

# Microeconomics



# Microeconomics

## A Critical Companion

Ben Fine



**Pluto Press**  
[www.plutobooks.com](http://www.plutobooks.com)



First published 2016 by Pluto Press  
345 Archway Road, London N6 5AA

[www.plutobooks.com](http://www.plutobooks.com)

Copyright © Ben Fine 2016

The right of Ben Fine to be identified as the author of this work has been asserted by him in accordance with the Copyright, Designs and Patents Act 1988.

British Library Cataloguing in Publication Data  
A catalogue record for this book is available from the British Library

ISBN 978 0 7453 3602 2 Hardback  
ISBN 978 0 7453 3607 7 Paperback  
ISBN 978 1 7837 1779 8 PDF eBook  
ISBN 978 1 7837 1781 1 Kindle eBook  
ISBN 978 1 7837 1780 4 EPUB eBook

This book is printed on paper suitable for recycling and made from fully managed and sustained forest sources. Logging, pulping and manufacturing processes are expected to conform to the environmental standards of the country of origin.

Typeset by Stanford DTP Services, Northampton, England

Simultaneously printed in the European Union and United States of America



# Contents

<i>List of Boxes</i>	vii
<i>List of Diagrams</i>	viii
<i>Preface, Preliminaries and Acknowledgements</i>	ix
<b>1 Locating Microeconomics</b>	<b>1</b>
1.1 Overview	1
1.2 Microeconomics as History of Economic Thought	2
1.3 From Marginalist Revolution ...	3
1.4 ... Through Methodology ...	5
1.5 ... To Implosion onto TA <sup>2</sup>	7
1.6 From Implosion onto TA <sup>2</sup> to Explosion into Economics Imperialism	11
1.7 From Old to New Economics Imperialism	14
1.8 Further Thoughts and Readings	18
1.9 Appendix: Can the Mainstream be Defended?	18
<b>2 Elusive Consumers and the Theory of Demand</b>	<b>21</b>
2.1 Overview	21
2.2 The Reduced Consumer	21
2.3 How Consumer Theory Got its Spots	25
2.4 Consumer Theory Hoist by its Own Petard	34
2.5 Consumer Theory as Economics Imperialism	36
2.6 From Consumer Theory to Systems of Provision	39
2.7 Broader Implications	42
2.8 Further Thoughts and Readings	45
<b>3 From Production to Supply and Beyond to General Equilibrium?</b>	<b>46</b>
3.1 Overview	46
3.2 Production and Cost Functions Rule, OK?	47
3.3 General Equilibrium: A Fantasy Glass, Half Empty or Half Full?	54
3.4 Further Thoughts and Readings	65
<b>4 Competition Is as Competition Does?</b>	<b>66</b>
4.1 Overview	66
4.2 Perfect Entry and Exit, and Monopoly	66
4.3 From Monopoly to Oligopoly	70

4.4	A Little Game Theory	75
4.5	A Simple Model of Entry Deterrence	81
4.6	Collusion	83
4.7	Discriminating Models	93
4.8	Path Dependence	99
4.9	The Coase ‘Theorem’	103
4.10	Towards Alternatives	106
4.11	Further Thoughts and Readings	109
<b>5</b>	<b>Production Function Rules, Not OK</b>	<b>110</b>
5.1	Overview	110
5.2	The Aggravating Aggregate Production Function	111
5.3	Total Factor Productivity	115
5.4	Measuring Something Called TFP in Practice	124
5.5	From Mismeasurement to Misinterpretation	126
5.6	Further Thoughts and Readings	127
<b>6</b>	<b>Labour Markets</b>	<b>129</b>
6.1	Overview	129
6.2	From Labour as Fish ...	130
6.3	... To Human Capital Theory	132
6.4	Imperfect Labour Markets	136
6.5	Risk and Uncertainty	141
6.6	Debating Minimum Wages	145
6.7	Towards Alternatives: Segmented Labour Markets	147
6.8	Further Thoughts and Readings	149
<b>7</b>	<b>Whither Microeconomics: Upside-Down or Inside-Out?</b>	<b>150</b>
7.1	Overview	150
7.2	From Microeconomics to Industrial Policy	151
7.3	Further Thoughts and Readings	153
	<i>References</i>	155
	<i>Index</i>	159

# 1

## Locating Microeconomics

### *1.1 Overview*

The purpose of this chapter is to provide a specification of the nature of mainstream microeconomics in a number of ways, not least by locating it within the history of economic thought (Section 1.2). In part, understanding the nature of microeconomics is aided by understanding its origins and history.

