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Understanding Capitalism

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A review article around Anwar Shaikh's 'Capitalism', published more than six years ago and now turning into a classic.

1. By way of an Introduction

'*Capitalist history* is played out on a *moving stage*.'- Shaikh, 2016, p. 50 (see also p. 5; italics added).

The Book[1] by Anwar Shaikh[2] which is reviewed here was published a little over six years ago; it has been translated into Chinese and Turkish, and is about to come out in a Spanish translation, as well; it has also won a prestigious Chinese award and the author has provided an updated "Introduction" to the book.

Shaikh *runs* to keep pace, like in *Alice in Wonderland*, not only with the 'moving stage' but the changing dynamics and development of the play on a stage that is in motion, for capitalist history is like a jigsaw puzzle, defying interpretations of an unchanging form. That, I think, is the secret of Shaikh's study of capitalist history applicable to societies that ostensibly change and develop almost incessantly.

The sheer quantitative dimensions of Shaikh's enterprise are mind-boggling: three parts divided into 17 chapters of *nearly a thousand pages* with the contents, the appendices, figures, tables, notes of abbreviations, references, subject and name indices. The Chinese, ever practical, produced an attractive two-volume set and I would endorse a second edition in English to be produced in three volumes, corresponding to the three parts into which the book is divided, which are Foundations of the Analysis, Theory of Real Competition, and Theory of Turbulent Macro-Dynamics (this is sometimes hyphenated).

It is easily comparable qualitatively to the 'classics' of the subject of Economics in the Post World War II period: Hicks (1946), Samuelson (1947), Simon[3] (1947), Robinson (1956), Debreu (1959), Sraffa (1960) and Taylor (2010)[4]. By 'classics' I mean those books that become standard within a few years of publication; otherwise, they take roughly a couple – or more - generations of graduate student lives to establish themselves. Classics are reprinted but rarely brought out in 'new' editions! All of these books - some of them were composed of articles that the authors put together, coherently, in a book form – became classics within a few years of publication.

Shaikh's book is a classic of similar sort; that is why it is just about right to write a review article now. However, it is well to equip oneself with Shaikh's essay in Szenberg and Ramrattan (2014) and his Goldsmiths interview of May 2019 (Ragupathy, 2022). Much of the book by Shaikh, as befits a classic, is based on the over 30 articles he has authored singly or jointly; they are meticulously referenced in this work.

Shaikh's and Sraffa's book have this in common: they both are critical of the current view of capitalism, informed by a view of classical economics (my conjecture is that Sraffa emphasizes the Ricardian aspects, whereas Shaikh the Marxian ones) – but they draw qualitatively different conclusions. They both are a Prelude to a Critique of Economic Theory, Sraffa explicitly and Shaikh implicitly.

The author says, in the "Preface" and "Acknowledgements" (p. xxxv):

'This book has been in the making for fifteen years. An earlier attempt was abandoned in 1998 after a decade ....'

I, however, am of the opinion that *The Book* was in preparation, at least in the author's fertile and critical mind, for almost half-a-century – ever since his Columbia doctoral thesis (Shaikh, 1973) and Humbug paper (Shaikh, 1974)[5]. The author also observes, (p. 7; italics added):

'Most of the time, the patterns are directly visible, but *sometimes formalization requires the tools of modern nonlinear dynamics* and empirical testing requires the tools of *modern econometrics*.'

The tools of modern nonlinear dynamics are required because the data of capitalist dynamics is suffused with intrinsic nonlinearities and lumpiness (p. 7) – these are supplemented with the tools of modern econometrics. I am woefully incompetent in all kinds of econometrics, but have some modicum of knowledge in modern nonlinear dynamics which I will put to use 'here and there' in this review.

2. The Structure of 'The Book'

'Excluding [the] introductory chapter and a brief concluding one, *each part comprises five chapters*. All theoretical arguments are contrasted to the corresponding neoclassical and Keynesian/post-Keynesian views and confronted with the *empirical evidence*.'- Shaikh, 2016, p. 7; italics added.

