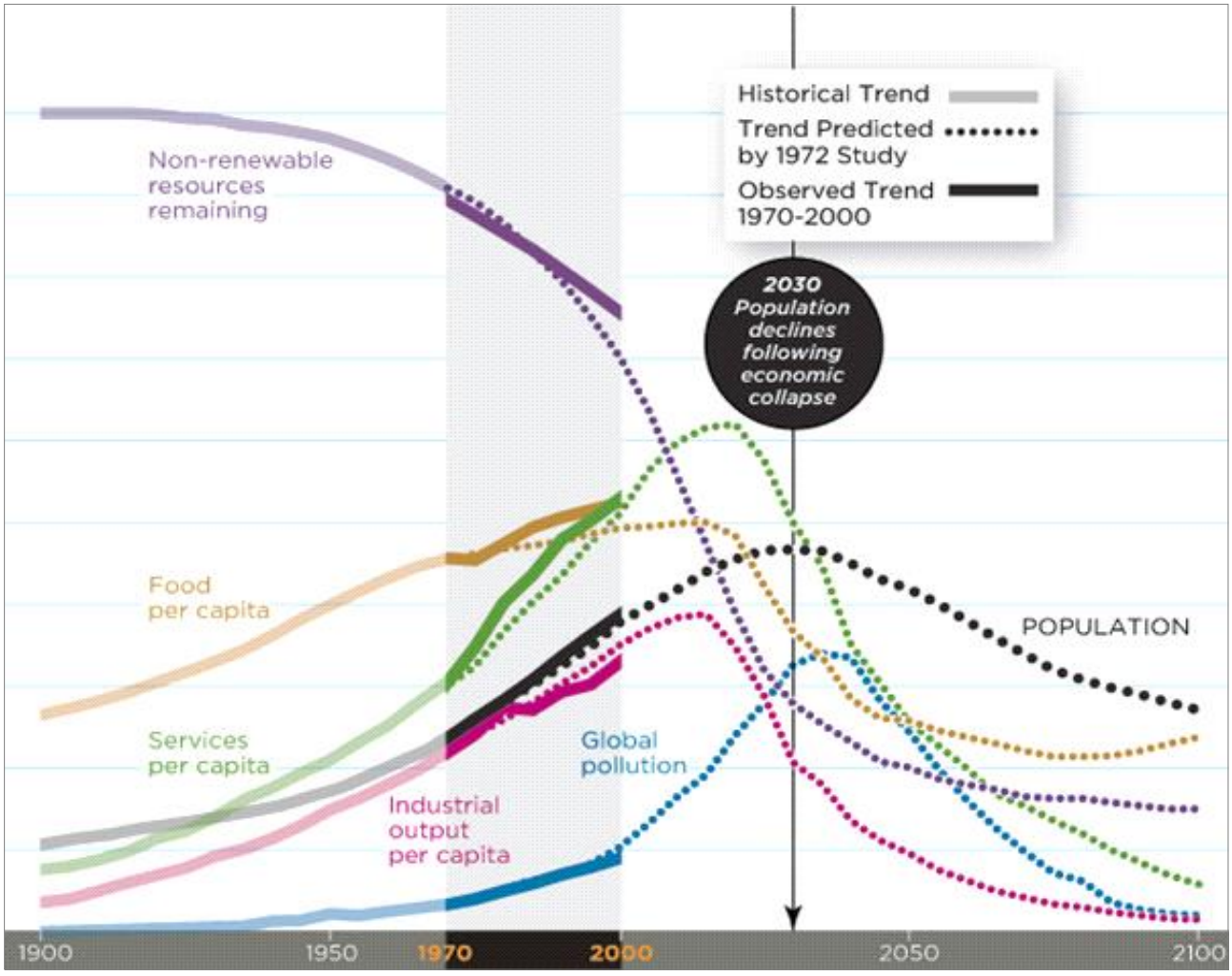
How Our Theory of Economics and our Practice in Financial Markets have Unsustainability built into them

Introduction

For all the talk of sustainable growth, we find the world economy subject to serious fluctuations, boom and bust but behind that a growth in the use of energy and non-renewable resources that is clearly unsustainable. In order to understand why, we need to look at the system as a whole, both the theory and the practice of economic and financial policy.

