

Kartik B. Athreya, *Big Ideas in Macroeconomics: A Nontechnical View*, 2013, Cambridge, Massachusetts and London, England: The MIT Press, 429 pp., ₹ 1957.

Gateway to Contemporary Macroeconomics

Economy is a popular subject of conversation. In a typical conversation like that, the greater scope of the discipline of economics is often reduced to public policy and macroeconomics domain of this subject. This may give one the impression that people are quite up-to-date about the developments in macroeconomics among different branches of economics. Unfortunately, the reality is different. Even though macroeconomics is discussed widely, the discussions on this subject are centred on the Keynesian ideas, which have been put forward by John Maynard Keynes in his magnum opus *The General Theory of Employment, Interest and Money* published in early 1936. Today, many thousands of researchers are devoted to the exploration of non-Keynesian ideas in macroeconomics. The Keynesian policies often suffered serious setbacks. As an instance, Japan saw persistent recession in the 1990s in spite of being faithful to the Keynesian policy prescriptions.

The gap between the frontier research and popular discourse can be traced to two broad factors. The polemic regarding government's role in economic revival and stabilization requires the Keynesian model of governmental policy prescription as its quintessential component. Therefore, countries historically enchanted with the idea of all-empowering government making economic transformation must have the Keynesian prescription as the popular tale of economics. And, dare I say that government as the biggest economic entity and employer seems to be the most powerful authority, which decides the future of the economy to the unsuspecting masses.

This government obsession applies to most third world countries including India. But what about the countries that absolve government of that role to a great extent, namely

North American and western European countries which have often been led by leaders espousing the cause of minimalist government? Keynesian discourse, though surely not the solitary idea in economic narrative of those nations, still pervade a disproportionate share of popular discourse. Why? The reason was unambiguously put forth by Nobel Laureate Robert Solow: 'Economics is no longer a fit conversation piece for ladies and gentlemen. It has become a technical subject.'

Macroeconomics, of late, has become a subject, of which ideas can be approached *only* being endowed with mathematical modelling and computational skills. Keynesian ideas are expressed in lucid and most comprehensible language. The repercussions of this development include not only limited percolation of economic ideas to popular psyche but also augment in number of macroeconomists who are largely concerned about techniques rather than the big picture. Kartik Athreya's book is, therefore, aimed not only to bridge the gap between frontier research and popular understanding but also to enrich the budding macroeconomists with this 'big picture' understanding of the subject.

Stephen Hawking was told by his publisher friend on a draft of his to-be-published popular science book that every equation quoted in the book would halve the number of copies sold of his book. Hawking only included one equation $E = mc^2$ in his book titled *A Brief History of Time: From the Big Bang to Black Holes*, and the rest is history. Athreya did not include even a single equation in this book. I know many people who complain of mathematical language as being unnecessarily complex and needlessly quantitative. For them, mathematical modelling is either unnecessary clouding of a brilliant idea in its presentation or, crudely speaking, masking an otherwise unsaleable idea with the disguise of pseudo-brilliance. They may take heart from Athreya's presentation of each and every idea without equation. At the same time, Athreya would not approve their criticism. The first chapter is dedicated to defend the practices of present-day macroeconomics such as

indispensability of mathematical modelling which—Athreya argues—is essential for conveying unambiguous rendering of one's idea and also for quantitative prediction. After all, science—which is how the macroeconomists attempt to define their subject—is nothing but rigour and prediction.

The foundations of microeconomic-based macroeconomics are laid down by Athreya in the first two chapters. To the uninitiated readers, this foundation lies in defining households and firms that behave according to some mathematically dictated preferences and objectives. Economics defines a possible stable situation involving such economic agents which, by the seminal researchers of this subfield, goes by the name Arrow–Debreu–McKenzie equilibrium. Price has a vital role, for it acts as aggregator of information and conveyor of information. Every aspect of defining this equilibrium was examined thoroughly in these two chapters, which is a must-have understanding for every budding economist. The existence of an invisible hand, that is the rough translation of equilibrium in market mechanism, is unproved which allows certain scepticism to prevail regarding applicability of this mechanism in the real world. Athreya motivates the reader from multiple points of view—game theoretic to experimental verification. On perusal of his articulations, irrespective of one's agreement or disagreement with neoclassical economics, one would definitely agree that Athreya, a thoroughly read and all-round knowledgeable in economics, is one of the fittest persons to defend the tenets of neoclassical economics.

