

# Forum - Climate Change

The Forum section provides illuminating pieces on topics of current interest. This edition's contributors are Clive Spash of CSIRO and Murray Patterson from the New Zealand Centre for Ecological Economics

## Fallacies of Economic Growth in Addressing Environmental Losses: Human Induced Climatic Change.

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Regardless of what else it has done the report on climate change by Stern (2006), an ex-Chief Economist of the World Bank, and his 22 colleagues, has thrust the issue into the midst of arguments over economic growth. Heralded as an enlightened report, which at last points 'rationally' to the serious nature of human Greenhouse Gas emissions, its headline (20% GDP loss) figure is already widely quoted by the environmentally concerned. Unusually for a government economic report, it talks of ethics, distributional inequity and catastrophic events. Ecological economists, and others, hoping for governments to start taking serious action on Greenhouse Gas mitigation might then regard this as a sign of significant change.

More than this, Stern tells us that Greenhouse Gas control is a rosy opportunity for economic growth with financial institutions set to make billions along with carbon traders, energy suppliers and other entrepreneurs quick off the mark. Indeed, we are told that: "Tackling climate change is the pro-growth strategy for the longer term, and it can be done in a way that does not cap the aspirations for growth of rich or poor countries." (Stern, 2006: viii). So, in short, cost-benefit analysis confirms Greenhouse Gas control as a good investment with positive returns, a profitable macroeconomic enterprise. Those ecological economists who have been placing numbers on global ecosystem services may be comforted to find other environmental pragmatists arguing that this is the way in which environmental problems should be articulated, i.e. as investment opportunities set in a market place.

The key issue for climate economists has now become to argue over whether the control costs are as low and the benefits of control (avoided damages) as high as Stern claims. I will not go into various problems surrounding cost-benefit analysis, strong uncertainty and intergenerational ethics (see Spash, 2002;

2007a; 2007b), but rather wish to focus on whether gross product is how such changes should be framed and expressed. Is the prospect of human induced climate change best reflected in GDP and if there is a permanent loss of 20% of GDP why does this matter?

Assume the government increased income taxes 20% and did nothing with this revenue; that is the flow of money in the economy is reduced. Much depends upon the way in which this proceeds, i.e. gradual adjustments or sudden shock. A slow income reduction over several years may be assumed to remove any adjustment shock. The reduced flow of money should reduce effective demand. However, the scale of the economy may not be affected. If everyone has their income reduced by the same amount relative prices need not change although absolute prices would fall. Thus, a general deflation would occur. If prices fell in line with income effective demand would remain the same. Clearly the economy measured by money flows may be divorced from the goods and services supplied in that economy, and we are not primarily concerned with money flows.

Consider two worlds. In state A there is no enhanced Greenhouse Effect, there is no need for defensive capital expenditures or new investment in energy sources, and the fossil fuel economy continues into the future, say, eventually switching to perfect substitutes. Economic growth can be taken as more material consumption or reduced work hours. In state B the enhanced Greenhouse Effect threatens to destroy the economic system so mitigation is undertaken. Investment goes into research and development of alternative energy sources, new markets are established to trade carbon, expenditures are undertaken to build new capital and structures are adapted to changed temperatures and sea levels. All these activities have displaced consumer and capital items or potential for reduced working hours in state A.

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## Forum - Climate Change *contd.*

Both states have human activity, both have GDP growth as measured by throughput and people are fully employed doing things. The point is that the states are qualitatively different not quantitatively different. They are different worlds.

So what is the “pro-growth” strategy for the future? Both are actually pro-growth strategies, the difference is in terms of “for what” economic activity is undertaken. GDP measures face a problem when addressing defensive expenditures and are misleading if they treat them as positive gains. There are goods and services which deliver direct primary satisfaction in themselves and those that yield zero or negative satisfaction, i.e. intermediate and defensive expenditures. Intermediate goods and defensive expenditures do not add to welfare and should therefore be distinguished as such in GDP; a well known but apparently neglected issue (Hirsch, 1977). Indeed, we find GDP calculations subsuming expenditures for damage avoidance as positive welfare growth. More generally, traditional macroeconomics fails to address the “for what” question and is only concerned in aggregates of prices, employment and throughput.