First, not necessarily following it in chronological order, is to trace how microeconomics got to be the way that it is, presenting its journey from the marginalist revolution of the 1870s to the formalist revolution of the 1950s (Sections 1.3 and 1.5).

Second is to describe each of these revolutions. The marginalist revolution brought into play many of the concepts that are now taken for granted within the mainstream. It also involved the break with classical political economy with which it is contrasted across a number of key elements (Section 1.3). The formalist revolution took off from the marginalist revolution, elevating the role of mathematics within economics (Section 1.6). Together these two revolutions underpinned the creation of what will be termed both a technical apparatus, of production and utility functions, and a technical architecture, of general equilibrium, both of which are more fully explained and explored in subsequent chapters.

Third is to pinpoint how, following the formalist revolution, the technical apparatus and architecture have been decisive in expanding the influence of microeconomics over both economics as a whole (even incorporating macroeconomics) and across other social sciences and topics in a process that is termed here the (historical logic of) economics imperialism (Section 1.7). In short, from very narrow foundations with limited scope of application – individual optimisation for given utility and production functions in order to specify market supply and demand – microeconomics has become almost unlimited in scope.

Fourth is to highlight in more detail the so-called reductionism characteristic of mainstream economics. This ranges from its narrow and flawed methodological content, which is increasingly unwitting and uncritically taken for granted, through its highly unrealistic conceptualisations and assumptions from the perspective of other social sciences, and even to the technical assumptions

within its own framework that are essential for the technical apparatus and architecture to prevail, (Section 1.4).

Fifth, the result is that microeconomics today has a schizophrenic relationship to its origins in the marginalist revolution of the 1870s. On the one hand, it remains securely founded on the core principle of individual optimisation and the core concepts of utility and production functions, efficiency and equilibrium. It is equally centred on supply and demand and the determination of market prices and quantities. On the other hand, it has become prodigiously promiscuous and even incoherent in its incorporation of whatever other factors and subject matter take its fancy, especially where these are amenable to mathematical modelling and econometric investigation. This reveals the intellectual and analytical weaknesses of the mainstream – its inability to explain its primary subject matter, the economy, on the basis of its core principles and concepts so that it has to introduce extraneous material to rescue itself. On the other hand, this is also to reveal the disciplinary strength and stranglehold of the mainstream. So secure are its principles that it is able to project them wherever it pleases with whatever it pleases. In an Appendix to this chapter, some discussion is offered on how economists might defend what they do although, in practice, this is often arbitrary and far from deeply considered.

### *1.2 Microeconomics as History of Economic Thought*

Textbooks in microeconomics generally begin with the optimising behaviour of individuals. Consumers, sometimes understood to represent households despite their composition of varieties of individuals and possibly conflicting interests, are presumed to maximise their utility, or preference level, subject to prevailing prices. This gives rise to demand for consumer goods and supply of labour (subject to any other assets that may be held). Firms maximise profits contingent on the technologies available to them and prices at which they can buy inputs and sell outputs.

Such consumer and producer behaviour is dealt with in Chapters 2 and 3, respectively. There, as will be seen in more detail, whilst economics and economists have become unquestioningly habituated to such framing of microeconomics, at least as a starting point, doing so involves a series of serious oversights that it is the purpose of this chapter to highlight.

First is to recognise that microeconomics as such is of a relatively recent vintage. Indeed, it is nominally less than a hundred years old, with the major division of the discipline of economics into the two fields of microeconomics and macroeconomics only explicitly emerging in the 1930s as macro, especially in the form of Keynesianism, sought to deal with the mass unemployment attached to the Great Depression. This is, of course, to enter the domain of the history of economic thought, something that modern microeconomics

(and economics more generally) has studiously overlooked. Nor is delving into the history of our discipline simply to provide a narrative of what came before and when, possibly with the presumption that the theory just got better and better, building on what has gone before, especially with the increasing adoption of mathematical techniques. As will become apparent, the results of situating microeconomics historically are much more extensive, rewarding and challenging. We gain the prospect of learning why the theory emerges as it does, when it does, with what scope of application and with what content. And we can also draw lessons concerning the nature of microeconomics as it is today.

