Why does market capitalism fail to deliver a sustainable environment and greater equality of incomes?

Author(s): Christine Greenhalgh

Source: *Cambridge Journal of Economics*, November 2005, Vol. 29, No. 6, SPECIAL ISSUE ON ECONOMICS FOR THE FUTURE (November 2005), pp. 1091-1109

Published by: Oxford University Press

Stable URL: https://www.jstor.org/stable/23601615

Cambridge Journal of Economics 2005, **29**, 1091–1109
doi:10.1093/cje/bei085

Why does market capitalism fail to deliver a sustainable environment and greater equality of incomes?

Christine Greenhalgh*

I argue that free-market capitalist economies are biased against inventing/using green technology and against supplying the basic needs of the poor. With no mechanism for setting globally optimal prices for non-renewables, entrepreneurs choose labour-saving resource-intensive production methods. Further pressure on labour costs comes from finite individual lifetimes combined with rising access to goods. R&D creates technologies/products geared to saving worker and consumer time, instead of conserving non-renewable resources. Demand for positional luxury goods by the rich crowds out the basic needs of the poor. Technology caters for the demands of the rich, accentuating inequality, as prices fall/quality rises with innovation. I conclude with policies to redress imbalances.

Key words: Capitalism, Environment, Poverty, Technology
JEL classifications: H20, J20, O30

1. Introduction

The implementation of the Kyoto agreement in 2005 is a significant first step towards global pollution control, but the US's refusal to ratify the Kyoto Protocol stands out as a significant deviation among the developed countries. Along with the inconclusive World Summit on Sustainable Development in Johannesburg 2002, and the breakdown of WTO negotiations at Cancun 2003, many people are asking why it has been so difficult to agree on strategies to improve upon world problems of pollution and poverty (see, for example, Grayling, 2003).

In this paper, we argue that the free market capitalist economy is biased against creating and using sustainable technology and biased against supplying the basic needs of poor consumers. To see why this is the case, we examine the basic mechanisms of the capitalist system. The distinctive contribution of this paper is to bring together several

Manuscript received 8 December 2003; final version received 5 August 2005.
Address for correspondence: St Peter's College, Oxford; email: Christine.greenhalgh@economics.ac.uk

* St Peter's College, Oxford. An earlier version of this paper was presented to the Economics for the Future Conference, Cambridge, 17–19 September 2003. I am grateful to Gavin Cameron for comments on this earlier draft and to conference participants for their constructive reception of the paper. I am particularly indebted to the two referees of this paper for their valuable comments, which greatly assisted me in the process of revision.

ideas already well developed in difference branches of existing economic literature, all of which are in themselves currently acceptable to neoclassical economics, and to show how their dynamic interaction causes the twin outcomes of excessive depletion of finite resources and accentuating inequality. The elements on which we draw include ecological economics, the happiness literature, consumer choice theory under time constraints, the rising personal discount rate due to increasing scarcity of time, entrepreneurial choice of techniques in response to evolving factor prices, and the selection of innovative products developed and launched via R&D and advertising in response to expanding demand dominated by rich, time-constrained consumers.

We aim to demonstrate that the dynamic interplay of these elements, most of which do not involve any significant degree of market failure (with the exception of the incorrect prices of non-renewable resources), causes negative outcomes in terms of the two social goals of increasing sustainability and reducing inequality. The argument outlines the dynamics of production technology choices and product innovation choices when entrepreneurs face an imperfect set of factor prices that are not socially optimal in reflecting pollution and depletion costs. Entrepreneurs also face a set of profit incentives driven by the demands of rich workers and consumers to save time, as their rising real income exacerbates their relative shortage of time compared with their endowment of goods, as each individual faces a finite lifetime within which to enjoy their consumption.

Conventional types of 'green' policy could help to solve the first distorting mechanism arising from incorrect factor prices, but competing national economies lack the global coordinating institutions to set globally optimal factor prices and are unwilling to take unilateral action. It is even harder to address the second problem, which is intrinsic to any world society with unequal incomes and rising incomes of the rich. In any event, the two problems are interrelated, as green prices are unlikely to be introduced by a government facing an electorate that is increasingly prone to use high discount rates. Hence there is a need for more subtle, but still radical, policies to restructure the perverse incentives that are currently arising from the dynamics of technology choices and from consumption patterns with unequal income distribution. We discuss several such policies in the final section.

We begin with a summary of the incentive basis of market capitalism, for which the institution of private property is seen as an integral feature, and assess what capitalism has achieved in terms of income and wealth distribution to set the background for our discussion.

2. Property rights and the institutional basis of capitalism

Private ownership of the means of production is frequently seen as the *sine qua non* of a capitalist economy. It has been argued that the fundamental institutional basis of capitalism is well-defined private ownership of property, without which markets cannot function effectively (Makowski and Ostroy, 2001) and economies cannot begin to grow and develop (Jones, 2000). A recent paper by Skaperdas and Syropoulos (2002) argues that the efficiency of exchange via markets can be severely compromised by the presence of contested ownership and enforcement costs. In contrast, Putterman *et al.* (1998) provide a critique of the literature on equality–efficiency trade-offs and

conclude firmly that: '[e]conomic theory still provides no proof of the superiority, much less the necessity, of either unabridged private property or of its highly unequal distribution ... While the operation of unfettered markets engenders great inequalities of wealth, claims that markets would be inefficient without such inequalities are largely speculative.'

Few authors dispute the fact that private ownership fuels inequality in practice. Once private property is well established, property rights are accepted as inalienable by force, remaining with their owner unless sold or gifted to another via inheritance. Inequality is likely to be a persistent feature of the system, generated within any generation by good or bad fortune and perpetuated between generations through inheritance (Atkinson and Harrison, 1978; Hills, 1995). Even with the growth of intangible assets of intellectual property and knowledge, access to ownership of productive assets is still inhibited by inheritance and access to private capital markets, without which people are limited in respect of their investment in education and access to information. So we observe a division of populations into rich and poor both within and between societies.

3. Does market capitalism deliver equality?

Wealth in the US has become more unequal during the 1980s and 1990s (Wolff, 1998); a recent British study concludes that intergenerational income mobility has declined (Blanden *et al.*, 2001), suggesting that in both societies the rich are gaining over the poor both within and between generations. This pattern is also prevalent in several other rich countries, with the contrary experience of progress towards reduced inequality of incomes being the exception rather than the rule (Gottschalk and Smeedling, 1997).

