

Commodity chains, creative destruction and global inequality: a class analysis

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Abstract

The majority of global commodity chain analysis is concerned with producer firm upgrading, because it is held to engender local-level development. This represents a myopic comprehension of the interaction of firms under capitalism. This article argues, in contrast, that lead firm chain governance and supplier firm upgrading attempts constitute strategies and practices that reproduce global poverty and inequality. Schumpeter's concept of creative destruction represents a starting point in undertaking this endeavour. However, his formulation of capitalist competition ignores class and global economic relations. A Marxian conception of creative destruction, in contrast, rests upon an understanding of globally constituted class relations, which provides a novel perspective in comprehending and investigating processes that re-produce global poverty and inequality. The article substantiates these claims by examining cases of buyer-driven global commodity chains, and lead firm strategies of increasing labour exploitation throughout these chains.

Keywords: Global commodity chains, creative destruction, global inequality, class analysis

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1. Introduction

The global commodity chain (GCC) framework has emerged, since its inception in the mid-1990s, as a powerful research agenda for examining forms of economic interactions and power relations between (mostly northern) 'lead' firms and their suppliers. The framework's main objective is to understand and facilitate (mostly southern) supplier firm 'upgrading', which in turn is held to contribute to regional development. This 'north-south' element provides the framework with the potential for understanding processes of global uneven development. However, despite or perhaps because of its proliferation and entry into mainstream development thinking, the majority of GCC analysis remains unable or unwilling to comprehend, at a more systemic and theoretical level, the relationship between unit-level upgrading successes, and broader processes that contribute to the (re)production of global poverty and inequality. As Benjamin Brewer (2011, 319) puts it, this represents an 'upgrading paradox' which resides in the 'disconnection between "sub-systemic" units of activity [in particular firm-level "upgrading"]... and durable "systemic" distribution patterns'. This disconnection is particularly ironic given GCC's provenance in World Systems Theory.¹

1 This article assumes some knowledge of the GCC and WST literatures and their key concepts and concerns. For good overviews see Bair (2005), Bernstein and Campling (2006), Selwyn (2012).

Due to this disconnect, this article seeks to contribute to Jennifer Bair's (2005) call for a second generation of GCC studies that, while maintaining a close focus on the constitution, governance and geographical spread of global commodity chains conceptually connects these to the original concerns of World Systems Theory. As Brewer (2011, 321) suggests, such a focus would be based on 'the identification and explication of particular mechanisms by which the broad patterns of durable income inequality have been reproduced across the space and time of the capitalist world economy'. Such a focus would 'make the reproduction and reorganization of global income inequality—and not necessarily its lessening [i.e. GCCs excessive focus on upgrading]—the 'hook' for GCC analysis'. Put differently, such an approach would broaden its analysis, combining a focus on individual global commodity chains with an analysis of the national economies within which they are embedded and their evolving position within the global system of wealth production and distribution. Although it does not discount the possibilities of individual cases of upgrading, it considers them in the context of the totality of firms and states within the world system as a whole. This constitutes the article's first theoretical contribution.²

Its second contribution is to investigate the GCC–inequality relationship through global class analysis. This perspective aims to investigate the actions of states and firms, and their outcomes, as a product not only of these actors' objectives in relation to each other, but also as a product of their relations with labour. Such a perspective endeavours to show how such actions seek and do impact upon labouring classes and how labouring classes are able to respond to them.

In a previous article in this journal (Selwyn, 2012), I argued for integrating capital–labour dynamics into GCC analysis in order to comprehend *local level* developmental processes and trajectories. This article extends the argument to demonstrate how class relations are globally constituted, and that they are important determinants of the (re)production of global poverty and inequality. Both articles are 'labour-centred' in that they investigate processes of local level development and the reproduction of global poverty and inequality from the perspective of labour, as opposed to from the perspective of combinations of states and capital, as is common in the majority of social science thinking.³ Although there is a plethora of research and theory that illustrates the nature of trans-national capitalist class formation and interaction (e.g. Sklair, 2001; Van der Pijl, 2012), there is much less showing how the constitution of the global labouring class is a core determinant of global uneven development.

