument and the pieces of legislation associated with it and the power of the arguments of Mill and others and the political and moral positions of liberals such as Gladstone reinforced this interpretation.

# Hayekian Objections

- In the standard literature we are talking about centralised adjustment of uniform price vectors.
- Hayek suggested individual price vectors and the pursuit of profitable opportunities.
- He argued that the process he described would « tend to equilibrium »
- But nowhere does he « show » this. A little example can show that some restrictions on the nature of « individual demands » are necessary!

# A shift in approach in other disciplines

- There has been a shift away from what Bob May called the comfortable consensus in ecology for example.
- The standard view was that large systems in nature were intrinsically stable if man did not interfere with them
- Furthermore the state of these systems was the result of a long evolution towards optimality.
- Both of these views have also been challenged in other disciplines.
- But we have pursued our historical path

# Confidence in our theory

The "central problem of depression-prevention has been solved,", Robert Lucas 2003 presidential address to the American Economic Association.

In 2004, Ben Bernanke, chairman of the Federal Reserve Board, celebrated the « Great Moderation » in economic performance over the previous two decades, which he attributed in part to improved economic policy making.

Our models functioned well during this period but would not any model have done so?

We need models to help us understand and deal with crises

# The Economics Ship is Unsinkable

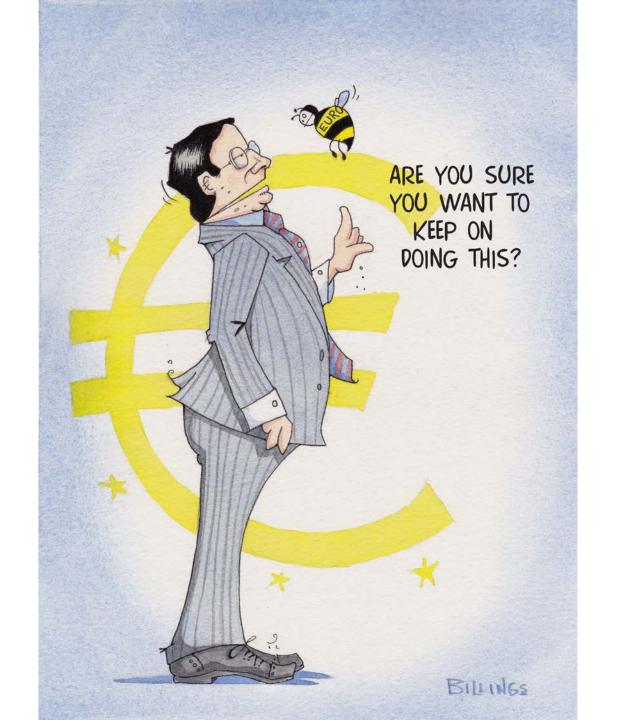


Presentation at the University of Buenos Aires April 2016

### **Economists and Models**

"And the first thing that came to mind was something that people said many years ago and then stopped saying it: The euro is like a bumblebee. This is a mystery of nature because it shouldn't fly but instead it does. So the euro was a bumblebee that flew very well for several years. And now — and I think people ask "how come?" — probably there was something in the atmosphere, in the air, that made the bumblebee fly. Now something must have changed in the air, and we know what after the financial crisis. The bumblebee would have to graduate to a real bee. And that's what it's doing".

Speech by Mario Draghi, President of the European Central Bank at the Global Investment Conference in London 26 July 2012



### **Economists and Models**

 We are so wedded to our models that when they do not correspond to empirical reality, we wonder what the problem with the evidence is

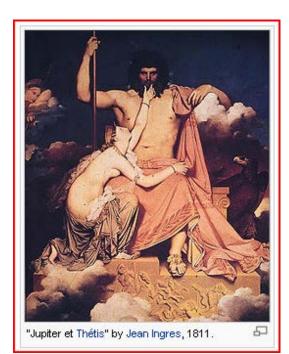
### Lessons for economists

- We are faced with a complex adaptive system over which we have very limited control.
- Sometimes it is not possible to reverse the consequences of well-intentioned but erroneous measures.
- The way in which the system self organises creates its own dynamics and incentives.
- See Bowles, Machiavelli's Mistake
- Crises are an intrinsic feature of our economies but not of our models so we cannot justify, with theory, any idea of stable self organisation.
- This however is a relatively recent conclusion in a number of disciplines but paradoxically not in economics.

# Equilibrium

- The policy measures associated with austerity are based on the belief that even if the economy may be briefly out of equilibrium it will rapidly come back to it.
- When the IMF's own committee said that stimulus had been stopped and austerity begun too early, the reply was that growth turned out to be less than expected and had they realised that this would be the case they would have delayed their recommendation
- The idea that it was possibly the fact that the stimulus was removed that slowed the growth was not entertained.

### Crises as rare events!



Fire burns, and water refreshes; heavy bodies descent, and lighter substances fly upwards, by the necessity of their own nature; nor was the *invisible hand of Jupiter* ever apprehended to be employed in those matters. But the thunder and lightening, storms and sunshine, those more irregular events, were ascribed to his favour, or his anger.

