Proposed theoretical foundations of ‘New Economics’: values, resources, money, growth and policy

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Outline

• “Whole-system” crises in the global economy
• Inadequacies of the traditional economic analysis
• Foundations of a ‘New Economics’:
  – Institutional and evolutionary economics
  – Keynesian economics without equilibrium (Kaldor, Robinson)
  – Post Keynesian theory
  – Complexity theory
  – Feminist economics
• Human motivation
• Role of money
• Demand-side growth
• Economic policy and externalities
• Representing the system in models
Background: The Great Recession and Global Warming

- Both arise out of the pursuit of self-interest
- Both are market failures associated with systemic risk and, arguably, both are the greatest market failures the world has ever seen
- Both are highly nonlinear systems’ failures leading to extreme events (economic and climatic)
- Both threaten the economy with catastrophic collapses
- Both require strong regulation for efficient economic outcomes
The Great Recession and Global Warming

• **Differences**
  – **Timing:** The Lehman bank collapse happened in a day (15 September 2008), arguably the consequences last years, or even two decades; global warming is a centuries-long process
  – **Risks:** financial risks are to trust in money and global deflation; global warming risks are wild weather and floods/droughts
  – **Solutions:** the financial crisis requires and supports an immediate solution (banks’ reputations are damaged) although new regulations take longer; global warming solutions can be delayed and subverted more easily by special interests
Traditional economic theory and the crises

- The “free market” approach of an optimal outcome without active policy has been discredited
- The lack of treatment of systematic risk in the traditional models is exposed
- Traditional theory is also found wanting
  - New Consensus Macroeconomics’ denial of role for fiscal policy for managing the economy has been rejected in favour of Keynesian stimulus packages
  - Computable General Equilibrium models used for climate change mitigation have been criticized for assumptions of perfect competition, constant returns to scale, etc
  - With financial instability, the existence of equilibrium at full employment in any economy seems implausible
  - The growth rate is obviously affected by the collapse in demand, so that the theory that it is entirely determined by supply-side factors becomes more open to question
New economics as a whole-system approach

• Aim: to understand the long-run and short-run development of the global economy and its component regional economies …
• as an evolving open system…
• interacting with the environment (air, water, land)…
• susceptible to financial crises…
• requiring government and policy to avoid chronic unemployment or inflation
Historical growth rates, 1901-2001
(Maddison’s dataset)

% pa

WW1    WW2

golden age

Great depression
Resources: institutional and evolutionary theory

- Resources, including institutions, evolve in social processes
  - **Resources:** people, institutions, knowledge as well as products (collections of goods and services)
  - **Institutions:** habits, procedures, ways of being, objectives, motivations and laws

- Human evolutionary drives: curiosity and desire for comfort, security and enjoyment i.e. “fitness”

- Institutional evolution of money, accounting, limited liability and other “social technologies”

- Conditioned by path-dependence and irreversibilities, economies of specialization and scale, limits on the environment’s capacity to absorb and recycle waste safely

Economic growth is an emergent property of the complex system of the world economy with component economies increasingly linked together:
  - increasing trade
  - urbanization
  - networks
  - information
Economics without equilibrium

- Keynes’ short-period equilibrium with involuntary unemployment was not the neoclassical “general equilibrium” but a stable outcome
- Equilibrium in traditional economics is required for a unique, determined solution ignoring deep uncertainty
- It can be replaced by the desired set of outcomes for policy analysis or the expected set
- The stability of the outcome can be itself be desired by policymakers
The development of Post Keynesian thought

• Four fundamental Post Keynesian features (Holt, 2007):
  1. Understanding the real world
  2. Economic activities take place in historical time, with path-dependence
  3. Uncertainty (versus probability calculations)
  4. Institutions

What can be added?
• Location: brings in system boundaries, externalities
• Structure and complexity: interaction of national and global industries
• Well-being and gender
  “new economics” intersection of Post Keynesian, feminist economics, complex systems, evolutionary and institutional economics

Post Keynesian Assumptions

• We know what “money” or “liquidity” is
• We can reasonably restrict the analysis to an aggregated producer-consumer-banks economy in multiple time periods
• ... in the context of general uncertainty and inability to convert all risks to certainty equivalents
• Non-ergodicity, “history has effects”
• Institutions matter and can change
Key Post Keynesian Results

