Conceptualising globalisation:

fossil energy, global finance and the labour market

Elmar Altvater

Elmar Altvater is Emeritus Professor of Political Economy at the Free University of Berlin in Germany.

ABSTRACT

Modern globalisation can best be described as a process of expansion and acceleration whereby production, labour and the conditions of life in all regions of the world influence each other. These effects result from the massive use of fossil energy. The imminent shortage of fossil energy ('Peak Oil') and the disastrous climate effect of the emissions of CO₂ are now major sources of public discontent with globalisation. Global finance, however, exerts a considerable pressure on production to increase growth rates and to reduce labour costs. As a result, labour is also subjected to the dynamics of the global economy with consequences for working conditions, wages, job security, skills and benefits. This is one of the reasons why the 'informal economy' is growing. An exit exists: from a fossil energy regime to the use of renewable energy and from informal and often precarious forms of labour to solidaristic and cooperative ways to organise production.

Introduction

Globalisation can best be described as an overarching process of 'compression of time and space' (Harvey, 2004). Whilst the compression of time is merely another expression for the acceleration of processes of production, transport and communication as well as consumption, the acceleration of production processes (or of productive consumption) allows for the production of more of the same in a given time or the same production within a shorter period of time. Thus it is the equivalent of an increase in productivity. In individual consumption acceleration occurs, for instance, in the form of fast food, which is in turn dependent on an acceleration of food production. The growth of productivity has been the positive message of free market capitalism since the times of Adam Smith and David Ricardo, both of whom argued that it is possible to increase the 'wealth of nations' by raising productivity. The method of achieving this goal involves both a widening and a deepening of the division of labour, on a national as well as on an international or global scale. Consequently, an acceleration in time also stretches distances and is thus one of the most important contributors to globalisation. The concept of globalisation, however, is of quite recent origin. It emerged as a generally used concept only in the 1990s, after the demise of 'really existing socialism' and the accompanying huge advances in the opening and liberalisation of markets and deregulation of political and social boundaries and regulations.

Even Karl Marx and Friedrich Engels praised the great achievements of the bourgeoisie in widening the narrow horizons of pre-capitalist communities and

enhancing productive forces, thus accelerating the accumulation of capital and the growth of incomes. But they also added that under capitalist conditions wealth is distributed in a way that simultaneously entrenches inequality of income and increases poverty. Moreover, they argued, the inequality of the distribution of income has to do with the contradictory position of workers and capitalists in the production process. Consequently a 'class perspective' cannot be excluded from any analysis of capitalist accumulation including the current processes of so-called globalisation. The simultaneous increase in wealth and growth in inequality described in the Communist Manifesto of 1848 has been confirmed by the findings of Angus Maddison's long-term statistical analysis of the growth of GDP per capita in all world regions between the year 0 and the end of the 20th Century (Maddison, 2001). The wealth and poverty of nations and its citizens are therefore opposite sides of the same coin.

The compression of distance has paradoxically enabled the spatial expansion of the economy. This is one of the most important features of capitalism since its emergence during what Braudel (1962) called the 'long 16th Century', that ran from 1492 (the discovery of the New World) to 1648 (the Peace of Westphalia). It was within this period that the world market came into existence through world trade and direct global investments as large parts of the terrestrial surface of Planet Earth were colonised by the imperialist powers of Europe. The economic system of capitalism spread across the world without acknowledging any boundaries. This spatial expansion also extended to the global environment. The epoch of colonialism and imperialism was also the epoch of what Alfred W. Crosby (1993) has called 'ecological imperialism'.

With the dismantling of older political borders and of social and natural boundaries in the course of the creation of the world market, new political borders were established around nation states. Indeed at the end of the 'long 16th Century' (Braudel, 1962), the 'Westphalian order' came into being as an outcome of the Peace of Osnabrück and Münster, after the 1618-1648 thirty years war. An international political system of nation states was born, which lasted from the middle of the 17th Century until the conclusion of the Cold War at the end of the 1980s. However it never contained more than a small minority of – mostly European – nation states; the non-European world was excluded from the Westphalian order.