Shaikh is famously modest (but firm in his convictions); he contrasts the theoretical arguments - polished versions of those of Smith, Ricardo and Marx, in particular, trying to analyse capitalism on a moving stage with history as not only as setting the past scene - to many more than the schools named, newclassical, New Keynesian, New Neo Classicals, Behavioural economics, to name just a few that are contrasted with - but, on the whole, he considers newclassicals as a 'branch' of the neoclassicals.

He underlines, superbly, the infeasibility of the newclassical project because the rational expectations hypothesis is not compatible with perfect competition (p. 17 and chapter 8, section 1.4, p. 346, ff). Shaikh, by the way, does not differentiate between US post-Keynesians and UK post-Keynesians.

Even though each of the three parts are allotted five chapters, the page distributions are widely different; part I is 187, part II is 277 and part III of 206 pages. My interest – I wouldn't call it competence, especially in the face of Shaikh's impressive ability – is in part III, "Turbulent Macro-Dynamics", generally, and in particular to chapter 14 (which is about 40 pages in length and sub-divided into 7 sections) and to Walras, Schumpeter (and the distinction with Austrians, in general), Sraffa, Harrod, Goodwin, the Phillips curve, Godley, Taylor and a few other miscellaneous items (like a critical view of Piketty[6], which – I surmise – is included as an afterthought in the latter part of the last chapter of *The Book*).

The 52-page introductory first chapter, together with the concluding chapter 17 (not counting the duplicated material in the latter, from the former), is extremely informative on the contents of *The Book*. Shaikh is being helpful to his readers, not all of whom are versed in the moving history of capitalism or have a grasp of the profit motive as the driving force of its dynamical development. Some are motivated by one school of thought and others by other factors. All of them are catered for, and a magnificent, yet critical, panorama unfolds in the pages of *The Book* – even for the likes of Lucas and Prescott.

Order through disorder, econophysics, emergent behaviour, turbulent fluctuations vs. normal fluctuations, business cycles, long waves[7], evolution, equity premium puzzle, efficient market hypothesis, RBC (as RBCT), rational and irrational expectations, gravitation, centres of gravity, Soros's notion of reflexivity, Gibson's paradox vs. Fisher's hypothesis, the Heckscher-Ohlin-Samuelson theorem, the classical dichotomy, stock-flow consistency, Say's Law (of markets), quantity theory of money, NAIRU, the paradox of thrift, the Coase theorem, globalization, neo-liberalism, natural prices vs. prices of production, and much else that makes economics – whether micro or macro – quantitatively meaningful is mentioned in detail in this Introductory chapter. The details (even of novel concepts like the quantity theory of competition) – if the reader wishes to explore them in depth – are referred to in terms of chapter and section. Shaikh's scholarship is outstanding.

Part II is about *real* competition – as noted above, it is the part that has the largest number of pages allocated to it – which is neither perfect nor imperfect competition; I was left wondering, in reading *The Book* (and Shaikh's Interview at Goldsmith's), whether real competition was a new concept or whether it lies in the continuum spanned by perfect and imperfect competition, like monopolistic or oligopolistic competition. The same doubt assails me about decreasing, constant and increasing returns to scale (Sraffa worked on both issues - i.e., on competition and returns to scale - in criticizing Marshall).

On related issues, chapter 7, section VI is about the Oxford Economics Research Group (OERG) and more particularly about Hall, Hitch, Andrews and Harrod. I believe Shaikh, as a proponent of statistical estimation and testing, should have taken seriously the 'Cambridge-based' critiques of Austin Robinson and Richard Kahn, especially since the industries that OERG considered were few (very small sample size). In addition, the OERG methods were static, and I don't know whether the statistical methodology of *The Book* can deal with dynamic phenomena. Since Shaikh applies it indiscriminately, to both static and dynamic phenomena, and capitalist history is envisaged on a moving stage the statistical methodology must be applicable to dynamics, too.