• The formation of expectations is critical to the system
• Money is normally demand-led via creation of bank liabilities
• Portfolio choices by wage earners, commercial banks and central banks are critical and inconsistencies can lead to collapse
• Monetary and fiscal policies should be inter-related and flexible to accommodate “events”
Extending Post Keynesian theory

- Extending the scope of the models to include government and trade in the economic systems
  - E.g. add national economies, governments, investment banks, and non-bank financial companies dealing in assets
- Including many diverse consumers, producers, governments, prices, wage rates, monetary assets and interest rates in a complex system
- Governments make laws, tax and spend to provide leadership and other public goods
- More emphasis on (or expected fitting to) macroeconomic and structural data and problems of economic policy
- Including empirical measures of trust or uncertainty in the system (volatility over time of various market rates – stock prices, exchange rates, commodity prices, interest rates)
# Traditional and new economics

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<tr>
<th>Critical differences</th>
<th>Traditional economics</th>
<th>New economics</th>
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<tbody>
<tr>
<td>ethics and society</td>
<td><strong>Utilitarian</strong>: optimising rational self-interested individuals</td>
<td><strong>Observed</strong>: satisfying conditional co-operators and altruistic punishers in evolving social groups</td>
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<tr>
<td>time and equilibrium</td>
<td><strong>Full employment forever</strong>: policies leading to higher GDP growth ruled out by assumption in CGE models</td>
<td><strong>Path-dependency</strong>: many unused resources and new business plans in response to threats</td>
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<td>uncertainty</td>
<td><strong>Normal</strong>: distributions derived from the past; use of “certainty equivalence”</td>
<td><strong>Non-linear</strong>: catastrophic surprises are inherent in complex systems</td>
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<tr>
<td>technology</td>
<td><strong>Exogenous</strong>: CGE and growth models have typically no feedbacks via technology</td>
<td><strong>Induced</strong>: by investment incentives and prices (e.g. a carbon price for climate policies)</td>
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A pluralist approach to values

• The debate on the economics of climate change has shown that many issues of economic policy are primarily ethical in nature
  – Value of human life
  – long-term discounting of costs and benefits for future generations
• Utilitarianism: market forces do not necessarily lead by themselves to intrinsically good outcomes (Foley, 2006)
• Justice can be an important alternative to utility in guiding economic policy
• Intrinsic values are distinct from monetary values and should not generally be converted to them
Money in the economic system

• A resource created by human society, with a set of characteristics that are embodied in different combinations in monetary assets

• Forms: notes and coin in circulation, sets of monetary assets, and wealth in general

• Critical feature of modern economies, necessary for endogenous economic growth
  – Circulates giving information
  – Needed to allocate resources in the system
  – Allows consumers the illusion of translating real future satisfactions into money-valued current convertible assets
Money in well-behaving economies

- Given stable expectations, all social groups can plan their use of money in an orderly way, and respond to signals appropriately.
- The finance ministry and central bank can manage the economy via signals and incentives, such that money is created as demanded.

Conclusions:
- Monetary aggregates are purely informational.
- Money (not interest rates) can be ignored in an analysis of the real economic system without affecting its explanatory power.
- When an economy becomes ill-behaving, the policy rules become misleading and perverse; money matters again.
The evolution of money

• No monetary asset has all the characteristics of perfect money
• New forms of money (e.g. credit derivatives of the 2007- financial crisis) can be created with new combinations of characteristics
• Such innovation for speculative purposes leads to financial crises
Explaining economic growth: the demand-side approach (1)

• Generalising consumption
  – as per capita incomes grow, consumers spend more, but on a wider variety of goods, so that quality increases
  – effective demand grows through private & public consumption and exports, assuming that the growth in demand will be met by a growth in supply, depending on whether suppliers have correctly projected demand

• Specialising production
  – increasing trade leads to more currency unions, lower trade barriers
  – global branding and life-styles
  – markets increase in numbers, scale and specialisation with associated reduction in costs
Explaining economic growth: the demand-side approach (2)

