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A bioregional economy: A green and post-capitalist alternative to an economy of accumulation

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Abstract
Some of the most compelling explanations for the current crisis reasoning comes from a Marxist understanding of how rising inequality and accumulation by dispossession during the neoliberal era led to economic instability. Other arguments put forward tend to ignore the inappropriateness of stimulating aggregate demand in an era when we have already grown beyond the planetary boundary, as evidenced by the crises of land use, climate change, and resource depletion. It may not be possible to address these problems within a reformed capitalism; rather, such a goal can only be met within a post-capitalist ecological economy geared to production for need, not for profit. This paper sets out a post-capitalist alternative drawing from green economics and Marxian economics and applied at a local and regional level.

Keywords
bioregion, capital accumulation, green economy, post-capitalism, subsidiarity

Introduction

Over six years on from the first signs of what would become the Great Financial Crisis (GFC) alternatives to the neoliberal consensus are thin on the ground. Orthodox economics has floundered as its luminaries have struggled to provide any credible explanation much less a viable prescription for restoring the world economy to health. Moreover, the renewal of a healthy economy is conceived of as a restoration of pre-2007 'business-as-usual'. This is understandable as mainstream economic theory is based on the very premise that markets work efficiently at all times and so to remain consistent its theorists would

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have to suggest that the crisis simply could not have happened – or at least should not have happened. The fall-back arguments have centred on the regulation of banking, debt and excessive public expenditure. The lack of ideas was exemplified by the initial reversion to a primitive, reactionary form of Keynesianism. More recent responses have emphasised the political economy of austerity matched by an 'austeria' that some have viewed as a cover for justifying an expansion of the power of capital matched by an attack on the size of the state (Radice, 2011). Mainstream opinion meanwhile is reflected in the media obsession with blaming certain individuals – from Gordon Brown to Alan Greenspan – or groups – such as the much-loathed bankers – with little deep analysis of the GFC and its recessionary consequences.

The GFC as a *crisis of neoliberalism* was considered briefly in its aftermath (Kotz, 2009), but, unlike Kotz, most proponents of this view see neoliberalism as the only problem, a planned effort by financial interests against the post-war Keynesian compromise, and suggest that a return to a Keynesian economic and regulatory structure will automatically lead the world to the sunny uplands of growth and prosperity (Duménil and Lévy, 2011). The debate is hampered by the hegemonic dichotomy of left vs. right, or capitalism vs. communism, which leads to the assumption that any position fundamentally critical of capitalism must be proposing the only alternatives that are familiar to the wider public: the completely undesirable forms of state capitalism practised in China and other self-proclaimed communist and socialist states. The heterodox economics community has been very concerned with explanations and critiques instead of offering any real alternatives.

In this paper, there is a focus on more compelling interpretations of the crisis. In particular, the Marxian interpretation is clear that the root of this instability lies with the capitalist imperative to accumulate capital (Luxemburg, 1921). The accumulation of capital is at the root of the instability because conflict between employers and workers, and progressively increasing exploitation, will always ensue (Luxemburg, 1913).

Apart from the periodic crises resulting from this conflict, there are deeper issues with which the future of capitalism must contend. Capitalism exploits both labour and the environment, and problems of land use, natural resource depletion and climate change pose difficult barriers for any future economic system (Foster et al., 2010). The Promethean optimism of neoclassical economists is being undermined by the rapid and persistent increases in commodity prices, even when so many economies have recently been in recession (*The Economist*, 2011). This paper offers a solution to this problem in terms of changing the relationship between capital and society, and between capital and nature. The bioregional economy sketched out in this paper would end the exploitation of labour and society, and also of the environment, as a natural economy.

The following section explores capitalism's accumulative dynamic, why there is no alternative within capitalism, and the damaging relationships between capital accumulation and nature, and between capital accumulation and labour. The following sections look at post-capitalist solutions and the idea of a bioregional economy.