The self-referential character of a monetary capitalist economy created a situation whereby the world market of the emerging world system disregarded and dismantled existing limits and frontiers. Tolls and customs disappeared and hindrances to the free movements of capital were removed, either by co-ordinated action or by pressures exerted by the most powerful nations in the world. At this point it makes sense to revisit Rosa Luxemburg's (1913) work on the accumulation of capital to obtain an impression of the political and military pressure and violence that was applied in order to open up markets for the capitalists of the most powerful nations.

The market forces thus unleashed were a key theme for Karl Polanyi (1978), who described what occurred during most of the 18th and 19th Centuries as a process of 'disembedding' of markets from society. In human history up to that point, he argued, markets had always been embedded in society. Only under modern capitalism have markets ruled the social system, with disastrous impacts, especially on labour power,

nature and money. Since the markets for these commodities work like 'satanic mills', they destroy both the natural environment and the embedded social fabric.

The system of nation states has several distinct characteristics. Firstly, it is based on the establishment of political definitions of citizenship in order to set up rules of inclusion and exclusion. The modern, contemporary European policy vis-à-vis migrants is an especially sinister manifestation of this general characteristic. Secondly, the territories of nation states must be defined clearly; without a clear and uncontested border a nation state cannot be sovereign. Palestine's difficulties in defining a coherent territory against the Israeli settlement policy provides a tragic illustration of this. Thirdly, in a concerted system there is a need for relative and, in the words of Susan Strange (1988), 'relational', power to be balanced so that conflicts can be reconciled or avoided. Globalisation therefore entails a contradictory process of, on the one hand, dismantling borders which hamper economic activities and, on the other, establishing borders of nation states vis-à-vis other nation states and unwanted peoples. The question of limits and borders is thus essential for an understanding of global trajectories. This is especially the case when natural and social limits are taken into account.

For a long time these limits on capitalist development were beyond the ordinary perception of people and remained outside general social consciousness. Put simply, nobody paid attention to them. But when the capitalist economy approaches the limits of the carrying capacity of natural resources and 'sinks' and of acceptance by peoples and then faces a loss of social legitimisation these constraints become a challenge for globalisation. The compression of time and space is not a process without conflicts. We can almost certainly expect such processes to trigger a collective resistance against some of the consequences of globalisation. It is therefore important for any analysis of globalisation to find appropriate concepts for an understanding of movements that are critical of globalisation.

In this paper I first address the 'fossil' character of modern capitalism in order to explain its overwhelming historical dynamic and the emergence of a specific global division of labour. The widespread use of fossil fuels has many advantages for the capitalist mode of production. However, the energy system based on fossil fuels is closed and therefore limited on the input side (availability of oil, gas and coal) as well as on the output side (emissions of CO₂ and the subsequent climate effect). In the next section the contradiction between the limits of (energy) resources and the carrying capacity of natural 'sinks' on the one hand and rapidly growing global financial markets on the other is analysed in relation to the pressures this places on labour. In the last section I discuss some consequences of the pressures exerted by global finance on labour: informalisation, precarious labour and attempts to overcome these through new forms of cooperative organisation.

Globalisation, fossil energy and finance

The 'limits of globalisation' (Altvater & Mahnkopf, 2004) become very clear when it comes to the provision of energy for capitalist accumulation – the aforementioned processes of acceleration in time and expansion in space. Capitalist industrialisation and its systemic endeavours to increase productivity (for the production of relative

surplus, as Marx wrote) have generated an enormous need to continuously increase supplies of energy. It was under capitalism that fossil fuels became the main energy source. The consequence has been that, unlike previous modes of production and agrarian societies before the industrial revolution, the energy consumed in the productive process stems from the earth itself: coal mines, oil reserves, gas fields rather than alternative sources, such as solar energy. The energy system under modern capitalist conditions has therefore been closed and isolated, in strong contrast with the 'openness' of those historical energy systems that were based on solar radiation. The advantages of solar energy are clear: energy sourced from the sun is a thousand times more powerful than fossil energy extracted from the crust of the earth.

