Behavioral Macroeconomics and Macroeconomic Behavior: The Contributions of G. A. Akerlof

Andrea Roventini[1,2]

Email: andrea.roventini@univr.it

[1]University of Verona

[2]Sant'Anna School of Advanced Studies

July 22, 2009

Introduction

- Nobel laureate G. A. Akerlof is one of the most important members of the New Keynesian School
- However, contrary to most New Keynesians he didn't join the New Neoclassical Synthesis (DSGE)
- Together with other "Hard" New Keynesians (e.g. Stiglitz), he considers imperfections as a structural, long-run characteristics of every economy
- "Hard" New Keynesians downplay the role of nominal frictions in favour of
  - asymmetric information
  - heterogenous agents
  - imperfect and incomplete markets
  - empirically supported agents' behavioral assumptions

Outline of the Talk

- Akerlof, G. A. (2002), "Behavioral Macroeconomics and Macroeconomic Behavior", American Economic Review, 92: 411-433
- Akerlof, G. A. (2007), "The Missing Motivation in Macroeconomics", American Economic Review, 97: 5:36
- Akerlof, G. A. and R. J. Shiller (2009), Animal Spirits, Princeton University Press

Introducing New Keynesians

- Main ingredients:
  - monopolistic competition
  - nominal and real imperfections
  - rational maximizing agents
  - rational expectations
- Main objective: providing a microfoundation of price and wage stickiness in order to open the door to non-neutrality of money
- In the long-run, prices and wages flexibility allow the economy to converge to its full-employment equilibrium
- Monetary policy preferred to fiscal policies (New Keynesian of New Monetarists?)

Nominal Rigidities

- Menu Cost and Near-Rationality models (Akerlof and Yellen, 1985; Mankiw 1985)
  - static models
  - firms face second-order costs if they keep their prices fixed
  - aggregate demand externalities (Blanchard and Kiotaki 1987) imply high cost for the society
  - the aggregate demand externalities arguments works through the Pigou effect
- Staggered Price (Wage) models (Fisher 1977, Taylor 1980, and Calvo 1983)
  - dynamic models
  - they don't provide a microfoundation to sticky prices
  - however, even with rational expectations money isn't neutral
- State-dependent price model (Caplin and Spulber 1987)

Real Rigidities

- Small nominal frictions induce firms to keep their prices fixed only for implausible parameter values
- This problem can be overcome introducing real rigidities
- Real price rigidities: profit-maximizing real price responds mildly to output changes (e.g. counter-cyclical mark-ups)
- Real wage rigidities: real wage doesn't respond to output fluctuations (e.g. efficiency wage and insider-outsider theories)
- Real rigidities reduce the gap between the old and new profit-maximizing prices increasing the scope of nominal rigidities

Policy Implications

- In the short-run, stabilization policies, in particular monetary policy can significantly reduce the cost of fluctuations
- New Keynesians accept the monetarism critiques to Neoclassical Synthesis policy approach and some of New Classical propositions such as dynamic inconsistency
- Inflation seriously reduces social welfare and should be tackle employing inflation targeting
- If unemployment is caused by real wage rigidities, appropriate labor market policy can reduce it

Problems

- A great deal of models, but not so many results
- Plausibility of menu costs
- "Old wine in new bottles" arguments
- Excess flexibility
- Are New Keynesians really Keynesians?
  - stabilization policies justified only by nominal rigidities
  - the fundamental role of real balance effects
  - uncritical acceptance of Classical methodology
  - acceptance of many Monetarist and Classical results
  - exogenous business-cyle theories
  - marginal role reserved to fiscal policies

Problems

- A great deal of models, but not so many results
- Plausibility of menu costs
- "Old wine in new bottles" arguments
- Excess flexibility
- Are New Keynesians really Keynesians?
  - stabilization policies justified only by nominal rigidities
  - the fundamental role of real balance effects
  - uncritical acceptance of Classical methodology
  - acceptance of many Monetarist and Classical results
  - exogenous business-cyle theories
  - marginal role reserved to fiscal policies

Towards a Keynesian Behavioral Macroeconomics

- Keynes's General Theory is a masterpiece in behaviorial economics
- There is a need for microfoundations grounded on psychological and sociological factors such as cognitive bias, reciprocity, fairness, herding and social status

Six Macroeconomics Puzzles

"Classical" macroeconomics cannot explain six puzzles:

1. involuntary unemployment
2. non-neutrality of money
3. non-accelerating deflation
4. undersaving for retirement
5. asset markets fluctuations
6. poverty and identity

