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De-growth – is not enough

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It is immensely encouraging that the issue of growth has begun to gain more interest. For decades a tiny few have been trying to draw attention to it, with negligible success.[1] The "Declaration from the 2008 Paris Conference"[2] is an excellent statement of grounds for scrapping the growth economy. For many years Herman Daly[3] has been arguing for a steady-state economy and more recently Tim Jackson's *Prosperity Without Growth*[4] has gained considerable attention.

As with the rapidly emerging Transition Towns movement I think we are dealing with extremely important initiatives, which are heading in directions that are admirable…but which are unfortunately mistaken regarding the nature of the global problem and the way out of it. If I am right the task is to try to persuade these potentially planet-saving movements towards more comprehensive visions and goals and more effective strategies. I think Takis Fotopoulos is basically right in his commentary on the de-growth initiative[5] and my comments are mostly intended to elaborate and reinforce the Inclusive Democracy analysis.

The integrated role of growth in the economic system

As Takis Fotopoulos recognizes the fundamental issue Latouche raises (inadvertently) concerns the structural relationship between growth and the rest of the socio-economic system. Is it a component like the air conditioning unit in a house which can be removed if it causes undesirable effects leaving the rest of the house functioning more or less as before? Takis shows that Latouche sees growth this way.

The first and less important point is that if the many undesirable effects of the growth imperative were to be remedied this would require such drastic and widespread action that we would then have a quite different kind of economic system. Latouche, Daly and Jackson call for changes such as having productivity gains taken as leisure rather than consumption, phasing out wasteful production and boosting environmental restoration, getting rid of unemployment, and curbing CEO salaries. Obviously these changes would involve vast reduction in business activity and apart from being intolerable to corporate and banking elites could not be achieved without unprecedented levels of state regulation, involvement and coercion in running the economy. This in turn would not be possible without a very different political situation and climate of opinion, enabling the state to do these things.

It is important to recognize the extent of the implications that stopping growth would have for the economy. The aforementioned authors sometimes seem to give the impression that it is little more than a matter of downshifting or "right-sizing" consumption. Consider the

matter of interest payments. In a zero growth economy these would cease to exist, or at most be negligible. (The belief that productivity growth would enable interest and indeed the survival of capitalism is rejected below.) If money can be lent and more paid back than was lent, then at the end of the year the amount available to invest will have grown. Thus in a zero-growth economy there would have to be only a fixed, stable amount of producing going on all the time, so "investment" could only replace the depreciating constant stock of productive capital, or adjust priorities within that stock (e.g., increase shoe production while reducing hat production).

This has many profound and far-reaching implications. Retirement incomes could not derive from invested superannuation funds. We would have to work out how to provide for security in old age by some completely different process.

Governments could not control the economy through interest rate policies, i.e., by varying them to stimulate or dampen economic activity, which is the main lever they have now. This mechanism allows governments to be relatively non-interventionist, as neo-liberal doctrine demands. Without it governments would have to take less indiscriminate, economy-wide decisions in order to stimulate some selected industries while deliberately phasing others down and keeping the gross output constant. In other words, without growth it is difficult to see how governments could avoid being predominantly "socialist" in the sense of far more state planning and control.

Without growth many industries would be seriously depleted or eliminated, because producing more is what they do. Construction and its financing and insurance would be confined to maintaining a constant stock of productive plant (or varying its components.) The same would be true for the production of machinery, appliances, vehicles, etc. where sales per annum (p.a.) would not be increasing. There would be no need for money creation because only a set amount of money would suffice in circulation to enable the constant amount of buying and selling going on. This would mean an extremely radical transformation of the banking industry as it would be the end of the process whereby vast sums are constantly raised for investment in expanding productive plant. It would also mean the end of the present incredible and comical bonanza whereby commercial banks are allowed to create new money, lend it to corporations and governments and draw interest on these loans. (Australians pay about $1000 p.a. per capita in interest payments on the money their governments borrow from banks, and more via corporate interest charges added to the cost of their purchases.) Thus the effects on the finance sector would be astronomical, cutting it from its present bloated status (making 40% of corporate profits) driven by armies of screen jockeys speculating on where most growth can be engineered, to a relatively few and simple functions such as holding savings and enabling only that amount of investment needed to maintain a fixed amount of productive plant.

In the present economy growth is essential to prevent unemployment from rising, because technical progress constantly improves productivity. In a zero growth economy a stable quantity of output would be achieved with a declining workforce. If we moved the present economy in which labour is hired to a zero growth economy then unemployment, poverty and social squalor would increase as productivity gains accrued to capital. (At present all such gains are taken by capital. Over the past 30 years the real income of the bottom 90% of Americans fell despite a 44% increase in worker productivity. Meanwhile the real income of

the top .01% quadrupled[6]. It would quickly become glaringly obvious that there must be a completely different way of allocating work, and it would be clear that this way must contradict market principles.