Cross-country analysis of average incomes tries to offer a more optimistic view: growth theory predicts that average incomes per capita are expected to show some convergence over time owing to investment and technology transfer. Even so, Jones (1998) presents figures to suggest that, even in the very long run, half of all countries will remain at levels below 40% of the income of the leading country, and most countries will not reach these steady-state positions until between 200 and 300 years have elapsed. Far from being discouraged by his own figures, Jones toys with the view that the past slowness might be attributable to the slow diffusion of the capitalist system. A more pessimistic view of the prospects for the poor is offered by Deardorff (2001), whose model of trade and growth illustrates how countries that start out different may remain so. So already we see that the existing economic system appears to generate and sustain inequality. Why, then, are there so many champions of the cause of free markets and private ownership?

4. Claims concerning the operation of competitive markets

Since Adam Smith first elucidated the ideas of enlightened self-interest and the superiority of unfettered markets (Smith, 1776) there have been powerful arguments in economic literature that economic efficiency and progress are best served by competitive capitalist markets. The concept of consumer sovereignty encapsulates the

idea that demands for goods and services will shape patterns of production so that the most strongly desired items are produced and sold. Resources are then allocated 'efficiently' by competing entrepreneurs responding to consumers' willingness to pay, rather than to direction from the state as in centrally planned economies. The inexhaustible wants of consumers will continue to command production through time, and the competition between producers for scarce production resources will ensure that factor prices reflect scarcity.

The competitive capitalist market is argued to be an efficient mechanism in the dynamic sense, too: as long as entrepreneurs can compete for profits using innovation, they will do so and, in the process, they will benefit their customers (for a recent restatement of the way competition acts to improve productivity see Carlin *et al.*, 2001). With some help in the form of intellectual property protection for invention, the market offers incentives to invent new or better methods of production and to design new goods and services. These new processes and products will gain a market share if they can do one or more of three welfare-improving things: reduce explicit production costs for existing products (process innovation); broaden the range of products (product innovation, filling gaps within the range of current product variety); raise the quality of the product (product innovation offering novel characteristics and rendering existing products obsolete). Thus the pursuit of profit through innovation results in the continuous introduction of new brands of goods and services, as well as new techniques of production and new forms of business organisation.

So far so good, but is this type of economic system sustainable? Georgescu-Roegan (1971) demonstrated that the economic process is not sustainable when it continues to rely on fixed stocks of the Earth's resources for its energy. The economy transforms non-renewable energy and materials into a mix of consumer goods and waste products without reference to the entropy law. The latter states that, in any transformation of matter, the share of bound energy will increase as a proportion of total energy, comprising available (usable) energy and bound (inaccessible) energy. Thus the use of natural resources to produce goods for human satisfaction must be adding to waste or pollution, and the process cannot be transformed by technology into any kind of clean, perpetual-motion machine. The way forward is to use renewable solar energy and minimise the use of non-renewable resources. But for economists rather than for technologists, there is even a prior question—does this use of resources feed the production of goods and services that succeed in adding to human satisfaction?

5. Does market capitalism deliver happiness?

There is increasing evidence that under the present distribution system, increasing economic wealth among the already advantaged does not dramatically increase human happiness. A recent survey of the literature on the economics of happiness (Frey and Stutzer, 2002) concludes 'The empirical research on happiness has clearly established that at a given point in time, and within a particular country, persons with higher income are happier. Over time, however, happiness in western countries and Japan does not systematically increase, despite considerable growth in real per capita income. This can be attributed to the rise in aspiration levels going with increases in income.' A similar conclusion is reached by Layard (2003, 2005), who emphasises that it is relative and not absolute income that matters to most people. According to

Easterlin (2001), although people always expect to be happier in the future as their incomes grow, the average happiness over the life cycle of the individual remains constant as their aspirations expand.

People are thus always disappointed with their material increase in welfare; the familiar adage of 'the more you have, the more you want' appears pervasive. Of course, rising aspirations and falling satisfaction levels are not always bad, if their occurrence reflects better perceptions of an expanded set of opportunities and a greater desire to achieve a wider range of objectives. They are unwelcome when the rising aspirations are due to a desire to 'keep up with the Joneses' via purchases of novel positional goods, discussed further below. Aspirations seem to have run ahead of income in the richest economy: Blanchflower and Oswald (2004) report that happiness in the US has fallen over the last quarter century and stress the role of non-economic variables, such as divorce, as well as unemployment and relative income in the determination of happiness.

This evidence on happiness highlights the opportunity to advance the happiness of the poorest by redistribution within societies, but much economic analysis has focused on the efficiency losses arising from taxation designed to achieve redistribution, but which adversely affects economic incentives. The potential for government to engage in redistribution without efficiency losses is very extensively explored by Putterman *et al.* (1998), who suggest that wealth redistribution could exhibit positive feedback by expanding access to investment in education. There are also supporters of the view that recent political aims of reducing the role of government in advanced economies may be misplaced. Ng (2000) has criticised the under-valuation of public versus private goods and the overestimation of the distortionary costs of taxation, on the grounds that private goods are more environmentally degrading than public goods, and that private income does not increase happiness in a society where relative income matters. The policy implication is that increased provision of public goods could be more welfare improving and less market distorting than allowed for in conventional analysis and policy.

The above studies mostly hold back from any more radical conclusion, such as that the invention and production of more and better quality goods for private consumption by the rich may be a pointless waste of scarce world resources, even though the incentive structure of the free market economy drives economic activity in this direction. Layard (2005) does propose a restructuring of objectives away from the focus on economic growth and towards the support of families and communities.

6. The basic intertemporal conflict—today's versus tomorrow's consumers

The first fundamental problem of a market capitalist system, which exploits finite (non-renewable) factor resources, is that in practice it fails to allow for the divergence between social and private rates of time preference. The social rate reflects society's willingness to preserve stocks of finite resources and hence to wait for future consumption and rewards. The private rate reflects the private citizen's unwillingness to wait very long for consumption, given a finite lifespan. If future events affecting the unborn generation were to be given the same weight as present ones, then the social discount rate would be zero, so future costs and benefits would have a weighting factor

of unity in social welfare. How high are private discount rates? A recent survey (Frederick *et al.*, 2002) shows a wide range of estimates of the private discount rate, but emphasises that the private weighting factor for future benefits is uniformly below unity in empirical investigations. The median of the 42 studies surveyed implies a weighting factor of around 0.82 (private discount rate 22%) to an event as little as one year away (Frederick *et al.*, 2002, Table 1).