This article argues that a Marxian conception of creative destruction can be understood as a dual set of relations and processes. The first set of relations is the asymmetric competitive relations between firms. The second are the global structure of class relations.⁴ The functioning of these relations rests upon and reproduces global poverty and inequality, within and between countries.

2 It should be noted that the global production network (GPN) approach attempts such an endeavour, but, so far, despite more ambitious objectives, it is difficult to discern fundamental differences of empirical substance between GCC, GVC and GPN approaches.

3 For elaboration on what labour-centred analysis entails see Selwyn (2013 and 2014).

4 This emphasis on class is important because strands of WST have often been guilty of downplaying the centrality of class relations to capitalist expansion and transformation (see Brenner, 1977; Van der Linden, 2008). The main exception is Beverly Silver (2003).

Following this introduction section two critiques the dominant GCC conceptions of ‘governance’ and ‘upgrading’. While both concepts contain insights they are limited. The concept of governance is rooted in a particular and one-sided reading of Joseph Schumpeter’s conception of innovation (see Section 5 below). The concept of upgrading suffers from a residualist conception of global inter-firm relations and resultant developmental outcomes (to be explained below). Neither concept leaves intellectual space for interpreting class relations as constitutive forces in the global economy. Section 3 argues that although Schumpeter’s conception of creative destruction represents a more profound comprehension of capitalist competition than the GCC conception of innovation, it is also limited—because of its a-social and methodological nationalist conception of the economy. These limitations can, however, be overcome by tracing the concept of creative destruction further back, to its Marxian roots, which enables us to understand it as a socio-spatial process that is based on globally constituted class relations, which is done in Section 5.

Section 6 examines a number of examples of buyer-driven GCCs and how their practices and strategies constitute the management of creative destruction dynamics that, in turn, reproduce global poverty and inequality. These are illustrated through discussing lead firms’ triple strategy of: (i) using their institutional power to lobby international institutions and national governments for industrial protection, (ii) attempting to monopolize entrepreneurial profits and rents within the commodity chain and (iii) intensifying the exploitation of labour across the chain.

2. From world systems theory to global commodity chains, via Schumpeter

Gereffi and Korzeniewicz’s (1994) *Commodity Chains and Global Capitalism* represented both the official launch of the GCC framework, and also signalled several significant departures from its foundations in WST.⁵ Of central importance to this article, while WST paints a picture of a dynamic world economy (characterized by upward and downward mobility by individual units) that nevertheless reproduces itself as a whole (Wallerstein, 1974; Arrighi and Drangel, 1986), GCC analysis is concerned above all with poor country firms’ ability to upgrade. Upgrading is defined as ‘a move to higher value added activities in production, to improve technology, knowledge and skills, and to increase the benefits or profits deriving from participation’ in GCC. (Barrientos et al., 2010, 323). While for WST ‘there is no such thing as national development’ (Bair, 2005, 157 paraphrasing Wallerstein, 1974), for GCC analysis upgrading contributes to local, regional and potentially even national-level development.

GCC’s conception of upgrading is rooted in a tension-laden combination of WST’s division of the world economy into zones of lower and higher value-adding economic activities and what appears to be a watered down conception of Schumpeterian innovation. Schumpeter (1954) posited four to five forms of innovation entailing introductions of (i) new methods of production and/or new forms of industrial organization, (ii) new commodities, (iii) new sources of supply and (iv) new trade routes

5 See Bair (2005) and Selwyn (2012).

and markets. These have been translated into product, process, functional and chain upgrading by GCC analysis (Kaplinsky and Morris, 2001, 38).⁶

GCC's second major conceptual innovation is that of commodity chain governance. Chain governance refers to a range of non-market relationships that determine or influence how material, financial and non-tangible resources flow and are allocated up and down the chain (Gereffi, 1994, 97).⁷ Through chain governance, lead firms determine what other firms do and how they do it, and thereby influence directly supplier firms' upgrading opportunities. Gereffi et al., (2005, 99–100) argue that:

[T]he governance of global value chains is essential for understanding how firms in developing countries *can gain access to global markets*, what the *benefits of access* and the *risks of exclusion* might be, and how the net gains from *participation* in global value chains might be increased (emphasis added).