Behavioral Macroeconomics Explanations

1. involuntary unemployment: fairness efficiency-wage theory (Akerlof and Yellen 1988, 1990)
2. non-neutrality of money: near-rational firms (Akerlof and Yellen 1985a,b)
3. non-accelerating deflation: i) opposition to nominal wage cuts; ii) role of inflation expectations (Akerlof et al 1996)
4. undersaving: agents maximize an utility function not linked to their welfare (hyperbolic discount rate)
5. asset markets behavior: excess sensitivity and equity premium puzzles, "irrational exuberance" (stories)
6. persistent poverty: identity-based theory of disadvantage

Behavioral Macroeconomics Explanations

1. involuntary unemployment: fairness efficiency-wage theory (Akerlof and Yellen 1988, 1990)
2. non-neutrality of money: near-rational firms (Akerlof and Yellen 1985a,b)
3. non-accelerating deflation: i) opposition to nominal wage cuts; ii) role of inflation expectations (Akerlof et al 1996)
4. undersaving: agents maximize an utility function not linked to their welfare (hyperbolic discount rate)
5. asset markets behavior: excess sensitivity and equity premium puzzles, "irrational exuberance" (stories)
6. persistent poverty: identity-based theory of disadvantage

Behavioral Macroeconomics Explanations

1. involuntary unemployment: fairness efficiency-wage theory (Akerlof and Yellen 1988, 1990)
2. non-neutrality of money: near-rational firms (Akerlof and Yellen 1985a,b)
3. non-accelerating deflation: i) opposition to nominal wage cuts; ii) role of inflation expectations (Akerlof et al 1996)
4. undersaving: agents maximize an utility function not linked to their welfare (hyperbolic discount rate)
5. asset markets behavior: excess sensitivity and equity premium puzzles, "irrational exuberance" (stories)
6. persistent poverty: identity-based theory of disadvantage

Behavioral Macroeconomics Explanations

1. involuntary unemployment: fairness efficiency-wage theory (Akerlof and Yellen 1988, 1990)
2. non-neutrality of money: near-rational firms (Akerlof and Yellen 1985a,b)
3. non-accelerating deflation: i) opposition to nominal wage cuts; ii) role of inflation expectations (Akerlof et al 1996)
4. undersaving: agents maximize an utility function not linked to their welfare (hyperbolic discount rate)
5. asset markets behavior: excess sensitivity and equity premium puzzles, "irrational exuberance" (stories)
6. persistent poverty: identity-based theory of disadvantage

Behavioral Macroeconomics Explanations

1. involuntary unemployment: fairness efficiency-wage theory (Akerlof and Yellen 1988, 1990)
2. non-neutrality of money: near-rational firms (Akerlof and Yellen 1985a,b)
3. non-accelerating deflation: i) opposition to nominal wage cuts; ii) role of inflation expectations (Akerlof et al 1996)
4. undersaving: agents maximize an utility function not linked to their welfare (hyperbolic discount rate)
5. asset markets behavior: excess sensitivity and equity premium puzzles, "irrational exuberance" (stories)
6. persistent poverty: identity-based theory of disadvantage

Behavioral Macroeconomics Explanations

1. involuntary unemployment: fairness efficiency-wage theory (Akerlof and Yellen 1988, 1990)
2. non-neutrality of money: near-rational firms (Akerlof and Yellen 1985a,b)
3. non-accelerating deflation: i) opposition to nominal wage cuts; ii) role of inflation expectations (Akerlof et al 1996)
4. undersaving: agents maximize an utility function not linked to their welfare (hyperbolic discount rate)
5. asset markets behavior: excess sensitivity and equity premium puzzles, “irrational exuberance” (stories)
6. persistent poverty: identity-based theory of disadvantage

Five Widely-Accepted Classical Neutralities

Five neutralities overturn main Keynesian macroeconomics results, reducing the case for stabilization policies:

1. life-cycle consumption theory
2. Modigliani-Miller theorem
3. natural rate theory
4. rational expectations hyphotesis
5. Ricardian equivalence

Preferences, Norms and Macroeconomics Neutralities

- New Keynesians accepted New Classical methodology, but introduce frictions to recover Keynesias results
- However, New Classical neutrality results are grounded on a poor analysis of individual preferences
- The introduction of realistic norms in the preferences of agents allows to overcome these neutralities adopting the New Classical methodology but without relying on frictions
- Standard utility function can then be accordingly modified introducing losses if agents don't follow norms

Preferences, Norms and Macroeconomics Neutralities

- New Keynesians accepted New Classical methodology, but introduce frictions to recover Keynesias results
- However, New Classical neutrality results are grounded on a poor analysis of individual preferences
- The introduction of realistic norms in the preferences of agents allows to overcome these neutralities adopting the New Classical methodology but without relying on frictions
- Standard utility function can then be accordingly modified introducing losses if agents don't follow norms