Thus to attempt to take growth out of the present economy would have so many huge effects that one could only hope to deal with them by resort to such levels of regulation and control that the resulting system would be best described as an extremely heavy-handed big-state-socialism. This is hardly reflected in Jackson's comment, "…this will mean raising tough questions about the ownership of assets and control over the surpluses from those assets."[7]

Connections with the market system

Latouche, Daly[8], and Jackson, along with many other critics of the present economy such as Henderson[9], Hawken[10], Porritt[11] and Korten[12], explicitly assert their desire to see the market system retained, although reformed. Fotopoulos rightly criticises the de-growth school for not realizing that one cannot scrap growth without scrapping the market. However, I believe the case for this claim is stronger than he makes it seem. He can be taken to be saying that growth and the market are separate things, for instance when he says growth and the market are "…the two fundamental components of the system."[13] and "…opposite sides of the same coin."[14] It seems to me more appropriate to say that there is basically only one factor here, the market, because it logically entails a commitment to growth.

Growth is built into the notion of the market principle because you (must) enter the market *in order to maximize*, to sell for the highest possible price, to buy at the lowest, to invest where returns will be greatest, and thus to make as much money as possible. If you do not you will be beaten by competitors. In the market you grow or die, because you are pitted in a necessarily self-interested maximizing competition with all others. It might be useful to distinguish growth and market in discussion but if you have a system that operates on market principles then you have a growth imperative.

The critique of society given by the above anti-growth theorists is deficient firstly in proceeding as if it is possible to scrap growth but retain the market, and secondly in not recognizing the profound unacceptability of the market mechanism, and in not identifying it as a core cause of our global predicament. Latouche's acceptance of it seems to be based primarily on the fact that in the near future there is no possibility of the market being scrapped. Daly and Jackson (and people aligned with Henderson and Korten) seem to be overly impressed by the merits of the market in generating production, "efficiency," innovation, etc. and therefore, want to retain a central role for it. This is asserted by Daly; "The market is wonderful for allocation"[15] "Let the market determine efficient allocations."[16] Thus they reveal their astounding acceptance of the core conventional economic delusion that markets are satisfactory allocation devices. How can they fail to grasp that the market is in fact the major cause of the global economic injustice that condemns billions of people to poverty, kills tens of thousands every day and is destroying the ecosystems of the planet? Markets inevitably allocate wealth to the rich and deprive the poor, because markets inevitably allocate goods to the highest bidder, and develop in the Third World mostly industries that will supply to the rich. (For detailed discussion and documentation see Trainer [17], and many of Fotopoulos' works[18])

Perhaps even more damning are the moral considerations. In a market system by definition no attention is or can be given to rights, justice, the public good, future generations or the environment. The inevitable outcomes include increasing inequality and damage to social cohesion and to ecosystems. The market is in principle morally repugnant and destructive, being at best only about self-interest, brutal indifference to the welfare of the other or to the public good, limitless acquisitiveness, and at worst it is about domination and predation. A marketing mentality contradicts the right human values and motives. You (have to) enter a market to maximize self-interest, be indifferent to the plight of others, and ignore the public good, justice and the environment, or you will be disadvantaged if not destroyed. Our vision should be to develop economic and other institutions which can be motivated by, and which reinforce a concern for cooperating, helping, nurturing and doing what is best for society and the environment. The market has of course generated astounding effort, innovation, wealth and "development," and there have been profound "trickle down" benefits for the 1.5 billion who shop at supermarkets, (although these benefits would not have been possible had market forces not geared the Third World's productive capacity to stocking those supermarket shelves.)

Polanyi is rightly famous for his account of the relationship between economy and society. In all known societies before our own the economy was "embedded in" society and governed by social rules, custom, religion and morality. One would approach decisions to do with production or distribution as one would approach those to do with attending church or painting a picture, that is, by considering the general social rules and bonds governing the way you must treat people and the environment. In Medieval times everything a person did was in accord with God's expectations, including producing and exchanging. Polanyi stresses that only our society has made the transition to a situation in which the economic sphere has been separated from society and allowed to proceed according to a set of rules which are not subject to control by social rules. The new rules are the rules of the market. In this arena you can seek to maximize wealth through buying and selling without any concern for loyalty, friendship, the welfare of others, the effects on the environment, the damage to social cohesion, the enrichment and impoverishment that results, whether outcomes are just or respect human rights. In a fire sale you can pay far less than the goods are worth, you can receive in interest far more than you lent, and you can drive a rival into bankruptcy and poverty. All that needs to be considered are your own monetary costs and benefits. Thus the economy is freed from social control. Indeed so far down this path have we now gone that it is not accurate to talk of separation; marketing has become the dominant mode, determining most of what happens and it is now appropriate to refer to this, not as a society which has a market, but as a marketing society.