While the 'upgrading' concept takes from Schumpeter an understanding of firms' innovative actions and strategies, it drops any serious conception of the obverse of innovation—creative destruction. Nor does it consider how lead firms seek, through commodity chain governance, to *purposefully manage* these creative destructive dynamics across the world system.⁸

Without a focus on these managed (governed) creative–destructive dynamics, however, GCC practitioners are vulnerable to charges of 'developmentalism' – the assumption of universality (all countries can achieve development) (Dunaway and Clelland, 1995; Smith, 1985). In the GCC approach, this comprehension of development often rests upon a double fallacy: of composition (what is good for one unit as an upgrading strategy is good for all units) and of comparison (if one unit can upgrade, so can all units). It also rests on a residualist conception of economic development, where lack of development is explained by 'exclusion' (from the 'world market', 'capitalism' or 'globalization'), to be remedied by 'inclusion' (Bernstein, 1992).

These elements are present in much of GCCs discourse on upgrading, as indicated in the italicised sections of the above quote from Gereffi, Humphrey and Sturgeon. Indeed, GCC and subsequent global value chain (GVC) analyses have been formalized as development policy guidelines from within the GCC/GVC tradition (as was the intention of Gereffi et al., 2005), and, from without, by international financial institutions (c.f. World Bank, 2010). The latter's policy framework in particular, occludes system-level analysis of processes that generate and reproduce global poverty and inequality. The masterpiece of such a discourse is, *Globalization, Growth And Poverty: Building An Inclusive World Economy*.⁹

6 Recent attempts to re-think the concept of upgrading have evolved into what is now being called 'social upgrading' which includes an explicit focus on workers' conditions (see Barrientos et al., 2010). But see Selwyn (2013) for a critique.

7 See Gibbon and Ponte (2008) for a discussion of the evolution of the 'governance' concept.

8 Talbot (2004) provides an alternative conception of upgrading, which while attentive to governance structures and competitive innovations, emphasizes how the distribution of income along the chain is a function of 'struggles over the structure of the commodity chains' (Talbot, 2004, 163). Rather than an exclusive focus on product innovation, Talbot emphasizes the role of strategies of solidarity and collective actions among producers. I aim to discuss Talbot's important work in a future paper.

9 For an extended critique of the residualist approach to development and a class-analytical alternative, see Selwyn (2014).

The obverse of a residualist conception of development is a relational one, where rather than resorting to simple dichotomies ('exclusion' versus 'inclusion') critical political economy investigates the reproduction of wealth and poverty and how they are related (Bernstein, 1992). The most important work within WST to engage with Schumpeter's conception of creative destruction are Arrighi and Drangel (1986), O'Hearn (1994) and Arrighi et al. (2003), who provide a bridge between WST's core concern and a potential second generation GCC approach rooted in a relational political economy.

Arrighi and Drangel (1986) and Arrighi et al. (2003) illustrate how despite decades of developmental effort and industrial transformation, the income and developmental gap between the countries of the global south and global north, have been reproduced. On the one hand the global south as a whole has 'converged' and in some cases overtaken the global north in its percentage of GDP in manufacturing as a percentage of the north's—from 74.6% in 1960 to 118.0% in 1998. On the other hand, as a proportion of national incomes of the global north, national incomes of the global south as a whole have remained more or less stagnant—at ~4.5% of northern GNP per capita (Arrighi et al., 2003, 12,13). Arrighi et al. conclude that their data support Wallerstein's (1974) original claim that the world system is characterized by a dynamic, but nevertheless stable structure comprising core, semi-periphery and periphery (see also Chase-Dunn, 1989). From within the broad WST tradition, Korzeniewicz and Martin (1994), Dezzani (2002) and Babones (2002) and from outside the tradition, Wade (2004) and Sutcliffe (2004) also provide evidence supporting WST's claims about the durability and systemic reproduction of global poverty and inequality. The remainder of this article discusses how a second generation of GCC analysis might interpret, investigate further and conceptualize these tendencies.