Such issues might be understood in terms of a sociology of knowledge; why does microeconomics emerge and evolve as it does? There are at least two broad approaches to such questions. The first or 'absolute' approach places emphasis on the internal development of the discipline itself as it raises and solves problems of its own making. The second or 'relative' approach suggests that external influences play a role in theory development, although these may be due to circumstances (was Keynesianism a response to mass unemployment?) or to vested interests, ideological or otherwise (was monetarism a response to, and/or support for, neoliberalism and/or financial interests?).

A choice does not need to be made between the absolute and relative approaches if accepting that external and internal influences mutually interact and condition one another. It is usually, however, much easier to trace the logical development of a discipline than to explain how external influences encouraged, or allowed, such development to be generated and accepted. This would require a detailed examination of what was going on in the economy, politics and ideology, as well as the institutions of higher learning.

### *1.3 From Marginalist Revolution ...*

Such a task is beyond our account of microeconomics other than to emphasise that its history and content are not reducible to the strengthening of an irrefutable body of theory that was simply waiting to be discovered and refined for the modern textbook. Ways of seeing the microeconomy are as much open to dispute as they are to discovery – or amnesia! And, not only in name is microeconomics a new arrival on the scene, deriving from the 1930s. For the principles underpinning microeconomics were established only 50 years or so earlier during what is known as the marginalist revolution of the 1870s. The moniker 'marginalist' derives from the idea that optimisation (for example of consumer or producer decisions) will have been achieved when a small, or 'marginal', change in some decision (for example, how much to produce or consume), leaves the optimiser no better off, everything else remaining the same (or *ceteris paribus*). The margin as such is usually captured by differentiating giving rise in particular to marginal cost, product or utility.

It is also worth rehearsing what was involved in this marginalist ‘revolution’, partly because many students never even get to learn about it so neglected is the teaching of the history of their discipline, and partly because it did establish the broad principles that govern the economics of today as opposed to how economics was conceived previously. A revolution involves a before, an after and a transition between the two. Prior to the marginalist revolution, economics as we understand it now was dominated by what is termed classical political economy, around which figures such as Adam Smith, David Ricardo, John Stuart Mill and Karl Marx loom large (although there are many differences amongst even these few representatives). Following the revolution, there was established mainstream, orthodox, neoclassical economics (I will use the terms interchangeably although mainstream most of the time), very much as we know it today. The transition between the two did not take place in a day, a year or a decade, but was extended across different issues over a number of decades before and after the 1870s (and it might be argued that the revolution began in the early nineteenth century and was only complete in the 1950s, see below).

This leads some to argue that there is no such thing as the marginalist revolution as such. But a simple comparison of before and after suggests otherwise across a number of elements. First, whilst the basic unit of analysis of microeconomics is the optimising individual, classical political economy focuses upon class relations, especially across capital, labour and land.

Second, microeconomics has a preoccupation with equilibrium. This is so even when it is dealing with (what is termed steady-state balance) growth of the economic system as a whole. By contrast, classical political economy is concerned with the processes of growth *and* change (not least because it is seeking to come to terms with what is the relatively new era of industrialisation with major economic and social impacts). Whilst microeconomics is concerned with static considerations, or at most stability, classical political economy addresses the historical and dynamic properties of the economic system.

Third, microeconomics is concerned with issues around the efficient use of given resources in the context of given production conditions. In this respect, it is ahistorical, tending to overlook the different economic and social relations under which such efficiency may or may not be generated (although presuming that market-type behaviour is universal wherever it can flourish). Classical political economy, on the other hand, is sensitive to different historically organised economic systems – after all, efficiency under feudalism or slavery is different than under capitalism.

Fourth, as today’s students know only too well, microeconomics is based upon a deductive method: one makes some assumptions (optimising individuals) and draws out conclusions on this basis. Classical political economy is more inductive, seeking to base its theory on close empirical observation of society (such as its class nature).

Fifth, microeconomics bases its understanding of value (and price) on a subjective theory of value. Ultimately, what things are worth is what individuals are willing to pay for them at the margin of consumption (although this is a subjectivity of the individual that is very different from postmodernism, in which subjectivity is invented, bound up with forging of identity, etc., as opposed to being given by a utility function). Classical political economy is more committed to an objective theory of value, one based on cost of production independent of demand, especially drawing upon the labour theory of value in which labour time to produce something underpins its value.