The core evil here would seem to be simply *gain*. Polanyi helps us to appreciate the huge distinction between "subsistence" economies and the market economy. In "primitive" economies exchange was "equal". The "markets" were places where goods were exchanged in transactions that enabled participants to leave with items they did not bring, but items of equal value to those they brought to exchange. Those who had yams but no bananas could exchange some yams for some bananas, and go home with things of the same "value" as those they came with (e.g., things requiring as much work to produce). There was, in other words no concept of gain. Markets were therefore not driven by "market forces" and might be better described simply as the locations or events where equal exchange could take place.

The contrast with our society could not be more stark. Just about all our economic relations are driven by the intention to gain. People operate in the market with the intention of coming out with more wealth than they had. The point of investing and trading is to accumulate, to end up with more than one had in the first place, and over time to get richer with no limit in sight. This is the root evil which has now generated the global sustainability predicament. An economy driven by this motive soon creates insufferable inequality as the fittest grab more and more, it uses up and devastates resources and environment, and it shreds social cohesion as all are pitted in dog-eat-dog struggle to survive. Markets are the things which enable gain. The point is that there can be no place in a satisfactory society for gain. Such a society must have and control an economy which provides that low but sufficient and stable quantity of goods and services that enable a high quality of life for all. Again it should be obvious that such a society can have no place for growth or the market, and that there cannot be a market without growth.

Thus Polanyi's recommendation[19] that the market must be "re-embedded" in society is clearly unsatisfactory. Of course it is preferable that the market should be subject to much social control if that is possible (and the extent to which present society is tolerable is largely a function of the extent to which regulation prevents the market from operating), but as Fotopoulos insists the ultimate goal must be to get rid of it altogether.

Thus the serious inadequacy of the critical social analysis underlying the de-growth position is again evident. It is far from sufficient to target growth. We are dealing with a socio-economic system that is fatally flawed in many ways yet the de-growth camp focuses only on the growth mistake and proceeds as if that is the only thing that has to be fixed if we are to avoid the coming global crisis.

We need less than zero-growth

Another huge oversight in the de-growth literature is the failure to recognize that if we in rich countries immediately adopted zero growth economies the planet would still be headed for catastrophic ecological breakdown. The problems cannot be solved unless there is a vast reduction in the amount of economic activity taking place on the planet. The many basic ecological indicators are making it clear that we are so far beyond sustainable levels of production, consumption, resource use and consequent ecological impact that sustainability cannot be achieved unless these rates are reduced to small fractions of their current levels.

The "Footprint" measure drives the point home. The average Australian now requires 8 ha of productive land to provide food, habitat, energy and water. By 2050 the amount available on the planet per capita, (assuming no land loss until then) will be .8 ha. *We are ten times over a sustainable figure*. Add the fact that Australians are fiercely determined to increase their consumption all the time, and the fact that at the standard 3% p.a. rate of increase our level of production and consumption will be four times as great as it is now by 2050. This of course means multiplication of present levels of consumption of minerals, fish stocks, phosphorus, etc. Clearly if you are serious about sustainability and justice you cannot avoid the conclusion that we in rich countries must reduce levels of production and consumption to small factions or their present levels. To call for a steady-state economy is clearly far from sufficient. None of the de-growth advocates deal with this point adequately. Latouche's comments seem to recognize that there is overshoot, but does not focus on its magnitude. Jackson's call for

"right-sizing with no idea of what that means, and Daly's recommendations suggest that we can in future taper to stability and that will be sufficient.

The political implications

The ID project recognizes that transition to a satisfactory society must involve radical change on a number of major dimensions, and that one of these is the political dimension. In failing to see this the de-growth school again reveals the insufficiency of its analytical scope. In my view the case for radical political transition derives primarily from an understanding of our ecological/sustainability problem and it is necessary to outline the connection here.

Despite their significant differences, Fotopoulos, Bookchin, the Eco-feminists and Chomsky centre their critique of society and their recommendations for a satisfactory society on power and the domination by elites, and thus they argue for what Fotopoulos refers to as "direct democracy". This seems to be simply the classical Anarchist conception of radically participatory democracy, whereby all citizens have an equal say in decisions, no individuals or agencies have power over the citizen level, and issues involving larger regions or groups are dealt with via delegations and federations without citizens relinquishing power. From The Simpler Way perspective the crucial need for this political form can be seen when the coming ecological situation is understood.