Background

This paper is based on the premise that the current trajectory of the world economy is unsustainable. It is over 40 years since the Club of Rome produced a report called "Limits to Growth" (1972). This was followed up in 2004 by "Limits to Growth; The 30-Year Update" which came to broadly the same conclusions. Though widely derided at the time, (on the grounds that technological progress would somehow transcend the second law of thermodynamics) the original projections have been proven surprisingly (and frighteningly) accurate. In 2008, an Australian, Graham Turner, published "A Comparison of `The Limits to Growth` with Thirty Years of Reality".[1] The key results are in the following graph:



I think the graph speaks for itself.

1 Graham Turner (2008). "A Comparison of `The Limits to Growth` with Thirty Years of Reality". Commonwealth Scientific and Industrial Research Organisation (CSIRO).

Nor is it just the Club of Rome that is sounding unequivocal warnings. The UN Millennium Ecosystem Assessment in a report entitled "Living Beyond Our Means" concluded in 2005 that 15 of 24 ecosystem services were being degraded or used unsustainably.[2] Overall, the ecological footprint of the global economy is estimated to be some 50% above the Earth's biocapacity, according to the Global Footprint Network.[3] In April 2012 the Royal Society published a report entitled "People and the Planet", which concluded, amongst other things: "*in the most developed and the emerging economies unsustainable consumption must be urgently reduced."* The IPCC report published this week (last week of September 2013) only reiterates what we already know about the unsustainability of our present energy usage patterns.

I believe we can now take as read that our current course is unsustainable, but how to change it? For the last two centuries or more there has been very little questioning of the concept that material progress was a main goal of public policy. Indeed we have the pursuit of perpetual growth built into both our economic theory and our financial institutions. It is important to understand how this comes about if we are to have any chance of changing course. It is to this end that I am addressing this paper.

1. Neo-classical theory

Neo-classical economic theory builds models of the economy based on the theory of clearing markets and a balance between supply and demand based on price. Markets are assumed to reveal people's preferences by the prices they are prepared to pay. This means that markets are presumed to reflect collective valuations. The claim is made that this is morally neutral and therefore scientific. In practice, however, there are a number of moral valuations inherent in this approach. In the first instance only goods and services that are traded can be valued. This automatically means that non-traded items are not of value – a major value judgement. Secondly, it is no less of a moral valuation to say that one pound spent by a millionaire is the same as one spent by a beggar. It is no less of a moral valuation to say that markets should determine how our economy is organised than it is to say that there are other factors which should be taken into consideration.

The flaws in this approach to economic valuation are indeed numerous. Generally recognised is the problem of externalities, ie those costs (and benefits) which are not traded. The classic example is pollution. A factory dumps waste into a nearby river and bears no cost for the resultant pollution, these are borne by the population and species downstream. A similar pollution is carbon dioxide and other greenhouse gases released in the course of production, which affect the whole ecosphere. There are, of course, attempts to control these costs by regulation and to "internalise" them by means of artificial markets such as the auctioning of rights to emit (carbon trading, for example) or taxation of various kinds (e.g. fuel tax). The problem has until recently been regarded as minor, on the grounds that most costs are not external. However, as the rate of consumption of the world's resources (including its ability to absorb carbon dioxide) continues to expand and these become scarce it could be said that externalities are beginning to dwarf "internalities".

Furthermore, inequality of income means that the preferences of the rich count for more than those of the poor, while future generations cannot "express" their valuation at all. The only values that count are those in today's market place. Then again, neo-classical analysis depends on the theory that consumers have perfect knowledge but that is far from the reality and time itself has a cost (ie the time needed to acquire anything like perfect knowledge is far too great). The result is that in practice all sorts of short cuts and rules-of-thumb are adopted by consumers that mean that they make purchasing decisions that do not reflect their considered views and own best interests. The idea that there is such a thing as "homo economicus" is a pure myth. The idea that all purchasing

2 http://www.millenniumassessment.org/documents/document.356.aspx.pdf
3 http://www.footprintnetwork.org/images/uploads/LPR_2012.pdf page 9.

decisions are made on the basis of a rational assessment of all the options and a long term view of even one's own best interests is either a madman or an economist. Needless to say non-human species have no voice either and are only valued in so far as humans buy them. To suggest therefore that markets produce a price for goods and services which reflects some scientific, objective value is not tenable.

