Keynes and uncertainty: impact on economics

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- Scheme of the lecture:

- Classical, frequentist and subjectivist theories of probability
- Keynes's Treatise on probability (1921)
- Keynes's economic theory for an uncertain world

- Bibliography

- A. Roncaglia, Keynes and probability: an assessment, EJHET, 2009, pp. 489-510
- A. Roncaglia, The wealth of ideas, CUP 2005 (Russian translation)
- J.A. Kregel. Economic methodology in the face of uncertainty, EJ, 1976, pp. 209-25.

Classical theory of probability

- James and Daniel Bernoulli, around 1700, study of regular games
- Probability = ratio of favourable to total cases
- Well-defined space of events and of ‘atomic’ events (as in card or dice games – the six faces of a die)
- Principle of indifference: equiprobability of the possible cases
- Probability theory: deriving the probability of complex events from ‘atomic’ events

Frequentist theory of probability

- Probability as the limit frequency in an infinite series of repetitive, stochastically independent, events
- (measurement in physics, Gauss; measurement of biological characteristics, Quetelet)
- Mises' collectives: infinite succession of uniform events only differing in an observable characteristic that is the object of analysis
- Impossibility of induction: each series is finite, Popper's black swan; Hume's skepticism
- (example: crude oil prices)

Subjectivist theory of probability

- De Finetti, Ramsey, Savage
- Probability estimates revealed by bets
- Internal consistency of the book of bets, no Dutch book
- Von Neumann & Morgenstern, Theory of games and economic behavior (1944, 1947, 1953): revealed preferences and utilities
- Agent's choices reveal probability estimates, preferences and risk aversion all together; the environment must remain unchanged
- Paradoxes: risk aversion, framing (Allais, Ellsberg, Kahneman-Tversky)

Keynes

- Probability = degree of rational belief, a secondary proposition stating a relation between available knowledge and a primary proposition (event): Pr(A/k)
- Subjective, in that it depends on individual knowledge
- Objective: does not depend on individual preferences (Smith's impartial spectator, Kant, Moore'e ethics of responsibility)
- Weight of the argument: total evidence, favourable or unfavourable
- General theory, with certainty (including measurable risk) and total ignorance as limit cases
- Different from Knight's dichotomy between risk and uncertainty
- Rational behaviour in an uncertain world: messy acquaintance with the facts, intermediate between rude empiricism and subjective solipsism

Probability and the General theory

- Method: short causal chains, Wittgenstein's language games
- (not omni-comprehensive models like IS-LM)
- Different kinds of uncertainty for different issues
- (money and financial markets, investment, consumption)
- Three pillars: liquidity preference, multiplier, effective demand
- Hierarchy of decisions and roles: financiers, entrepreneurs and families

Money and financial markets

- Financiers: decisions concern allocation of stocks of wealth
- (hence dominate over decisions concerning flows)
- Dominant role of expectations – the beauty contest
- (self-fulfilling expectations)
- Rate of interest as the price for liquidity
- (liquidity as the counter-part of uncertainty)

Investments

- Long-run expectations: uncertain, unstable
- (example, nuclear electricity plant)
- Importance of a solid and stable environment – the role of stabilizing policies and sufficiently stable rules of the game
- Rate of return, interest rate and liquidity conditions: no mechanic decision rule

Production and employment

- Consumption: the multiplier
- Decisions on investments separate from decisions on savings
- Effective demand: point of equilibrium between aggregate supply (expected outlays) and aggregate demand (expected receipts): both subjective, in the mind of the entrepreneur
- ED not an equilibrium point, unless expectations are realized – and do not change (Kregel)
- Changes in wages do not lead to full employment: no invisible hand of the market

Crises

- Minsky: covered, speculative and Ponzi positions
- Crises not as a step in the cycle, but as a disruption
- The shaky foundations of statistical risk assessment models

(3 methods for computation: worst x% of outcomes, variance-covariance models, MonteCarlo; Roncaglia in PSL QR 2012)

- The 2008 crisis not a ‘black swan’
- «When the capital development of a country becomes a by-product of the activities of a casino, the job is likely to be ill-done» (Keynes, GT, p. 159
- Keynes at Bretton Woods, and financial globalization