MARKETISING THE ENVIRONMENT

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Is the environment the new market frontier? In the past, markets have commonly shaped processes of resource extraction and waste disposal that impact on environmental quality. However, their use as economic policy instruments for dealing with the environmental threat of climate change is relatively novel. Current policy proposals for 'putting a price on carbon' signal a form of 'marketisation' that requires particularly careful attention. Is it a progressive step toward meeting what now seems to be the greatest challenge for the future of humankind and the planet? Or is it an application of neoclassical economics and neoliberal politics that creates more dangers than it is likely to resolve?

Proponents of marketising the environment contend that it can drive the transition to a more sustainable economy. Indeed, to generate major changes in patterns of energy use, industrial production, urban form, transport and consumer spending is an enormous task. To make the changes happen quickly enough to avoid the possibility of catastrophic climate change is a particularly tall order. As the contributors to a special issue of this journal on 'Contesting Climate Change' emphasised, corporate interests are at stake as well as prevailing ideologies and consumerist behaviours.

The goal of *sustainability*, although commonly simply asserted, is itself complex and multi-dimensional. Economic sustainability requires the reproduction of productive capacity, including the replacement of depreciating capital, whether natural or human built. Social sustainability implies the reproduction of acceptable social structures and institutions, producing social cohesion. Ecological sustainability is a yet deeper concern, requiring the maintenance of biodiversity, ecological integrity and intergenerational equity. All such considerations are threatened by climate change. The scientific evidence of the severity of this problem has been cumulative and increasingly consensual

(Diesendorf 2009, 2011). While proponents of 'putting a price on carbon' formally accept the need to make a transition to sustainability, their view of sustainability mainly emphasises its economic dimension.

The criteria for assessing the effectiveness of a transition to sustainability also require consideration. From a political economic perspective, it cannot properly be just a transition: it must be a just transition. This concern with justice may imply arrangements for redress or compensation for past wrongdoings: the 'make the polluter pay' principle is a case in point. A broader concept of *social* justice invites yet more considerations of how to create reasonable equality of opportunity, equality of outcome or equality of sacrifice. For example, some would say that socially just environmental policies require greater sacrifice by wealthier individuals, classes or nations. If so, there are implications for who should take the primary responsibility for leading the way towards more ecologically sustainable patterns of production and consumption. Questions of equity and ethics intertwine with political economic judgements about the likely policy impacts.

This is the context in which we need to consider the current proposals for 'putting a price on carbon'. We need to understand why a market-based approach has been adopted in response to the challenge posed by climate change. We also need to compare this market-based approach to other policy possibilities. The modest contribution that this article makes is to show that the 'marketisation' of the environment is not inexorable. Rather, it is a strategic policy choice that reflects particular economic ideas and interests. To emphasise this point, the article describes an array of policy approaches, ranging from (i) market creating to (ii) market adjusting, (iii) market regulating, (iv) market augmenting and (v) market contesting. This parallels the spectrum of 'light green' to 'deep green' positions in debates on the nature of environmental problems (Neumeyer 2010; Goods 2011). The current proposals for 'putting a price on carbon' occupy only a small space in this spectrum; and there are potentially more potent political economic alternatives.

Creating Markets

Emissions trading has been at the top of the policy agenda in Australia, as in many other countries. The report of the review committee, chaired by Ross Garnaut, that the former Rudd government set up to report on

climate change policies had this emphasis (Garnaut 2008); and emissions trading has had the central place in proposals for carbon pollution reduction ever since. Establishing an Emissions Trading Scheme (ETS) creates a new market – a market in rights to pollute.

Emissions trading proposals have a strong basis in neoclassical economic theory. According to that theory, a limit can be set upon the total amount of allowable carbon emissions, and permits to pollute up to that limit can be issued and traded in the market. Those permits will then be acquired by businesses with the greatest need to pollute and the greatest ability to pay. The cost of purchasing the permits can then be expected to impact on the price of the products. Those who criticise the policy because 'the polluters will pass on the costs to their customers' are off the mark, according to the mainstream economists, because that is how the policy is supposed to work. Higher prices discourage the consumption of products whose manufacture is carbon-generating. Meanwhile, the higher costs associated with emissions-intensive technologies create incentives to develop and adopt less environmentally damaging forms of production and consumption.

