

Stu's Notes #12

Stu's Notes provide selected passages from books that are of interest to Stu. They are primarily direct quotes, though some longer passages are summarized. They do not generally provide a thorough synopsis of the book. Rather, they capture individual facts or opinions of interest, which may or may not be reflective of the overall text.

Title: **Debunking Economics: The Naked Emperor of the Social Sciences**

Author: Steve Keen

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Summary: Explains the contradictory and incorrect assumptions on which contemporary (neo-classical) economics is based, with a brief discussion of alternative schools of economic thought. Many of the key assumptions (and a few quotations) are listed in "Highlights", below.

Highlights: The "invisible hand" of individual hedonism maximizes social welfare [p.23-24]

All people have the same tastes, and each person's tastes remain the same as their income changes [p.24, p.45-46]

Each person never has enough [p.33]

We maximize utility, but follow ethical contractual behaviour [p.52]

We have infinite processing power to calculate the comparative utilities of various purchases, and do not rely on habit [p.52]

Productivity falls as output rises [p.55]

Monopolies are always bad [p.107-108]

Lower wages lead to fewer hours worked [p.115]

Unrealistic assumptions are the hallmark of good theory [p.149]

You can ignore the passage of time [p.166]

"Equilibrium is blither" [p.177]

No one wants to accumulate (save) wealth for later use [p.193]

Discussion of uncertainty, expectations, speculation, market fluctuations [p.200-201]

All investors have identical expectations about the future prospects of all companies, these identical expectations are correct; and all investors have equal access to unlimited credit [p.215-216]

“... we devote our intelligence to anticipating what average opinion expects the average opinion to be” [p.238]

“... unless finance markets are institutionally tamed, capitalism will remain subject to potentially catastrophic breakdown” [p.243]

“When crisis strikes, conventional economists will be the last people on the planet who can be expected to provide sage advice on how to return to prosperity – unless, as often happens in such circumstances, they drop their theoretical dogmas in favour of common sense.” [p.256]

Discussion of alternative systems of economics [p.300]

1: No More Mr. Nice Guy

2: The Calculus of Hedonism

One of the “beliefs” of economics is the “invisible hand”: that society is simply a collection of individuals, and the net utility gained by society is the simple sum of the utilities gained by the individual members. As such, the benefit to society can be maximized if individual members pursue their own self-interest.

“Though mainstream economics began by assuming that this hedonistic, individualistic approach to analysing consumer demand was intellectually sound, *it ended up proving that it was not*. The critics were right: society is more than the sum of its individual members, and a society’s behaviour cannot be modelled by simply adding up the behaviours of all the individuals in it. To see why the critics have been vindicated by economists, and yet economists still pretend that they won the argument, we have to take a trip down memory lane to late 18th century England.” [p.23]

“Adam Smith’s famous metaphor that a self-motivated individual is led by an ‘invisible hand’ to promote society’s welfare asserts that self-centred behaviour by individuals necessarily leads to the highest possible level of welfare for society as a whole. Modern economic theory has attempted, unsuccessfully, to prove this assertion.” [p.24]

“But personal satisfaction is clearly a subjective thing, and there is no objective means by which one person’s satisfaction can be added to another’s. Any two people get different levels of satisfaction from consuming, for example, an extra banana, so that a

change in the distribution of income which effectively took a banana from one person and gave it to another could result in a different level of social well-being.