In the conditions of intense scarcity ahead a viable and satisfying society will *have to be* based on principles of frugality, self-sufficiency, simplicity, localism, mostly small firms and farms, cooperation, many low-technologies (hand tools, earth building, crafts, gardening…) and non-material satisfactions. It will have to have per capita GDP and consumption of resources that are *a small fraction* of those taken for granted in rich countries today. It will have to be made up of mostly small local economies drawing on local resources to meet local needs. None of this will be viable unless the economy is under local control and run to meet needs as distinct from being run to make profits.

Such a community is not going to work satisfactorily unless it is intensely cooperative, cares for and provides for all, generates conscientiousness and good will, makes the technically and socially right decisions, monitors itself accurately, etc., and these processes and conditions are not going to be unless there is radically participatory democracy. This is not optional or a matter of ethical preference. Only the citizens of the town know the history, soils, values, needs and therefore what will work best. The technically and socially right decisions cannot come from any other source than local consensus seeking processes including citizen assemblies in which everyone has an equal right to participate. Without these conditions the working bees and committees will not be fuelled by the necessary conscientiousness and good will and the local commons and systems and infrastructures will not be maintained well enough.

In other words, if the new communities are to be viable they *will have to* govern themselves, with some but relatively minor assistance from remnant state and federal governments. (There will not be insufficient resources to run big centralized and bureaucratized states.) Thus the social-ecology of a viable and thriving community in the coming era of intense and irremediable scarcity will determine that participatory democracy will not be optional; it will be a necessary characteristic of a community that is viable, resilient and good to live in.

However, when one focuses on the sustainability problem one realizes that much more has to be done than just get rid of elite power and we could eliminate elites and domination and have a perfectly just and equitable world economy, while still destroying the planet. We would do so quickly if everyone in our new, just society insisted on living affluently, and it is not the case that by getting rid of the dominant elite or the disposition to dominate we would have got rid of the obsession with affluence. Bookchin, Daly, and most greens and Marxists tend not to see that a good society cannot be an affluent and industrialized society but most be based on far lower per capita levels of production and consumption than we have now in rich countries. The de-growth school does not seem to recognize this and might best be regarded as merely a zero-growth school.

Again the integral nature of the problem and the insufficiently of the de-growth vision is evident. Among the far reaching implications of a more thorough critique of consumer-capitalist society is the inescapable need for scrapping representative democracy, as well as the market, as well as growth, and as well as current levels of affluence. There are additional realms in which there are similarly profound implications but which will not be considered here, including the radically new localized geography of settlements, and especially the very different culture, values, ideas and preoccupations that must prevail. (Latouche does recognize the need for a "cultural revolution").

Also beyond the present discussion is the issue of transition strategy. The de-growth school says little on this topic but the impression given is, as Takis recognizes, that a voluntary consumption "downshifting-by-individuals" strategy is assumed. Godoy says Latouche "…calls for a renouncing of the uncontrolled consumerism of contemporary capitalist society."[20] Again Takis Fotopoulos is right in insisting that moves by individuals and groups towards ecologically and socially desirable practices, including community gardens and eco-villages, are essential elements in the required revolution, but in themselves are doomed to failure. They must become parts of an overarching political movement focused on scrapping the system.

Can capitalism survive de-growth?

Some of the best known critics of growth believe that it is quite possible to continue a capitalist economy without growth. Jackson's case is clearly unsatisfactory. After less than half a page of discussion, he concludes that the new economy will be "less capitalistic"…and that the question "probably doesn't matter".[21] These conclusions derive from his mistaken definition of capitalism, which is solely in terms of the private ownership of capital. It will be argued below that if capitalism is defined in terms which add competition, free markets, labour treated as a commodity, production determined by profit, and above all by the drive to accumulate surplus and reinvest it in a limitless spiral, then an economy which did the things Jackson desires might retain private ownership of productive means but it could not be a capitalist economy.

Herman Daly's case is much more substantial and is based on an issue which warrants careful attention. He argues that even though the throughput of resources in a steady state economy would be stable, productivity growth would still provide scope for increasing income, wealth, and investment, and therefore for the continuation of capitalism. Productivity gains would enable more and more "value" to be got out of that constant amount of inputs, and this could

go on motivating initiative and investment and enabling the accumulation process which is essential to the concept of capitalism.