While the theory is relatively simple, the practice is much more complex. The policy implementation and effects depend upon how strictly the limit on acceptable pollution is defined, how vigorously it is policed, whether the initial allocation of permits gives preferential treatment to existing polluters, and the conditions under which the market operates (see Spies Butcher 2011). All these practical considerations can result in the application of an idealised neoclassical theory producing a more uncertain outcome in the real world.

Issues of equity and social justice also need to be considered but these are not integral to the economic theory underpinning emissions trading: at best, as in the Garnaut report, they are secondary matters to be addressed by compensatory welfare policy measures. Sustainability is interpreted in economic rather than ecological or social terms. Little wonder that, beyond the appeal of emissions trading to neoclassical economists, it has generated little popular support among those concerned with linking ecological sustainability and social justice. Yet, with the backing of mainstream economists like Garnaut and the support of politicians from the major political parties – other than a rump of climate change sceptics – it has emerged as the officially favoured option.

Adjusting Markets

An alternative that has been advocated by environmental groups for many years is a *carbon tax*. After a slow start, a more positive view of this alternative became evident in Australian politics during 2010-11. Government spokespeople slid from discussing an ETS as the principal policy proposal to discussion of 'putting a price on carbon' or 'carbon pricing'. This opened up the possibility of a tax rather than emissions trading. It created a reorientation of the public policy debate that has assuaged the concerns of some environmentalists and enabled the Greens political leaders to become partners with the ALP in promoting a market-based response to the climate change threat. The Gillard government's proposal for a 'hybrid' scheme, legislated in November 2011, has a carbon tax as the first step towards a subsequent ETS which is currently foreshadowed for introduction in 2014-5. The hybrid character of the policy tends to blur important differences between the market adjusting and market creating elements, so it is worth pausing to clarify the distinction.

The market adjusting role of a carbon tax is quite straightforward, setting aside all the complexities relating to free permits and other concessions that are embodied in the current Australian scheme. A carbon tax is an indirect tax – a tax that is levied on goods and services rather than on people, on expenditures rather than incomes. Indirect taxes on goods and services apply in most countries, of course. The GST, levied at 10% across-the-board on most goods and services, has been the principal indirect tax in Australia for the last decade. A carbon tax, by contrast, would have a differential impact on the price of different goods and services according to the amount of fossil fuel used in their production. If the carbon tax were universally applied, products whose manufacture and supply requires the burning of much fossil fuel would therefore become more expensive. Aluminium products are a case in point, because the production of that raw material involves the use of enormous amounts of electricity, typically produced by burning coal. Proponents of carbon taxes argue that, were such products to become heavily taxed, consumers would seek to switch to cheaper, less environmentally degrading products.

Like emissions trading, the economic case for an environmentally targeted taxation structure has its roots in neoclassical economic theory.

In both cases, the expectation is that patterns of production and consumption will adjust to changes in market price signals. What were previously unpriced market 'externalities' become priced and thereby internalised to the market system, resulting in more efficient resource allocation. That positive view is buttressed by the expectation that the changed prices will have long-term 'dynamic' effects arising from the stronger incentive for businesses to seek and implement technological changes that emphasise non-renewable materials, energy sources and products.

Like an ETS, the likely effectiveness of a carbon tax in practice depends on an array of considerations such as the rate of the tax, the array of exemptions and the nature of compensation. The recent political debates in Australia have focussed particularly on these details. The compensation arrangements, for example, currently involve a government commitment to fully (even more than fully in some cases) compensate low and middle income households for the expected rise in electricity bills. How this might work can be interpreted through the prism of the neoclassical economists' own theory: by distinguishing between the 'income' and 'substitution' effects of the price rises that a carbon tax will cause. The *income* effect causes falling demand for electricity (and all other items of consumption to some extent, however minor) because consumers' real income declines as a result of the new tax. The *substitution* effect causes switching from the now higher priced products to lower priced products. Neoclassical economists generally regard substitution as the key to allocative efficiency.