“Economists were therefore unable to prove their assertion, unless they could somehow show that altering the distribution of income did not alter social welfare. They worked out that two conditions were necessary for this to be true: (a) that all people have to have the same tastes; (b) that each person’s tastes remain the same as her income changes, so that every additional dollar of income was spent exactly the same way as all previous dollars – for example, 20 cents per dollar on pizza, 10 cents per dollar on bananas, 40 cents per dollar on housing, etc.” [p.24]

“The true father of the proposition that people are motivated solely by self-interest is not Adam Smith, as is often believed, but his contemporary, Jeremy Bentham.” [p.25]

In 1948, Paul Samuelson codified the principles of consumer rationality:

- Non-satiation: More is always preferred to less. [p.33]

A line connecting successive indifference curves, as income rises, is called an “Engels curve”. These can take several shapes:

- Necessity: buy lots at low income, but fewer *additional* ones as income rises
- Inferior: buy at low income, but buy fewer *total* ones as income rises
- Luxury: buy few initially, but at a faster rate as income rises
- Neutral: buy at the same rate, regardless of income level [p.39]

“Two centuries after Bentham, mathematical economists established that the second leg of the Benthamite agenda was, in general, impossible.

“The obvious conclusion from this is that Bentham was wrong: ‘society’ must exist as an entity in its own right, and the selfish pursuit of individual welfare does not necessarily maximise social welfare.” [p.40]

“Far from proving Bentham’s supposition that “the interests of the community then is (sic) ... the sum of the interests of the several members who compose it”, economists instead showed that only under highly restrictive conditions could social welfare be treated as the sum of its individual members. These were that:

- “The distribution of income was fixed and Engels curves must have a *constant* slope; or
- “Engels curves must have a *constant* slope, and they all have the *same* slope.

“The first restriction was unacceptable because this contradicts the economic theory of income distribution, which argues that relative incomes are determined by the price system. So the only ‘palatable’ way out for economists was with the second restriction.” [p.44]

“... which means that all consumers must have the *same* tastes.” [p.45]

“... Bill Gates must spend the same proportion of every new dollar he earns in exactly the same way that you do ...” [p.45]

“It means that as you get older, you continue spending your income exactly as you did when you were a teenager.” [p.46]

“There are many reasons why economists did not recoil from the patent absurdities outlined above, and search for a sounder approach to economic theory than Bentham’s individualistic calculus.

“One is that economics has been wedded to the vision of society as simply a sum of utility-maximising individuals since the inception of neoclassical economics in the 1870s. When the proof came, one century later, that this vision was internally inconsistent, the commitment to the vision was too strong to break. Better to search for special conditions which would let the theory survive – however ludicrous they might be – than to admit failure.”

The second reason is the use of language which obscures the underlying meaning.

The third reason is that most economists are unaware of the flaws in the underlying theories. [p.48]

Other questionable assumptions:

- Consumers seek to maximize utility, but scrupulously adhere to ethical contractual behaviour.
- We have infinite processing power to calculate the comparative utilities of various purchases. (In fact, the rational thing to do when faced with overwhelming choice is to minimise choice by relying upon habit.) [p.52]

3: The Price of Everything and the Value of Nothing

“Economic theory argues that productivity falls as output rises, so that higher levels of output result in higher prices. The ‘supply curve’ therefore slopes upwards: a higher price has to be offered to entice firms to produce higher output.

“Though this sounds intuitively plausible, when this theory was put to those who do know how factories are designed and managed, they rejected it as ‘the product of the itching imaginations of uninformed and inexperienced arm-chair theorizers’ (Lee 1998, citing Tucker).

“How could something which seems so reasonable to the inexperienced, be so absurd according to those ‘in the know’? The answer lies in the assumptions economists make about production. Though these seem sound to the uninitiated, the two key assumptions are in fact contradictory: if one applies for a given industry, then the other one almost certainly does not.

“Economic theory also doesn’t apply in the ‘real world’ because engineers purposely design factories to avoid the problems that economists believe force production costs to

rise. Factories are built with significant excess capacity, and are also designed to work at high efficiency right from low to full capacity. Only products (like oil) that can't be produced in factories or farms are likely to have costs of production that behave the way economists expect.