Chapter 4 well defends against the critics of macroeconomic modelling who dismiss such modelling as unrealistic. Criticisms are categorized into four classes, *Aggregation*, *Rationality*, *Equilibrium* and *Mathematics*, called 'our four sins' by the author. I remember my initial years in graduate school when I struggled to understand why macroeconomic modelling presents a reality in spite of these 'cardinal sins'. Athreya, on advocating the cause of macroeconomic modelling, presented a judicious overview for each of the cases.

All economic models suffer from *aggregation*, but since macroeconomics deals with prediction about the real economy, such modelling is considered unreal by many. Macroeconomists—for example, Per Krusell and Anthony Smith—attempted to decode how different will the prediction be by the models that deviate from a single representative agent. The answer that can assure the sceptics is 'minimal'. Indeed, this is not the only kind of departure from aggregation that is possible but obviously one of the kinds that used to be considered a strong case by critiques.

Another interesting case rests with *rationality* assumption. The real reason why economists use this assumption is that it is simply impossible to mathematically model an

agent who may not act as per any predefined utility function. Economists—somewhat unconvincingly—defend their case arguing for rationality of crucial decision-makers and tickling down effect of their decision-making to *all* decision-makers. Some other economists—namely Thomas Sargent and Christopher Sims—under the general rationality framework argue for rational inattention that means that agents do not update their information all the time on account of the cost to update so, but update their information once a while. It is safe to say that bounded rationality has not made any better inroad than this model of rational inattention in macroeconomic modelling. Extensive research on behavioural economics failed to make their presence felt in the macroeconomic modelling, perhaps on account of necessary complexity involved in the process. Some other disciplines such as Econophysics and Complexity studies relapsed this assumption of rationality. They either appeal to physical laws or to even arbitrary mathematical laws to model human behaviour. Such models are more simplistic but sans any micro-foundation. The discourse today has not progressed ahead of this roadblock.

The last two chapters of the book deal with policy advice from macroeconomic modelling. Neoclassical economics, famed for its role in opposing the Keynesian prescription, also suggests policies. The chapter starts from the Malthusian model and covers all notable models to the latest search-theoretic one. In each case, salient features of the model, their empirical motivation and policy prescriptions are discussed. For example, the Solow model shows that technological progress and capital accumulation can make long-term impact in transforming lives. As a typical case, the model illustrates the case of Indian barbers who are much worse-off compared to their American counterparts, in spite of both the nations having similar degree of inequality. The model may give the insight that higher tax rates is a killjoy for many, for it takes away their income but it may actually make sure their long-term felicity.

Athreya also discussed the role of calibration and quantitative examination in case of a macroeconomic model, which is an interesting development that happened since the seminal work by Finn Kydland and Edward Prescott in the early 1980s. The expectation regarding performance of macroeconomic models has, forever, changed since then. New Keynesian ideas like coordination failure and sticky prices are also examined in this same standard when expressed in macroeconomic modelling.

Doubts loomed large on the efficacy of macroeconomic research in popular circles after the financial crisis of 2007–08, and Athreya addresses the topic in the sixth

chapter. This chapter elaborately presents the view of different macroeconomic theories on the causes and possibilities of the crisis. His contention is that leading macroeconomic models predicted a big fall of real estate prices as 20 per cent. An unanswered question remains—Why then did the crisis happen? Athreya is a theoretical economist and also as editor of a reputed academic journal

may bother simply about general soundness of economic research, but business management demands a bridge between sound economic research and sound economic policy-making.

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