Smith 1795: 49, emphasis added

### Crises as Rare Events

- "With notably rare exceptions (2008, for example), the global "invisible hand" has created relatively stable exchange rates, interest rates, prices and wage rates."
- Alan Greenspan, Former Chairman of the Federal Reserve Bank

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- "With notably rare exceptions, Germany remained largely at peace with its neighbours during the 20th century."
- "With notably rare exceptions, Alan Greenspan has been right about everything."
- Comments on the blog Crooked Timber

# **Black Swan**



### The nature of economic crises

- Recall that standard macroeconomic models do not contain the possibility of a crisis in the sense of the one that we are currently experiencing
- The only changes that can knock an economy off its equilibrium track are caused by exogenous shocks and by assumption the economy returns to equilibrium.
- As Larry Summers (2013) said recently in a speech to the IMF,
- "It is a central pillar of both classical models and Keynesian models that it is all about fluctuations: fluctuations around the given mean, and that what you need to do is have less volatility."
- The fluctuations were attributed to shocks and the latter are given very superficial explanations such as « technological shocks » or « important and unexpected news ».
- But these shocks are not directly measured nor is much said about their distribution

### The Nature of Crises

- If however, you accept the view of the economy as a complex system then policy measures should be designed to take account of the real and not the posited evolution of the economy.
- Larry Summers warned recently that we are in danger of prolonged « secular stagnation » and that with interest rates near or even below zero policies should not be the same as in « more normal » times
- But should we view crises as exceptional or as part of the endogenous evolution of the system?

# The Ex Governor of the European Central Bank

When the crisis came, the serious limitations or existing economic and financial models immediately became apparent. Arbitrage broke down in many market segments, as markets froze and market participants were gripped by panic. Macro models failed to predict the crisis and seemed incapable of explaining what was happening to the economy in a convincing manner. As a policy-maker during the crisis, I found the available models of limited help. In fact, I would go further: in the face of the crisis, we felt abandoned by conventional tools. In the absence of clear guidance from existing analytical frameworks, policy-makers had to place particular reliance on our experience. Judgement and experience inevitably played a key role. Trichet (2010)

### However Trichet also said

- As regards the economy, the idea that austerity measures could trigger stagnation is incorrect.... In fact, in these circumstances, everything that helps to increase the confidence of households, firms and investors in the sustainability of public finances is good for the consolidation of growth and job creation. I firmly believe that in the current circumstances confidence-inspiring policies will foster and not hamper economic recovery, because confidence is the key factor today. *Trichet 2010*
- Note the emphasis on « confidence » and the idea that we know how people's confidence will be affected by the change in expectations induced by « confidence-inspiring » policies.
- Echoes of « supply side economics » for firms.

# Intelligence

- « Intelligence is the capacity to profit from previous experience » Brian Kirman
- How much have we learned from the many surveys made of firms in which they say that what interests them is how much they will be able to sell of what they produce and not some general idea about the state of the economy?
- How much have we learned from the Great Depression?
- See Barry Eichengreen's « Hall of Mirrors »

# The view of those responsible in the U.K

« But there is also a strong belief, which I share, that bad or rather over-simplistic and overconfident economics helped create the crisis. There was a dominant conventional wisdom that markets were always rational and self-equilibrating, that market completion by itself could ensure economic efficiency and stability, and that financial innovation and increased trading activity were therefore axiomatically beneficial. »

Adair Turner, Head of the U.K. Financial Services Authority



# What is the Logic behind Current Austerity Policies?

- The first argument is that of deficit reduction
- Why and to what level?
- The answer first proposed is that the deficit will become unsustainable if interest rates rise as they surely will do if the deficit is not reduced.
- The markets will not be willing to lend to countries in this situation it is said.
- Yet France which has violated the EU rules on both debt and deficit has never borrowed at such low rates!
- But, we are assured the markets will catch on.
- How do we reconcile this with the efficient markets hypothesis where markets digest and transmit all the available information??

# An Example: Ireland

- In 2010 budget, within the proviso of the 'Croke Park Agreement', 760 million euro stripped from social welfare, and this was further reduced by 873 million euro in 2011 budget. In 2012, the VAT went from 21% to 23%.
- In 2013, government had plans to make \$3.5bn euro of saving via spending cuts and new taxes
- This was a consequence of the government deciding to bailout the banks.
- The cost of bailing out the banks amounts to 45% of GDP (Blyth p.235)
- We are now told that Irish debt has fallen below the magical 100% number, but so much is excluded including future pension liablilities and PPP commitments that this figure is illusory.
- Taking Brian Lucey's numbers into account drives debt up to over 180%

# Another Example: Iceland

- 2 referenda in 2010 and 2011 to decide how to handle the debt problem
- decided to pay back the debt gradually rather than through austerity
- Breaking with IMF orthodoxy, capital controls were introduced and bankrupt banks were let fail
- Non-performing assets were left in the old bankrupt banks
- "...the government decided to let institutional creditors shoulder the cost of the collapse rather than the taxpayers.", p.239

# The targets for debt reductions.

- These are determined by the Maastricht Treaty.
- How was it possible to have signed a treaty in which deficit and debt limits were specified without reference to the stage of the evolution of the economy nor of the economy in question?
- If we are to enshrine such numbers we should at least propose ones with some intrinsic significance!
- So I reiterate my proposal that we replace 3% for the deficit limit by  $\pi\%$  (Cars Hommes proposes e% but that is a bit too strict)

## **Targets**

- Do we have any reason to believe that these targets are useful?
- Japan runs a debt of over 200% and is still surviving, but with the opposite of the characteristics that are supposed to be observed in this situation
- We are told that this is acceptable because the great majority of the debt is owned by the Japanese themselves
- Would a 200% Greek debt be acceptable if the Greeks owned all their debt and, if so, how would we reconcile that with Maastricht?