However solar energy lacks some of the advantages of fossil energy. Fossil fuels are a 'thick energy' with a comparatively high energy return on energy input (EROEI), and can be used independently of time and space. Fossil fuel can be stored easily and is also simple to transport over large distances, thus avoiding the necessity of building production sites in the places where energy is available. In addition, energy can be imported from global 'gas stations' to manufacturing countries. This means that when different places are in competition, decision-makers do not have to take energy supply into consideration. Moreover, it is possible to concentrate and centralise fossil energy more easily than solar energy (biomass, wind or water) and thus comply with the dynamics of the capitalist system. It can be used 24 hours a day, where it is needed, in a flexible way and in as concentrated a form as is required by economic decision-makers (Altwater, 2006). So, the speed of technological innovation since capitalist industrialisation in the late 18th Century has brought unprecedented economic success. The new technical devices have been fuelled almost entirely by fossil energy. Notable examples are the steam engine, the petrol engine, electricity grids, the aeroplane, the container ship and the internet. Capitalism's expansion in space was thus only possible because of revolutionary technological developments in transport and communication. The increase in productivity succeeded only because of the availability of modern machinery and fossil fuels – and this made it possible to reorganise the production process by establishing commodity chains which sometimes encircle the entire globe. Transnational corporations locate labour-intensive sections of the commodity chain in places where labour is cheap and technology-intensive links of the chain in places where the knowledge base is highly developed. Transport and communication between these specialised places in the global space are only affordable because of the cheap provision of energy together with the availability of adequate technology and sophisticated organisation.

This development has also had a decisive impact on the political regulation of globalisation. The liberalisation of financial markets that – in combination with technological progress – has been going on since the late 1970s has underpinned the deregulation of political boundaries. The creation of fully-fledged world markets for products, services and finance has been as important an innovation as the automobile or the PC. Economic liberalisation and political deregulation are two aspects of globalisation which can only be understood by means of a new discipline: international or global political economy.

Nonetheless, the use of fossil energy also brings serious disadvantages. First of all, as the debate on Peak Oil¹ clearly shows, the supply of fossil fuels is limited. It is likely that oil production will peak on a global scale in the course of the first decade of the 21st century as it already did in the USA at the beginning of the 1970s. Although we are currently able to draw on fossil fuels (oil) conservative estimates from oil companies such as BP and Exxon suggest that supplies will only last for up to another thirty to forty years. So long as the supply curve of oil has a negative slope and the demand curve continues to rise it is more than likely that the price of oil will remain at a high level. This has serious consequences for oil importing countries, given that in times of energy shortage energy security is one of the main challenges for global governance and is subject to conflict, as recent disputes in oil-rich countries have demonstrated.

Moreover, there is a second disadvantage of hydrocarbons. The combustion of fossil fuels also affects the global climate through the production of CO₂ emissions. Since the publication of the Stern review by the British government in October 2006 and of the assessment report of the IPCC in February 2007, it has become clear that the greenhouse effect has the potential to change the global climate with disastrous consequences for the working and living conditions of humanity. The greenhouse effect clearly shows that globalisation today is much more than the creation of a world market or of global institutions of governance. Globalisation, which during the long 16th Century overcame all limits in its extreme economic expansion, is now heading towards the limits of nature and the social limits of growth. The conclusion is bitter. The dependence of the global capitalist economy on fossil fuels must be reduced because of limited supplies and the negative effects of combustion. This will inevitably also bring a need to change the trajectory of globalisation processes over the course of the next few decades. It is certain that this change will have deep repercussions on the labour process, on the distribution of incomes and thus on industrial relations. However this is still a blind spot in labour and incomes policy, as well as in social research, which needs to be illuminated.