However, at the currently proposed rate of carbon tax, consumers' switching is likely to be quite minor unless new products become readily available. The bigger drivers of substitution effects could be expected to arise in the processes of production, where the currently proposed rate of carbon tax will favour gas as the source for energy production, at the expense of coal, for example. Indeed, Greg Combet, the Minister responsible for Climate Change policy, has explicitly stated this as a primary policy goal. The push for more coal seam gas mining is one industry response already under way, with health and environmental consequences that are creating widespread concern (Hutton 2011). Given, though, the current gap between production costs for electricity generated by burning fossil fuels and using wind or solar thermal, for example, the rate of carbon tax would need to be substantially higher than the $23 per tonne that is currently being proposed (Buckman 2011:

85-89). Otherwise, renewable energy sources will not be economically more attractive options. Meanwhile, encouraging the switch from coal to gas-fired electricity could impede an eventual switch to renewables because the capital investment going into a new gas-based system will take decades to pay off.

Market-Creating or Market-Adjusting?

The relative merits and demerits of emissions trading and a carbon tax warrant careful consideration. According to neoclassical economics, both policies could readily achieve the same outcome. An ETS sets the permitted level of output (of carbon emissions) and allows the market price (of permits) to vary. A carbon tax sets the price (of continuing to pollute) and allows the output (of carbon emissions) to vary. This seems reassuringly symmetrical, at least in theory. Yet there are significant reasons why one policy may be preferred to the other in practice.

The Australian government seems to have opted for the ETS as the ultimately preferable policy for two reasons. First, some other countries are implementing it, so it offers at least some prospect of becoming a global trading system. Second, its proponents say it is likely to yield a more certain outcome. This is because, given that the main aim of the policy is to produce a specified reduction in carbon emissions, the ETS directly hits that target as a result of the government determining how many permits to issue. A carbon tax, by contrast, would require adjustments to the tax rate until, by trial and error, the target reduction in carbon emissions is attained. There are more uncertainties, and more political impediments in this latter processes, it seems. Hence, in the Gillard government's scheme, the carbon tax is regarded as only an interim step towards the introduction of a fully-fledged ETS.

Is this official preference for an ETS sound? There are at least two contrary concerns. One is the neglect in the mainstream economic reasoning of *property rights* and their behavioural implications. An ETS would create private ownership of the rights to pollute, which would then limit others' access to environmental resources, such as clean air. Once the new property rights have been sold – in effect 'privatising the environment' – there would be no social or ethical reason for restraint. Indeed, purchasers of the property rights would have full entitlement, and economic incentive, to use those rights to the full. Moral opprobrium in

the community would cease to be a significant restraint. With a carbon tax, by contrast, there is a closer alignment between the economic and ethical signals. Producers and consumers of environmentally harmful products must pay the penalty if they do not desist. Paying the tax, as with cigarette consumption, allows retention of the right to consume but, unlike payments for licences to pollute, no new rights are conveyed to the polluters.

It is the construction of the issue in a neoclassical economic framework that obscures these crucial ethical aspects of what is, in the end, a matter of collective community interest. An ETS, creating individually saleable rights to violate that collective interest, is a hazardous policy, even though it limits the number of permits to be issued. The fundamental problem is the failure to recognise that market behaviour and the pursuit of common interests have different ethical bases. It is a point that the US economist Kenneth Boulding recognised four decades ago when he said that 'the presence of pollution is symptomatic of the absence of community' (Boulding 1971:132). Building that community focus is more likely through common acceptance of a tax on bad behaviours than through the sale of rights to behave badly.