The economic literature concerned with social choice, including environmental issues, has long acknowledged the problem of distorted incentives arising from incorrect factor prices and has encouraged the government to redress this imbalance (Layard, 1972, part III). These authors argued for using lower discount rates (reflecting social time preference) for public projects with long duration and for taxing finite resources to slow their rate of extraction and exhaustion. The toolkit of conventional environmental policy to deal with pollution and depletion includes regulation, Pigouvian taxes or subsidies, and tradeable permits but, as surveyed by Daly and Farley (2004, ch. 10), governments often prefer regulation to taxes, even though this is less cost effective and offers weaker incentives to improve technology than tradeable permits.

Recent analysis of the intergenerational welfare distribution issue has recognised that dynamic efficiency (based on social discounting) does not guarantee sustainability. This has lead to proposals to compensate future generations, by making transfers of man-made capital in place of the depleted resources. This approach seems unwilling to recognise that there are some finite resources, such as the ozone layer, which are necessary for human existence and for which there are no substitutes. In this case, there are no compensating man-made capital transfers that would be acceptable to the future population (unless the belief is that we shall leave them the technology and equipment to migrate to another planet!).

As a result of high private discount rates, there is a continuing political difficulty within a democratic society in getting enough votes for environmental policy, particularly if the population is changing so the childless person becomes the median voter, leading to minimal political support for the design and implementation of pollution control systems. In Europe, low birth rates have evolved as more women have chosen careers over motherhood, although in the US the birth rate has increased again after an initial fall (*The Economist*, 2002). In the UK, half the women of childbearing age are not married and, despite some increase in cohabitation among unmarried people, the total fertility rate is now only 1.64, the lowest ever recorded. What do all the childless adults care about society's survival beyond their lifetime?

Even where pollution and finite resources are geographically local in their impact, and so might be considered to be the subject of domestic environmental policy, competition between suppliers of traded goods from different countries militates against any single country adopting a unilateral policy of taxation or other controls on resource depletion or emissions. The increasing pressure of international competition in the global economy places very strong constraints on the political acceptability of any unilateral national ecological policy that raises production costs, a point described as 'a severe and general policy difficulty' by Daly and Farley (2004, p. 386). Thus an international coordinating body is crucial for implementing conventional green policy, but there is extreme difficulty in reaching international agreement for pollution pricing or regulation, especially where the finite resources are global rather than domestic.

International environmental agreements may falter, owing to the lack of credible penalties against countries refusing to sign the agreement, or against countries that sign but then fail to meet their agreed targets (Bohringer, 2003). Worse still, negotiators may begin without a clear view of the objectives: the Kyoto agreement began by establishing the lowest common denominator of acceptable targets for reduction of emissions, rather than by establishing what targets are necessary to constrain global warming (Cameron and Evans, 2003).

Thus, as a result of missing markets and uncorrected negative externalities, market prices either do not yet exist (e.g., for the ozone layer) or prices are well below the shadow prices that would reflect their long-term social value (e.g., for finite mineral resources). How does this play out in the economy?

7. The effect of distorted factor prices on choice of technology and innovation

From a long-run social perspective, the labour hours supplied by workers are a renewable resource in the production of consumer goods and services but, under market capitalism in advanced countries, they are treated as an increasingly scarce resource in the design of production systems. Labour scarcity to employers is signalled by the rising real wage, which mirrors the rising scarcity of time within a finite lifetime. High incomes offer the opportunity for a wide range of consumption activities, but with no rise in individual time endowment, and with time being a necessary input for almost any type of consumption activity, the individual's price of time will continue to rise (Linder, 1970).

In contrast to labour services, all types of capital services are derived from equipment, production plant and tangible intermediate goods that embody elements of non-renewable resources, whether in terms of raw materials or energy for their construction and transport. In practice, to date there is no market price for the consumption of an essential non-renewable resource, the ozone layer/clean air. Rather, there is free disposal into the air of much pollution from the extraction and transport of mined products, from energy production, and from the use of fuel for general transport, especially in air travel, for which the fuel attracts lower taxes than for land vehicles. Hence all capital products embodying non-renewable resources and using free disposal via pollution are supplied at a price below social cost.

Another element of overpricing of labour arises from the tendency of the wages of unskilled workers in rich countries to follow those of skilled workers, due to concepts of fair wages and the pressure to share within society the gains from economic growth. Unlike a Heckscher–Ohlin–Samuelson long run, where external trade could produce complete factor price equalisation, in which the unskilled workers in advanced countries would earn the same as those in newly developing countries, we observe only weak trends in the direction of factor price equalisation, for example in the widening wage distribution of the UK (Wood, 1994).

In this situation, the high price of time for renewable labour, whether skilled or unskilled, is compared with too low a price of substitute factors in advanced capitalist countries, which conduct the vast majority of the world's R&D for new process technology and new product invention and design. Entrepreneurs seeking to enter a market by harnessing technological change are driven by a desire to make profit; they

do not have innate desires to be labour intensive and resource minimising, either in their current choice of techniques or in their product or process innovation. When too low a price is put on the exploitation of limited resources and too high a price on labour, then profits are maximised by choosing new techniques and inventing new products that respond to these biased prices. This is done in several ways within current production: by economising on high wage labour by using capital equipment containing some components of the under-priced metals and minerals, by economising on bulk off-peak transport and storage of semi-finished stocks and by using fuel-intensive just-in-time delivery of small batches of parts and materials.