This requirement runs completely contrary to the workings of financial markets. The liberalisation of financial markets since the 1970s was the most remarkable event of the last few decades in the global economy and international politics. It was even more important than the fall of the Berlin Wall at the end of the 1980s because the latter can at least partly be interpreted as a consequence of financial liberalisation. The liberalisation of financial markets resulted in the growing indebtedness of Third World countries and of socialist countries of the Second World vis-à-vis creditors in the Western, i.e. First World states. Since the beginning of the 1980s the need to service their debts undermined the regulatory capacity of nation states, especially the planning systems in socialist countries. It also enforced the opening up of their economies for trade and investment. As a result, strategies aiming at self-reliance were bound to fail and so they did. It was the disappearance of the socialist system that give Margaret

¹ According to Wikipedia (accessed, May 3, 2007), 'The Hubbert peak theory posits that for any given geographical area, from an individual oil field to the planet as a whole, the rate of petroleum production tends to follow a bell-shaped curve. It also shows how to calculate the point of maximum production in advance based on discovery rates, production rates and cumulative production. Early in the curve (pre-peak), the production rate increases due to the discovery rate and the addition of infrastructure. Late in the curve (post-peak), production declines due to resource depletion' (Hubbert, 1956).

Thatcher the reason to gloat that ‘there is no alternative’ any more. Globalisation at ‘the end of history’ is a unique trajectory of economic, social and political development in the world. This has created a situation where it seems as if the Western model of formal and procedural democracy of free markets and the pluralistic social system has finally gained a global reach, and that the *pensée unique* of neo-liberal ideology has been victorious in the struggle of ideas, ideals and ideologies. However, rejoicing at this apparent victory fails to acknowledge the natural and social limits of globalisation; neither does it take into account the negative impact of liberalised financial markets on society, on nature and – last but not least – on the real economy of production, distribution and consumption.

This is the reason for the current topicality of Karl Polanyi’s critical concept of disembedded markets and the new demands associated with it to re-embed markets into systems of social regulation. The most disembedded markets are financial markets, due to the specific dynamics of competition between financial institutions in the global market. In commodity markets, competition in general, and global competition in particular, result in lower prices and a better quality of products and services, so long as competitive forces are working and not brought to a standstill by the interventions of powerful monopolies or oligopolies. In financial markets, however, global competition results in higher yields, interest rates or returns on capital invested because financial institutions compete against each other with comparatively attractive opportunities for financial investors. This is the reason why the central banks of nation states (or of currency unions like the Euro system) cannot reduce interest rates below the level set by competing financial centres. They have to prevent capital flight, a devaluation of the currency and inflationary tendencies. This means that the political options of financial institutions are asymmetrical. As long as there is no co-ordinated, concerted action of powerful central banks and other financial institutions in favour of capping interest rates, they are only able to increase interest rates and not to decrease them. The governments of the G7, the big financial players and the mainstream of neo-classical economists have refused to consider interest caps or target zones for exchange rates since the 1990s. This has made it possible for internationally operating banks, funds and TNCs to profit from volatile exchange rates and high interest rates to the disadvantage of small and medium-sized firms and of poorer countries in the world, as UNCTAD complains.

It is not always well understood that high yield requirements enforced by financial markets have to be produced in the real economy. Yet because of high real interest rates (nominal rates minus the expected rate of inflation), productivity must be raised and with it the growth rate of the real economy. This rests crucially on the availability of energy; it is only possible insofar as the supply of fossil fuel, particularly of oil, can be guaranteed. But the burden of the financial service sector tends to exceed the limits of such real economic performance and in this case modern high-tech capitalism falls back into the predominant mode of absolute surplus value production (Marx) or into a mode of ‘accumulation by dispossession’ (Harvey, 2003; Altwater, 2006), i.e. into a global process of redistribution of resources and income in favour of large and powerful owners of monetary wealth

in rich countries. The lesson to be learned is that globalisation is not only a process of technical progress, of increasing incomes (even when coexisting with an increase in inequalities) and of greater economic and, concomitantly, political freedom; it is also a process of developing new forms of exploitation in order to meet the requirements of financial asset holders. The consequences for the labour market are dire.