## **Targets**

- Recall the famous 90% turning point described by Reinhart and Rogoff. This turned out to be erroneous but has not prevented the EU from insisting on its importance.
- « The 90 percent claim was cited as the decisive argument for austerity by figures ranging from Paul Ryan, the former vice-presidential candidate who chairs the House budget committee, to Olli Rehn, the top economic official at the European Commission, to the editorial board of *The* Washington Post. So the revelation that the supposed 90 percent threshold was an artifact of programming mistakes, data omissions, and peculiar statistical techniques suddenly made a remarkable number of prominent people look foolish. » Krugman NY Times 2013
- Remember Alesina and Ardagna!

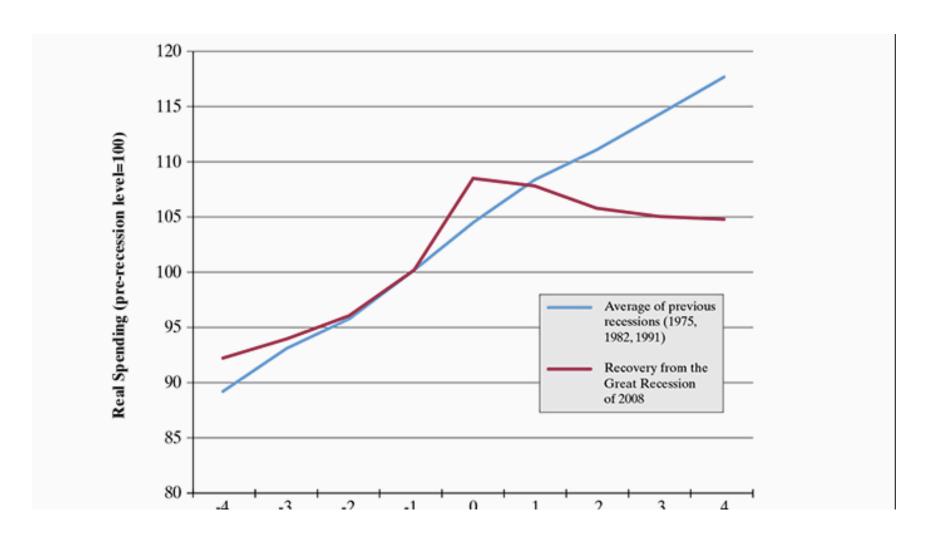
## **Targets**

- Recall also the fiscal multiplier calculated by Blanchard at the IMF. It was said to be around 0.8% indicating that any fiscal stimulus would be unproductive. It turned out after recalculation to be well over 1% and this was published in the AER but with very little fanfare.
- So the lesson would seem to be not less but more monetary and fiscal stimulus. More investment particularly from the public sector, and in education and research to generate the income to reimburse the debt.

# But that is not what we are doing!

- There is, by now, an increasingly vocal chorus arguing that the Eurozone countries and the ECB should be stimulating their economies.
- The U.S in particular, fearing that European stagnation will hold the world's economic progress back, has been pushing for this.
- The last G7 which finished on May 26th found a coalition of basically all countries except for Germany and the U.K. against continuing austerity.
- The ECB is hampered in the actions that it can take by national legislation particularly in Germany.
- One solution would be a determined alliance between France and Italy and the other « Southern » countries to offset German pressure.

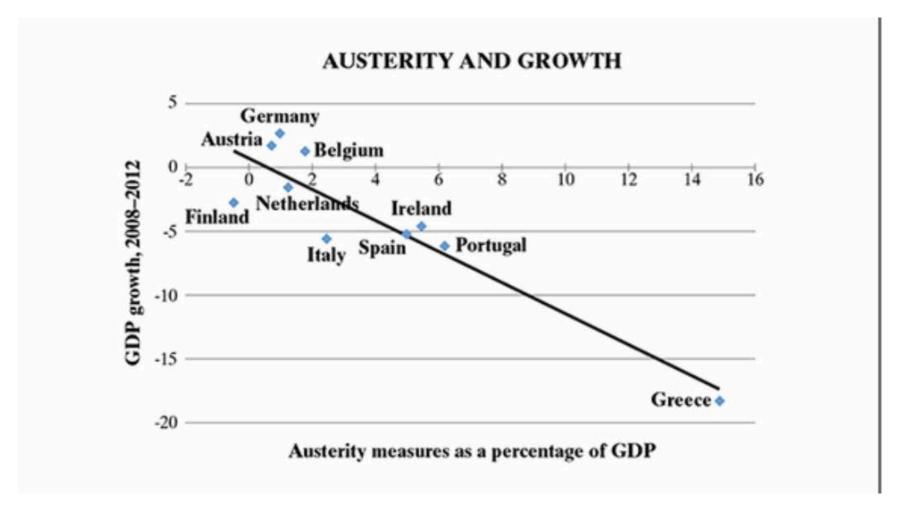
### **Evidence from IMF**



### **Growth in France**

- The INSEE announced recently that the monthly growth figure was « surprisingly » strong. 0.3% as opposed to the forecast 0.1%
- But 2% is a small error! No it is a 300% error!!
- The truth is not that growth was not surprisingly strong but that the forecast was unsurprisingly bad.
- This has important consequences for budgetary cuts!
- Budgets are based on forecasts which have a very poor record. (See the OECD's post mortem on forecasts)

# Some Evidence about Expansionary Austerity



### Structural Reforms

- We are told that countries are in need of « structural reforms » to get them back on a solid footing.
- These structural reforms are supposed to make countries more « competitive »
- But this looks like a non-cooperative game at the expense of labour and may also explain the dissatisfaction in countries which seem to have done well.
- The most common argument has been that we have to reduce unit labour costs to be more competitive.
- But who believes that it is relative labour costs that explain the different trade balances of France and Germany?