The following argument is that this claim is true but trivial, and would soon cease to be true. The first question here is what are the sources of productivity growth? It is commonly assumed that it derives from smarter technology, and that there are no limits to this. The relevant index for our purposes is not "Labour "Productivity" but "Multifactor Productivity," which refers to that proportion of GDP growth that is left when the contribution of labour and capital inputs are subtracted. It is assumed to include the effects of efficiency gains and technological advance. Australian Bureau of Statistics[22] and the Australian Productivity Commission[23] figures show that over the past ten years MFP accounts or under 25% of GDP growth. This means that the scope for increases in investment of capital, incomes, GDP, etc. in an economy with no increase in inputs could be no greater than one-quarter of what it is now.

However the situation is much more restricted than that figure suggests, due to the characteristic failure of conventional economists to attend to anything but dollars and prices. Several studies have pointed to the crucial role of energy in productivity and GDP growth, and this is completely ignored when productivity is assumed to be a function of capital, labour and technology. A strong case can be made that economic growth in general, and technical advance in particular, are primarily due to increasing inputs of energy, especially to the substitution of energy and energy-intensive machinery for labour. Several studies have discussed the considerable and at times overwhelming role of energy growth in economic and productivity growth.[24] Ayres[25] presents detailed analyses of the role of energy in economic history and draws rather alarming conclusions regarding the close relationship. He finds that growth depends heavily on the availability and price of energy, and that in the likely near future of sharply increased energy scarcity and cost dire consequences for growth can be expected. "Economic growth depends on producing continuously greater quantities of useful work."[26] Ayres actually concludes that because of coming energy problems, growth "…is more than likely to end within a few decades."[27].

Berndt[28] says that by the 1970s it was clear that at least 50% of apparent technology gains were due to increased energy use. He endorses the expectation that rising energy prices will cut productivity growth.[29] US productivity has fallen following oil price shocks, as managers substitute other and less efficient factors for energy. Productivity has shown a long term decline since 1990, which is likely to be a consequence of energy problems. Finally, the "Productivity Paradox" seems to reinforce the significance of energy. If technical wizardry was the major determinant of productivity growth then how can we explain the fact that US productivity growth has slowed in the 1970 to 1990 period when computers have revolutionized just about all technologies?

Agriculture is a realm where technical advance has been predominantly a matter of increased energy use. Over the last half century productivity measured in terms of yields per ha or per worker have risen dramatically, but these have been mostly due to even greater increases in the amount of energy being poured into agriculture, on the farm, in the production of machinery, in the transport, pesticide, fertilizer, irrigation, packaging and marketing sectors, and in getting the food from the supermarket to the front door and then dealing with the waste packaging. The "Green Revolution" has depended largely on ways that involve greater

energy use. Less than 2% of the US workforce is now on farms, but agriculture accounts for around 17% of all energy used (not including several of the factors listed above.) Unconventional measures of agricultural productivity, such as food energy produced per unit of fossil fuel used, have actually plummeted. In an economy with no increase in resource use and therefore in energy use, this major source of productivity gain, i.e., using more energy, would not be available.

Thus we can see the inadequacy of conventional economic indicators of productivity as sheer "disembodied" or "angelised" technical progress. The above Multifactor Productivity figure, saying that all contributors to growth other than labour and capital only account for one-quarter of growth, fails to indicate the extent to which that small contribution is due to increased energy inputs.

The declines after oil price rises and the general serious decline since 1990 indicate the possibility that any productivity gains due to pure technical advance are probably very low now, might indeed be negative, and probably soon will be overwhelmed by the effect of energy price rises (which is what Ayres, and Stern and Cleveland are saying.).

It should not be assumed that in general rapid, large or continuous technical gains are being routinely made in areas such as energy efficiency. Mackay[30] reports that little gain can be expected for air transport, and Ayres notes that for many decades there have been plateaus for the efficiency of production of electricity and fuels, electric motors, ammonia and iron and steel production. The efficiency of electrical devices in general has actually changed little in a century[31] "…the energy efficiency of transportation probably peaked around 1960", partly due to greater use of accessories since then.[32] Ayres' Fig. 4.21a shows no increase in the overall energy efficiency of the US economy since 1960.[33] Ayres notes that reports tend to publicise particular spectacular technical advances and this can be misleading regarding long term average trends across whole industries or economies.

Then there is the general issue of diminishing returns. In the short run the greater emphasis on for instance finding ways to save energy will probably yield significant results, after an era of fairly cheap and abundant energy when little effort to conserve was prompted. But before long the "low hanging fruit" will have been picked. Studies of energy and carbon saving potential for instance seem to indicate the possibility of 25-50% savings (although more for electric cars and buildings), but reaching these levels will become increasingly difficult. The IPCC[34] finds that to double carbon emission reduction from what a $20/t price would achieve would require multiplying expenditure by 5. In addition these kinds of achievement predictions always assume present energy prices and resource availability, and these will soon be significant underestimates of the costs and difficulties determining technical and productivity advance.