Of course, state A above does not exist and, actually, under state A there is a potential for a large surprise. The surprise is not some bounded probability distribution which experts can specify by staring into their crystal balls and then magically convert from vision to monetary value (absolute or GDP). The surprises are unknown but potential scenarios which scientists can outline to the best of their ability and which involve loss of life and human infrastructure on a grand scale; losses only preceded by the mass movement of people, loss of life and destruction of World War II. However, there is no peace treaty to sign or enemy to defeat, only our own actions to control. Once the surprises start in earnest action will be too little too late. A six metre sea level rise is one scenario which would flood all the major coastal cities. How does this get transferred into X% GDP with any semblance of meaning left in the utter disaster and human suffering which would be entailed?

The problem then is that GDP is at best an aggregate measure of the monetary value of throughput, not of well-being or its distribution. The distribution of impacts is more important than the gross measure.

Damages evenly spread across an entire population are different from those concentrated on one city, region or sector. Damages of materials are different from destruction of support systems and human fatalities. GDP loss hides the characteristics of physical and social impacts, neglects their distribution, makes catastrophes appear equivalent to a reduction in money flows, confuses financial expenditures with welfare gains, assumes away incommensurability and replaces plurality with monism.

The measurement of environmental damages by economic growth and investment analysis, as in Stern, seems to exclude more than it addresses. There is no issue of consumption being incommensurable with loss of life or harm of the innocent. Ethical issues are encapsulated in preference utilitarianism with each generation treated as if an individual. There is scant attention to interregional inequity. There is no debate as to the reasons for more luxuries in Australasia, North America and Europe, because the cake can grow regardless of who gets to eat it or how. There is no stark contrast between deciding whether millions of people suffer and die rather than airplane, car, oil, coal and energy supply companies having to adjust their operations and rich consumers their consumption habits. There is no



**Growth v Poverty:** In a poor rural town of Yang Mei, China Mobile, the country’s biggest mobile phone provider is the only reminder of China’s economic power. (photo courtesy of Anna Lukaszewicz)

question as to precaution in the face of strong uncertainty. There is no moral storm (Gardiner, 2006). There is only a bottom line in monetary rates of return. Rather than asking why humanity should expect a positive rate of return on climatic disaster prevention, the only question is how large is the return?

**Continued next page**

## Forum –Climate Change *cont.*

The political economy, motives and values behind the Stern report may be a subject of future research, or perhaps it will soon be forgotten just like Cline's 20% climate damage estimate 15 years earlier (e.g. Cline, 1992). We may suspect and speculate as to hidden political agendas such as: supporting new investment in nuclear power for the UK, raising the issue as a problem with a traditional solution, fending off a Green vote in forthcoming elections, allowing the Treasury to justify a new tax. The thrust of the report is that modern economies can continue with traditional economic growth and indeed business as usual offers the "solution".

The enhanced Greenhouse Effect is an impact on the physical not the monetary. We may then ask, if the scale of the physical economy shrank 20% why should anyone in affluent societies really care that much? In affluent societies, continued increases in material consumption have been noted to have added nothing to well-being for some considerable time (Economist, 2006), and reduced scale of through-put has been advocated to save resources for future generations (Georgescu-Roegen, 1975). A permanently smaller material economy has been positively advanced, by literature on steady-state economics, as something for which we should be planning. Smaller by design rather than smaller by disaster.

Modern economic growth has been locked-in to dependence upon fossil fuels and these are the historical source of the majority of Greenhouse Gas emissions. Humanity is facing the transformation of the economy away from this dependence; that transformation will come whether we choose to plan for it or not. A new economics is required in which human well-being is addressed as a multifaceted concept which involves a plurality of values. Poverty in less industrially developed economies is not solved by supplying more luxuries to the already wealthy. Traditional "pro-growth" policies fail to address the problems we face, the necessary transition or the nature of widespread environmental change we are undertaking. The time is upon us when we must ask: economic activity "for what"?

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(photo courtesy of Anna Lukaszewicz)