#### Redistribution

- A puzzle for many is the dissatisfaction of voters in countries that are apparently doing well by standard measures such as growth rates and unemployment
- The answer lies precisely in the austerity approach
- Making countries more competitive has meant holding real wages down and median incomes have stagnated particularly in the U.S
- Thus most people do not feel the benefit of the deceptively healthy published growth figures
- Unemployment figures, as Janet Yellen has pointed, out mask many dimensions of the problem and this is part of the explanation as to why 2/3 of the U.S. population think that the future will be worse than the past.

#### Why did this book resonate so much?

# CAPITAL

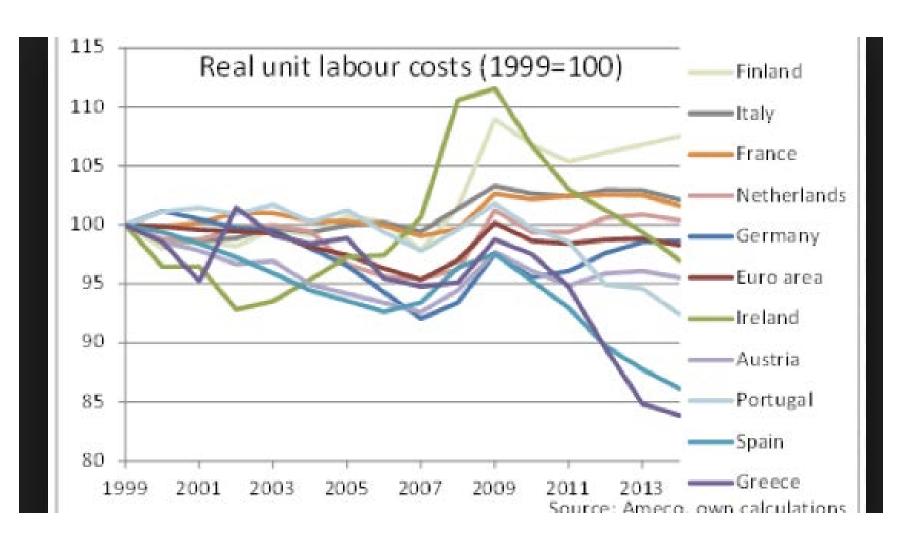
in the Twenty-First Century

# THOMAS

PEANSLASTS STARTED SQUAREST

presentation at Brussels meeting

### Labour costs (wages)



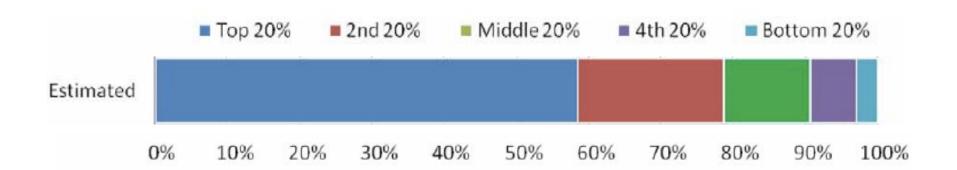


presentation at Brussels meeting

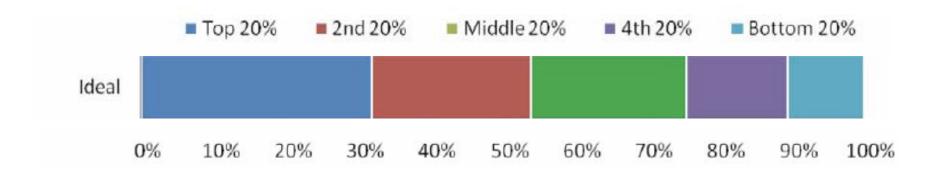
## If only they knew!!

- People's indignation has been spurred by the publicity that inequality both of wealth and of income have received.
- But it is people's perceptions that count.
- Here is what 5000 people questioned about wealth distribution in the U.S. had to say.