A second reason for preferring the carbon tax alternative to an ETS is that it creates less of a tendency for secondary markets to proliferate. An ETS opens up opportunities for polluters to purchase 'carbon offsets' internationally in order to continue with their current environmentally destructive production arrangements. Therein lies a host of problems, including the effects of privatisation and jeopardising land rights in developing countries, and delaying the phasing out of polluting industries in the industrialised countries (Lohmann 2005; Boyd, Boykoff and Newell, 2011). An ETS, like any newly created opportunity for trading in markets where prices are variable and uncertain, also predictably gives rise to the development of futures and other derivatives. This increases the array of economic institutions with a stake in marketing rights to pollute, each with their own capacity for charging commissions and seeking various forms of 'profits without production'.

This situation may help to account for the acceptance of the current policy by some sections of capital, particularly financial intermediaries and management consultants who see themselves having a role as 'market makers'. However, the effect of carbon derivative markets is to add to the opportunities for the sort of speculative transactions that have

imparted such financial volatility to the capitalist economy in recent years. Having complex layers of institutions with an interest in the proliferation of carbon derivatives market trading is indeed a deeply troubling prospect. Our environmental future prospects become embedded in, and dependent upon, the functioning of financial markets in which speculation and cyclical instability are endemic.

These differences between the likely effects of an ETS and a carbon tax are important. It is clear that the latter policy is preferable, once the analytical frame moves beyond the narrow construction of neoclassical theory to a broader political economic perspective. For that reason, there is a strong case for seeking to stop the 'interim' carbon tax policy of the Gillard government being superseded by the ETS.

Both policies have common problems though. They both seek to ameliorate environmental damage by primary reliance on market principles, operating directly on quite narrowly defined individual economic interests. Therein lies their appeal to those who view society as functioning according to the individualistic principles of economic liberalism. But the restricted 'market logic' does not recognize the more fundamental problems associated with capitalism as an economic system based on class interests and a relentless drive for capital accumulation and economic growth.

Moreover, 'putting a price on carbon' has predictably adverse equity effects. Wherever there is a rise in prices of what neoclassical economists like to call 'environmental goods', such as clean air or water, they become less accessible to the poor. In the extreme, access to those environmental goods, even to the requirements for life itself, becomes a matter of ability to pay. From a 'just transition' perspective, this means that all such policies generally score badly. Supplementary measures to address these equity concerns then become a political imperative. Compensation payments can be used for this purpose, as previously noted, and it is to the Gillard government's credit that its 'clean energy future' policy package takes this issue seriously, mainly by raising the tax-free threshold for income tax payments. However, eradicating the income effects of the carbon price for all but the most wealthy consumers means that the adjustment process then relies primarily, if not wholly, on substitution effects. Whether the latter effects are sufficiently strong depends on the availability of more sustainable alternative products and processes; but meeting that requirement may require different policy

interventions, such as public investment – an aspect to which we turn shortly.

These concerns about the market-centred character of the current proposals for combating climate change, together with more general concerns about the limits of 'ecological modernisation', have been widely discussed for many years (eg. Eckersley 1993; Rosewarne 1993, 2002, 2011; Splash 2010; Pearce 2011; and Salleh 2011). In an excellent book on this topic the Australian environmental scientist Sharon Beder set out the issues particularly systematically. She identified three environmental protection principles – the sustainability principle, the polluter pays principle, and the precautionary principle – and three sets of social principles relating to equity, human rights and public participation. Assessing the proposed market-based economic instruments for pollution control against these six criteria, Beder showed that they do not measure up against what is needed for a just and effective transition to sustainability (Beder 2006). So, if we are to go beyond tinkering with the current economic arrangements, we have to engage in more fundamental thinking about future directions in environmental policy.

Regulating Markets

Markets invariably exist within some sort of regulatory framework. Regulations, broadly conceived, are universal feature of all political economic systems, not limited to the 'rules of the game' set by governments. Ben Spies Butcher (2011:54-56) makes this point effectively in discussing the Garnaut Report. As popularly understood, however, regulation involves a narrower concept of state-centred controls. It is this latter form of regulation that is usually opposed by mainstream economists such as Garnaut because they regard it as less sensitive than market arrangements in which individual freedom of choice prevails. 'Command and control' is a term sometimes used to imply that regulation is inherently heavy-handed and anti-democratic.