The technical possibility for capital–labour substitution, particularly evident in manufacturing, has led to dramatic job losses for skilled manual workers, producing a substantial labour market mismatch and a rise in natural rate of unemployment in the UK from 3% in the early post-war period to about 6% in the 1990s. As shown by Gregory *et al.* (2001), technological change was a significant force in changing the level and composition of employment in the intervening period, with job losses due to technology being concentrated in the skilled manual worker and machine operative categories. Given the rising unemployment, it seems that wages should fall, restoring the incentive to use labour-intensive production methods. However, efficiency wage theory offers a number of arguments as to why real wages are downwardly inflexible (Bosworth *et al.*, 1996) and both workers and firms are optimising within a situation of heterogeneous skills and quality. Nevertheless, this leads to a residue of unemployed persons who exert no pressure on real wages. Empirically, we have seen increasingly large numbers of inactive adults of working age, comprising a form of hidden unemployment in both the US and the UK (Erdem and Glyn, 2001). The world of work thus becomes more unequal, and this exacerbates the inequality of income and wealth (Gregg and Wadsworth, 2000).

Paradoxically, as capital is substituted for labour in production, its use is also subject to an increasing degree of under-utilisation. There has been a significant trend reduction in shift working in factories and offices, leading to under-utilisation of newly installed costly plant and equipment. This picture is in sharp contrast to trends in retailing and services, where demand for more flexible shopping hours by a time-constrained population of consumers has led to multiple shift working and greater capacity utilisation of retail premises, providing evidence of supply patterns being conditioned by consumer demand (discussed further below).

Even as individual worker hours have fallen, there could have been a rise in capital utilisation in industry and non-retail services, using multiple shifts of workers in factories and offices, and also double day shifts in schools and universities, which typically use only one day shift for teaching, with very few evening courses. The shortening of the hours of utilisation of some premises and equipment may be a response to the time use constraints of the higher paid plant and office managers, and the teachers and lecturers, who are unwilling to work unsocial hours. Nevertheless, this under-utilisation means that there is a dramatic increase in the amount of building and equipment needed, relative to labour inputs, in order to supply a given level of physical output or to supply services to a given population. As physical wear and tear and obsolescence occur with time and not just proportionally with use, intermittent use represents a wasteful use of fixed capital in comparison with continuous utilisation of facilities.

8. Who gains most from innovation?

The innovation literature shows that the vast majority of innovations take the form of new products, either intermediate goods for sale to other producers or products for sale directly to final consumers (Scherer, 1984). The analysis of returns to R&D and intellectual property assets also suggests that innovative markets are highly competitive, with fairly short periods of excess profit following innovation (see, for example, Greenhalgh and Rogers, 2005). Thus in the long run, the major benefits of innovation flow through into lower production costs in user industries, lower prices and higher quality products, all of which ultimately benefit final consumers. The temporary profits earned by innovative firms will accrue to shareholders, who tend to be concentrated in higher income groups. As we argue below, this direct income addition from innovation is accompanied by a further concentration of gains to rich final consumers.

US evidence on the value of continuing product improvement suggests that the Consumer Price Index overstates price inflation (for a number of reasons) by around 1% per annum, half of which is attributable to the failure of statistical measurement to account for the rising quality in goods and services (Advisory Committee, 1996; Boskin *et al.* 1998). However, these benefits do not flow evenly to all consumers; rather the increase in real incomes due to product innovation raises the purchasing power of the rich more than that of the poorest. As invention and commercial innovation are driven by market size and profitability, producers will invent more products to satisfy the increasingly well off, higher income groups.

An important example of income bias in innovation is explored by Schmitt and Wadsworth (2002). They show that the ownership of personal computers, which provide access to modern information and communications technology (ICT), is much greater for those with higher incomes. Similarly ranked rates of adoption by income group were observed with earlier innovative goods that are now mature products, such as vehicles and washing machines. They demonstrate that the ownership gap between rich and poor only begins to close after the highest income group reaches product saturation, but their study also demonstrates that there is incomplete elimination of differential ownership rates, as the low-income consumer market is saturated well below 100%, locking in inequality. Thus, despite the hope that ICT will offer help to disadvantaged groups, for example using the Internet to gain cheap information, it appears that most new technology and innovative products will be of greater advantage to richer consumers, who adopt them most rapidly. This is the market that the profit-seeking designer of tomorrow's products will target.

Further general evidence of technology responding to the demands of the rich is not hard to find. The composition of innovation as measured by R&D and patents is highly concentrated in pharmaceuticals (and more recently biotechnology), in electrical and electronic gadgets for use in the home and office, and in aerospace and motor vehicles, for faster and more frequent travel. Innovation in pharmaceuticals has long focused on the diseases of the rich world, as noted by Daly and Farley (2004, p. 173), who cite the result that 'only 13 of 1240 new drugs licensed between 1975 and 1996 dealt with lethal communicable diseases that primarily afflict people from developing countries'. Although important moves have been made to try to balance innovation driven by private profit with government-sponsored research, these have

not often been able to deliver the key results. For example, Glennerster and Kremer (2000) describe the abortive attempts of the USAID to fund research into a malaria vaccine over many years. It has been left to charitable organisations, such as the Bill and Melinda Gates Foundation, to create significant demand for medicines for the poor and to stimulate R&D by signalling the potential market for innovative treatments of the health problems of the Third World.

9. Demand for luxuries competes with demand for necessities

The capitalist system of supply through an impersonal market can be seen as exhibiting neutrality between satisfaction of competing demands but, if some demands are more important than others, this very neutrality can be seen as a bias against the most needy, whose demands are forced to compete with less necessary luxury demand. To see this, we can conveniently divide consumer demand into the two types familiar from income elasticity analysis, labelling these as 'necessities' and 'luxuries'. Within the necessities group are items that are consumed whether the consumer is of high or low income, given his/her present lifestyle and place of work. Within this group of consumer items, there is a core of basic needs, which are those required to survive in a reasonable state, e.g., food, drink, shelter, health care. In contrast, luxuries are demands that are not necessary for survival in good health and can be given up if income falls.

Textbook economic theory observes that resources are always insufficient to meet all the demands in the market. It then proceeds to discuss how scarce resources are allocated to competing demands without reference to whether these demands reflect basic needs or luxury demands. The market makes no judgment about priority of demand, so that a basic need is not able to trump a luxury demand, whereas morally it might be thought to do so. The possibility of satiation in demand is also given very little attention in standard economic theory. Why after so many years of economic growth do we observe simultaneously unmet needs of the poor and seemingly inexhaustible demand from the rich? Why are the rich not yet satisfied, so that entrepreneurs in the market could turn their inventive activities to better supplying the basic needs of the poor today and harbouring resources for supplying basic needs tomorrow?