Cost-benefit analysis recognises some of the limitations in this approach and attempts to assign a value to non-traded goods, based on shadow prices and on opportunity cost, ie the value of using the resource in its next most valuable use. Thus the opportunity cost of capital is the mean rate of return on other investments. The opportunity cost of labour may be less (or more) than the going wage for a particular job because wages are regulated or because of other "imperfections" in the labour market. Theoretically the opportunity cost of taking copper out of the ground is the value of copper to some other user. This latter type of opportunity cost is almost never taken into account, in my experience. However, the fundamental position that results in neo-classical analysis leading to unsustainability is the proposition that that which Nature provides is only to be costed as the cost of extraction/collection.

While goods and services produced by capital and labour are costed including depreciation of capital, since firms are required to include depreciation in their accounts, non-renewable resources are costed only at the cost of their extraction and refining. Nature is not required to depreciate. Granted that the cost of such depreciation is not as easy to include as the depreciation of man-made capital, it is nevertheless a real issue, as the extreme case of Nauru amply illustrates.[4] The sale of potash seemed very profitable until the deposits ran out, leaving the island practically uninhabitable and GDP plummeted. Conventional economic analysis could not argue against this, even if common sense should have. Even the inventor of the GDP concept, Simon Kuznets, said "the welfare of a nation can scarcely be inferred from a measurement of national income". President Sarkozy set up a commission headed by Amartya Sen and Joseph Stiglitz to examine alternatives to GDP who concluded that we were measuring the wrong thing. Valuing everything at quasi market prices brings all the failings of GDP as a measure of well-being into the decision-making process.

Conclusion

Failing to take the value of non-renewable resources to future generations into account by assigning a cost to the depletion of natural capital effectively treats the earth's resources as infinite. This inevitably leads to economic analysis that is unsustainable; since unfortunately the planet is indeed finite.

2. Financial Markets

Turning to the financial markets, I want to concentrate first on the issue of bank lending, which, I argue, has unsustainability built into its heart. The impact of bank lending on the necessity for GDP to grow is partly obscured by the fact that different loans are being made and repaid all the time. At the present time about 97%[5] of the UK's money supply has been created by banks and credit card lending.

As a thought experiment, let us assume that all of these loans had a maturity date of 31st December, with a moratorium on paying interest until maturity at which point they had to be repaid with the

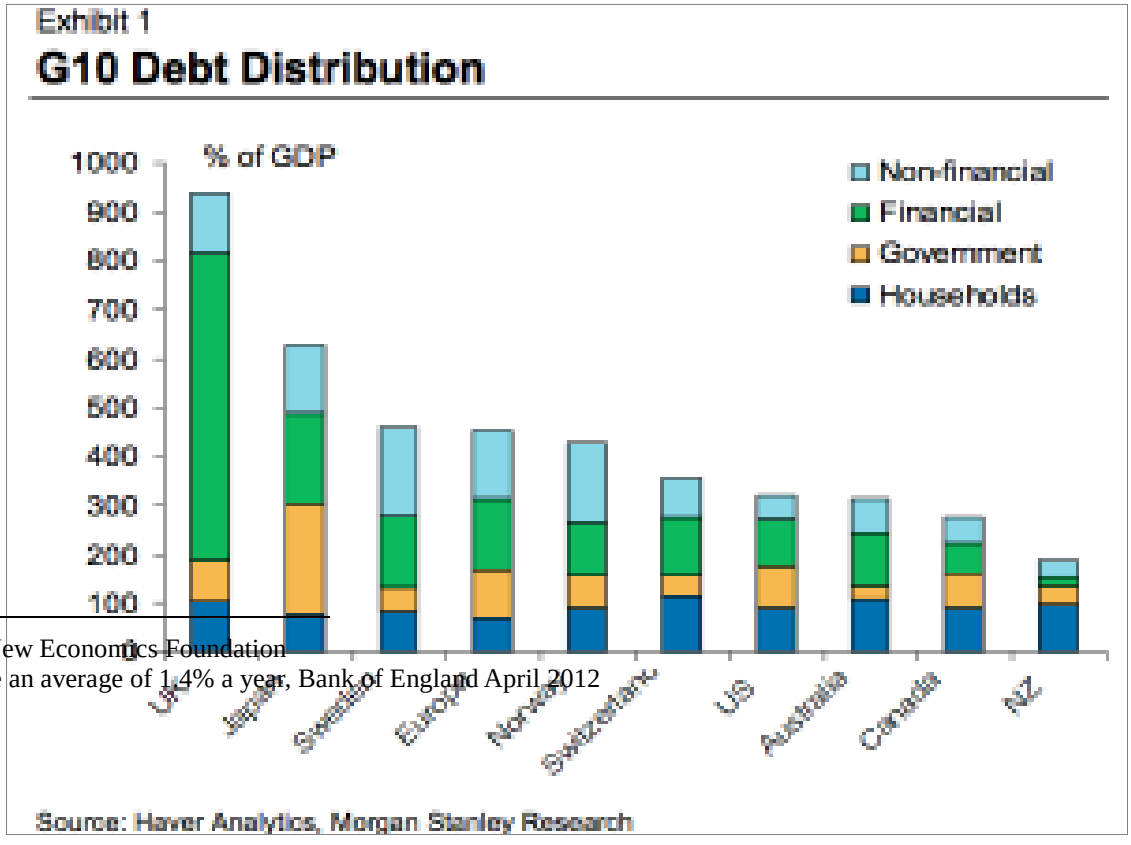
4 See for example Wikipedia: In the years after independence in 1968, Nauru possessed one of the highest GDP per capita in the world due to its rich phosphate deposits. With their exhaustion, GDP plummeted. In anticipation of the exhaustion of its phosphate deposits, substantial amounts of the income from phosphates were invested in trust funds aimed to help cushion the transition and provide for Nauru's economic future. However, because of heavy spending from the trust funds, including some disastrous foreign investment activities, the government is now facing virtual bankruptcy. (Some deeper deposits have now been found, so they are having a second chance to do things more sensibly this time.)