A typical neoclassical argument is that strong regulation by governments implies two government-imposed prices on the activity – zero and infinity – according to whether the activity is permitted or not. This is held to be less sensitive to supply and demand conditions than a continuous array of prices, leading to 'deadweight loss' of economic

welfare (Kolstad 2001:226; Varian 2010:663-4). However, state regulations can, and often do, have conditional characteristics, designed to steer behaviours into more socially acceptable forms. One may infer that neoclassical economists' general preference for market-led adjustments results from them placing more weight on process – particularly 'freedom of the market place' – rather than outcome, notwithstanding the apparent focus of their theories on efficiency of resource allocation. It is a political orientation that is implicit throughout mainstream economics and becomes explicit when those theories lead to neoliberal policy prescriptions. In practice the aversion to direct regulation is not altogether consistent anyway, because regulation is implied in an ETS, which is the preferred policy instrument from a neoclassical perspective. In any 'cap and trade' system the 'cap' must be directly set by a regulator.

What is anathema to neoclassical economists is prohibition. Indeed, regulation may entail the use of state power to preclude particular activities that are deemed to be against the public interest. There are many precedents where matters of public health and environmental quality are involved. Governmental land use controls prohibit specified degrading land uses or restrict them by 'zoning' to particular localities. Mandatory 'green building' requirements are increasingly common. Prohibition has also come to apply to an ever-widening array of products with adverse environmental effects – such as asbestos building materials, pesticides that are hazardous to health, and CFCs in refrigeration. Looking at these examples, it is hard to accept that they run counter to a public interest. Indeed, one of the major challenges for public policy is how to most effectively extend regulations to deal with the proliferation of new products with as-yet-unknown environmental consequences. So, notwithstanding the restrictions of 'market freedoms' that prohibition necessarily entails, it has an accepted social role that has particular resonance in relation to environmental concerns.

What we can usefully salvage from mainstream economic reasoning in this context is recognition of the importance of possibilities for *substitution*. If access to environmentally damaging products is to be made substantially more expensive – or prohibited – then improved access to substitute products with less environmentally damaging effects must be a policy priority. In many instances the possibility of substitution is limited, however. Car dependence, for example, is particularly hard to reduce where there is no readily available public

transport in the locality. Spontaneous market responses to situations of latent demand are unreliable. More typically, direct state provision may be required to ensure that alternative products and processes are developed to replace those that are precluded. This is where the case for environmental policies 'beyond the market' starts to become more compelling – or, from a neoclassical economic perspective, more deeply problematic.

Augmenting Markets

Investment is the focus of a more market augmenting policy process. Post-Keynesians and other political economists have often argued that the Achilles heel of a market economy is the short-term orientation and volatile character of private investment behaviour relative to long-term social needs. Renewed attention to what Keynes famously called 'the somewhat comprehensive socialisation of investment' (Keynes 1936:378) is warranted in this context. The need for a systematic restructuring of the economy on ecologically sustainable principles makes it particularly pertinent now, notwithstanding the neoliberal aversion to the more 'interventionist' approach that this more state-centric political economic approach implies.

Government expenditures on the development and implementation of more ecologically sustainable technologies are potentially potent policy instruments. The provision of better infrastructure and public transport services, for example, would directly result in lower emissions and less fuel consumption *per cap*ita if usage levels rose as a consequence of those public transport improvements. Developing industry policies for alternative technologies using renewable resources is another avenue through which government expenditure can contribute directly to more ecologically sustainable arrangements. Solar and wind-powered electricity generation are obvious examples. Revenue generated by carbon taxes can be used to finance expenditure for these purposes. It is to the Gillard government's credit – and the effectiveness of negotiations by Greens Senators – that this has emerged as a significant feature of the current 'clean energy future' policy. Yet it remains secondary to the expected impacts of price changes through market processes. Inverting those priorities would create a more comprehensive policy package – combining taxation, regulation and direct state provision.