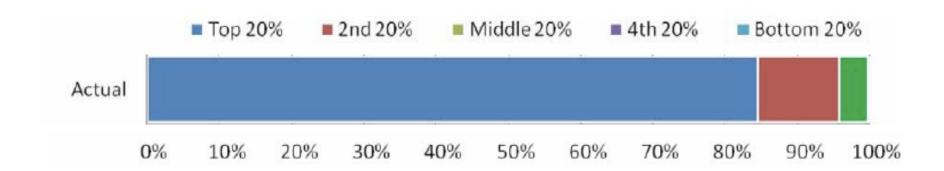
# What people think that the distribution of wealth is in the U.S



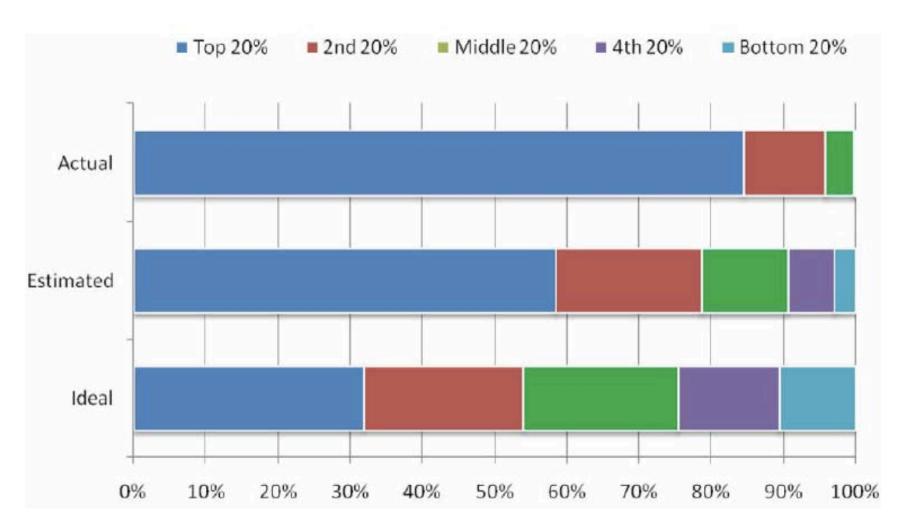
#### What they would like it to be



## What it is in reality



# What do people know about the present?



#### Question

 If people know so little about the current situation why should we believe that they understand the way in which the economy works and how it will evolve in the future?



# **Rational Expectations**

### Rational Expectations

- This brings me to the assumption concerning people's attitudes to uncertainty on which modern macroeconomic models are based
- Unless we have some idea about how people's expectations are formed we can say little about how the economy will react to policy changes
- Remember the Lucas critique.

#### The origins of the notion

- In a General Equilibrium model in which there is uncertainty, individuals will take their decisions in the light of what they expect to happen in the future.
- The only way therefore to define an equilibrium in such a model is to attribute expectations about the uncertainty in the economy to the individuals.
- But unless we know those expectations the exercise of showing the existence of an equilibrium is futile.
- The way out is to assume that firstly individuals have the same expectations and secondly that they are "correct" in the sense that they coincide with the "real" process generating the stochasticity in the economy.
- Without this, policy measures will have "unforeseen consequences" which they do by the way.

# Why should individuals have rational expectations?

- As Mike Woodford has pointed out, even if the modeller has a consistent model that he has chosen, in which the individuals are assumed to act rationally, he cannot be sure that the individuals in the model will have come to believe in that model.
- If not we get again « unintended consequences »
- Learning to believe in sunspots.

## And econometically?

- In a world with structural breaks in the underlying stochastic process the RE hypothesis is unjustified.
- As Hendry and Mizon (2010) point out
  - « The mathematical derivations of dynamic stochastic general equilibrium (DSGE) models and new Keynesian Phillips curves (NKPCs), both of which incorporate 'rational expectations', fail to recognize that when there are unanticipated changes, conditional expectations are neither unbiased nor minimum mean-squared error (MMSE) predictors, and that better predictors can be provided by robust devices »

#### A more modest view

- Ben Bernanke,
  - « I just think it is not realistic to think that human beings can fully anticipate all possible interactions and complex developments. The best approach for dealing with this uncertainty is to make sure that the system is fundamentally resilient and that we have as many fail-safes and back-up arrangements as possible »

Interview with the IHT May 17th 2010

#### The Financial Sector

#### The Efficient Markets Hypothesis

- This is very simple
- All relevant information is contained in prices therefore there is no need to look anywhere else: paradox
- This basic argument comes from the work of Bachelier but the referee for his thesis said...

## Mencken cited by Krugman

 H. L. Mencken: "There is always an easy solution to every human problem — neat, plausible and wrong."

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# The crucial role of information



Underlying the faith in the capacity of markets to self organise is the « efficient markets hypothesis » But as Greenspan observed,

« The whole intellectual edifice collapsed in the summer of last year »

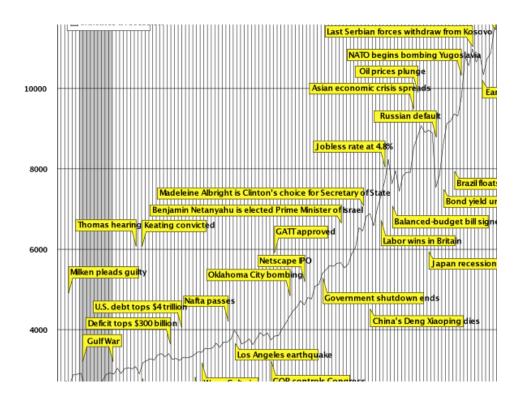
Alan Greenspan, testimony to House of Representatives Committee on Government Oversight and Reform, October 23rd 2008

