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# Green Light for a Keynesian Stimulus

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**M**any environmentalists are concerned that financial crisis and recession will sideline efforts to address the looming challenge of climate change. Others see “upside in the downturn”, and suggest that the crisis creates an opportunity to shift our economic pathway onto a greener trajectory.<sup>1</sup> Is there any merit in the notion of a so-called “green recovery”?

## **Warning: complex systems collapse under pressure**

The global financial system is a “complex system” in which the emergent properties of the system (e.g. prices) result from interactions between multiple diverse agents (e.g. buyers and sellers). Such systems often illustrate chaotic behaviour, and exhibit considerable resilience to perturbations, but they also have thresholds which, if crossed, can produce nasty outcomes. Gradually pumping up levels of debt, and allowing default risks to be mispriced and held “off balance sheet” has caused the financial system to meltdown with significant value destruction, job losses and broader social consequences.

The climate system is also a “complex system”. Like the financial system, it illustrates chaotic behaviour and is resilient to perturbations, up to a point. As is well known, we are gradually pumping up levels of greenhouse gas concentrations, and allowing carbon risks to be mispriced and held “off balance sheet”. Climate system dynamics are considerably slower than financial system dynamics. So the warning signals appear earlier. But system inertia implies that what appears to mere humans to be “early” could actually be rather late.



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**Emissions will fall; but private low-carbon investment will also decline**

The two systems not only share these (admittedly superficial) similarities, they are also interconnected. The financial crisis will have several effects on the climate change agenda, many of them negative. One silver lining is that because emissions are a function of output, the recession in the real economy will reduce emissions. Deutsche Bank estimate that emissions from the EU ETS sectors will fall by an average of 2.5 per cent over the 2008-2020 period.<sup>2</sup> This translates into a lower carbon price, and thereby blunts the incentive to pursue low-carbon investments.

More significantly, the world of cheap capital and expensive energy has

suddenly been transformed to one in which private capital is more difficult to obtain, and where oil prices are back at lower levels. All this implies a more difficult investment environment for low-carbon generation.

## **Keynes is given the green light**

With the paralysis of the inter-bank market, monetary policy is now largely ineffective at stimulating demand, and governments are returning to Keynes and reactivating interventionist fiscal policy after several decades in hibernation. Most economists consider temporary tax cuts to be largely ineffective,<sup>3</sup> although the recent drop in UK VAT from 17.5 to 15 per cent suggests that HM Treasury has access to wisdom the rest of us do not. Permanent tax cuts could have a role, but increased government spending will be a more significant response, even given risks of crowding out private investment and leaving significant deficits to be repaid by the future.

If governments are to spend big, they should aim to increase investment, rather than continue to fuel unsustainable consumption. The investment should, obviously, yield good returns. Ideally, the results of the stimulus will be felt quickly. Many investments in energy efficiency and “green infrastructure” promise nice returns and can get started relatively quickly, deploying a substantial amount of labour and reducing unemployment. This has given rise to the notion that a “green stimulus” might contribute to healing the financial and climate systems simultaneously. Politicians abhor a trade-off just as nature abhors a vacuum, and because a green recovery promises only upside, it has proven too enticing for our politicians to ignore.

The UK Chancellor announced a £525 million green stimulus in the pre-budget report on 24 November. The US President-elect has proposed spending \$150 billion over 10 years to create 5 million “green collar” jobs,<sup>4</sup> and other analysis supports spending of \$100 billion to create 2 million American jobs.<sup>5</sup> The United Nations Environment Programme is also suggesting a “Global Green New Deal”.<sup>6</sup>