Norms and "Missing Motivations in Macroeconomics"

- "Norms reflect how decision makers think they and others should or should not behave"
- Norms based on observations can take into account the real behavior of agents
- Examples: religion, workplace conditions, women role, children at the merry-go-round
- Norms allow to get patterns of behavior akin to the ones depicted in Keynes' General Theory ause
- Keynesian observations (norms) $+$
  New Classical methodology (constrained optimization) $=$
  "inclusion of the missing motivations in macroeconomics"

Norms at Work

1. Ricardian equivalence: parents get utility from gift-giving to their childreen
2. Life-cycle consumption theory: mental accounting, obbligations and entitlements to consume
3. Modigliani-Miller theorem: empire-building managers have norms about firm investment strategy
4. Natural rate and rational expectations: workers and consumers have opinions about the right (fair) values of nominal prices and wages
5. Rational expectations: see previous point

Norms at Work

1. Ricardian equivalence: parents get utility from gift-giving to their childreen
2. Life-cycle consumption theory: mental accounting, obbligations and entitlements to consume
3. Modigliani-Miller theorem: empire-building managers have norms about firm investment strategy
4. Natural rate and rational expectations: workers and consumers have opinions about the right (fair) values of nominal prices and wages
5. Rational expectations: see previous point

Norms at Work

1. Ricardian equivalence: parents get utility from gift-giving to their childreen
2. Life-cycle consumption theory: mental accounting, obbligations and entitlements to consume
3. Modigliani-Miller theorem: empire-building managers have norms about firm investment strategy
4. Natural rate and rational expectations: workers and consumers have opinions about the right (fair) values of nominal prices and wages
5. Rational expectations: see previous point

Norms at Work

1. Ricardian equivalence: parents get utility from gift-giving to their childreen
2. Life-cycle consumption theory: mental accounting, obbligations and entitlements to consume
3. Modigliani-Miller theorem: empire-building managers have norms about firm investment strategy
4. Natural rate and rational expectations: workers and consumers have opinions about the right (fair) values of nominal prices and wages
5. Rational expectations: see previous point

Norms at Work

1. Ricardian equivalence: parents get utility from gift-giving to their childreen
2. Life-cycle consumption theory: mental accounting, obbligations and entitlements to consume
3. Modigliani-Miller theorem: empire-building managers have norms about firm investment strategy
4. Natural rate and rational expectations: workers and consumers have opinions about the right (fair) values of nominal prices and wages
5. Rational expectations: see previous point

A Revival of Keynesian Animal Spirits

- Keynes provided an endogenous business-cycle theory grounded on animal spirits which supports government policies (the parable of parenting advice books)
- New Neoclassical Synthesis has watered down animal spirits and new Classicals have cast them away
- Without animal spirits, economists have negatively considered the role of government policies, creating a favourable environment for the current crisis
- A behavioural macroeconomics taking into account animal spirits can explain the current crisis and provide adequate policy responses

Animal Spirits

- Agents do not always rationally pursue their economic interests
- Their choices can be guided by non-economic motivations and can be irrational
- In highly uncertain environments, many economic decisions are the results of animal spirits, i.e. "spontaneous urge to action"

Five Different Aspects of Animal Spirits

1. Confidence drives consumption and investment decisions (Keynesian vs. confidence multipliers)
2. Fairness can override rationality in wage and price settings (norms and the equity theory of exchange)
3. Corrupt and antisocial behaviors have a major role in recessions (false accounting and snake oil, bridge vs. Texas hold'em)
4. Money illusion: financial contracts, accounting, legal provisions, wage setting, pricing
5. New era stories created by media have a major role in financial market bubbles

Five Different Aspects of Animal Spirits

1. Confidence drives consumption and investment decisions (Keynesian vs. confidence multipliers)
2. Fairness can override rationality in wage and price settings (norms and the equity theory of exchange)
3. Corrupt and antisocial behaviors have a major role in recessions (false accounting and snake oil, bridge vs. Texas hold'em)
4. Money illusion: financial contracts, accounting, legal provisions, wage setting, pricing
5. New era stories created by media have a major role in financial market bubbles

Five Different Aspects of Animal Spirits

1. Confidence drives consumption and investment decisions (Keynesian vs. confidence multipliers)
2. Fairness can override rationality in wage and price settings (norms and the equity theory of exchange)
3. Corrupt and antisocial behaviors have a major role in recessions (false accounting and snake oil, bridge vs. Texas hold'em)
4. Money illusion: financial contracts, accounting, legal provisions, wage setting, pricing
5. New era stories created by media have a major role in financial market bubbles