Global finance and the labour market

Financial markets exert pressure on the labour market and on the welfare state via the channels of investment and trade in the real economy. Here the Keynesian hierarchy of markets comes in. At the top are financial markets, forming the interest rate. Then there are commodity markets with commodity prices, which are responsible for the profit rate that can be earned under the condition of given interest rates. At the bottom are labour markets, where demand is determined by interest rates on financial markets, commodity prices formed on world markets and unit labour costs (i.e. wages and labour productivity) on a national scale. High capital yields on monetary wealth (yields which exceed the profit rate on real capital or the growth rate of overall GDP) can only be realised by redistributing flows of income from labour and other social strata to (financial) capital. Therefore the pressures directed toward a re-distribution of revenue flows for the benefit of financial investors are extremely high – and successful, as shown by distribution statistics. This result is confirmed by the April 2007 World Economic Outlook in which the IMF discusses what it describes as ‘the globalisation of labour’ (IMF 2007: 161-192) and concludes firstly that ‘the effective global labour force has risen fourfold over the past two decades’ and secondly that ‘this growing pool of global labour is being accessed by advanced economies through various channels, including imports of final goods, offshoring of the production of intermediates, and immigration’ (161). Thirdly, the authors claim that this has resulted in a steep decline in labour’s share of income in developed countries (168) and thus in a rise in the incomes of financial wealth owners. This is one of the major expressions of the new phase of global capitalist ‘accumulation by dispossession’ (Harvey, 2003; Altvater, 2006).

What are the consequences for the labour market? The pressures on labour income and working conditions are enormous, especially the pressures to extend working time. In the first instance this means that the welfare state of the ‘Fordist époque’ is reduced to a process of dismantlement and reduction of social expenditure in all countries of the world with a few remarkable exceptions. Quantitative cuts quickly produce qualitative repercussions: reshaping of institutions; cultural changes; changes in gender relations; and new contests for ideological hegemony. The reduction in social wages is not just an effect of competition within low-wage countries. In the first place it results from the financial repression exerted by liberalised financial markets and the perverse working of competition between financial institutions to the benefit of financial actors and the owners of monetary wealth. Secondly, individual wages are under pressure and may be forced down so far that working for a living wage and living a decent life become impossible, thus breaching the ILO principle of ‘decent work’. The growing number of ‘working poor’ is not confined to the US

labour market; it is a widespread feature of European labour markets too. A third effect is the exclusion of the 'redundant population' (Ricardo, 1817) which takes place because a sufficient number of new jobs for redundant workers is not created to compensate for those that have been lost. The expectation of compensation was only realistic during the golden years of capital accumulation between the 1950s and 1960s, after the Second World War. Since then, the redundant population has become visible on the streets of downtown areas in all capitalist countries. 'Redundant population' is also a major cause of migration. Fourthly, in most cases the unemployed do not simply acquiesce in the prospect of long-term unemployment. The unemployment statistics conceal many hidden phenomena, for example individuals may lose the belief that they can get a new job and take up work within the so-called 'informal economy'. The informal economy is characterised by precarious jobs, weak representation and protection of workers on the shop floor, low technical standards, and an absence of labour regulation and other dimensions of socio-economic security. This is the reason why it is necessary to consider the 'globalisation of insecurity' (Altvater & Mahnkopf, 2002) as an important aspect of modern globalisation. The informalisation of labour (and of money and politics, which cannot be analysed here) is an aspect of the erosion of the economic, social and political forms which have structured the process of development and the mode of regulation in the past.

Although the informalisation of parts of the labour market may take different forms depending on local social and economic conditions, there are also some important and pervasive general characteristics. The informal economy can be interpreted as a space in which the workers excluded from the formal economy try to reorganise the world of work and of their daily lives beyond the broken forms of formal labour. On the one hand it is a world with its own rules, or one that uses the rules of the formal world, but in a subaltern manner. Workers in the informal economy respond with a so-called 'neo-liberalism from below' to the 'neo-liberalism from above' of the formal economy and its representatives. On the other hand, the informalisation of labour very often reaches into the realm of illegitimate economic practices and even into the criminal sphere. This is one of the most important causes of the globalisation of organised crime and of the emergence of transnational criminal networks (the others can only be identified by means of an analysis of the informalisation of money and politics). These are obviously very important in the contemporary world. The IMF has calculated that up to five per cent of global GDP passes through money laundering channels. In most cases it is not well understood that these networks are connected to processes of informalisation which stem in turn from the dynamics of globalisation. Behind the formal world market the hidden economy grows inexorably. One of the paradoxical consequences of neo-liberally inspired deregulation is the creation of wider spaces of unregulated activity, of a shadow world of organised crime – which then has to be fought (rather ironically) by precisely those political actors who followed the neo-liberal trumpet, and now contribute to the dismantling of the civil rights of citizens.