#### Easy, green and wrong?

Despite these arguments, the idea does have its detractors. The Economist, for instance, rejects these proposals out of hand, pointing out that “subsidising clean energy requires politicians to decide on the best way of delivering it, and their judgment is likely to be worse than the market’s.”<sup>7</sup> History suggests the risk of picking losers is a real concern. Furthermore, most of the “green recovery” proposals place great faith in the direct emission reductions from energy efficiency improvements, ignoring important (and possibly overwhelming) indirect “rebound” effects. For instance, energy efficiency improvements in cars directly save fuel and hence emissions, but they also (i) reduce the cost of motoring, and thereby increase the miles driven, increasing emissions; (ii) save owners money which is spent on other goods and services, increasing emissions; (iii) increase productivity and contribute to economic growth, also increasing emissions.<sup>8</sup> Reducing costs, saving money and increasing productivity are all to be welcomed, and energy efficiency investments should indeed be encouraged. However, ignoring these “rebound” effects<sup>9</sup> is unlikely to lead to the right type, or level, of investment in energy efficiency if the objective is to reduce emissions.

#### Tough, green and right

While picking losers and ignoring rebound effects is likely to produce bad results, a flippant rejection of a green stimulus would also be “easy and wrong”. On the face of it, the logic (set out above) is straightforward: monetary policy is broken, a fiscal stimulus is necessary, tax cuts may play a role but government spending will be necessary, the spending should be on investments that yield good social returns, rather than on fuelling unsustainable consumption. Many green investments indeed yield high returns and bring additional advantages. Proponents argue that green investments are more labour intensive, require fewer imports, and contribute to reducing inequality (through reduced energy bills for the poor) and economic volatility (through reducing the impact of energy price shocks). In principle, a green stimulus may be the right response. The tough part involves ascertaining how spending should be directed to minimise (inevitable) wastage and deliver a payoff for the climate. There are at least three potentially profitable areas:

**Low-carbon research and development:** Government spending on fundamental research has had a habit of throwing up very valuable surprises - the internet is perhaps the canonical example. With public sector energy R&D at all time lows,<sup>10</sup> we are not well placed to benefit from positive “Black Swans”.<sup>11</sup> Yet the economic case for support in R&D is long-understood and persuasive: basic research not only benefits the researcher, but also other researchers, companies, competitors and society at large, even after factoring in our system of patent protection. These spillovers imply that basic research is underprovided by markets,

which could be corrected through government spending. However, investment in R&D is unlikely to produce an immediate boost to the economy, so it should form part of a wider package of measures for a green stimulus.

**Green Infrastructure:** Government investments in core infrastructure are also unlikely to crowd out private sector investment. And investing in “green infrastructure” could shift incentives faced by firms in order to create a new selection regime in which low-carbon business models would be better adapted and could thrive.<sup>12</sup> There are a range of “green infrastructure” proposals, and here are two that might be considered. First, a smart and high-voltage direct current grid might reduce electricity transmission losses, and potentially allow new renewable sources to connect at lower cost. Second, investment in mass transit would improve productivity, reduce congestion and reduce emissions from transport.

**Energy efficiency:** Investments in energy efficiency are sensible from an economic perspective, and may contribute to emissions reductions although not at the levels widely promoted, as discussed above. An advantage of energy efficiency investment is that it can be rolled out relatively quickly.

#### Opportunities for the brave

Where does this leave the private sector? Market behaviour currently suggests that firms are finding investment in renewable and other low-carbon technology difficult to justify. However, there are several reasons why a contrarian strategy should not be dismissed. Investors will continue to develop a new appreciation of risk

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(particularly off-balance sheet risk). Climate change - the greatest externality the world has ever seen - is a multi-trillion dollar off-balance sheet risk. Investing in low-carbon technologies today might be compared to shorting subprime bonds in 2006. A few brave investors identified critical system risks, focussed on the fundamentals, and ignored the herd rushing to oblivion. Those who had the courage to short the market made stupendous returns.

### Investing in low-carbon technologies today might be compared to shorting subprime bonds in 2006

While returns to shorting fossil fuel generators are unlikely to deliver such impressive returns, investors with a focus on fundamentals are likely to find green investments increasingly attractive. Just as the slow process of globalisation has increased skilled wages in poor countries, the inevitable transition to a low-carbon economy is likely to raise the return on low-carbon sectors assets. If governments lead the way with a sensible Keynesian stimulus, and provide the core infrastructure and support the knowledge base, the private returns for complementary investments in the low-carbon sector may prove to be attractive. ■

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