Five Different Aspects of Animal Spirits

1. Confidence drives consumption and investment decisions (Keynesian vs. confidence multipliers)
2. Fairness can override rationality in wage and price settings (norms and the equity theory of exchange)
3. Corrupt and antisocial behaviors have a major role in recessions (false accounting and snake oil, bridge vs. Texas hold'em)
4. Money illusion: financial contracts, accounting, legal provisions, wage setting, pricing
5. New era stories created by media have a major role in financial market bubbles

Five Different Aspects of Animal Spirits

1. Confidence drives consumption and investment decisions (Keynesian vs. confidence multipliers)
2. Fairness can override rationality in wage and price settings (norms and the equity theory of exchange)
3. Corrupt and antisocial behaviors have a major role in recessions (false accounting and snake oil, bridge vs. Texas hold'em)
4. Money illusion: financial contracts, accounting, legal provisions, wage setting, pricing
5. New era stories created by media have a major role in financial market bubbles

The Explanatory Role of Animal Spirits part I

- Economic depressions
- The real effects of monetary policy: open-market operations, discount window, deposit insurance
- Involuntary unemployment: fairness efficiency-wage theory
- Inflation-unemployment long-run trade-off: money illusion (nominal wage rigidity + inflation expectations)
- Undersaving: the role of psychological framing and culture

The Explanatory Role of Animal Spirits part I

- Economic depressions
- The real effects of monetary policy: open-market operations, discount window, deposit insurance
- Involuntary unemployment: fairness efficiency-wage theory
- Inflation-unemployment long-run trade-off: money illusion (nominal wage rigidity + inflation expectations)
- Undersaving: the role of psychological framing and culture

The Explanatory Role of Animal Spirits part I

- Economic depressions
- The real effects of monetary policy: open-market operations, discount window, deposit insurance
- Involuntary unemployment: fairness efficiency-wage theory
- Inflation-unemployment long-run trade-off: money illusion (nominal wage rigidity + inflation expectations)
- Undersaving: the role of psychological framing and culture

The Explanatory Role of Animal Spirits part I

- Economic depressions
- The real effects of monetary policy: open-market operations, discount window, deposit insurance
- Involuntary unemployment: fairness efficiency-wage theory
- Inflation-unemployment long-run trade-off: money illusion (nominal wage rigidity + inflation expectations)
- Undersaving: the role of psychological framing and culture

The Explanatory Role of Animal Spirits part II

- Asset prices volatility: Keynes' beauty contest and delicious apple metaphors; the role of feedbacks
- Corporate investment fluctuations: knightian uncertainty and straight from the gut decisions
- Real-estate price cycles: stories, corruption, naive beliefs
- Persistency of poverty: stories, fairness and we-they groups

The Explanatory Role of Animal Spirits part II

- Asset prices volatility: Keynes' beauty contest and delicious apple metaphors; the role of feedbacks
- Corporate investment fluctuations: knightian uncertainty and straight from the gut decisions
- Real-estate price cycles: stories, corruption, naive beliefs
- Persistency of poverty: stories, fairness and we-they groups

The Explanatory Role of Animal Spirits part II

- Asset prices volatility: Keynes' beauty contest and delicious apple metaphors; the role of feedbacks
- Corporate investment fluctuations: knightian uncertainty and straight from the gut decisions
- Real-estate price cycles: stories, corruption, naive beliefs
- Persistency of poverty: stories, fairness and we-they groups

The Explanatory Role of Animal Spirits part II

- Asset prices volatility: Keynes' beauty contest and delicious apple metaphors; the role of feedbacks
- Corporate investment fluctuations: knightian uncertainty and straight from the gut decisions
- Real-estate price cycles: stories, corruption, naive beliefs
- Persistency of poverty: stories, fairness and we-they groups

The Current Financial Crisis: What Is to Be Done?

- Standard expansionary monetary and fiscal policies are not enough
- Employ credit targets to fight the current credit crunch
- Policy responses:
  1) expansionary discount window
  2) direct investment in banks
  3) direct credit from government-sponsored enterprises
- Aggregate demand and financial market targets

Main Conclusions

- Mainstream macroeconomics assume that agents are rational and have only economic motives
- There is no room for irrational behavior and non-economic motives
- A behavioral macroeconomics can explain the current crisis and many macroeconomics puzzles
- The presence of animal spirits imply that economies need rules and governments should provide them together with appropriate monetary and fiscal policies

Some Critical Remarks

- Preservation of the neoclassical apparatus (minor changes to agents' utility functions)
- Animal spirit theory not linked to a model
- Misinterpretation of Keynes' thought about
  - nominal wage rigidity
  - money illusion
  - involuntary unemployment
  - savings