“The outcome is that costs of production are normally either constant or falling for the vast majority of manufactured goods, so that ‘supply curves’ are normally either flat or downward sloping. This causes manufacturers no difficulties, but it makes life impossible for economists, since most of economic theory depends on supply curves sloping upwards.” [p.55]

Note that this whole chapter seems predicated on the notion that the supply curves should include only the costs of production; not advertising, financing, etc. If this is true, then the argument appears correct that supply curves often don't slope upwards. However, if the additional costs of advertising and financing are included, both of which rise as you try to capture a larger share of the market, then the critique is less convincing. The author never explains why advertising and financing costs must not be included in the supply curves.

The mutually-exclusive assumptions referred to above are that:

- Supply and demand are independent
- At least one input to production can't be varied in the short run (i.e., there is at least one finite constraint on production)

“The crux of Sraffa's critique was that ‘the law of diminishing marginal returns’ will not apply in general in an industrial economy. Instead, Sraffa argues that the common position would be constant marginal returns, and therefore horizontal (rather than rising) marginal costs.” [p.64]

As a result, there's a problem with the idea that the market (and maximum profits) are established at the point where the supply and demand curves cross.

4: Size Does Matter

Though economists are often opposed to a monopoly on the basis of market theory, this analysis is flawed. There is no basis in economics for concluding that a competitive market is better for society than a monopoly. Each case must be evaluated individually. There are other reasons to be concerned about monopolies: “... they can bully and stifle potential competitors, set higher markups than more competitive markets, and use their monopoly power to exploit other markets. ... Unfortunately, the economic argument against monopolies has redirected attention away from these qualitative nuances to the simple issue of whether a monopoly exists – defined by the proportion of the market dominated by one firm. This simplistic criterion treats all monopolies as tainted, whereas the old anti-trust philosophy attacked monopolies for particular types of behaviour. The economic argument can therefore lead to monopolies being broken up where there were no signs of such behaviour, or where there were extremely good reasons why a single firm was far more efficient than a number of competitive firms. Far from being a guide

about how to achieve greater economic efficiency, economics may encourage us to dismantle effective companies and replace them with inefficient ones.” [p.108]

The example is given of phone services based on fibre optic cable. Having two competing companies means a need to keep costs low, but costs are driven up by the need to have two parallel sets of infrastructure serving all areas. In addition, each company is primarily interested in serving the most profitable areas, and less-profitable areas are left unserved by either company. [p.107]

5: To Each According to His Contribution

“Economists prefer to treat everything, including labour, as a simple commodity, subject to the same ‘laws of supply and demand’ as the simple apple.” [p.111]

In particular, it is assumed that people would prefer to have a life entirely of leisure, and that they must be enticed to work by offering a wage. The higher the wage, the more they will work. Conversely, if you drop the wage, they will work less. This ignores the fact that people need money so survive. They therefore cannot respond to a reduced wage by choosing fewer hours, as this would further decrease their take-home pay. The economics rationale is behind statements that minimum wages are bad for society. [p.115]

“For this majority, work is not an option but – in the absence of a social security system – a necessity. Rather than smoothly choosing between work and leisure, in a *completely* free market system they face the choice of either working or starving. In a market economy attenuated by the welfare state, this choice is less stark, but still present. [p.126]

“Few issues provide better examples of the negative impact of economic theory on society than the distribution of income. Economists are forever opposing ‘market interventions’ which might raise the wages of the poor, while defending astronomical salary levels for top executives on the basis that if the market is willing to pay them that much, they must be worth it. In fact, the inequality which is so much a characteristic of modern society reflects power rather than justice. This is one of the many instances where unsound economic theory makes economists the champions of policies which, if anything, undermine the economic foundations of modern society.” [p.126]

6: The Holy War Over Capital

Argues that “... economic theory cannot justify the existing rate of profit as somehow reflecting the marginal productivity of capital.” [p.146]

7: There is Madness in Their Method

“There would be few if any academic economists who have not had a lecture disturbed by some recalcitrant student, interjecting that the assumptions of the model being discussed are unrealistic. Fortunately, there is a simple weapon at hand: an appeal to

the authority of Milton Friedman that a theory can't be judged by its assumptions, but only by how well its predictions accord with reality. In fact, Friedman's case went further: he argued that unrealistic assumptions were the hallmark of good theory." [p.149, with full quote from Friedman on p.150]