There are a number of factors leading to consumption bias towards luxury in patterns of demand. The first was identified above—the capitalist market reality is that expressed demand is greatest from those who are here today and have the most purchasing power. The market will strive to satisfy the demands of those with purchasing power, but will be less inventive in regard to the basic needs of those with low income. Yet even when entrepreneurs continually strive to supply the demands of those with the most purchasing power, eventual satisfaction or satiation of the luxury demands from the rich is never achieved, as revealed in the happiness literature—why not?

An integral feature of demand for luxury goods is that relating to competition for status. After satisfying their basic needs, the rich use their purchasing power to move on to the purchase of positional goods. By definition, there is an inexhaustible demand for positional goods: all can compete, but few can win the positional race. As each new good is introduced, there is a competition to be in the elite club of winners, one of the first owners of the latest positional good. Thus we see evidence of luxury demand by

the rich engaged in status competitions crowding out the basic needs of the poor. For example, the UK has a substantial problem of homelessness alongside an increase in house prices, driven by rich peoples' desires for second homes for vacations, which are typically under-utilised, and for third homes to rent as a wealth-maximising investment. Further evidence of under-utilised positional goods can be seen in boats moored in marinas all around the coastline, most of which are used very infrequently.

On top of this desire to display wealth, another bias in demand by the rich arises from the differential price of the time of rich and poor people. Asset owners and high wage earners face an imbalance between their limited time endowment (finite lifetime) and their high wealth/income/goods endowment (Linder, 1970; Scitovsky, 1976). As people become richer, they have more options open to them in their use of time, but their time endowment does not rise to match the growth in their incomes. This leads them to shift their patterns of consumption towards goods-intensive activities and away from time-intensive ones. Hence they will discard old but functional home equipment and personal goods and purchase new varieties of positional goods, which permit them to display their wealth without any increase in the time needed for consumption.

However, the rich do not just focus their spending power on tangible goods. They also demand services to free up their personal time from mundane tasks—hence we also see a very large growth in prepared foods, in the use of restaurants, and in information services. Blow *et al.* (2004) demonstrate that, between 1975 and 1999, the share of (non-housing household) expenditure on restaurant meals rose sharply, while that on home-prepared food fell significantly in the UK; meanwhile, the share of household expenditure on services rose from 29% to 42%. As well as demanding goods and services which are time-saving, high-income individuals demand help in managing their assets in order to maximise their wealth—employing lawyers to protect their rights of ownership, and financial specialists so that they can enjoy maximum rates of return on their assets.

In its description of the use of scarce factors of production, again the textbook economic model glosses over these key issues of the nature of competing demands. Labour is paid the marginal value of output, and this production of labour services is always assumed to be satisfying a genuine economic need. A paradox of our labour market is that some of the highest earners, who work in the City of London, are not fundamentally creative in the fashion of either industrialists or even restaurant chefs. Rather, they are wealth value preservers, acting as managers of portfolios of the assets of the rich and aiming to maximise the price of their claims on income and profit streams, without contributing directly to the industry and trade processes generating the incomes. Living from a share in these marginal changes in asset values can give them the personal economic power of high earners, although much of their activity comprises a process of obtaining income for themselves and their clients by being on the positive side in a zero-sum trade. Thus no account is taken in their earnings of the losses sustained by small savers without access to the City's sophisticated information set, whose portfolio value may have gone down as a result of their activity.

Competition for resources of skilled labour from positional goods and wealth management services means that complex necessary services, such as health and education, which also require inputs of skilled labour and have real value to both poor and rich, will cost more than if these latter demands did not exist. Where capital–labour substitution is not possible, these services will become continually more

expensive relative to other goods through time, even though they are necessities. This problem was first recognised by Baumol and Bowen (1965) in the context of the performing arts, but it is even more apposite in respect of health and education. In these services, essential face-to-face contact with highly trained professionals has not yet been substituted by any computerised or robotic techniques, even though the productivity of professionals has been enhanced in some areas by ancillary equipment.

The two sectors suffering the greatest problems of funding in many advanced capitalist economies are these complex services of health services and education. They are often provided in the public sector precisely because they are seen as merit goods, which are desirable and necessary for all and so should be supplied not only to those who can afford them. Ironically this relegates them to being cash limited by public expenditure constraints, leading to the familiar twin problems of underpayment of their skilled workers and rationing of the inadequate supply. Yet more adverse dynamics appear as a result. Restrictions on the supply of medical care undoubtedly exacerbate problems of absence from work for all types of workers. Once again, this makes labour appear more expensive than its long-run marginal cost when healthy, leading to continued pressure to use capital-intensive automated processes. Even more ironic is the feature that the future skill base of an advanced capitalist economy depends critically on the quantity and quality of teaching in schools, universities and vocational training institutions. Constraining expenditure in medical services is analogous to an agricultural economy failing to mend fences and protect the harvest; under-spending in education is analogous to an agricultural economy eating its seed corn.

10. Policies to redress the perverse logic of capitalism

10.1 Rethinking property rights:

Ownership of private property in advanced societies allows goods and assets to be retained for the exclusive use, and right of disposal, by individuals or companies. No censure is obtained for failure to use privately owned durable goods, whether these are production facilities or consumer durables. Also, even if the durable goods depreciate, provided they do not impede or harm others, the owners generally face no penalty. What kinds of ownership arrangements could improve this situation and raise rates of utilisation to minimise environmental depletion?

For fixed property, we can contrast the above pattern of exclusive freehold ownership with that of leasehold occupation under restrictive covenants. There are many examples of leasehold ownership of property for fixed periods, where the freehold owner has rights of inspection, while the lessee has obligations to maintain the occupied property. Restrictions on the type of use permitted, whether commercial or educational or for housing, are also widespread. If more property were occupied leasehold, it would be possible to write in further covenants requiring occupation and use for minimum fractions of time, with a penalty of the lease being withdrawn if these conditions are not met. The freeholder would generally be the state or a local community, rather than another individual.