3. Schumpeter and Marx on capitalist dynamism and creative destruction

It is well documented that Schumpeter was intellectually indebted to Marx.¹⁰ This debt is revealed by a passage from the Communist Manifesto, which undoubtedly captured Schumpeter's imagination:

The bourgeoisie cannot exist without constantly revolutionizing the instruments of production, and with them the whole relations of society... Constant revolutionizing of production, uninterrupted disturbance of all social conditions, everlasting uncertainty and agitation distinguish the bourgeois epoch from all earlier ones (Marx and Engels, 1848)

Although Schumpeter praised Marx's economic interpretation of history as 'one of the greatest intellectual achievements of sociology to this day' (cited in Milonakis and Fine, 2009, 197), his comprehension of capitalism was devoid of the latter's careful attention to the system's conflictual social relations. For example, he emphatically rejected Marx's labour theory of value. Rather, the above quote from the Communist Manifesto provides Schumpeter with a basis for placing the

10 Although Paul Samuelson denies this debt, most commentators recognize it (e.g. Elliott, 1980; Bottomore, 1992; Rahim, 2009), so much so that authors such as Nathan and William Lazonik (2011) argue that he should be considered a Marxist (but see Galambos, 2011 for a response).

bourgeois entrepreneur at the heart of his system while side-lining any serious consideration of capital–labour relations. Delinking Marx’s class analysis from his conception of capitalism enabled him to employ concepts utilized by Marx, but for very different ends.

For example, and of central importance to this article, his concepts of entrepreneurial profits and rents see below have many similarities to Marx’s conception of surplus or super profits (Schumpeter, 1987 [1943]). In *Capital* Marx suggested that firms derive super or surplus profits from: (i) being technologically more advanced than other firms, enabling them to operate at above the average rate of productivity and profitability, and/or (ii) enjoying monopolies of technologies and resources. Both aspects are compatible with Schumpeter’s conception of capitalist development, but while Schumpeter insists that profits (whether ‘normal’ or entrepreneurial) were either ‘wages to management’ or rewards to entrepreneurs derived from innovation, for Marx, both average and super profits were rooted in the exploitation of labour by capital. This is the central divergence between the two political economists and subsequent conceptions of innovation.

Of particular relevance to this article is Marx’s (1990) analysis of the variety of interlinked strategies pursued by capitalists to increase the rate of exploitation of labour: through *immiseration* (pushing down wages, often to poverty levels), through raising the rate of *absolute surplus value* extraction (lengthening the working day), and/or increasing the rate of *relative surplus value* (intensification of the working day through technological and managerial innovations and/or reducing the costs of labour power). Farshad Araghi (2003, 49) notes that these strategies are sometimes conceptualized by Marxists as occurring within workplaces or national economies, reflecting, like Schumpeter, a methodological nationalism (see below). He suggests, instead, that they need to be viewed as ‘global value relations’. That is, the form and intensity of exploitation of labour in different parts of the globe, and the systems of development that are based upon them, are dialectically inter-related. This article concurs and seeks to use Araghi’s insight to construct a critical second-generation GCC perspective.

4. Creative destruction and social classes

In his conception of creative destruction, Schumpeter distinguishes between innovating entrepreneurs and normal businessmen (the latter who run non-innovating firms). Innovating entrepreneurs win the entrepreneurial profits—the ‘difference between receipts and outlays’, the latter of which are momentarily ‘smaller per unit of product than for other businesses’ (Schumpeter, 1961: 128, 129, 131). Normal businessmen, in contrast, only earn ‘wages to management’. The core distinction here is between firms that compete among each other on price, (often based upon reducing production costs including wages) and those that generate entrepreneurial profits through qualitative innovations, potentially leading to wage increases as profits more than offset rising production costs.