Most decisive would seem to be the predictions by the Australian Bureau of Agricultural Economics that the energy efficiency of energy-intensive industries is likely to improve by only .5% p.a. in future, and of non-energy-intensive industries by .2% p.a.[35] In other words we can expect it to take 140 years for the energy efficiency of the intensive industries to double the amount of value they derive from a unit of energy. This would seem to rule out any hope that getting more value out of energy inputs is likely to enable the owners of capital to go on doubling their invested capital every 7 years, i.e., making say 10% p.a. profits.

Perhaps the most meaningful indication would come from comparing the rate of GDP growth with the rate of growth of material inputs into the economy. In a normal/good year GDP increases 3% p.a. (For the last decade or so the Australian average has been closer go 2.2% p.a.) However, Australian energy use is increasing at around 3% p.a. and electricity use at 3.15% p.a. with transport energy close behind. In other words if national income is increasing no faster than the rate of increase in use of energy, then the productivity of energy is not increasing, and whatever the other sources of growth are, including technical wizardry, they are likely to be overwhelmed in the near future if and when energy prices take off.

But is not the energy-intensity of the economy falling, and does not this show that the significance of energy in productivity is falling? Crude measures of the amount of energy used per unit of GDP have shown long term falls in rich countries but there are a number of reasons for not accepting the common interpretation that it shows energy has been "decoupled" from economic growth, and that more product is being got out of each unit of energy. Firstly the rate of fall has been declining and might by now have ceased as the above crude indications suggest. Secondly the GDP figure includes vast amounts of dubious "output," especially by the finance industry (so big now that it makes 40% of corporate profits) where hedge funds etc. shuffle ever-increasing quantities of electronic dollars, much of it "wealth" that does not exist (most obviously the mountains of debt) but the paper value of "sales" and the brokerage and consultation fees, are all accounted as increased business turnover and GDP. Also, as Daly stresses, GDP includes the expenditure required to remedy damage caused by the production of GDP, and in view of the falling indices of sustainable economic welfare in rich countries, energy inputs per unit of valuable or welfare-yielding GDP increase are surely falling.

In addition the economies of the developed economies have shifted from energy-intensive production to services, significantly reducing the amount of energy used within their borders. [36] They have thereby greatly increased the amount of energy-intensive materials, agricultural products, manufactured and capital goods imported and consumed but these quantities do not show up on their books. The energy that goes into producing these things overseas should be added to the figure for energy used per unit of GDP, but it does not feed into the common measure of the energy-intensity of the economy. Of course on the opposite side of the ledger the energy content of exports should be taken into account, but the US mostly pays for its imports, not by exporting goods it uses energy to produce, but by accruing debt and selling assets. The economists are therefore keeping the books in ways that show much lower energy use than is actually going into producing what is consumed in rich countries.

Finally it has long been understood that gains in the energy intensity of the economy have been significantly due to "fuel switching," i.e., moving to sources which are of "higher quality" and enable more work per unit of energy.[37] For instance a unit of energy in the form of gas enables more value to be created than a unit in the form of coal, because gas is more easily transported, switched on and off, or converted from one function to another, etc.

These are some of the reasons for not being overly impressed by apparently declining figures for energy intensity per unit of GDP. They certainly cannot be taken as showing that energy will not be a major negative factor determining future productivity trends, if only because the price of energy is likely to rise significantly in the near future.

To summarise, it seems that the gains in productivity that can be anticipated in an economy with constant inputs of energy would be very small and probably negligible, even assuming that future input costs are similar to present costs. This is very likely to be a quite invalid assumption as we are probably entering an era of scarcity, especially bringing dramatically higher energy prices. This will impact not just on energy used in production but on all other inputs such as machinery and indeed labour, because everything requires energy in its production and maintenance. Fossil fuel prices are likely to escalate in the near future as the cost of dealing with emissions is added, and the price of renewable energy forms will be significantly higher than current prices for fossil fuels. It is most likely, as Ayres warns, that energy price rises alone will overwhelm the productivity gains deriving from sheer technical wizardry and determine that the dollar output value per unit of energy will fall dramatically, i.e., that productivity gains in future will be negative.

So even if Daly is correct as far as the initial situation is concerned, what matters is the greatly reduced scope there will soon be as time goes by for increased output in terms of the dollar value of sales and the increased opportunities for investment. To summarise, a) that (probably very large) proportion of the present one-quarter of GDP growth that is due to increased use of energy will not be achievable, b) the scope for getting more out of energy due to improvements in efficiency of use is probably not large, c) the cost of energy inputs is very likely to rise significantly, adding to production costs and to the cost of technical advance and thus reducing productivity gains from non-energy related sources and quite probably outweighing them, d) diminishing returns will operate on new technologies. Even if these factors left a zero-input growth economy with some increasing scope for more production, sales and investment every year, these would clearly be tiny fractions of present amounts, and nothing like what would be needed to sustain a capitalist class of anything like the present scale.