5 Bank of England April 2012

year's interest. If the average interest rate was 10% (to keep the numbers easy) then 107.1% of the money supply would be needed on 31st December just for settling debt. This could only be achieved if there had been growth in the money supply in order to generate the interest. At present this can only be achieved by an increase in bank lending since Quantitative Easing increases M0, ie the quantity of money held within the accounts of banks held within the Bank of England, but not M4, the money circulating in the economy! Growth in the money supply without inflation requires growth in the real economy (unless it gets absorbed in rising asset prices, which is asset price inflation, as opposed to retail prices inflation). In fact in 2010 only 8% of bank lending went to the productive sectors of the economy,[6] the bulk of lending (51%) goes to households (primarily for house purchase (87%)) and to financial institutions (31%) such as leveraged hedge funds, primarily for speculative purposes.[2]

This has indeed directed the demand created by lending towards fixed and paper assets that are already in existence rather than towards increasing production. It is therefore hardly surprising that there have been bubbles in house prices and other assets. This did not get recognised as inflation as house and share prices (as opposed to mortgage payments) are a capital item and do not get reflected in the CPI or RPI. The Government and subsequently the Bank of England monetary policy committee felt able to carry on with "business as usual" during an expansion of the money supply from being 180% of GDP in 1980, to 360% in 2002 and even to 614% in 2010. (Only in 2011 and the first quarter of 2012 has the ratio of M4 to GDP declined marginally to 540% at the end of March 2012.) During the period from 2002 to 2010, the RPI increased only 27% in the 8 years, a period which saw the money supply increase by 226%, while GDP adjusted for inflation increased only 11.5%.[7] Some of the consequences of this expansion can be seen in the Chart below.

Chart 1 below illustrates the size of debt relative to GDP for a number of countries and areas. We can see immediately that UK appears to have a debt problem, but not the problem one might expect. Non-financial firms have debt approximately equivalent to GDP, but not so different from the Euro zone as a whole and less than Sweden and Norway. Government debt is much less than Japan's , somewhat less than Europe's and similar in size to the United States. Household debt is less than Switzerland or Australia's and much the same as Canada or the US. The really noticeable difference is the debt of the financial sector, which amounts to 600% of GDP (a similar ratio to the debt of the 3 Icelandic banks just prior to their collapse) and is more than three times as big as that of the next most heavily indebted financial sector, that of Japan.



6 New Economics Foundation
7 ie an average of 1.4% a year, Bank of England April 2012

(These figures come from Morgan Stanley Research and appear to relate to 2011.)