Following the introduction of the innovation a ‘second act’ occurs in the competitive drama. Industry is completely re-organized and the ‘final result must be a new equilibrium position, in which . . . the law of cost again rules’ and ‘the surplus of the entrepreneur in question and his immediate followers disappears’ (Schumpeter, 1961,

131–132). Between the introduction of the innovation and its diffusion, a time lag exists during which innovators and early adaptors of the innovation win ‘rents’ based on their greater competitiveness compared with firms that have not yet introduced the new way of doing things.

‘Economic progress in capitalist society means turmoil’ and is the source of creative destruction (Schumpeter, 1987, 32). This is because:

Capitalism... is by nature a form or method of economic change and not only never is but never can be stationary... The fundamental impulse that sets and keeps the capitalist engine in motion comes from the new consumers’ goods, the new methods of production or transportation, the new markets, the new forms of industrial organization that capitalist enterprise creates (Schumpeter, 1987, 82–83).

Crucially, [t]he new products and new methods compete with the old products and old methods not on equal terms but at a decisive advantage that may mean *death to the latter*’ (Schumpeter, 1987, 32, emphasis added). Creative destructive dynamics operate temporally (over short, medium and long cycles or waves) generating economic booms and slumps:

While these things are being initiated we have brisk expenditure and predominating “prosperity”... and while [they] are being completed and their results pour forth we have the elimination of antiquated elements of the industrial structure and predominating “depression” (Schumpeter, 1954, 68).

When innovations cluster together they can generate a leading sector that ‘create[s] new products with high demand, made with newer, cheaper forms of energy and distributed via newer, cheaper modes of transportation’ (Schwartz, 2010, 69).

Schumpeter’s conception of creative destruction illuminates how gains from innovation are distributed unevenly between firms, but it excludes considerations of class relations. His attempts to habilitate the capitalist entrepreneur as the dynamic force of capitalist innovation while discounting Marx’s class analysis have obvious political objectives. However, they also weaken his understanding of capitalist development. As Angus Maddison argues, ‘the main weakness in [his] long-wave theory... [is that] he does not provide a persuasive explanation why innovation (and entrepreneurial drive) should come in regular waves rather than in a continuous but irregular stream...’ (Maddison, 1991, 103).

Entrepreneurs’ search for profits and continuous intra-capitalist competition constitutes a key determinant of innovation. But Marx identifies a second source: conflicts between capital and labour—where the former struggles for greater profits and the latter for higher wages and better working conditions. Mandel (1980) argues that as workers’ struggles intensify, preventing increasing rates of exploitation and challenging the ruling ideologies of the time, capitalists begin seeking out means of re-asserting their control over the labour process in order to raise the rate of exploitation. They do this through industrial innovation—entailing new hard and soft technologies (machineries and systems of management), in turn giving rise to new labour processes and labour regimes. For example, Silver (2003) conceptually and empirically connects class struggles, leading firms’ organizational innovations and the global dispersal of production. She illustrates, like Mandel, how working class militancy accumulates over time within new zones of production. Schwartz (2010) draws out a number of

Table 1. Technological development and class relations

Time period		Leading sector (Schumpeter)	Labour process (Mandel)	Form of workers organization (Mandel)
Schumpeter	Mandel			
1780s–1820s	1789–1848	Cotton, textiles, iron and water power—canals and mills	Craft workers operating water- and steam-powered machinery in small factories	Owenite unionism and Chartism
1840s–1870s	1848–1890s	Steel, steam engines and railways	Industrial production of machines by specialized firms + emergence of specialist machine operators	Skill-based unions
1890s–1920s	1890s–1930s	Industrial chemicals, electricity and intra-urban trams	Taylorist methods of production	Mass unionism
1940s–1970s	1930s–1960s	Internal combustion engine, petroleum and motor vehicles	Assembly lines	Great strike wave of ‘1968’ and beyond
1980s ^a to present	1980s ^a to present	Digitalization, microelectronics and ‘information’	Continuous-flow, just-in-time production	In formation . . . (see last section, below)

^aSchwartz’s extrapolation.