My knowledge of Harrod's contribution is confined to dynamic issues, more particularly to the trade cycle book and the subsequent growth paper and his various books on dynamics (and the one on Induction and the early official biography of Keynes). None of these is marred by descriptive statistics and he is rather primitive in his knowledge of dynamics. Moreover, the trade cycle book, published soon after the *General Theory* by Keynes[8], was subject to penetrating criticism by Tinbergen on elementary dynamical grounds. That Harrod was a promoter of the statistical methods of OERG is, to say the least, quite astonishing.

But Shaikh is not only modest; he is also generous, and he is so to all – but particularly to members of the OERG. One way to understand Shaikh's advocacy of the various theses put forward by OERG are that they support his stance on real competition. I am unable to get away from the feeling that the OERG view of price formation and its concept of 'best practice methods' (technology, p.54 and chapter 7, as a whole) was static. However, I regard real competition defining capitalist history as dynamic, independent of disequilibrium and growth processes.

There are also the analogies Shaikh draws between war and competition (for example on p. 119, see also p. 15) in capitalist economies; I would have expected a reference, or two, to von Clausewitz, Sun Tzu (perhaps in the Chinese translation) and K. W. Rothschild (especially because a great admirer of Shaikh is a 'UK' post-Keynesian, viz, Geoff Harcourt, who was inspired by Rothschild's 1947 paper in the *Economic Journal*).

As mentioned earlier, Shaikh emphasizes facts, ahead of theory and devotes a considerable amount of space to statistical estimation and tests in each chapter of the book. However, he spends little – or no – time on the probabilistic underpinnings of statistical and stochastic processes, even if they are viewed statically or without regard to the difference between short- and long-run factors (see the last lines of footnote 9). I venture to suggest that Shaikh's statistical analysis is based on a frequency determined probabilistic framework, compatible with discrete-time outcomes; but many of the mathematical theories are continuous-time phenomena. How the transition is achieved remains a puzzle, but this may be due to my lack of expertise in modern econometric tools (even if my incompetence is granted, approximation is crucial in going from discrete to the continuous, and *vice versa*).

Finally, *The Book*, does not deal with the assumption of *non-satiation* of individuals; it is only the flip side of the *fallacy of composition* (or the whole is greater than the sum of its parts) – or the crucial distinction between orthodox microeconomics and heterodox macroeconomics. The near-dominance of optimal decision-making in any form of neoclassical economics (for example newclassical or varieties of behavioural economics) is fundamentally dependent upon the assumption of non-satiation.

3. Some Observations on the contents of 'The Book'

'[M]athematics cannot rise above the level of the vision which it seeks (and frequently fails) to encapsulate.' - Shaikh, 2016, p. 344

That the above quote is in part II of *The Book* is appropriate. Confining myself to this part (chapter 8, sections, 1.5 and 1.6), I have two observations (apart from approving heartily, that Schumpeter is differentiated from the Austrians – and presumably the Austrian school of economics emanating from Carl Menger). One is that 'creative destruction' saw the light of day in 1942 (not in 1950) and, two, one does not have to decide which side of the bread he butters by interpreting secondary sources. This is, however, inevitable in a book that deals with so many concepts and personalities, but it is a pity that no reference is made to the books of 1911, 1934, 1939 or even 1942, by Schumpeter[9].

In part II, chapter 8, sections 1. 3. ii and 1. 4 (p. 341 and p. 346) Shaikh points out that price-taking behaviour leads to irrational expectations. Now various mathematical economists – keeping in mind the quote on mathematics from p. 344 of *The Book* – have maintained that the proper (!) formalization of price-taking behaviour is by a variant of non-standard analysis. My rhetorical question is whether they also assume irrational expectations for the agents (who are infinitesimal – which is equivalent to price-taking behaviour) in them?

In part III Shaikh mentions Sraffa but not that his – i.e., Sraffa's – subsystems are constructive solutions just as vertical integration and integrated labour times (and Marxian labour values, when transformed to prices, i.e., the transformation problem) are; the latter three are 'classical' – formal, non-constructive – mathematical solutions. Shaikh concentrates on his earliest paper, the Humbug Production function, and aspects of the Cambridge Controversies on Capital Theory (*pace* Harcourt!) in the form of *Marx's Last Theorem* on p.61 and chapter 9, in general, and especially section IX. Before I comment on the notion of *Theorem*, I would like to point out that the result relies on limit arguments, input-output tables and so on.