Capitalism and accumulation

Capitalism is a system where those who control finance use it to bring the other 'factors of production', labour and land, into a productive process. In order to continue investment in productive processes and to encourage the holders of capital to invest, some of the productive value is extracted as surplus or profit. The inherent logic of

capitalism is the valorisation (increasing the value) of capital, and a continual increase of profits. This is achieved firstly by an increase in control over the labour process by capital and secondly by accumulation of capital. The accumulation of capital, predicated on production for profit, is thus written into the most basic definition of capitalism, so that there is no capitalism without accumulation. As Luxemburg (1921) argued:

> Production only makes sense to the capitalist if it fills his pockets with 'pure income', i.e. with profit that remains after all his investments; but the basic law of capitalist production is not only profit in the sense of glittering bullion, but constantly growing profit. This is where it differs from any other economic system based on exploitation. For this purpose the capitalist – again in contrast to other historical types of exploiters – uses the fruits of exploitation not exclusively, and not even primarily, for personal luxury, but more and more to increase exploitation itself. The largest part of the profits gained is put back into capital and used to expand production. The capital thus mounts up or, as Marx calls it, 'accumulates'.

At the heart of the Luxemburgian analysis, there are two main tendencies that arise due to accumulation: the tendency to over-accumulation (Reuten, 1991) and the tendency of the rate of profit to fall (Harris, 1983). Over-accumulation of productive capital is a situation where more capital is invested in production than can obtain a normal profit. The rate of *surplus value*, the value added during production that is not paid to labour power, tends to increase with control of labour due to, for example, improved production techniques. This is reflected in an increase in the rate of accumulation of capital. Ultimately, the increased accumulation leads to a level of activity that requires near full employment of labour, because the accumulated capital must be utilised to be profitable. The demand for workers then depletes the reserve army of labour. This exerts an upward pressure on wages, counteracting the increase in the rate of surplus value and eventually causing it to decrease, leading to a decrease in the rate of accumulation of capital due to a *profit squeeze*. The rate of profit is equal to the total surplus value (value added minus the value of labour power, or wages) derived from the production process, divided by the total value of capital (the value of fixed capital plus the value of labour power). It follows that, given the value of labour power, an increasing ratio of the value of capital to the value of labour power – due to investment in capital relative to labour – will lead to a decline in the rate of profit, even as this investment increases productivity. The capitalist then responds by investing more in raising productivity or expanding the scale of production, which in turn reduces profits per unit further in a vicious cycle of diminishing returns. Hence, the accumulation of capital erodes and eventually eliminates the very basis of its continuation.

The slump phase of the economic cycle ultimately exerts a necessary restorative influence on the capitalist system. The general pressure on profits forces firms to reorganise or merge, to search for new markets and to develop new commodities, using unemployment to restructure the production process and increase the rate of exploitation of workers, as well as increasing pollution and resource use. The effects of recession can thus serve to restore the profitability of the circuit of capital, but at the expense of society and the environment.

Over-accumulation of capital manifests itself as the *overproduction* of commodities, where not all output can be sold at prices realising the rate of profit. A capitalist intent on increasing the volume of surplus value – whether through increasing

productivity, cutting wages, laying-off workers, or speeding up production by upgrading machinery – faces resulting barriers to the realisation of surplus value or profits through the sale of goods and services. This first contradiction represents an economic crisis that manifests itself on the demand side, in the sense that any attempt to extract more production from fewer workers is, ultimately, futile as the attempt will lower consumer demand. We may also consider overproduction as a result of production for profit and its failure to satiate all economic needs, notably for the working classes, because capital only invests in production when it is profitable. This fails to satisfy the needs of people who lack basic necessities but have insufficient market power to acquire these needs in a manner that would be profitable for businesses. This contradiction, where capitalism produces commodities but denies workers the means to consume, leads to crises of overproduction in the midst of underconsumption, or 'poverty in the midst of plenty' as it was called by Marx (1894).

Having restored the profit rate leading to the late 1980s boom, the spectre of overproduction loomed over the world economy in the 1990s. Higher exploitation of the employed workforce, a loosening of macroeconomic policy, and a continuing accumulation of debt limited the threatened crisis to regional outbreaks (Kliman, 2010). This prevented crisis from restoring the profit rate, so that: 'Persistently low profitability has simply caused the world economy to stagnate, with persistently surplus capital taking many disruptive, adventurous paths' (Potts, 2011). Thus, the tendency for the rate of profit to fall in boom manifested in the generation and speculative investment of surplus capital in the financial system and fictitious capital, providing a tendential basis for financial bubbles and consequent crises (Harvey, 2010; Potts, 2011).