But the overwhelmingly important factor here has yet to be taken into account and it is not recognised by Daly, Jackson or most of the anti-growth school. As has been made clear above the need is not just for zero-growth, it is for dramatic reduction in the amount of producing and consuming going on. These must be cut to probably less than one-fifth of the levels typical of a rich country today, because the planet cannot sustain anything like the present levels of producing and consuming, let alone the levels 9 billion people are going to generate. This means that *most productive capacity in rich countries, most factories and mines, have to be shut down*. Again the de-growth school, let alone conventional economists, seem unable to grasp that this is what the limits to growth analysis has been telling them for at least fifty years. How much scope would there then be for capital accumulation?

Capitalism is by definition about growth. Its essential characteristic is the investment of capital in order to make as much profit as possible, to re-invest next year in order to make as much profit as possible … in a never ending spiral of *capital accumulation*. The Monthly Review school has continued to show the crucial significance of this process in the nature, functioning and crises of capitalist society, especially in pointing to the chronic "problem of surplus" that it generates. In other words the system's most serious problem is finding investment outlets for that ever-accumulating volume of capital. In the last few decades this has been the major force pushing globalization through, as protection, regulation and state ownership have been swept aside to enable corporations and banks to get into previously inaccessible profitable fields. The volumes of capital now sloshing around the planet franticly

seeking outlets are astronomical, much of it in the form of un-repayable debt, much in the form of wild speculation, and much of it cannibalistic (i.e., often profits can only be made through the carve up of the assets of gamblers who lose, including the meager savings of bankrupt home loan borrowers.)

The figures on accelerating inequality also indicate the rate at which capital available for investment is being accumulated. The incomes and wealth of the super rich 1% have skyrocketed. They do not store that ever-increasing wealth under the bed; they want to invest it. Similarly the mountains of debt that now exist represent capital that has been lent, often with reckless desperation in an effort to find profitable "investment" outlets. (Hence the mistake in attributing the GFC to the stupidity or greed of the bankers; they have only done what the system requires.)

Daly and the others who think capitalism and zero-growth are compatible seem to have no idea of the gulf between these sums of ever-accumulating capital now seeking investment outlets, and the opportunities for this that would be available in a materially stable economy functioning under the above savage conditions and limits. The present capitalist economy plunges into difficulties if the growth of its GDP falls below 3% p.a. How likely is it that such an economy could continue to function, driven by the investment of capital by its private owners in order to increase their wealth, when the productivity growth rate is negligible if not negative, and it applies to a GDP maybe one fifth of its present value? It would seem that there is a rather strong case that, as Smith concludes in his powerful critique of Daly, "…a steady-state capitalism is impossible."[38]

(This does not mean that in a satisfactory, zero-growth economy there could be no private firms. The Simpler Way vision advocates mostly small family farms and firms and co-ops, operating within a local, community-controlled economy geared to meeting local needs[39]).

Conclusion

The de-growth initiative is to be hugely congratulated for helping to get the issue on the agenda. As with the Transition Towns movement I think it is entirely understandable, indeed inevitable, that at first such initiatives tend to be reformist reactions or only aimed at limited goals based on limited analyses of the situation. Our task is to try to deepen the vision, so that participants increasingly realize that what they are upset about is part of a complex and flawed integrated system and that what they want cannot be achieved unless they greatly extend their goals to include nothing less than scrapping and replacement of the basic elements in consumer-capitalist society.

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[1] My first attempt to contribute, originally titled *Abandon Affluence and Growth* (London: Zed Books,1985) was rejected by sixty publishers.

[2] S. Latouche, "Degrowth; An electoral stake?," *The International Journal of Inclusive Democracy,*" Vol. 3, No. 1 (Jan., 2007).

[3] H. Daly, *For The Common Good* (Boston: Beacon, 1989), pp. 1-2; *Steady-State Economy* (Washington: Island Press, 1991), pp. 75, 100, 102, 103; *Beyond Growth* (Boston: Beacon, 2008), pp. 10 ff., and "A steady state economy," Sustainable Development Commission (UK, April 24.)

[4] T. Jackson, *Prosperity Without Growth*, Sustainable Development Commission (EU, Brussels, 2009).

[5] Fotopoulos, "Is de-growth compatible with a market economy?," *The International Journal of Inclusive Democracy*, Vol. 3, No. 1 (Jan., 2007).