Theorems, in the classic mathematical and logical senses, rely on axioms, (conventional) deductive rules and (logical) propositions. It is clear that *The Book* dispenses with axioms – unlike some of the classics (Hicks, Robinson, Debreu, etc.). But mathematical proof of a theorem requires something to replace axioms and this 'something' could be gleaned as a computation rule, for example from the original proof of Guthrie's four-colour conjecture, as a man-machine interaction. In fact, all mathematical proofs throughout history – whether moving or not – relied on computation – i.e., algorithmic – rules till misplaced rigorization took place in the late 19th century. Shaikh's statistical estimation techniques of factual propositions do not require axioms.

Chapters 12, 13 and 14 of part III are very important, in my view. I shall comment on mathematical aspects of chapter 14, before I end this section. The model of wage share and unemployment ratio that Shaikh discusses in chapter 14 is the adaptation of the prey-predator system of Lotka-Volterra; it was shown to be structurally unstable, but Shaikh's argument is economic (see Shaikh, 2003, p. 127, last line) and I accept it. However, even economically, there is an objection to it. It assumes Say's Law[10], which was rejected by Marx and Keynes!

The generalized version of the prey-predator model, if it is shown to possess a centre, must appeal to the Jordan curve theorem (on the plane). The Jordan curve theorem makes the demonstration of the existence of a centre non-constructive, but it can be shown to be made constructive (since at least the end of the last century).

On the other hand, the conventional limit of the two variables, the way they are defined, keeps them within – or on - the unit square, and the prior argument of structural instability is important before the two variables are required to fulfil the limits imposed mathematically to lie within – or on the - the unit square. *The Book* treats the limits of the two variables but does not do the prior exercise of investigating the structural instability of the adaptation to economics of the prey-predator model.

Finally, in the original model, it is the workers who are the 'predators' and the capitalists are the 'prey' – shades of Khayyam's *Rubaiyat* and (part of) the quatrain (in Fitzgerald's translation), 'who is the potter, pray - and who the pot' come to mind.

4. Concluding Notes

'Profit is central to both micro- and macroeconomics.' - Shaikh, 2016, p. 31.

This is a very impressive book, apart from its forecast of the rise and fall of macroeconomics; In fact, I believe that macroeconomics has more lives than a cat. I wholeheartedly endorse the author's view of the theme of *The Book* (p.745; italics added):

'I end by returning to the main theme of this book, which is that *theory* is important to an understanding of the economy.'

Notwithstanding the importance the author attaches to statistical estimation and tests of empirical facts, Shaikh is an uncompromising theoretician of capitalist history, viewed from alternative schools of thought.

As mentioned above, in section 1 of this paper, *The Book* is divided into three parts and although I have doubts on real competition, I am really enthusiastic about part III, Turbulent Macro-Dynamics; nonlinear mathematical theory comes into its own and Shaikh's important theory is emphasized. Turbulent adjustment, waves and cycles are paradigmatic nonlinear phenomena, which cannot be encapsulated in a unique theory. There is no superposition principle in nonlinear theory.

Part I, Foundations of the Analysis, is an alternative to Hicks, Samuelson and Debreu – i.e., neoclassical theory – and gives one the feeling that the author has given much thought to it, before penning his ideas down.

Hilbert tried to colonize economics with his formalistic apparatus. He failed, but the mathematical economists, *aka* neoclassicals, led by von Neumann, Wald and Wold did it for him (but also earlier, by Irving Fisher, F. Y. Edgeworth, A. Marshall and the founding neoclassical trio of Walras, Jevons and Menger). Shaikh never mentions Hilbert, but I suspect he is a follower of Weyl[11] and Lorenzen in having a sceptical attitude to axiomatic development. In any case, Shaikh is definitely not a follower of Hilbertian mathematical economics in its neoclassical guise.