One is tempted to conclude that it is the debt of the financial sector which is truly unsustainable in the conventional sense. Like Iceland and Ireland, the UK has a financial sector which has grown out of proportion to the rest of the economy. Lending at interest greater than the rate of growth of productivity increases the size of the financial sector relative to other sectors.[8]

Conclusion

Lending at interest (at least interest greater than the rate of inflation) will require perpetual growth in borrowing or there will be a repetition of the crisis. A crisis that can only be resolved by a wiping out of sufficient loans (and so causing the consequent losses for the lenders) to cover at least the interest paid on all loans. (This, for example, is what had been resisted for so long in the case of Greece.) However, as borrowing takes up a larger and larger ratio to GDP, banks and the markets become increasingly nervous of the financial sustainability of the situation. They respond by increasing interest rates to reflect the greater perceived risk and this in turn makes the debt definitively unsustainable.

The only way that any significant reduction in the proportion of National Debt to GDP has been achieved in history is through the growth of GDP, not the paying back of debt. This is at least partly because government net revenue depends heavily on the rate of growth in the economy. If growth falters, unemployment increases, tax revenues fall and so net revenue worsens. Thus in the long run the financial sector can only make a profit if there is perpetual growth not only in the money supply but in GDP. Perpetual growth in GDP is itself unsustainable in a finite world. I therefore conclude that the way we run our financial sector is itself unsustainable.

3. Stock Markets

I want to turn to one further way in which the way we organise our economy is bound to lead to unsustainability.

You could argue that the joint stock company is the foundation stone of the modern economy. It led to the large accumulation of capital that enabled major investments to be made and undoubtedly fuelled the industrial revolution, at least in the 19th and 20th centuries. However, coupled with the advent of computer trading and increased financialisation of the economy, it has separated ownership from management and shortened the horizons of investors to the point where many trades on the stock exchange involve holding shares for a matter of seconds.

The stock exchange, even more than in the pre-1980 period, has growth built into the very nature of its operations. If the board of a company doesn't focus on short term growth in sales (at least, but often in dividends as well), then the share price will suffer and the company will be taken over by those who will. The key to board decision-making has generally become the effect of a decision on the stock price. (The easiest way to increase the size of a company is by taking over another, not by creating new products and winning new markets. This drives agglomeration, which reduces competition often without adding genuine value.) For the present argument, the important point is that even if the members of the board are fully aware of the environmental damage of their activities, they will be punished for taking that into account if that does not reflect positively on the proverbial (single) bottom line (in contrast to **nef's** triple bottom line).[9] Indeed they are enjoined in

8 Pasinetti, L (2006) “Structural Economic Dynamics” Cambridge University Press, Cambridge ISBN10: 0521029767

9 New Economics Foundation. Triple bottom line refers to 1. the enterprise, 2. the community, and 3. the environment. http://www.neweconomics.org/sites/neweconomics.org/files/A_guide_to_Social_Return_on_Investment_1.pdf

law to serve the best interests of their shareholders, which is only taken to mean their present shareholders, not future generations and not the wider community and pretty much only in the short term. This means, for example, that takeovers at what seem in the short term to be a good deal for current shareholders must be accepted, almost regardless of the long term consequences. It also means that decisions which reduce immediate profits are seldom allowed, let alone actually taken, even if they would have great benefits for the wider community.

I should point out that the managers of banks are just as bound by this short termism and narrowing of horizons to the stock price as any other business. Any bank board that wished to be more "responsible" in its borrowing and lending and in its risk taking would be punished by the "market". It is no surprise that they acted the way they did. As Chuck Prince, then CEO of Citigroup said in July 2007: "*as long as the music is playing, you've got to get up and dance. We're still dancing*." Even those (probably few) who fully realised the dangers of the Colateralised Debt Obligations (CDOs) and the rest of the alphabet soup of exotic financial instruments that have been created, had to take to the dance floor or lose their jobs. Indeed they still are, even after the collapse of Lehman brothers. This pressure has been exacerbated by "The Big Bang" and the decrease in mutuals and partnerships in business as the limited liability joint stock company now has become the norm within the non-bank financial sector, which used not to be the case before 1980.

Overall conclusion

These three factors are elements of the system by which we currently run our economic system. Together they build unsustainability into the core of political and economic decision-making. No amount of weasel words about "sustainable growth" and exhortation to change behaviour will amount to more than re-arranging the deckchairs on the Titanic until we change the system itself.

References

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