[6] D. Monkerud, "US Inequality Continues to Grow," *The Capital Times* (Wisconsin, 17th July, 2009.).

[7] Jackson, op. cit., p. 178.

[8] See note 3.

[9] H. Henderson, *Ethical Markets; Growing the Green Economy* (London: Chelsea Green, 2006).

[10] P. Hawken, *Ecological Commerce* (New York: Harper Collins, 1993), pp. 11-13.

[11] J. Porritt, *Capitalism As If The World Mattered* (London: Earthscan, 2005), p. 84.

[12] D. Korten, *Agenda for a New Economy* (San Francisco: Berrett Koehler, 2009).

[13] 0p. Cit., (2007), p. 7.

[14] Fotopoulos, (2007, print version), p. 13.

[15] H. Daly, *Steady State Economy*, op. cit., p. 51. See also *For The Common Good*, op. cit., pp. 14, 19, 44-47, and *Beyond Growth*, op. cit., pp. 13 – 14, 17.

[16] H. Daly, *Beyond Growth*, op. cit., p. 17.

[17] "The Economic System," *The Simpler Way website* : http://ssis.arts.unsw.edu.au/tsw/

[18] see e.g. T. Fotopoulos, *Towards an Inclusive Democracy* (London: Cassell, 1997).

[19] G. Dalton, (Ed.), *Ancient, Primitive and Modern Economies; Essays of Karl Polanyi* (Boston: Beacon Press, 1968).

[20] J. Godoy, "European activists against economic growth," *Common Dreams* (Mon. 19th April, 2010) : www.commondreams.org/headline/2010/04/19-6.

[21] Jackson, op. cit., pp. 201-202.

[22] Australian Bureau of Statistics

[23] Australian Productivity Commission

[24] E. R. Berndt, "Energy use, technical progress and productivity growth: a survey of economic issues," *The Journal of Productivity Analysis,* 2: (1990), pp. 67-83; S. Schurr, and B. Netschert, *Energy and the American Economy*, *1850-1975* (Baltimore: Johns Hopkins University Press, 1960); D. I. Stern and C. J. Cleveland, *Energy and Economic Growth* (2004); R. K. Kaufmann, "A biophysical analysis of the energy/real GDP ratio: implications for substitution and technical change," *Ecological Economics* 6: (2004) , pp. 35-56; R. K. Kaufmann, "The mechanisms for autonomous energy efficiency increases: A co-integration analysis of the US energy/GDP ratio," *Energy Journal* 25(1) (2004), pp. 63-86; C. J. Cleveland, R. Costanza, C. A. S. Hall, and R. K. Kaufmann "Energy and the U.S. economy: A biophysical perspective," *Science*, 225: (1984), pp., 890-897; Office of Technology Assessment, *Energy Use and the U.S. Economy,* US Congress, OTA-BP-E-57, U.S. Government Printing Office, Washington DC. (1990).

[25] R. U., Ayres, *The Economic Growth Engine*, (Cheltenham: Elgar, 2009), p. 54.

[26] Ayres, op. cit., p. 297.

[27] Ayres, op. cit., p. 306.

[28] Berndt, (1990), op. cit.

[29] Berndt, (1990), op. cit.

[30] Mackay, (2008), op. cit.

[31] Ayres, op. cit., Figs. 4.1 and 4.19, p. 127.

[32] Ayres, op. cit., p. 126.

[33] Ayres, op. cit., p. 128.

[34] IPCC, "Fourth Assessment Report," Working Group III Report "Mitigation of. Climate Change," (2007), Fig. SPM 10 : http://www.ipcc.ch/ipccreports/ar4-wg3.htm

[35] ABARE, *Australian Energy Projections to 2029-30* :

http://www.abare.gov.au/publications_html/energy/energy_10/energy_proj.pdf
ons_html/energy/energy_10/EG10_AprListing.xls
http://www.abare.gov.au/publications_html/*energy/energy_10/EG10_AprListing.xls*

[36] E.g., P. Mulder and H. de Groot, (2003), "International Compatrisons of Sectoral Energy and Labour Productivity Performance," DCB Discussion Paper Netherlands Bureau of Economic Policy Analysis.

[37] Stern and Cleveland, (2004), op. cit., p. 33; Cleveland et al., (1984), op. cit.; Kaufmann, (2004), op. cit.; Office of Technology Assessments, (1990), op. cit.; Berndt, (1990), op . cit.; Schurr and Netschurt, (1960), op. cit.

[38] R. Smith, "Beyond growth or beyond capitalism?", *Real World Economics Review*, 53 (2010), pp. 28 – 42.

[39] *The New Economy*, The Simpler Way website : http://ssis.arts.unsw.edu.au/tsw/TheNewEc.html