- **Market clearing**
  - utilisation of capacity, waiting lists, prices and quality will all adjust to match supply to demand
  - long-term outcome comes from short-term path-dependent responses
  - Instability in expected prices and output will reduce investment and growth
  - growth dependent on finance for investment being available

- **Competitive innovation & obsolescence**
  - new products encourage consumption
  - information costs falling rapidly

- **Money is the critical resource allowing separation of consumption and production across locations and over time**
Economic policy

• Central government has a leading role in proposing and implementing economic policies

• Portfolios of policies are necessary (monetary, fiscal, regulation) for multiple objectives:
  – managing externalities (e.g. global warming)
  – resolving macroeconomic inconsistencies

• Uncertainties imply that outcomes for policy portfolios should be tested for robustness in relation to the approach, assumptions, reliability of parameters
Models based on new economics theory: E3MG (global), E3ME (EU), MDM-E3 (UK)

• Recognises path-dependence and critical role of technology in historical studies of growth
• Post Keynesian theory
  – Kaldor’s cumulative causation (1957)
  – Scott’s gross-investment as the basis of growth (1989)
  – Uncertainty and expectations are crucial features
  – Demand-led growth
• Assumptions
  – increasing returns in some sectors
  – market power varies across sectors
  – behaviour of social groups, not representative agents
  – parameters are location- and time-specific
Features of these models

- Structural, econometric, dynamic, non-equilibrium, simulation energy-environment-economy (E3)
- Use of cointegration techniques to identify long-run trends from annual cross-section data
  - E.g. E3MG: 20 world regions, 21 energy users, 12 energy carriers, 41 industries, 14 atmospheric emissions, estimated 1973-2004
- Allowing induced technological change
  - Anderson & Winne (2004) model of induced change with learning
  - Technological Progress Indicators (TPI) (incl. R&D) in many equations e.g. in 420 energy-use and 820 export equations
- And for sector markets to have regional prices
  - except for those for oil and other world commodities
Notable macroeconomic model outcomes

- GHG mitigation policies can lead to higher employment and growth
  - Provided revenues from taxes etc are recycled
- More stringent policies can reduce costs sufficiently to cause system-change via technological change
- The model generates an endogenous long-term investment-led cycle
Conclusions

- New economics is arguably the new mainstream for policymaking and business. It acknowledges
  - deep uncertainty as well as risk
  - the need for interventionist fiscal and monetary policies
  - the importance of institutions
- The debate over the economics of global warming has highlighted why intrinsic values should be recognised alongside monetary values
- Institutional approaches address the issues of the pivotal role of money and banking in the economy
- Demand-side growth theory, allowing for technological change embodied in investment, provides a more convincing explanation of growth
- Fiscal and monetary policies are increasingly being integrated
Summary: Treatment of values

**traditional**
- individual independent preferences
- monetized social welfare
- an optimal solution
- value of human life from economic theory and observation

**new**
- values formed by social groups
- multiple values and multi-criteria analysis
- no optimum
- value of human life from social consensus depending on context
Treatment of location effects

**traditional**
- no treatment of place in elementary theory
- all activity at points in space
- no transport costs
- no diffusion effects

**new**
- globalization and transmission of effects over distance is critical
- Economic growth is affected by size of market
- Falling transport and IT costs support the widening of markets
## Treatment of temporal effects

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<th>new</th>
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<tr>
<td>existence of equilibrium assumed</td>
<td>non-linear systems assumed with possibility of chaotic behaviour</td>
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<tr>
<td>no treatment of time lags in elementary theory</td>
<td>time and duration of effects is intrinsic to economic policy</td>
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<td>static analysis</td>
<td>dynamic analysis</td>
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<td>implicit symmetry in timing, and reverse flows if costs change</td>
<td>irreversibilities (through accumulation of stocks)</td>
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Representing the economic system: long term

**Traditional**
- Computable General Equilibrium models
- Typically one year’s data for 10-100 year projections
- Technological change exogenous
- Search for welfare optimum
- Uncertainty: certainty-equivalence and net present values of solution

**New**
- Simulation of behaviours and outcomes
- Panel data provides basis for trend relationships
- Technological change induced by policy
- Models inform a range of social choices
- Assessment of robustness of policies under uncertainty