# Where does the efficient markets hypothesis go wrong?

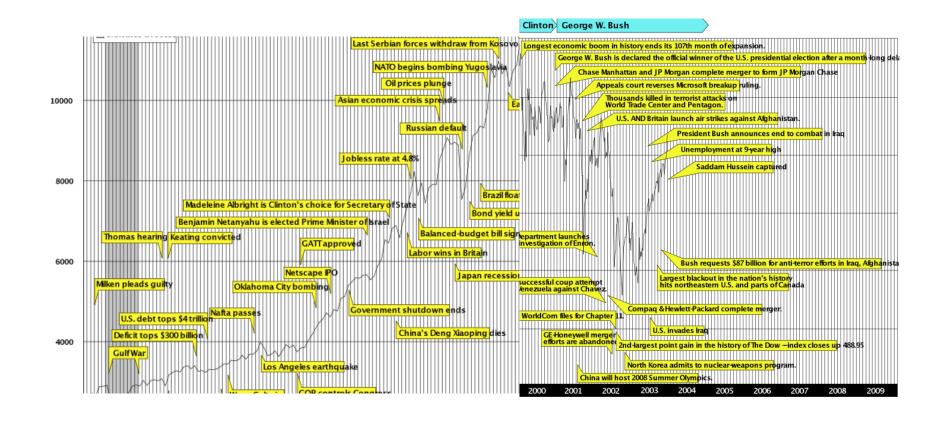
- Remember Poincaré's warning
- Individuals do not only look at their own information they also observe the actions of others and infer information from those actions.

### **Exogenous Macro Shocks?**

- As Wilhem Buiter a former member of the Bank of England's Monetary Policy Committee and now chief economist of Citigroup, says,
- « Those of us who worry about endogenous uncertainty arising from the interactions of boundedly rational market participants cannot but scratch our heads at the insistence of the mainline models that all uncertainty is exogenous and additive » Buiter (2009).



#### **Dow Jones 1980-1999**



#### **Dow Jones 1980-2006**



Looking into the sky quickly gets passers-by to follow.



presentation at Brussels meeting

#### Un avertissement

 Quand des hommes sont rapprochés, ils ne se décident plus au hasard et indépendamment les uns des autres ; ils réagissent les uns sur les autres. Des causes multiples entrent en action, et elles troublent les hommes, les entraînent à droite et à gauche, mais il y a une chose qu'elles ne peuvent détruire, ce sont leurs habitudes de moutons de Panurge. Et c'est cela qui se conserve

Henri Poincaré Report on Bachelier's thesis 1900

#### **Adam Smith**

 "The directors of (banks and corporations), being the managers rather of other people's money than of their own, it cannot well be expected, that they should watch over it with...anxious vigilance. . . Negligence and profusion, therefore, must always prevail, more or less, in the management of the affairs of such a company". Adam Smith, The Wealth of Nations, 1776

### Before the Great Depression

 "The goose that lays golden eggs has been considered a most valuable possession. But even more profitable is the privilege of taking the golden eggs laid by somebody else's goose. The investment bankers and their associates now enjoy that privilege. They control the people through the people's own money." Brandeis: Other People's Money and How the Bankers Use It, 1914

#### Brandeis' View

OTHER PEOPLE'S MONEY by Louis D. Brandeis



Presentation at Brussels Conference Cover illustration of Harper's Weekly, November 29, 1913 by James Montgomery Flagg June 2016

### The problem

- What worried Brandeis was the concentration of so much corporate wealth in the hands of so few bankers.
- Industry and commerce was controlled by a few important business men aided and abetted by investment banks.
- The network of ownership at the time was very dense
- His book was reissued in 1933



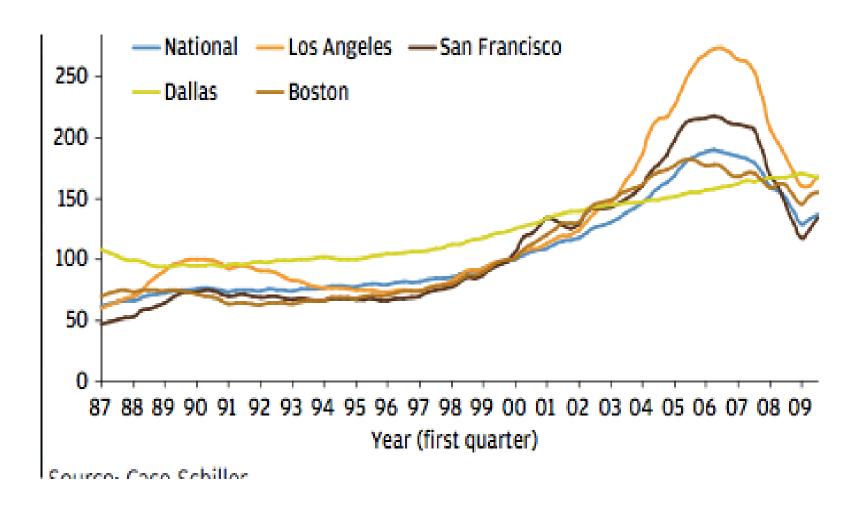
#### **Subprime Mortgages**



#### **Derivatives Warren Buffett**

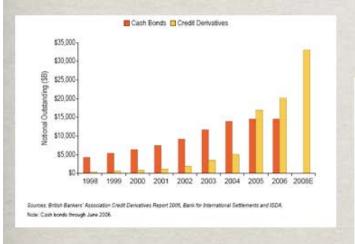
- The derivatives genie is now well out of the bottle, and these
  instruments will almost certainly multiply in variety and number until
  some event makes their toxicity clear. Central banks and
  governments have so far found no effective way to control, or even
  monitor, the risks posed by these contracts. In my view, derivatives
  are financial weapons of mass destruction, carrying dangers that,
  while now latent, are potentially lethal.
- Warren Buffet 2002