"A theory that contains logically inconsistent assumptions will be a bad theory – and, as this book shows, economics is replete with logical inconsistencies." [p.155]

"What makes economics different from and inferior to other sciences is the irrational tenacity with which it holds to its core beliefs in the face of either contrary factual evidence or theoretical critiques that establish fundamental inconsistencies in its intellectual apparatus." [p.158]

"Any scientist from the 19th century would be bewildered by what is commonplace today in his discipline – save an economist." [p.159]

Part of the challenge, when compared with other sciences, is the difficulty in conducting controlled experiments to affirm or disprove a theory. [p.159-161]

"Economics as a discipline arose at a time when English society was in the final stages of removing the controls of the feudal system from its mercantile/capitalist economy. In this climate, economic theory had a definite (and beneficial) political role: it provided a counter to the religious ideology that once supported the feudal order, and which still influenced how people thought about society. In the feudal system the pre-ordained hierarchy of king, lord, servant and serf was justified on the basis of the 'divine right of Kings'. The King was God's representative on earth, and the social structure which flowed down from him was a reflection of God's wishes.

"This structure was nothing if not ordered, but this order imposed severe restrictions on the now dominant classes of merchants and industrialists. At virtually every step, merchants were met with government controls and tariffs. When they railed against these imposts, the reply came back that they were needed to ensure social order.

"Economic theory – then rightly called political economy – provided the merchants with a crucial ideological rejoinder. A system of government was not needed to ensure order; instead, social order would arise naturally in a market system in which each individual followed his own self-interest. Smith's phrase 'the invisible hand' came along rather late in the process, but the notion played a key role in the political and social transformations of the late 18th and early 19th centuries.

"An essential aspect of this market social order was equilibrium.

"From the outset, economists presumed that the market system would achieve equilibrium. Indeed, the achievement of equilibrium was often touted as an advantage of the free market over any system where prices were set by fiat. Equilibrium was therefore an essential notion of the economic defence of capitalism: the equilibrium of the capitalist market would replace the legislative order of the now defunct feudal hierarchy." [p.161]

8: Let's Do the Time Warp Again

You can't learn to ride a bicycle by practicing when it is motionless. The skills are different. Similarly, the knowledge gained by studying a static economy tells you little about a dynamic one (i.e., you have to consider the passage of time).

"Economic theory in general ignores processes which take time to occur, and instead assumes that everything occurs in equilibrium. For this to be allowable, the equilibrium of the dynamic processes of a market economy must be stable, yet it has been known for over 40 years now that those processes are unstable: that a small divergence from equilibrium will *not* set up forces which return the system to equilibrium. The dynamic path of the economy therefore cannot be ignored, and yet most economists remain almost criminally unaware of the issues involved in analysing dynamic, time-varying systems." [p.166]

"But this long run is a misleading guide to current affairs. In the long run we are all dead. Economists set themselves too easy, too useless a task if in tempestuous seasons they can only tell us that when the storm is long past the ocean is flat again.' (Keynes 1923)" [p.177]

"As Keynes also once remarked, 'equilibrium is blither'". [p.177]

"Instead, what has to be abandoned is the economic obsession with achieving some socially optimal outcome. As noted in this and the previous chapter, economists have conflated the concept of equilibrium with the vision of an 'economic utopia' in which no— one could be made better off without making someone else worse off. But a free market economy could never remain in an optimal position, because economic equilibria are unstable. The real question is whether we can control such an unstable system – whether we can constrain its instability within acceptable bounds.