The promotion of '*green jobs*' is also an important aspect of market augmenting intervention in environmental policy. Indeed, this is a crucial element in avoiding the 'jobs versus environment' dichotomy that otherwise bedevils ambitions to build popular support among working people for policies to combat climate change. There is no shortage of proposals for restructuring of employment from industries and occupations with large ecological footprints into other activities with more sustainable characteristics (see, for example, ACTU/ACF 2008; Pearce and Stilwell 2008). Admittedly, the definition of what constitutes 'green jobs' is contentious (as noted by Masterman-Smith 2010). Moreover, as Goods (2011) argued in the preceding issue of this journal, the general hue of 'green jobs' proposals to date has tended to be 'light green' rather than 'deep green', emphasising relatively limited perceptions of the changes in capital-labour relations that would be required in the longer term. However, the push for green jobs to be a political priority potentially unites organised labour and environmental groups in a common program.

Direct state provision can also play a significant role in a market augmenting approach to creating a sustainable economy. It may involve public ownership of key industries, challenging the neoliberal preference for privatisation. Of course, there is no universal reason why public enterprises should adapt more ecologically sensitive technologies than privately owned businesses. It all depends on the policy priorities that drive the decision making processes within those enterprises. However, taking the proposed electricity privatisation in New South Wales as a case in point, a further shift from public to private ownership would tend to close off policy options – with potentially adverse consequences for a sustainable energy outcome. Privately owned electricity providers have a direct stake in increasing the demand for their product, adding to energy usage. Publicly owned institutions are more likely to be able to work effectively with customers in order to reduce their electricity consumption levels. From a sustainability perspective, this is a far more attractive option. For this reason we may infer that public ownership, while not a pre-requisite for the adoption of ecologically responsible managerial practices, would tend to keep possibilities open for the pursuit of goals other than short-run profit maximisation.

All these considerations point to the need for planning of structural change to create economic, social and ecological sustainability. This is an inherently different process from reliance on market signals to trigger

resource reallocations. It implies an *institutional* economic perspective, requiring focus on developing appropriate ownership and management structures, industry and regional policies, skills formation through TAFE, and opportunities for trade unions to be directly involved along with government, business, community and environmental groups. It is a policy approach that puts more emphasis on building the institutional arrangements that are required for a just transition, embodying concern with equity and participation as well as sustainable outcomes.

Contesting Markets

The policy approaches already discussed in this article are different in character, both in terms of their economics and politics. They have a common recognition of the need to deal with the role of markets in modern capitalist economies as generators of price signals and processes of resource allocation. Their differences relate largely to judgements about whether creating markets, modifying markets, regulating markets or augmenting markets is likely to be more effective in steering processes of production and consumption into less environmentally degrading forms. The big question remains: are these policies adequate? Digging deeper, we have to ask whether they impact on the processes and interests that are ultimately decisive.

Critics of reformist policy measures emphasise the need for a broader array of social changes to occur if we are to establish more ecologically sustainable economic arrangements. They commonly stress the need for a more fundamental challenge to corporate business interests and to consumerism as the dominant culture/ideology of modern capitalism (see, for example, Saleh 2011, Nelson 2011 and Goodman 2011). On this view, it is the exploitation of nature for profit and the insatiable thirst for commodity acquisition, driven by powerful corporate economic interests and fuelled by consumerist ideology, that are the more fundamental problems. The nature and prospects of capitalism, as an inherently growth-oriented economic system, comes more directly into consideration. Contesting capitalist market principles and interests becomes the main concern.

This anti-capitalist position is well-established in radical political economy among writers and activists concerned with environmental issues. In a standard text written nearly four decades ago for the

Prentice-Hall series on 'modern economics', US urban political economist Matt Edel had a powerful chapter on this theme: immediately following a chapter on 'the limits of environmental fine tuning' he wrote about the corporate interests shaping the 'political economy of internal combustion' (Edel 1973). Other radical critics during that period when environmentalism was a growing concern, like Barry Weisberg (1971) and Murray Bookchin (1980), were starting to fire even more powerful broadsides. In the intervening years, important contributions by Marxist political economists such as James O'Connor, John Bellamy Foster and David Harvey have maintained the critique and extended the analysis. From these radical political economic perspectives, 'ecological modernisation', as a strategy of capitalist adaptation to ecological crisis, is indeed deeply problematic.