Source: Derived from Schwartz (2010, 69–72) and Mandel (1980).

synergies between Schumpeter’s analysis of leading sectors and Mandel’s understanding of their basis in new labour processes, and how they cluster in time (Table 1).

Schwartz argues that the overlap between Schumpeter’s leading sector and Mandel’s labour process is not coincidental:

‘The sheer scale of investment needed to utilise new technologies usually mandates both new organisational forms and new work practices. Neither innovation can stand alone: new work practices and management systems make little sense unless changes in machinery and power systems accompany them; new machinery cannot be used to its full potential without changes in work practices and the management of production (Schwartz, 2010, 72).

Leading sector innovations are generated by the capital–labour dialectic as much as through intra-firm competition. Their emergence and spread is based upon, and works through, sets of global relations.

5. Spatial dynamics of creative destruction

In his schema of creative destruction, Schumpeter understands market-leading activities (innovations) and market-following activities (diffusion of innovations) as occurring temporally, generating booms and slumps, within discreet national spheres. However, to quote Angus Maddison again, he ‘makes no distinction between the lead country and the others, but argues as if they were all operating on a par as far as productivity level

and technological opportunity is concerned. Thus his waves of innovation are expected to affect all countries simultaneously' (Maddison, 1991, 104–105). This is in contrast to Marx, who 'considered the world market to be the real framework of economic fluctuations' (Mandel, 1980, 8) and who raised the problematic of how an international division of labour impacts upon the developmental trajectories of different national economies.

'If we now conceive this feverish agitation as it operates in the market of the whole world, we shall be in a position to comprehend how the growth, accumulation, and concentration of capital bring in their train an ever more detailed subdivision of labour, an ever greater improvement of old machines, and a constant application of new machines – a process which goes on uninterruptedly, with feverish haste, and upon an ever more gigantic scale (Marx, 1847).¹¹

What are the implications of this ever more detailed subdivision of labour for global poverty and inequality, and how would these be conceptualized and investigated from a critical GCC framework? The GCC concept of chain governance is potentially illuminating here, but only after some reformulation. As noted in Section 2, an important hypothesis of GCC analysis is that development requires supplier firms to 'link[] up with the most significant lead firms in the industry' (Gereffi, 2001, 1622). However, such formulations risk reproducing a residualist developmentalism. This is because, lead firm governance practices and strategies are conceptualized primarily as conditioning (enabling or disabling) the possibilities and forms of upgrading for supplier firms. (Humphrey and Schmitz, 2002; Gereffi et al., 2005; Kaplinsky, 2005; Gibbon and Ponte, 2005; Selwyn, 2008a).

Although the above observations are correct, they are limited, as they leave out a further, vital consideration. From a critical GCC perspective, supplier firm upgrading successes and failures need to be compared not only against other local level development processes (resulting from inclusion or exclusion from GCCs), but in relation to the developmental processes occurring at the lead firm node of the chain and 'its' surrounding regional/national economy. A conceptual framework is required, therefore, that facilitates empirical research into understanding how, and the extent to which, lead firm governance of GCCs and supplier firm attempts to upgrade within them reproduce the asymmetrical relations between these different units of capital, how capital–labour relations are a constituent part of these processes and how these relations reproduce global poverty and inequality. Some of the building blocks for such a framework can be found within WST.

In his notable study of the Irish and English cotton industries, Denis O'Hearn (1994) argues that while conceptions of capitalist innovation often assume that it is a locally or nationally bound process, it must be comprehended globally and geo-politically:

'There is no such thing as a *national* system of innovation because clustered innovations require global strategies to secure raw materials, capture markets for the export of core products, and stifle competition from within and outside the core.' (O'Hearn, 1994, 595, original emphasis).