We see this kind of arrangement with common ownership of land by tribal groups in West Africa (Toulmin and Quan, 2000). Under tribal ownership, the use of land for agricultural production is awarded to particular families without their being given

private title to the land, which remains with the tribe as a group. In such cases, failure to plant any seeds or taking actions causing degradation of the land can lead to a loss of these use rights. As Cousins (2000) points out, far from leading to a tragedy of the commons, which only arises where there is no title and unrestricted access, communal ownership of land can balance the allocation of land rights for different uses. The same territory that is in private use during the rainy season for crop cultivation can be offered to another group for grazing during the dry season, ensuring full capacity utilisation.

Patterns of joint use of facilities can be found in advanced societies, for example in sports facilities shared between schools and communities, but many publicly owned buildings such as schools and universities are used for barely half of their potential daytime use, rarely open at weekends and closed during lengthy vacation periods. The extension of joint use is essential to obtaining full capacity utilisation of the non-renewable resources embodied in property, and this may require further intrusion by the state as freeholder for the nation.

10.2 Personal taxation

As the demands of the rich exert pressure on the use of resources without achieving very much, if any, addition to happiness, Layard (2005) argues this justifies the adoption of more progressive taxation of incomes. To go further, society could try to break the cycle of division into rich and poor. This cycle is very closely related to the inheritance of wealth and to the effects of family background, whereby inequality of opportunity in childhood creates strong correlations between the success and failure rates of different generations. An annual wealth tax would provide a starting point. Inheritance could be capped, to allow only the transfer of small asset values, breaking the intergenerational inheritance of inequality and reducing incentives to hoard stocks of assets.

For environmental reasons, we need to institute progressive taxation of wealth held in physical assets, with particular emphasis on penal taxation of under-utilised assets. Second homes often stay vacant for much of the year, yet these private goods display the characteristics of local public goods in that many users could occupy them for holidays without reaching their congestion limits. Should their owners be chivvied into renting these assets to obtain better occupancy rates and to prevent the need for new production entailing resource depletion? The defender of the market would say that, if it were profitable to do so then the owners would rent, but this potential for profit depends on the owners' time costs (too high to oversee transactions) and existing tax structures (too low to reflect the real resource costs of vacancy).

One route to increase rental markets is via property taxes. Second homes in the UK have paid lower local property tax than the main home; Muellbauer and Cameron (2000) identify this as a problem of inequity and argue for equal rates. Based on the embodiment of scarce resources that are under-utilised, second homes should be charged at more than full rate, unless reaching specified occupancy rates. Similarly, those with two TVs per household pay the same licence fee as those with one but, to avoid wasteful consumption of durables, the rate should be more for the second. Car tax has been historically set per vehicle, although recently varied by engine size and emissions; but rebates could be offered to those using older vehicles to encourage their repair and maintenance and avoid new purchases, subject of course to meeting good emissions standards.

In society, we need to create a new status culture that is critical of personal asset stock-building and the purchase of positional goods, while being very positive about community service. This requires the use of status rewards in companies and communities, so that people begin to view the conduct of 'Green' service activity to satisfy needs, rather than personal ownership of a wasteful excess of goods, as the basis of social status. In the UK, we already have a system of honorary titles, which can be won by service to the community, but this system is at present too narrow, and achievement is not sufficiently restricted to those making socially efficient contributions, as distinct from engaging in privately profitable activity.

10.3 Taxation and regulation of production

Can we avoid ecological degradation causing an inevitable transition of our society from rich, to poor, and finally to non-existence? To commence any improvement, capitalist economies must try to create social value incentive systems in production. To reflect social values, the use of renewable resource inputs must be substituted for exhaustible natural resources and the use of non-polluting techniques of production must be favoured over those that cause pollution. At the same time, the production of goods and services that satisfy basic needs must be given priority over luxuries, especially positional goods consumed mainly by the rich.

An ideal system of taxation would thus rate every product group to determine product-specific tax rates, which would rise according to its 'world heritage cost' (depletion of non-renewable resources, including the ozone layer) and rise according to its 'inequity cost' (contribution to satisfaction of demand for luxury by the rich, which raises prices for the poor). To do this requires information about supply chains, partly available in conventional statistical input–output tables, but needing augmentation to include the accompanying pollution and depletion accounts, as well as information on consumption patterns by income level.

Differential product taxation could be reinforced using lower taxes on labour use in the production of necessary services, such as care for the elderly or sick. We could tax labour most heavily when employed in the production of durable goods, which embody scarce real resources both in their construction and disposal. The UK had a Selective Employment Tax in the 1960s, which imposed higher taxes on employment in services than in manufacturing (HMSO, 1966) with the aim of giving positive encouragement to manufacturing. A reverse form of such a tax would be needed to reflect resource depletion, but there is also a need to differentiate within services, to distinguish personal care, education and health services from financial wealth management, with the latter attracting the same differential burden of employment tax as manufacturing.

In order to address under-utilised capacity in industry and in private ownership, taxes on durable assets and on production capacity of plant and buildings could be set inversely to their length of life and to their rate of utilisation, to encourage full use and good maintenance. We should also need to support high charges on energy consumption from non-renewable fuel sources and on waste disposal. All of the above will cheapen the production of essential labour-intensive services relative to the manufacture of goods by capital intensive and depletable resource intensive methods.

Another business activity integral to the marketing of new positional goods for the rich is that of advertising. At present, advertising costs are a valid business expense

deducted before taxation of profits, while the main controls on advertising content are those of ensuring that it is not misleading or offensive. As a result, firms making final consumer products spend large amounts on advertisements, the content of which is often more in the nature of providing entertainment, while repetitively reinforcing the brand name, than in enhancing product information. Taxation of advertising and greater control of its content could thus be used to moderate advertising expenditure and thus to lower the demand for positional goods.

10.4 Addressing technology bias

There are two policy instruments widely in use to promote commercial innovation—these are the system of intellectual property (IP) rights and government subsidy to R&D. Can these policy instruments be fine-tuned to influence innovation in order to produce greener technology and better goods and services for the poor?

Intellectual property is composed of patents and designs, trade marks and copyright. Patents reward inventors of genuinely novel items, provided that these have an industrial application, but the inventor has to document and display the details in the public domain so that others may learn from the invention. Trade marks protect a company's right to trade under their company name or sell branded goods using an established trade mark, to validate the origin of their goods and services. Copyright protects the rights of authors to their text, but it does not generally protect the use of the ideas contained therein, and it preserves fair use for non-commercial purposes, such as personal study. These various rights are meant to preserve incentives for creative activities of both a commercial and a cultural nature, while also offering opportunity to followers to improve upon what has gone before.