It is the association between marketisation and *commodification* that is crucial. This connection underpins the political economic critique of attempts at 'environmental fine tuning' through the use of market-based economic instruments. The key point is that markets require 'things' to be traded. Treating environmental resources as commodities brings them into this set of processes and calculations. A capitalist logic prevails, notwithstanding differences of view about the relative merits of different 'interventionist' policies for seeking more sustainable patterns of production and consumption. It has been the extension of markets in a capitalist context that created the environmental stresses in the first place. By inference, a comprehensive solution needs to involve more than incremental accommodation of capitalist market economies to contemporary environmental conditions. A more fundamental paradigm shift is entailed.

Contemporary Challenges

Three contemporary features add to the depth of these concerns in the current era and indicate the need for alternatives that challenge 'marketisation' as the dominant policy paradigm. These are the global financial crisis, the effects of extreme economic inequalities and the environmental stresses compounded by international trade agreements. In each case there are both threats and opportunities.

The global financial crisis has had contradictory implications in relation to environmental concerns. On the one hand, it has discredited the view

of markets as inherently efficient and it has delegitimised capitalist institutions that base their policies on a neoliberal free market orthodoxy. On the other hand, the GFC – and subsequent 'double dip' recession effects in some countries – has created a context in which conventional concerns with renewing economic growth have taken priority, relegating environmental concerns to a less urgent policy status. Yet the continuing crisis provides opportunities for fundamental structural change. 'Green jobs' proposals can have particular traction in this context – emphasising a strategy for planned transition that simultaneously addresses job creation and environmental protection. Proposals for linking economic recovery to more sustainable patterns of production, consumption, and energy use should have growing appeal in these conditions (Spies Butcher & Stilwell 2009).

Economic inequalities on a global scale are also a critical consideration. Government environmental policies measures, such as those on which this article has focused, tend to founder on concerns about establishing equity of sacrifice in the adjustment process, given the gap that exists between rich and poor. Market-based environmental policies are bedevilled by this concern in individual nations. Even more problematically, international economic inequalities impede solutions to what is ultimately a global problem. As the international conferences in Copenhagen in 2009 and Cancun in 2010 showed, uneven development between nations inhibits the cooperation necessary for agreement on a global sustainability strategy. Only when the more advanced industrialised nations are seen to be taking the lead in bearing the costs of adjustment can the full cooperation of poorer countries be expected to be forthcoming. Otherwise the poorer countries are understandably reluctant to embrace environmental policies that they see as likely to retard their rates of economic growth.

Yet growth itself is in question to the extent that its technological basis and consumerist tendencies are the root causes of the depletion of non-renewable resources and chronic environmental stresses. On this reasoning, a switch from growth to redistribution needs to be a central feature of a global strategy for dealing with the threat of climate change. The drives for sustainability and for social justice on a global scale are inextricably linked, as key elements of the 'anti corporate globalisation' movement have recurrently emphasised.

Third is the particular issue of international trade. In the last decade the neoliberal drive to further liberalise global trade has been deflected into regionally-focused 'free trade' agreements, of which the Australian-US Free Trade Agreement and the currently proposed Trans-Pacific Partnership Free Trade Agreement are examples (Ranald 2010). These trade agreements constrain the capacity of national governments to implement environmental policies where these are regarded as being in restraint of trade or selectively favouring local producers. This is deeply problematic because, on environmental grounds, *local production for local consumption* is a more worthy goal. Under current international trading arrangements, a prodigious use of energy and transport resources is involved in moving products around the world in order to increase the range and variety of products available at particular locations in 'the global supermarket'. This has obvious appeal to consumers but it is not ecologically sustainable. Reorienting production towards local consumption can provide a means of reducing the stress on scarce energy resources. Some parts of the consumer movement are already starting to give priority to the advantages - including the freshness of produce - of consuming products that are relatively local in origin.