11 Marx (1847) Wage Labour and Capital. Available at <http://www.marxists.org/archive/marx/works/1847/wage-labour/ch09.htm>

O'Hearn's argument is further strengthened by Marx's analysis of the English cotton industry, and his specific focus on its globally interconnected labour relations:

'Direct slavery is just as much the pivot of bourgeois industry as machinery, credit, etc. Without slavery you have no cotton; without cotton you have no industry. It is slavery that has given the colonies their value; it is the colonies that have created world trade, and it is world trade that is the pre-condition of large-scale industry.' (Marx, 1846).¹²

Bornschier's (1992, 4) reference to a 'world market for protection' illustrates the role of states as facilitators and protectors of innovation. Lead firms' abilities to manage the diffusion of leading edge technologies can 'consign peripheral firms to use out-moded technologies or previous innovations' (O'Hearn, 1994, 594). Such technological diffusion may enable peripheral firms to maintain a presence in industrial sectors, but 'with lower profit rates and lower wage rates' (O'Hearn, 1994). Differential technological generation and diffusion impacts directly on workers' wages and conditions:

'Those that do something new make a creative response – they utilize new technologies or forms of organisation in ways that allow them to outcompete others. Those that respond by extending their existing practices make an adaptive response, which enables them to compete with innovations for a time by intensifying workers' efforts, reducing wages, and accepting lower rates of profit.' (O'Hearn, 1994, 593).

Put differently, the latter can participate in the world economy through paying poverty wages to their workers (see below).

Arrighi and Drangel (1986) and Arrighi et al. (2003) show how once such a set of unequal international economic relations are in place, 'market' forces reproduce asymmetries between core and peripheral firms. They highlight three elements of this process. First, costly industrial innovations are more likely to occur in wealthy countries because their higher incomes mean higher aggregate demand and larger actual and potential markets. Higher production costs generate greater pressures for technical innovations (to reduce costs). Cheap and plentiful credit facilitates the financing of innovations (Arrighi et al., 2003, 18). Market-leading firms that benefit from entrepreneurial profits and rents are then endowed with larger sums of re-investible capital than market following firms. Not only does this enable them to re-invest and seek further innovations compared with follower firms, but it enables them to invest in costly systems of chain governance (Schumpeter's 'new form of industrial organisation') to more effectively monopolize entrepreneurial profits and rents.

A second tendency, almost a mirror-image of the first, is generated among follower countries and firms (assuming that they do not benefit from compensating institutional support, see Selwyn, 2009, 2011). Arrighi et al. (2003, 18) note how the poor countries in which the majority of market-following firms operate 'resemble Schumpeter's "large majority of businessmen," ... who end up with "very modest compensation or nothing or less than nothing".' (citing Schumpeter, 1987, 73–74). Although poor countries have industrialized, they have done so by introducing widely available (codified) industrial technologies and methods which: (i) often structurally preclude them from innovating

12 Available at: http://www.marxists.org/archive/marx/works/1846/letters/46_12_28.htm

and thus winning entrepreneurial profits and rents and (ii) are subject to quick devaluation, caused by innovations containing much more costly, complicated and hard-to-replicate tacit knowledge elsewhere in the system.¹³

This two-sided dynamic generates yet a third tendency which concerns the destructive sociological aspects of innovation, referred to by Schumpeter (1954: 68) as ‘the elimination of antiquated elements of the industrial structure’. Such elimination impacts unequally upon wealthy and poor countries, where the former are more easily able to adjust both economically and socially (e.g. through welfare policies) than the latter, in part as a consequence of the greater volume of distributed wealth derived from prior entrepreneurial profits and rents (Arrighi et al., 2003, 18). Robert Wade (2005a, 17) summarizes the above situation as one where poor and rich states ‘are embedded in the same “system”, and systemic effects help to explain the divergent outcomes’.