"This question was once at the heart of what is known as macroeconomics – the study of the entire economy and its control using government fiscal and monetary policy. Unfortunately, as we shall see in the next chapter, economists have formalised this once virile area of analysis into intellectual impotence." [p.185-187]

9: The Sum of the Parts

"Macroeconomics was once a vibrant and independent area of economic research from the study of individual markets, which is otherwise known as microeconomics. In spite of the manifest failings of microeconomic theory, economists have revised macroeconomics to make it more consistent with microeconomics. Macroeconomics today is just a branch of microeconomics, and is based on the proposition which Chapter 2 showed to be untenable, that society in the aggregate can be treated as 'one big consumer'. This process of decay was set in train firstly by Keynes's incomplete escape from conventional theory at the time he wrote *The General Theory of Employment, Interest and Money*, and accelerated by Hicks's dubious interpretation of Keynes as a marginalist. This interpretation ignored Keynes's argument that uncertainty was a fundamental aspect of economic reality with which economic theory has to grapple." [p.189]

“Keynes’s attempt to refute this notion was to put it kindly, rather confusing. ... The upshot is that the essence of Say’s Law lives on in modern economics, though it now goes under the more respectable name of ‘Walras’ Law’ (or in some circles, ‘Say’s Principle’). Its modern definition is that ‘the sum of all notional excess demands is zero’, and this proposition is accepted as valid – indeed as irrefutable – by modern-day economists.

“However, I argue that this is precisely the concept which Keynes intended to refute.” [p.190-191]

Say’s Law suggests that a declining demand for consumption goods would lead to an increased demand for investment. In fact, a declining demand for consumption goods causes investors to question the future demand for those goods, and thus the wisdom of investing. [p.192]

“Marx’s critique of Say’s Law, which so excited Keynes in his later years, went to the heart of Walras’ Law (and Say’s Law). Marx rejected Say’s initial proposition that “[e]very producer asks for money in exchange for his products, only for the purpose of employing that money again immediately in the purchase of another product” (Say 1821). Instead, Marx pointed out that this notion asserted that no-one in a market economy wished to accumulate wealth. If there was never any difference between the value of commodities someone desired to sell and buy on the market, then no-one would ever desire to accumulate wealth. But an essential feature of capitalism is the existence of a group of agents with precisely that intention.” [p.193]

“The capitalist pays a fair price for his raw materials and a fair wage to his employees. They are then combined in a production process which generates commodities for sale. The commodities are then sold for more than the cost of the raw materials and workers’ wages, yielding a profit. The profit allows the capitalist to fulfil his desire to accumulate wealth, without robbing any other market participants, and without having to buy commodities below their value and sell them above it.

“Say’s Law and Walras’ Law, on the other hand, envisage an exchange-only economy: an economy in which goods exist at the outset, but where no production takes place.” [p.194]

“The key concept in Keynes’s summary was the impact of uncertainty upon investment, and therefore upon economic analysis.

“Investment was undertaken to augment wealth, and yet the outcome of any investment depended upon economic circumstances in the relatively distant future. Since the future could not be known, investment was necessarily undertaken on the basis of expectations about an uncertain future.

“Keynes was at pains to distinguish the concept of uncertainty from the simpler concept of risk.” [p.200]

Risk = the future can have a number of known alternatives, with known probabilities (e.g., rolling dice).

Uncertainty = items for which there is no reliable history, and thus no known probability.

“About these matters there is no scientific basis on which to form any calculable probability whatever. We simply do not know’ (Keynes 1937).

“Faced with this uncertainty, we develop conventions to help us cope. We assume that ‘the present is a much more serviceable guide to the future than a candid examination of past experience would show it to have been hitherto’, that ‘the existing state of opinion as expressed in prices and the character of existing output is based on a correct summing up of future prospects’, and ‘knowing that our own individual judgment is worthless, we endeavour to fall back on the judgment of the rest of the world which is perhaps better informed’ (Keynes 1937). We project the present into the future, we comfort ourselves that our collective hunches have got the future right, we follow the herd.