Last, microeconomics is intradisciplinary to the extreme, with its principles far removed from the concerns of other social science disciplines (with their preoccupation, for example, not only with class but also power, conflict and ideology). Classical political economy is very different, not least as signified by its name, embedding its understanding of the economy into broader economic and social factors beyond the market, and not confining itself to what has become the traditional subject matter of economics.

#### *1.4 ... Through Methodology ...*

As is at least implicit in what has gone before, microeconomics adopts a stance on certain methodological issues. It chooses methodological individualism (of a special type, utility maximisation as opposed to broader behavioural or motivational determinants – as in psychology for example) over methodological holism (the study of the system as a whole prior to the study of its individual components); deduction (and especially mathematical technique) over induction; an intradisciplinary over an interdisciplinary approach; and an ahistorical or universal methodology (applicable at all times, places and circumstances without regard to history and context) over theory attuned to the specific nature of the object under study (such as capitalism as opposed to slavery). In addition, previously explicitly if less so more recently, microeconomics presumes a separation between positive and normative theory, between what is and what ought to be, presuming that its principles are ethically neutral, or value-free, whether right or wrong.

This separation is acknowledged by some philosophers to be unobtainable, not least because how we express things inevitably incorporates some ethical content – compare the notion of production as a relationship between inputs and outputs with its being understood as a class relationship of exploitation. By the same token, the presumption that evidence can be given independently from theory as the basis on which to test theories is also false – we need at least a conceptual framework to determine how we construct evidence: what does or does not count as a component part of GDP or the unemployed for example.

Each of these issues around methodology is extremely controversial. Whilst it is possible to discuss each issue separately, it is not at all clear that they can be settled in isolation from one another, nor that everyone will agree on the nature of the methodology. Any methodology is almost certainly liable to incorporate a complex mix across these separate elements but not necessarily be defined by that mix, even with added ingredients. But what stands out about microeconomics is the extent to which it adopts an extreme position on each and every element. The point here is not so much to demonstrate that this is unacceptable (both in principle and in practice) from the perspectives of the study of methodology and of other social sciences (and, indeed, of the physical sciences with which economics often seeks to compare itself) – the market system cannot come from individuals, and nor can the language with which we engage in it, let alone discuss it; the market system cannot be isolated from society; it cannot be discussed with value-free concepts; it cannot be based on deductive principles alone (where do concepts such as the optimising individual come from in the first place?); and it cannot be assessed on the basis of externally given data. Rather, to reiterate, the point is to observe the extremes to which microeconomics has been driven methodologically and, subsequently, to reveal how this relates to the substantive content of the theory involved.

For, with the marginalist revolution based on the optimising individual (with utility or production function as consumer or producer, respectively), two important goals were established for what was to become designated as microeconomics. The first was to focus upon the economy as market relations, with the otherwise corresponding neglect of the social, the historical and the institutional. Thus, microeconomics became concentrated on supply and demand. This involved one sort of ‘reductionism’, a narrowing of the understanding of what is the economic and what factors comprise and determine it. The second goal involved a second type of reductionism, not only to the individual, as already indicated, but also to that individual as ‘rational’ in the sense of being committed – pure and simple – to the pursuit of self-interest. Homo economicus, or economic rationality, became identified even more narrowly with utility maximisation as the sole factor in individual motivation and behaviour.

To some extent, at least in principle, the focus upon such rationality can be seen as a reasonable response to the emergence of the market itself as the major form taken by economic relations. Surely, this does itself inspire a particular form of motivation and behaviour across individuals even if in other areas of our lives we might be more rounded, irrational even, as human beings in going about our daily business as citizens and family members. Nonetheless, rightly or wrongly, microeconomics became concerned with the notion of (economic) rationality in the sense discussed, with a presumption that other forms of behaviour, especially in market relations, should be lumped together as ‘irrational’. Such a pejorative term suggested by implication that such behaviour

should be left to other disciplines, and is liable to be unsystematic, not of great significance, and subject to erosion by competitive processes (if more so in the arena of production than consumption).

### *1.5 ... To Implosion onto TA<sup>2</sup>*

Such predispositions towards focusing upon economic rationality in this form in the context of market relations almost inevitably gave rise to the posing of a particular problem for microeconomics. Given economic rationality, what are the implications for (individual) supply and demand? Does supply inevitably increase with price, and demand decrease? And, even more formally, what are the mathematical implications for supply and demand curves given that they are derived from the optimising behaviour of individuals?