In dealing with these three huge challenges – continuing economic crises, inequality and the reorientation of trade – issues of both ideology and power are at stake. Neoclassical economics, as an ideological underpinning for neoliberal policies, has been a major part of the problem and continues to be an obstacle to solutions. It has created an unwarranted confidence in 'efficient markets'. It has given legitimacy to otherwise unacceptable economic inequalities. And it has underpinned the arguments for free trade and the growth of international free trade agreements which have damaging environmental consequences. Extended yet more directly into formulation of 'remedial' environmental policies, it compounds the difficulties, as this article has argued.

Confronting the drivers of neoliberal globalism, the challenges are not just to a dominant economic orthodoxy though. As ever, underlying the contest of economic ideas is a contest of economic interests. Marketising the environment derives its perceived legitimacy from mainstream economics and its practitioners, like Garnaut, but it ultimately derives its power from corporate interests who see this as the least threatening form of environmental policy. These interests include not only the large transnational corporations but also the supra-state institutions such as the World Trade Organisation and the International Monetary Fund that are

wedded to economic practices that prioritise capital accumulation over other societal concerns. These are the sources of power to which a political economic analysis of the environmental challenge necessarily draws our attention.

From Markets to Mobilisation?

Markets have their uses. However, they always operate in a socioeconomic context in which power structures and prevailing ideologies shape outcomes. Looked at in this broader context, policy proposals for 'putting a price on carbon' place undue reliance on a restricted range of market economic adjustments. Restructuring for sustainability, when coupled with concerns about a just transition, requires going 'beyond the market'. Regulating, augmentating and contesting markets – and challenging the ideologies, interests and power of the dominant market participants – then become key themes in a radically different political economic scenario.

A parallel may be drawn with threats of a military character. Are markets helpful at times of war? Responding to the shortage of goods, wartime markets commonly generate inflation which governments then try to control through regulatory measures, such as price controls or rationing. To divert resources to the war effort, direct mobilisation rather than the use of indirect market mechanisms is usually the preferred policy. Markets are subordinated to the more directly goal-oriented and planned processes of resource reallocation. Of course, war is not in all respects a comfortable metaphor for a looming environmental crisis. However, like warfare, the threat of climate change requires rapid and substantial changes in economic and social priorities and resource uses.

While a carbon tax can play a modest role as a market-modifying mechanism, it cannot properly shoulder the full burden of resolving, or even ameliorating, climate change. Understandably, many pragmatic environmentalists support it as currently 'the main game in town' and as a means of at least making a belated start on public policy development. However, if it is constructed as a stepping-stone to an emissions-trading system, as the Australian government currently proposes, it could eventually generate more problems than it resolves. In a rarefied world of neoclassical economic theory, subject to specified conditions, market principles may be expected to enhance allocative efficiency. However,

in a real world of concentrated corporate power, economic inequalities, capital accumulation and speculation, the more likely outcome is to mortgage environmental quality to those who bear responsibility for creating the problem in the first place. The arsonists are asked to put out the fire – at a price.

The primary focus in current political debates on 'putting a price on carbon' and other policies of 'environmental fine tuning' also tends to divert attention from ends to means. As a society, we need to set out the practical steps of actually getting from where were are now to where we want to be. This more down-to-earth set of concerns is reflected in recent attempts to plan the economic transition for Australian regions currently dependent on unsustainable extractive industries like coal mining (Bill *et.al*. 2008; Evans 2011). To develop this planning for transition, at both national and regional scales, linked to employment, training and industry policies, is the long-term imperative.

The broader political dilemma in the meanwhile revolves around a judgement about whether introducing policies towards the 'market adjusting' end of the range discussed in this article accelerates or retards the prospect of more fundamental 'market contesting' approaches eventually being embraced. Since the former is currently the main focus of government policy, the challenge is to drive a popular movement for a second wave of more radical interventions that go 'beyond the market' to sustainable socioeconomic and ecological outcomes.

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