“Expectations formed in this way are bound to be fragile, since future circumstances almost inevitably turn out to be different from what we expected. Expectations will therefore be volatile, resulting in sudden shifts in investor (and speculator) sentiment.” [p.201]

10: The Price Is Not Right

“However, when economists say that the market is efficient, they mean that they believe that stock markets accurately price stocks on the basis of their unknown future earnings. That meaning shifts ‘efficient’ from something which is obvious to something which is a debatable proposition. But that’s not the end of the story, because to ‘prove’ that markets are efficient in this sense, economists make three bizarre assumptions:

- That all investors have identical expectations about the future prospects of all companies;
- That these identical expectations are correct; and
- That all investors have equal access to unlimited credit.” [p.215-216]

“[Fisher] eventually developed a radically different analysis of finance, one in which his ancillary assumptions in *The Rate of Interest* – that ‘the market must be cleared, and cleared with respect to every interval of time’ and that ‘The debts must be paid’ – were systematically violated. Now he acknowledged that the market was never in equilibrium, and that debts could fail to be repaid, not just individually but *en masse*. Static reasoning gave way to an analysis of the dynamic forces which could have caused the Great Depression.” [p.224]

“While any of a multitude of factors could, according to Fisher, push the system away from equilibrium, the crucial ingredient needed to turn this limited instability into a catastrophic collapse was an excessive level of debt, where ‘the breaking of many debtors constitutes a ‘crash’, after which there is no coming back to the original equilibrium’.

“He ventured the opinion that the ‘two dominant factors’ that cause depressions are ‘over-indebtedness to start with and deflation following soon after’” [p.225]

The first assumption above suggests that “once equilibrium is reached, trade on the stock exchange should cease. Thereafter, any trading should merely be the result of the random arrival of new information, or the temporary disturbance of equilibrium via the floating of some new security.” [p.232]

The third assumption above “implies that anyone could borrow sufficient money to purchase all the shares in, say, Microsoft, and pay no more than the riskless rate of interest to do it.” [p.233]

“The essence of this game is not to work out what particular shares are likely to be worth, but to work out what the majority of other players are likely to think the market will think they are worth, since ‘it is not sensible to pay 25 for an investment of which you believe the prospective yield to justify a value of 30, if you also believe that the market will value it at 20 three months hence’ (Keynes 1936). In one of the most evocative analogies ever used by an economist, Keynes compared investing in shares to

“those newspaper competitions in which the competitors have to pick out the six prettiest faces from a hundred photographs, the prize being awarded to the competitor whose choice most nearly corresponds to the average preferences of the competitors as a whole; so that each competitor has to pick, not those faces which he himself finds prettiest, but those which he thinks likeliest to catch the fancy of the other competitors, all of whom are looking at the problem from the same point of view. It is not a case of choosing those which, to the best of one’s judgment, are really the prettiest, nor even those which average opinion genuinely thinks the prettiest. We have reached the third degree where we devote our intelligence to anticipating what average opinion expects the average opinion to be. (Keynes 1936)” [p.238]

“As a result, there is a feedback from current share valuations to investors’ behaviour via the impact that present valuations have on investor expectations. A rising market will tend to encourage investors to believe that the market will continue rising; a falling market will maintain the sentiment of the bears. Such a market can find itself a long way from equilibrium as self-reinforcing waves of sentiment sweep through investors. These waves can just as easily break – though long after any rational calculation might suggest that they should – when it becomes clear that the wave has carried valuations far past a level which is sustainable by corporate earnings.” [p.239]

11: Finance and Economic Breakdown

“The efficient markets hypothesis says that the stock market’s volatility is due to the random arrival of new information that affects the equilibrium value of shares. Allegedly, if it were not for the arrival of new information from outside the market, the market itself would be quiescent.

“However, there is an alternative explanation that attributes most (though not all) of the market’s volatility to its own internal dynamics.

“Remarkably, these two explanations can predict statistical outcomes for share market prices that are almost indistinguishable from each other.” [p.243]

“If financial markets aren’t efficient, then what are they?”