Do co-operative and 'solidary' economies offer an exit strategy?

There have been counter-actions to this tendency, however. It is a common experience for the informal economy to transform itself into a 'solidary' economy (sometimes known as the 'economy of solidarity'). This term has quite recently resurfaced in

Latin America. The immediate trigger for this development was peoples' experiences of the debt crises of the 1980s and the financial crises of the 1990s. In response to these, people tried to re-appropriate dispossessed common and public spaces – by squatting land and factories, for example, which had been deserted by their former proprietors because their profits were not sufficient to meet the requirements of global financial markets. This can be seen as a revival of old experiments in the establishment of co-operatives that have appeared in many countries since the beginning of the capitalist industrialisation, in what E.P. Thompson described as the development of a 'moral economy' (1971). In the OECD world, more than 29 million people work in the 'third' non-profit sector (OECD 2003: 17-18), mostly under precarious working conditions because of the dismantling of welfare safety nets. Very often, the work does not conform to standards of decency (as defined by the ILO): wages are low and insecure and workers' rights at the workplace are often non-existent. But there have also been more positive experiences whereby an emancipative trajectory has resulted in the formation of co-operatives. In both Brazil and Venezuela the governments have appointed special secretaries for the solidary economy in order to support this progressive exit from the informal economy of precarious work, and to avoid a regressive exit into an illegitimate and even criminal economy.

The overwhelming tendency of globalisation to create a disembedded market vis-à-vis society and nature has thus generated counter-tendencies to 're-embed' the economy into society. This supports the argument of Karl Polanyi that the full disembedding of the economy in the course of globalisation is not possible without triggering social resistance against the pure working of the principles of exchange, of abstract market mechanisms and the law of equivalent exchange. An economy based on solidaristic forms of co-operation has emerged partly because of the lack of sufficient employment or stimulus for economic expansion, i.e. as a 'child of emergency'. By creating new opportunities for income generation it offers for a modicum of hope to many people. In a solidary economy, the focus shifts from the global level to regional and local markets and places. At present, developments of this kind only play a marginal role compared with the power exercised by the large modern transnational corporations that still determine the development of corporate globalisation. However, the very tendencies that result from their policies – the exclusion of hundreds of millions of the global labour force from formal employment – have also triggered the counter-tendencies of either propelling people into the informal economy or widening the space for cooperative and solidaristic forms of production.

The necessity to substantially reduce CO₂ emissions in a rather short period of time is an important impulse in the direction of substituting renewable energy for fossil energy. Conversely, an economy based on renewable energy is not possible under the pressure of global competition, and therefore 'slower' and more local forms of production and distribution (and hence of social regulation) are required. The formal, open sectors of the economy have to increase their competitiveness in global competition and are thus dependent on the use of fossil fuels. But the limits on the input side ('Peak Oil') and on the output side (the threatening climate collapse) already serve as a warning that corporate globalisation simply cannot be continued. The

informal and solidary economies are in general less dependent on fossil fuels because of their smaller scale and lower requirements for productivity (on average). The limits of globalisation compel us after years of (neo)liberal and postmodern euphoria to take them seriously into account, to adjust our (scientific) discourses and to transform social and political practices in the direction of a solidary and solar economy and society. In order to conceptualise globalisation we must therefore also develop an understanding of the ambivalences of modern capitalism, of contradictory economic development, political regulation and social resistance and of new trajectories at the limits of globalisation, based on new labour processes and an increasing reliance on renewable instead of fossil energy.

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