#### Case Shiller Index

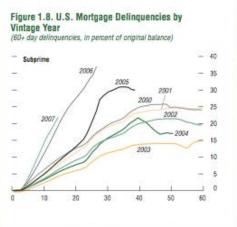


### HISTORICAL MOTIVATION

1. trading complex credit derivative products without really understanding what they're worth



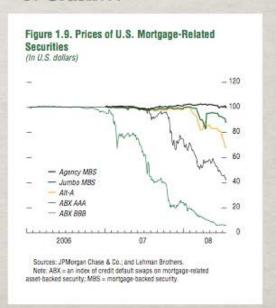
2. ... in the face of bad news accumulating ...



Why so sharp?

Figures from Global Financial Stability Report Oct. 2008

#### 3. Crash!!!



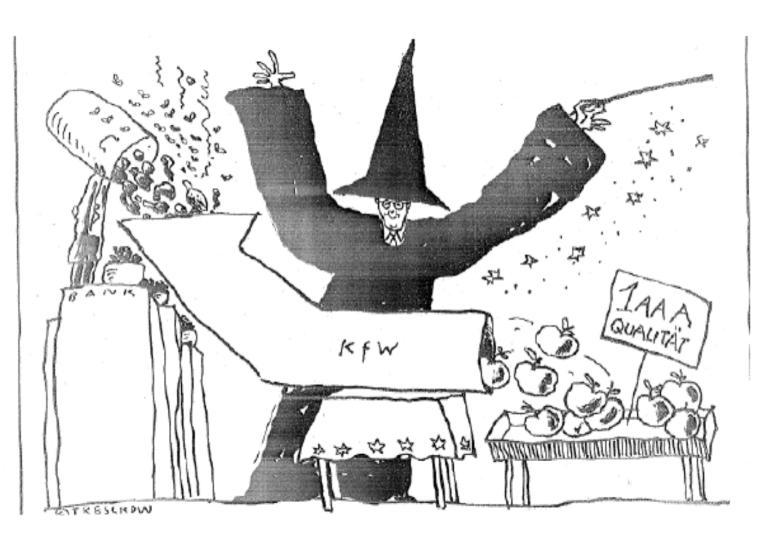
## Structuring the Deal- the Devil in the Details

- The potential investors in these mortgage backed securities were mainly institutions that were restricted by regulation to buying investment grade bonds. (Typically these are bonds that are rated BBB or better).
- So, for an Arranger to sell these mortgage backed bonds, a rating of BBB or better was essential.
- Working in consultation with the credit rating agencies, the deals were structured in a way that would give most of the bonds AAA (safe) rating.

Presentation at COST Final Conference The EU in the new complex geography

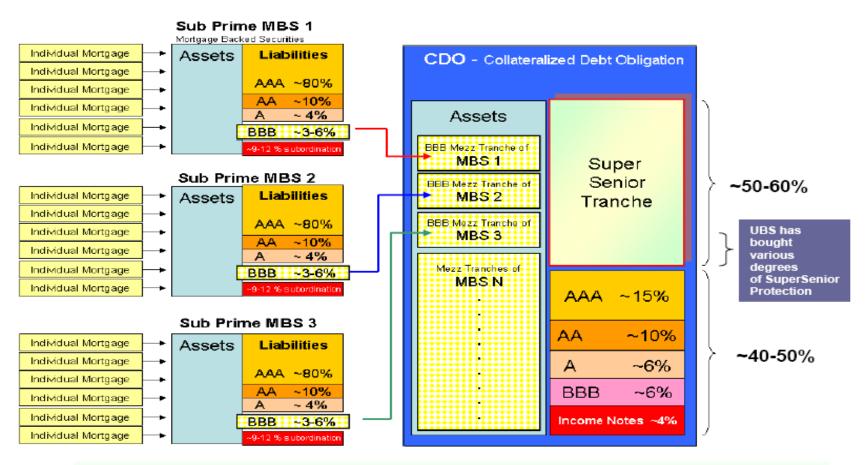
## Securitization

Frankfurter Allgemeine Zeitung, May 16, 2003





#### Securitization



While the junior notes behind the BBB Mezzanine Tranche are typically very thin, the total credit support for the Mezz. Tranche are typically in the range of 9-12% in form of Income Notes, Excess Spread and Over Collateralization



## **Quantitative Easing**





## What went wrong - recently?





"I THOUGHT WE WERE JUST BUYING A HOUSE!"

### **Not Just Banks**

The Volkswagen Scandal



The IAAF Doping Scandal



Presentation at the University of Buenos Aires April 2016

## Markets and Incentives

## Putting a price on wrongdoing

- Cobras and Rats
- Most people remember the paradox of blood donation. As soon as a fee was paid the amount diminished. People did not want to be seen as doing something for a monetary reward
- The second story is that of the Haifa creche or kindergarten. When fines were imposed for being late people came later. There was a price to pay
- But what about Banks?