Each type of right offers a different scale of private monopoly and affects different industries and each would need to be examined in the context of redirecting creative activity to be greener and pro-poor. For example, the issue of what is a sufficient contribution to merit a patent could be adapted to fit with a socially determined incentive structure of satisfying basic needs and preserving societal resources. If patent protection were only awarded when the inventor could either show improvement of supply for basic needs or provision of a new technique for greener technology, this would help to concentrate R&D and innovation in these product and process fields. A patent examiner currently has to judge whether the invention is novel and non-obvious with very little reference to the nature of the invention (other than not being harmful to society); under a social objective regime, he would have to judge whether a new technique was greener, and whether a new product was directed towards the markets for luxuries or necessities before awarding a patent.

However, this could still fall short of socially optimal pricing of the invention during the monopoly afforded by the IP right; as is well known, IP rights are a second-best solution to the problem of incentives to innovate (Arrow, 1962), which can only be fully solved by offering instant rewards to inventors, with no temporary monopoly rights. For many new drugs, human suffering is prolonged by the high prices while under patent. Kremer (1998) has suggested that governments should hold auctions to establish the value of monopoly profits on newly patented drugs. It should then pay a premium on this auction price to acquire the patent compulsorily. (The premium reflects the additional consumer surplus, beyond the loss of monopoly profits, of moving to price at marginal cost, and provides the correct stimulus to invention from

social benefit.) Following this, government would distribute the knowledge and allow any producers to enter the market to supply drugs at marginal cost to maximise their consumption. The importance of government offering guaranteed markets for vaccines is also stressed as a policy route to rebalancing incentives (Glennerster and Kremer, 2000).

Trade marks are possibly better described as industrial property than as intellectual property, as they seem to offer much more benefit to the private firm than positive spillovers for society. Just as the issue of advertising of brands merited attention, so the issue of how many trade marks per firm are allowed may need consideration—why is the company's own name not a sufficient label for indicating product origin and acting as a signal of quality to the consumer without the multiplicity of trade marks?

Government subsidy rates to R&D can also be varied to promote social objectives and indeed there are some initiatives of this kind already in place. In the US the Vaccine and Microbicide Tax Credit legislation offers new rewards for companies inventing vaccines for Third World diseases; the subsequent introduction in the UK of tax credits for research into vaccines also represents a new injection of funds to repair the technology bias of existing R&D against basic diseases which affect the world's poor (Inland Revenue, 2002).

11. Conclusions

We have argued that a free-market capitalist economy is biased against creating green technology and biased against supplying the basic needs of poor consumers. We began by identifying the patterns of perverse logic in the system of market supply and in the process of technological advance under capitalism. The first bias arises because there are no institutional mechanisms to price non-renewable factors at globally optimal price levels, so economic decision-makers place too high a value on labour. Hence advanced capitalist markets create and use technologies that are geared to saving worker time and to producing goods and services to save consumer time, instead of technologies and products that conserve scarce non-renewable resources.

A second bias arises because of the existing inequality of wealth and the differential price of time between the rich and the poor. Demands for positional goods by the rich, which are time-saving and resource-using, crowd out demands to meet the basic needs of the poor. Entrepreneurs react by satisfying the dominant, but wasteful, market demands of the rich, both in current supply and by responding to incentives to invent new products and processes that appeal to the rich. This has a further consequence in accentuating inequality, as prices fall and quality rises for products subject to innovation, and in driving up the relative price of skilled labour yet further, restoring the cycle of labour-saving innovation at the expense of the environment.

Policy to redress these perverse pressures must be more far-reaching than those currently under discussion in either the 'Green' or the 'Poverty' forums. We argue for examining whether private property rights should be allowed to continue unfettered when private ownership leads to a situation of significant under-utilisation of property and equipment. Although a wealth tax is an obvious first step in reducing the power of the rich to distort production towards the acquisition of resource intensive goods, it is not likely to be sufficient for reducing resource depletion. Within both consumption

and production, policy should aim to increase the rate of utilisation of existing durable consumer goods and productive capital. This requires incentives that promote rental markets for privately owned durables, especially housing, and restore shift working to ensure better capacity utilisation. The taxation of production could also change: incentives to business could be restructured to maximise the use of renewable resources, including labour, and minimise the use of materials-intensive techniques. Advertising by firms to enhance demand for positional goods could also be limited by taxation or controls. Finally, the rewards to invention and innovation, whether through R&D tax credits or the award of intellectual property rights, must circumvent the present bias of invention for today's rich, in order to address the needs of today's and tomorrow's poor.

Keynes is often quoted for saying that 'in the long run we are all dead'. This is a truism when describing the experience of individual economic actors. The challenge for modern government is to ensure that this is not also true as a society.

Bibliography

Advisory Committee to Study the Consumer Price Index 1996. *Toward a More Accurate Measure of the Cost of Living*, Final Report, December

Arrow, K. 1962.. Economic welfare and the allocation of resources for invention, in Nelson, R. (ed.), *The Rate and Direction of Inventive Activity*, NBER/Princeton University Press

Atkinson, A. B. and Harrison, A. J. 1978. *Distribution of Personal Wealth in Britain*, Cambridge, Cambridge University Press

Baumol, W. J. and Bowen, W. G. 1965. On the performing arts: the anatomy of their economic problems, *American Economic Review*, vol. 55, no. 2, 495–502

Blanchflower, D. and Oswald, A. 2004. Well-being over time in Britain and the USA, *Journal of Public Economics*, vol. 88, 1359–386

Blanden, J., Goodman, A., Gregg, P. and Machin, S. 2001. 'Changes in Intergenerational Mobility in Britain', LSE Centre for Economic Performance, Discussion Paper 517

Blow, L., Leicester, A. and Oldfield, Z. 2004. *Consumption trends in the UK, 1975–99*, London, Institute for Fiscal Studies

Bohringer, C. 2003. The Kyoto Protocol: a review and perspectives, *Oxford Review of Economic Policy*, vol. 19, no. 3, 451–66