The solution to these problems is discussed in some detail in Chapters 2 and 3, on consumer and producer theory, respectively. For the moment, though, the first point to emphasise is that this is the problem microeconomics sets itself. The second point is that microeconomics is single-mindedly prepared to make any sacrifices – or, on its own terms if rarely put this way, to make whatever assumptions are necessary – to generate a solution.

These sacrifices are, indeed, prodigious. For example, as already indicated for the consumer, this is an individual with fixed preferences over fixed goods, with a single motivation and behaviour. As a result, goods carry no meaning other than their physical properties, and individuals have no subjectivity other than a given utility function, and so are stripped of the possibility of making their own identity (free to choose as consumers but predetermined through their utility functions in what they will choose and what utility is given by those choices). Differences between individuals, let alone their individuality or its making, are obliterated. There are no differences, by nation, region, gender, race, ethnicity and so on, nor by motives – all are simply driven by given utility. Of course, other (non-individualistic) approaches also obliterate some or all of these differences at the outset – those addressing class or gender, for example, especially where these are analytically or causally privileged as opposed to the individual. But, what is peculiar about this abstraction or assumption in mainstream economics is that it is the individual that is being addressed as the privileged concept, but without any individuality.

Further, even within this framework, as students at all levels soon recognise and to which they become habituated, certain technical assumptions are necessary for the problems of determining supply and demand to be resolved. In elementary terms, quite apart from effectively eliminating time and space from the analysis, these simplifying assumptions include diminishing marginal utility, for example, in order that orderly mathematical solutions can be derived for the utility-maximising consumer. Such assumptions are not and cannot

be motivated by any reference to empirical evidence, but are the consequence of what is necessary for the theory. As it were, as so often within economics, the world must fit the theory and, if it does not do so, so much the worse for the world. And, having sinned once or thrice in making its assumptions, the mainstream simply carries on without a second thought other than convenience to the theoretical (or possibly other purposes, such as to ease the undertaking of empirical work or to be able to come to and/or support particular policy conclusions).

Of course, in this and other contexts, this very appropriately raises the issue of the 'realism' of microeconomics (and economics more generally). Now realism is itself a very tricky notion and is highly controversial (as much so as methodology), and is open to many different positions with different elements and possible combinations. It involves both *ontology* (what is the nature of reality – is it like a set of equations or a mathematical model, is it the same for the physical as for the social world, and what room is there for uncertainty as opposed to regularity in outcomes, even beyond probabilistic understandings?), and *epistemology* (what is the nature of our knowledge of the world; moreover, do we get that knowledge through observation or reasoning, and how do we know whether we are right or wrong?).

As with methodology, it is beyond this text to cover debates on ontology and epistemology. Rather, once again, the purpose is more to highlight how extreme is the position to which microeconomics is pushed. As it were, it is the needs of the theory that are in command at the expense of everything else, including realism however this is understood. It has become extremely rare for microeconomists especially (but economists more generally) even to decipher and recognise, let alone justify, their positions in these respects and how they differ from, and even are thought to be invalid from, the perspectives of other social sciences and those who specialise in methodology.

To some extent, these and other issues may have been acknowledged, if set aside, as microeconomics was being established and strengthened. But today, with microeconomic theory as part of the conventional wisdom of the discipline, the presumption is that there is some underlying methodology and notion of realism that can support it. What is informally involved is some combination of deductive reasoning from axioms which is taken to be indisputable (maths done properly cannot be wrong) together with some form of falsifiability (well, if our axioms are wrong, this will show up in our conclusions and will be invalidated by empirical testing).

Both in principle and in practice, these positions are known to be wrong. As already mentioned, it is impossible to construct evidence, for example, without preconceptions; and it is almost impossible to refute a theory through evidence (and it rarely happens in economics) because it can generally be modified to take account of apparent empirical anomalies. For example, if estimates of demand

do not fit we can always claim the theory is still correct but the underlying utility functions may have shifted.