Accumulation and ecological crisis

Valorisation through commodification as a process specific to and definitive of the capitalist mode of production is also the key dynamic of the ecological crisis (Strange, 2000). Ecological Marxism envisages a crisis of over-accumulation being followed by a 'crisis of reproduction' (Gorz, 1980: 24) whereby a crisis of the capitalist means of production is created by the capitalist response to a crisis of over-accumulation. In particular, the 'second contradiction of capital' is underproduction (Spence, 2000), whereby capitalism fails to maintain the conditions – social, ecological and environmental – which enable production. This is often a consequence of overconsumption and uncontrolled economic growth, involving the large-scale destruction of these conditions. The supply side of capitalism depends on the ecosystems from which raw materials are taken. Underproduction occurs when capitalist firms and states fail to renew or protect the conditions of production; the conditions of production are thus underproduced (O'Connor, 1998). The contradiction is that capitalists are intrinsically motivated by the drive for accumulation to minimise such costs as worker welfare and ecological protection (Foster, 2002). Underproduction then facilitates cost-side crises. Crisis ensues when capitalist firms use profit strategies that fail to 'maintain over time the material and social conditions of their own production, for example, by neglecting work conditions . . . degrading soils . . . or turning their backs on decaying urban infrastructures' (O'Connor, 1998: 242).

It is not in the nature of capitalism to willingly take on costs. It is in the nature of capitalism to accumulate without end. 'There is no profit in maintenance of preservation, or actions taken, and resources expended, to prevent bad things from

happening that would otherwise occur. The profit is in expansion, accumulation, and marketing something old or new at lower costs' (O'Connor, 1998: 317).

The so-called *growth imperative* of capitalism (Gordon and Rosenthal, 2003) is the clearest, and most ecologically damaging, consequence of accumulation. In spite of the best efforts of environmentalists and academics, the conflict between physical reality and our economic model has not been resolved. The consequence is the evidence of ecological crisis we see all around us. Mainstream proponents of a 'green economy' seek a means of powering capitalism, permitting the accumulation of surplus value and economic growth, without challenging the design of the system itself. Herman Daly (1991), for example, is prepared to challenge the 'uneconomic growth' that conventional economics generates, and to suggest a 'steady-state economy', but without tackling the central issue of whether capitalism as a system can survive the end of growth.

Smith (2010) argues that Daly's (1991) arguments are flawed and 'ecologically suicidal growth is built into the nature of *any conceivable capitalism*' (p. 28). A no-growth policy is by definition impossible as it would undermine the capitalist system. Abandoning a growth-driven model implies abandoning capitalism altogether. However:

> if we must abandon growth and greatly reduce production and consumption then there is no alternative but to develop an economy which is basically under social control, i.e., in which we discuss, decide, plan and organise to produce that stable quantity of the basic things we need to enable a high quality of life for all. (Trainer, 2011)

The post-capitalism that we propose grows out of *bioregionalism*, a philosophy treating natural, political and economic units (regions) as ecological ones (Milani, 2000). In the remainder of this paper, we will briefly introduce this idea and consider how its application to economics as a system of provisioning might transcend the problem of accumulation that typifies a capitalist economy.

Post-capitalism: A bioregional alternative

Bioregions are 'areas within which there is spatial coincidence in characteristics of geographical phenomena associated with differences in the quality, health, and integrity of ecosystems' (Omernik, 2004). This means that the bioregion is defined by natural boundaries such as watersheds or mountains, share similar geology and terrain, and enjoy similar environmental conditions that are expressed in similar ecological dynamics. Furthermore, the bioregion's human population must interact with its ecology in such a way as to enable the long-term well-being of the region as an ecological whole. This technical definition has been incorporated into bioregionalism, a political and cultural movement that is not only based on the naturally defined bioregion, but also recognises the involvement of cultural and social phenomena in the determination of a bioregion (Cato, 2011), so that the bioregion's population must have common social or cultural ties, such as shared language, art and religion, enabling localisation of provisioning systems.