Boskin, M. J., Dulberger, E. R., Gordon, R. J., Griliches, Z. and Jorgenson, D. W. 1998. Consumer prices, the consumer price index and the cost of living, *Journal of Economic Perspectives*, vol. 12, no. 1, 3–26

Bosworth, D., Dawkins, P. and Stromback, T. 1996. *Economics of the Labour Market*, London, Pearson Education

Cameron, J. and Evans, A. 2003. What happens after Kyoto? *New Economy*, vol. 10, no. 3, 128–39

Carlin, W., Haskel, J. and Seabright, P. 2001. Understanding the essential fact about capitalism: markets, competition and creative destruction, *National Institute Economic Review*, no. 175, January, 67–84

Cousins, B. 2000. Tenure and common property resources in Africa, in Toulmin, C. and J. Quan (eds), *Evolving Land Rights, Policy and Tenure in Africa*, ch. 8, London, International Institute for Environment and Development, and Natural Resources Institute

Daly, H., and Farley, J. 2004. *Ecological Economics*, Washington, DC, Island Press

Deardorff, A. 2001. Rich and poor countries in neoclassical trade and growth, *Economic Journal*, vol. 111, no. 470, 277–94

Easterlin, R. A. 2001. Income and happiness: towards a unified theory, *Economic Journal*, vol. 111, no. 473, 465–84
Erdem, E. and Glyn, A. 2001. Job deficits in UK regions, *Oxford Bulletin of Economics and Statistics*, vol. 63, Special Issue on The Labour Market Consequences of Technical and Structural Change
Frederick, S., Loewenstein, G. and O'Donoghue, T. 2002. Time discounting and time preference: a critical review, *Journal of Economic Literature*, vol. 40, no. 2, 351–401
Frey, B. and Stutzer, A. 2002. What can economists learn from happiness research? *Journal of Economic Literature*, vol. 40, no. 2, 402–435
Georgescu-Roegan, N. 1971. *The Entropy Law and the Economic Process*, Cambridge, MA, Harvard University Press
Glennerster, R. and Kremer, M. 2000. A better way to spur medical research and development, *Regulation*, vol. 23, no. 2, 34–9
Gottschalk, P. and Smeeding, T. 1997. Cross-national comparisons of earnings and income inequality, *Journal of Economic Literature*, vol. 35, June, 633–87
Grayling, T. (ed.) 2003. Beyond Kyoto, *New Economy*, vol. 10, no. 3, September
Greenhalgh, C. A. and Rogers, M. 2005. Intellectual property, competition and the value of UK firms, in Peeters, C. and Van Pottelsberghe, B. (eds), *Economic and Management Perspectives on Intellectual Property Rights*, Basingstoke, Palgrave, forthcoming
Gregg, P. and Wadsworth, J. 2000. Poles apart: labour market performance and the distribution of work across households, *World Economics*, vol. 1, no. 2
Gregory, M., Zissimos, B. and Greenhalgh, C. 2001. Jobs for the skilled: how technology, trade and domestic demand changed the structure of UK employment, *Oxford Economic Papers*, vol. 53, no. 1, 20–46
Hills, J. 1995. *Inquiry into Income and Wealth, Vol. 2 A Summary of the Evidence*, York, Joseph Rowntree Foundation
HMSO 1966. *Selective Employment Tax*, Cmnd. 2986, White Paper presented to Parliament by the Chancellor of the Exchequer, May
Inland Revenue 2002. Regulatory impact assessment for R&D tax credit for large companies/vaccines research relief, www.inlandrevenue.gov.uk
Jones, C. I. 2000. Was an industrial revolution inevitable? Economic growth over the very long run, *NBER Working Paper* W7375
Jones, C. I. 1998. *Introduction to Economic Growth*, New York, W. W. Norton
Kremer, M. 1998. Patent buyouts: a mechanism for encouraging innovation, *Quarterly Journal of Economics*, vol. 113, no. 4, 1137–67
Layard, R. (ed.) 1972. *Cost Benefit Analysis*, Harmondsworth, Penguin Books
Layard, R. 2003. *Happiness—Has Social Science a Clue?* Lionel Robbins Memorial Lectures 2002/3, LSE Centre for Economic Performance
Layard, R. 2005. *Happiness: Lessons from a New Science*, Harmondsworth, Penguin/Allen Lane
Linder, S. B. 1970. *The Harried Leisure Class*, New York, Columbia University Press
Makowski, L. and Ostroy, J. M. 2001. Perfect competition and the creativity of the market, *Journal of Economic Literature*, vol. 34, no. 2, 479–535
Muellbauer, J. and Cameron, G. 2000. Five key Council Tax reforms and 12 reasons to enact them *New Economy*, vol. 7, no. 2, 88–91
Ng, Y.-K. 2000. *Efficiency, Equality and Public Policy*, London, Macmillan
Putterman, L., Roemer, J. E. and Sylvestre, J. 1998. Does egalitarianism have a future?, *Journal of Economic Literature*, vol. 36, no. 2, 861–902
Scherer, F. M. 1984.. *Innovation and Growth: Schumpeterian Perspectives*, Cambridge, MA, MIT Press
Schmitt, J. and Wadsworth, J. 2002. Give PCs a Chance: Personal Computer Ownership and the Digital Divide in the United States and Great Britain', LSE Centre for Economic Performance Discussion Paper 526
Scitovsky, T. 1976. *The Joyless Economy*, Oxford, Oxford University Press
Skaperdas, S. and Syropoulos, C. 2002. Insecure property and the efficiency of exchange, *Economic Journal*, vol. 112, no. 476, 133–46

Smith, A. 1776. *An Inquiry into the Nature and Causes of the Wealth of Nations*. Republished, 2 vols, London, Dent, Everyman's Library (first printing 1910)

The Economist 2002. A tale of two bellies, Leader article, 24 August

Toulmin, C. and Quan, J. (eds) 2000. *Evolving Land Rights, Policy and Tenure in Africa*, London, International Institute for Environment and Development, and Natural Resources Institute

Wolff, E. N. 1998. Recent trends in the size distribution of household wealth, *Journal of Economic Perspectives*, vol. 12, no. 3, 131–50

Wood, A. 1994. *North–South Trade, Employment and Inequality: Changing Fortunes in a Skill Driven World*, Oxford, Clarendon Press