## Markets and Rules.

## FINANCIAL TIMES

Thursday November 13 2014

**COMPANIES NEWS** 

## Fines carry strong echo of Libor scandal

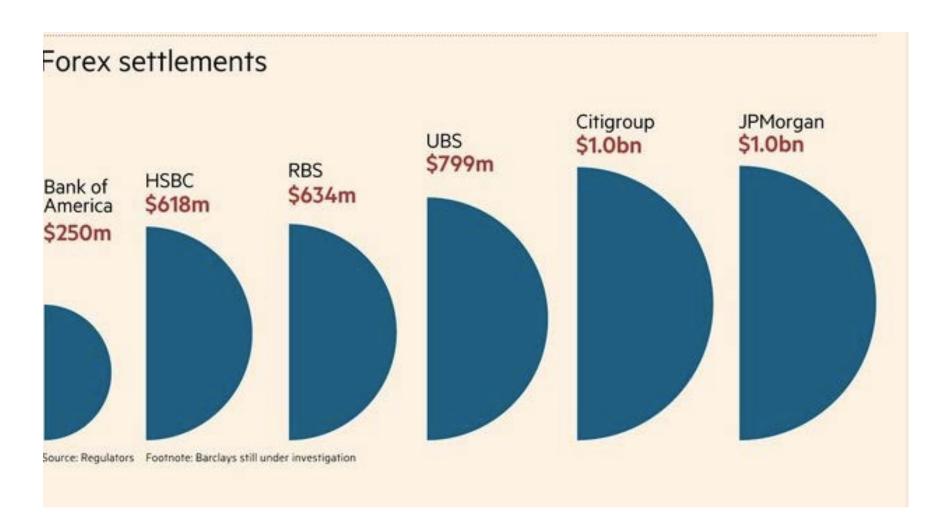
Heaviest penalties in history meted out in large part because banks have failed to learn lessons

#### No end in sight to a rotten culture

Size of fines less stunning than scale of conspiracy

#### Trio of banks fined \$950m by US regulator

## **FOREX FINES**



# Ireland When Irish Eyes are Smiling



## What does this suggest?

- Individuals will adapt to whatever rules that are put in place and new norms whether bad or good will emerge.
- History is redolent with examples of taxes that have produced perverse results.
- It is very difficult to predict what the consequences of a policy will be as Krugman likes to point out to the Austeriens.
- Suppose we think of the economy differently
- We might even get back to one based on trust

Insurance is wanted by CCEANIC STEAM NAVIGATION COMPANY LIMITED for account of Whom it may concern. fore, if any, haryable to OCEANIC STEAM NAVIGATION COMPANY, LIMITED. A. \$\$100,000. on STR. TITANIC Valued at \$5,000,000. and to be insured at and from the 30 day of March 1912 at 7 M. M. the 90 day of Merich 1913 at This policy is subject to total loss or constructive total loss of the vessel only, and to cover General Average and salvage charges if both charges combined amount to \$750,000. which amount is deductible. Premium at the rate of 2-1/10% per annum, predicated on the rate of 7to for each trip, and in the event of the vessel being detained in port for any cause, the premium returned for such detention to be based on the number of trips. But in the event of the total loss of the Steamer during the period covered by this policy, the full annual premium of 2 1/10% to be paid by the Assured. Marokastadaan To moude the trip from Bufast to Southampton Sailing on or after Manch 30th 1912 ar John and the rosk of truls on Lanie Steam Navjalin Granpre

## The signatures

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## **Bob Shiller**

 Of course, the problem with economics is that there are often as many interpretations of any crisis as there are economists. An economy is a remarkably complex structure, and fathoming it depends on understanding its laws, regulations, business practices and customs, and balance sheets, among many other details.

## **Bob Shiller**

 Yet it is likely that one day we will know much more about how economies work – or fail to work – by understanding better the physical structures that underlie brain functioning. Those structures – networks of neurons that communicate with each other via axons and dendrites - underlie the familiar analogy of the brain to a computer – networks of transistors that communicate with each other via electric wires. The economy is the next analogy: a network of people who communicate with each other via electronic and other connections.

## **Bob Shiller**

The brain, the computer, and the economy: all three are devices whose purpose is to solve fundamental information problems in coordinating the activities of individual units – the neurons, the transistors, or individual people. As we improve our understanding of the problems that any one of these devices solves – and how it overcomes obstacles in doing so – we learn something valuable about all three.

http://www.project-syndicate.org/commentary/the-neuroeconomics-revolution#01DugqtByVO8W50F.99

## Hayek on Complexity

• "It's the whole question of the theory of how far can we explain complex phenomena where we do not really have the power of precise prediction. We don't know of any laws, but our whole knowledge is the knowledge of a pattern". *Hayek* (1994), p.122

## F. A. Hayek

The last words should be left to Mervyn King (Former Governor of the Bank of England)



 "The message from Hayek is that we should avoid the hubris of thinking that we understand how the economy works, Just as we should avoid the hubris of thinking that leaving markets to their own devices will lead to nirvana." Mervyn King April 2013

## But the band played on



## Conclusion

- Both mainstream DSGE and their critics share a common failing
- Their insistence on « growth » as we used to understand it.
- The 21st century economy is not like the 20th century one.
- Redistribution, sharing, cooperation and coordination should be our by-words
- Competition and Competitiveness are destructive and not creative.

"You want to keep an open mind but you don't want to open it so far that your brain falls out."

Buz Brock