There are infelicities in *The Book*, mostly in the references; they can be corrected in any second edition and in the translations (which I have not seen). Those that can be found as misspellings or other kinds of mistakes. In the main body of the text are what can be found in a book of the enormous size that this is; still, my favourites are *Delli* and *Henrya*!

Shaikh harnesses the lessons from children's books (particularly Robinson Crusoe), operatic phrases (especially Gilbert & Sullivan) and, in general, is a master of English prose – I think.

Shaikh and *The Book* belongs to my pantheon of 'eminent economists' which includes those who influenced me.[12]

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Footnotes:

1 I shall refer to what I am writing a review article of as The Book, in the sequel (mostly).

2 As Anwar shaikh is about to retire after almost half-a-century of teaching and guidance of students, at the Graduate school of NSSR, the authorities have named him the University in Exile Professor. It must be remembered that NSSR was founded as refuge for those who were fleeing Nazi persecution as a University for Exiles; so, it is a prestigious named Chair.

3 Simon's straddles economics and management, just as Debreu does economics and (classical) mathematics; Sraffa does as Debreu, but his formalisations and proofs are in terms of constructive mathematics.

4 None, except Sraffa (op.cit.) are mentioned in the copious reference list in The Book; Shaikh's book, in considering imaginatively, a view of the development of capitalist dynamics based on a critical interpretation of classical economics, is closest theoretically to the 'classics' by Robinson and Sraffa – both of which are theoretical with arithmetical examples. Shaikh augments his theoretical and arithmetic arguments with statistical estimations of observable phenomena; it is, therefore, a fact based theory, rather than the other way about – and, in this sense, a refreshing 'classic' (like Taylor's).

5 I was privileged to receive, from Joan Robinson or Richard Goodwin (unfortunately, I don't remember exactly, except that it was in Cambridge, in 1974) the manuscript version of Shaikh, 1974. But I must confess that my reading of it was based on an insufficient knowledge of capital theory at that time.

6 Shaikh mentions, in passing, that Pareto is a 'compatriot' of Piketty! Is it because of the Pareto distribution (of property income) 'noted for France in 1897' (p. 757); for Pareto was neither Piketty's countryman nor was he employed in France – but he was born in Paris (which Piketty was not)!

7 Kitchin, Juglar – not by name – Kondratieff (long waves) are referred to as inventory, (conventional) business and price cycles.

8 Harrod never got the proper title of the GT, even in the reprint of the trade cycle book – let alone in the 1936 original! He was woefully ignorant of Poincaré, Birkhoff (the elder and, therefore, of ergodic vs. deterministic dynamical systems) and even le Corbeiller's article in volume 1 of the Econometrica, although he was a Fellow of the Econometric Society from 1951Shaikh's knowledge of ergodicity is due to Davidson (p. 446), whose view of the foundations of probability, on which he superimposes his incorrect vision of ergodicity, is fallacious.

9 Footnote 10 on p. 351, is illuminating as the source of Shaikh's view of Austrian theory of competition, but I could not find any theory of market process or markets, defined with possibilities of statistical estimation and tests of observable facts.

10 In addition, it is a 'long-term' model – but it can be adjusted to fit 'short-term' variables, as well – and the Say's Law assumption can also be relaxed.

11 The 'later' Weyl – but he was a successor of Hilbert, in Göttingen (before the evils of Nazism caught up with him and he moved to the Institute of Advanced Studies in Princeton) and wrote a celebrated memoir of Hilbert on his death. The 'earlier' Weyl was an uncompromising follower of Brouwer!

12 My pantheon of eminent mathematical economists consists of Richard Goodwin, Herbert Simon, John Hicks, John McCall, Robert Clower, Hukukane Nikaido, Duncan Foley and Ali Khan. I class Piero Sraffa as an eminent philosopher-economist. Those who have influenced me though not to the point of emulation are (chronologically) Björn Thalberg, Geoff Harcourt, Guglielmo Chiodi, Tony Lawson, Stefano Zambelli, Wynne Godley, Shu-Heng Chen, Francesco Luna, Jayati Ghosh, Ragupathy Venkatachalam and Lance Taylor.

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