Otherwise, critics of (micro)economics often point to its undue reliance upon mathematics. To some degree, this is misplaced. There is nothing wrong with mathematical reasoning. It can both clarify our arguments and it can even be used as a tool to discover and present results that are not otherwise apparent. But there are limitations on the form and content that can be taken by mathematical reasoning. It has difficulty dealing with aggregates such as power, class and conflict, or even the state and concepts such as liquidity that involve beliefs and ideology. As emphasised, though, mathematical reasoning fits extremely comfortably with the directions taken by microeconomics, but that is the fault of the theory not of mathematics as such.

By the same token, it is worth observing that, despite its claims for rigour because of its use of mathematics in theory and evidence in testing, and a corresponding claim of being parallel with the methods of the (natural) sciences, this is not true (and nor is it appropriate, since economics concerns the social not the physical world so that their methods are justifiably and necessarily different from one another). The physical sciences do use mathematical reasoning and modelling and they do test theories against the evidence. And yet, those who study the methodology of science would be appalled at the naïve and extreme postures of microeconomics. In any case, the theories and hypotheses that are used in the natural sciences are heavily influenced by close empirical observation as opposed to the more or less arbitrary assumptions attached to microeconomics (especially concerning the individual which we know are not and cannot be true) that are driven by its own inner goals as opposed to correspondence with its object of study.

In addition, as mentioned, microeconomics has heavily involved a reductionism towards a particular type of individual behaviour in the context of market supply and demand. In many respects, in what will be termed an 'implosion' upon its core methods and assumptions, this resulted in the throwing away of those considerations that got in the way of deriving the desired results. It became a matter of teasing out as full a set of implications as possible from individual optimising behaviour, irrespective of the assumptions necessary to do so. A further consequence has been to consolidate the division between (micro)economics and other disciplines to which, from its own perspective, were allocated issues related to non-economic or irrational behaviour and social factors whether related to the non-market or to the non-individual (institutions, politics, ideology, the law and so on, even though these are recognisably prerequisites for the market and affect its functioning). And, especially in the interwar period, whilst the core results of microeconomics were being established, there was a strong separation between it and economics more generally. It was as if the discipline indulged the exercise in implosion on its own narrow terrain whilst

continuing to go about its own, more important business of studying how the economy as a whole functioned.

At the time, institutional economics and applied economics of various types and economic history were particularly strong, with a heavy reliance upon inductive methods – analysing the rise of monopolies and trade unions, the patterns and causes of business cycles, the changing distribution of income and wealth, etc. Significantly, by the time of the Great Depression nobody looked to microeconomics to explain massive unemployment. As a result, (Keynesian) macroeconomics emerged alongside microeconomics although, unsurprisingly, there were those who argued that too high real wages were the cause of unemployment on grounds that would be instantly recognisable to standard microeconomics. Whilst, in the early 1930s and in the context of massive unemployment, Lionel Robbins sought to define economics as the allocation of scarce resources between competing ends, this had to wait a couple of decades before it was more readily accepted.

By the 1950s, the goals that microeconomics had eventually set itself had been accomplished. The first (already discussed), of drawing out the implications of individual optimisation, gives rise to the Slutsky–Hicks–Samuelson conditions (see Chapter 2). These provide the necessary and sufficient conditions for (individual) supply and demand curves to have been derived from optimisation. But there was a second goal that came to prominence later, in contrast to the partial equilibrium analysis of the marginalist revolution that had been inspired by Alfred Marshall who laid out much of the conceptual and technical apparatus that is familiar to all students of economics (marginal cost, utility, externalities, monopoly pricing, consumer surplus, and so on). This is how to put such individual supply and demand curves together across the whole economy and find, in general equilibrium, what price vector would equate supply and demand for all markets simultaneously.

Kenneth Arrow and Gerard Debreu proved the existence of general equilibrium in the early 1950s. In effect, this is the ultimate achievement of microeconomics since it both rests upon individual optimisation and the aggregation over all individuals to form the economy as a whole. However, once again, the desire to forge a theory of general equilibrium involved an implosion of its own, albeit overlapping with that of individual optimisation. Apart from so-called perfectly competitive markets (in which all firms are taken to be price-takers, on which see Chapter 4), to guarantee the unique existence of a stable Pareto efficient general equilibrium required no increasing returns to scale, no externalities, and that all goods be more or less gross substitutes for each other (see Chapter 2) – as well as the standard methods and assumptions around individual optimisation.

By the 1950s, the microeconomic implosion was complete and gave rise to what has already been dubbed the technical apparatus and the technical