- “According to the ‘fractal markets hypothesis’, they are highly unstable dynamic systems that generate stock prices which appear random, but behind which lie deterministic patterns.
- “According to the ‘inefficient markets hypothesis’, they are systems which overreact to good news and bad, leading to excessive asset price volatility which inhibits the performance of the real economy.
- “According to the ‘financial instability hypothesis’, they are speculative vehicles existing in an uncertain environment, whose reactions to uncertainty over time generate financial cycles which drive the real economy into speculative booms and debt-driven busts.

“All three theories support the argument that unless finance markets are institutionally tamed, capitalism will remain subject to potentially catastrophic breakdown.” [p.243]

“Though Haugen makes no reference to Keynes, the reasons he gives for the market behaving in this way echo the arguments Keynes made back in 1936, that in the real world of uncertainty, few if any stock market speculators trade on the basis of new information. Instead, they trade on the basis of how they think other market participants will, on average, expect the market to react to news. Unlike the efficient market hypothesis, this ‘news’ can include the most recent movements of stock prices themselves.

“In fact, in today’s stock market, the major news will always be the most recent movements in stock prices, rather than ‘real’ news from the economy.” [p.249]

“He also argues that the market’s endogenous instability has a severe and deleterious impact on the functioning of a modern capitalist economy.” ... because:

- It values stocks badly, thus leading to misallocation of resources.
- The volatility reduces the overall level of investment from what it would otherwise be. [p.250]

“What can I say? By promulgating the efficient markets hypothesis, which is predicated on each investor having the foresight of Nostradamus, economic theory has encouraged the world to play a dangerous game of stock market speculation. When that game comes unstuck, America in particular will most likely find itself as badly hobbled by debt as Japan has been for the past decade. This speculative flame may have ignited anyway, but there is little doubt that economists have played the role of petrol throwers rather than firemen. When crisis strikes, conventional economists will be the last people on the planet who can be expected to provide sage advice on how to return to prosperity – unless, as often happens in such circumstances, they drop their theoretical dogmas in favour of common sense.” [p.256]

12: Don't Shoot Me, I'm Only the Piano

“At one level, [the mathematics in conventional theory] is unsound because conditions which economists assume contradict other conditions needed for their models, so that the theory is built on a mathematical error.” [p.259]

“At a more profound level, conventional economics is mathematically unsound because it has not learnt the lesson which true mathematicians have learnt in the last century: that there are limits to mathematical logic.” [p.259]

13: Nothing to Lose But Their Minds

A discussion of the economic theories of Marx (and why they prove that socialism will inevitably overcome capitalism). Indicates the flaws in these theories, but also suggests that there are aspects of Marx's theory which can and should be salvaged.

“One defining belief in conventional Marxian economics is that labour is the only source of profit: while machines are necessary for production, labour alone generates profit for the capitalist. This proposition is a key part of the radical appeal of Marxism, since it argues that capitalist profit is based upon exploitation of the worker.” [p.269]

“The advantage Marxists have over economists is that at least they are upfront about having an ideology. Marxists are as consciously committed to the belief that capitalism should give way to a socialism as economists are to the often unconscious belief that, if only we could rid ourselves of government intervention in the market, we could currently reside in the best of all possible world. [p.299]

14: There Are Alternatives

“In fact, there are many alternative schools of thought within economics. In addition to Marxian economics, the main alternatives are:

- *Austrian economics*, which shares many of the features in common of neo-classical economics, save a slavish devotion to the concept of equilibrium;
- *Post-Keynesian economics*, which is highly critical of neoclassical economics, emphasises the fundamental importance of uncertainty, and bases itself upon the theories of Keynes and Kalecki;
- *Sraffian economics*, based on Sraffa's concept of the production of commodities by means of commodities;
- *Complexity theory*, which applies the concept of nonlinear dynamics and chaos theory to economic issues; and
- *Evolutionary economics*; which treats the economy as an evolving system along the lines of Darwin's theory of evolution.” [p.300]

“I commented at the beginning of this book that economics was too important to leave to the economists. I end on the same note.” [p.313]