The economic system that operates within a bioregion arises from the social and ecological culture of a bioregion, and from the inherent logic of bioregionalism: to localise and respect natural limits for ecological and environmental benefit. This respect for natural limits and local ecological contexts is known as biocentricity. A bioregional economy would be oriented towards meeting people's needs efficiently

so as to enable a high quality of life for all. As such, economic activity would be based on the criteria of satisfying human needs and production would be carried out directly for human use rather than to perpetuate the accumulation of capital, making the bioregion a post-capitalist economy (Cato, 2006). From an economic perspective, bioregional boundaries are flexible, guided by the principle of subsidiarity: in the case of any individual resource or service local is a principle that trumps principles such as price or choice (Cato, 2007). Bioregions are also self-reliant economies, in the sense that imports are treated as a last resort. Bioregions are designed to be largely self-sufficient in basic resources so that only goods that cannot be produced within the bioregion due to their complexity or specific climate requirements are imported – a development of the ideas proposed by proponents of localisation (Hines, 2000).

However, the practical obstacles to creating a network of regions are numerous. Foremost is the fact that bioregions are easy to theorise, but difficult to define in practice. The boundaries of a regional economy, the zone of subsidiarity, the boundaries of socially and culturally homogeneous areas, the boundaries of geographically similar areas and the zones of administrative practicality may not, and rarely do, overlap. Bearing this in mind, we can define a bioregion as a geographical unit where the demand for goods is in a near-equilibrium state with the planet's ability to supply the resources to produce those goods and services. Thus, the bioregion results from a flexible approach to the definition of social and environmental boundaries, and resource boundaries which will differ for various resources, suggesting a pragmatic approach to the question of resource subsidiarity (Nove, 1983). Even so, no existing city can be considered to be a bioregion – having the mineral resources, capacity for energy and water, and the suitable available land to grow the food it requires. But whilst a city could function as the central hub of a wider bioregion, it lacks the resources to function as a bioregion in its own right.

Within a bioregional economy decisions on production, distribution and investment could be made through a non-market allocation system utilising direct economic democracy (Gunn, 2012) encompassing all bioregional citizens without resorting to a state-controlled economy where the bioregional council, or other system of governance, decides on economic issues. For example, participatory planning (Albert and Hahnel, 1991) could be used to make important decisions on what to produce, how much to invest and where to distribute (Albert, 2004; Hahnel, 2005), as well as whether anything should be imported, or whether to export any surplus, starting with a discussion of needs and wants, framed to minimise required work time (Gorz, 1973). However, worker control of operational production decisions offers a counterbalance to the more general participatory planning of production. A possible complement to production through worker control is a system of peer production (Moore and Karatzogianni, 2009). Peer production is a way of producing goods and services – presently in the knowledge economy with software and digital creations (Orsi, 2009) such as Wikipedia and open-source operating system Linux – that relies on self-organising communities of individuals who come together to produce a shared outcome.

Conclusion

There are many questions arising from our work that we do not answer, and ideas that can be extended or introduced to our

bioregional economy. This article has not sought to pursue such practical issues and has focused on sketching a theoretical vision of such a solution as a post-capitalist economy. Future papers on bioregionalism will need to use example regions from the real world as proto-bioregions and sketch a 'routemap to bioregionalism', as well as dealing with broader theoretical questions not addressed in this paper such as alternative monetary systems.

We see our proposal for a bioregional economy based on a number of small, largely self-provisioning local economies as the key to creating a future economy defined by sustainability and social justice. There is an increasing focus on what is meant by a 'green economy' and whether a capitalist economy can ever be sustainable. Our argument in this paper makes it clear that we are convinced that it cannot. The principle of accumulation, which is what defines a capitalist economy according to those who coined the term, produces a range of consequences that are resulting in social and ecological crisis. A bioregional economy, by contrast, would transcend the economic system's need for accumulation and replace it with local provisioning.

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