6. GCC, the global business revolution and renewed global stratification

The above conception of global creative destruction, as a dual set of asymmetrical relations—between more and less powerful units of capital, and between differentiated capital and differentiated labour—potentially represents a useful lens through which to comprehend patterns of global poverty and inequality. It suggests the possibility of understanding creative destructive dynamics from a global class-relational perspective.

This section focuses on lead firm strategies in buyer-driven GCCs. It is these actors, Sturgeon (2001, 17) suggest, that ‘usually initiate the flow of new products [and we should add, modes of chain governance and strategies of managing labour systems] through the...chain.’ These firms have as their objectives ‘the maintenance or establishment of their position as one of the top two or three companies in the global marketplace’ (Nolan, 2003, 301; Table 2).

TNCs have pursued the above objectives since the 1980s through a three-pronged strategy of: (i) employing their institutional power to lobby international institutions and national governments (such as the WTO and the US and EU states) for industrial protection (Gallagher, 2005), (ii) selling off their non-core businesses and developing their core competencies to attempt to monopolize entrepreneurial profits and rents within the value chain and (iii) cutting wage and input costs and intensifying the exploitation of labour across the whole chain.

6.1. The IPE of entrepreneurial profit monopolization and inter-capitalist relations

As argued above, entrepreneurial innovations rarely occur within a ‘pristine’ national economic sphere. Rather, they exist within a hegemonically organized world system. For example, Sell (2002) and Wade (2005b) have documented how TNCs in the entertainment, pharmaceutical and software industries have promoted both the discourse and the WTO-backed legislation protecting intellectual property rights. The World Bank (2002b) estimates that with a full application of TRIPS across the globe,

13 The classic discussion of tacit and codified knowledge is by Michael Polanyi (1966).

Table 2. Industrial consolidation within global value chains, 2006–2008

	Number of firms	Global market share
Large commercial aircraft		
Engines	3 ^a	100
Braking systems	2	75
Tyres	3	100
Automobiles		
Auto glass	3	75
Constant velocity joints	3	75
Tyres	3	55
Information technology		
Micro-processors for PCs	2	100
PC operating systems	1	90
Glass for LCD screens	2	78

^aIncluding GE's joint venture with Snecma.

Source: Nolan and Zhang (2010).

US companies would gain an additional US\$19 billion a year in royalties, with much of these flows originating in, and constituting a financial drain from countries of the global south. In a similar vein, Weiss (2005) characterizes the WTO as an upgrading club for advanced capitalist countries—where the organization attempts to deny developing countries the ‘right’ to utilize infant industry protection strategies associated with successful late development, whereas facilitating developed country governments’ support for their own fledgling industries. Henderson et al., (2002, 450) note how institutions such as the WTO, World Bank and IMF are part of the struggle for ‘value enhancement and capture’, where the ‘capacity to exercise power to influence the investment and other decisions of lead companies and other firms integrated into [GCCs] is inevitably asymmetric’.

TNCs’ focus upon developing their core competencies and regulating tightly their supply chains has been pursued through a huge increase in spending on R&D (e.g. from around US\$160–170 billion by the world’s top 300 firms in the early 1990s to US\$240 billion in 1998); through increased spending on branding; through ‘a massive increase in expenditure by the world’s leading firms on IT hardware, software and services’, and a ‘merger frenzy’ where, for example, spending on transnational mergers and acquisitions increased from US\$156 billion to US\$1100 billion between 1992 and 1997 (Nolan, 2003, 302, 303). A consequence of lead firms’ concentration on core competencies has been that a ‘cascade effect’ is operating across industrial sectors, generating intense pressure upon first and then second-tier suppliers to merge, acquire and themselves follow TNC’s strategies. Nolan concludes that:

‘Large capitalist firms now stand at the centre of a vast network of outsourced businesses which are highly dependent on the core system[] integrators for their survival. The system[] integrators possess the technology and/or brand name which indirectly provides sales to the supplier firms. They are therefore able to ensure that [they] obtain the lion’s share of the profits from the transactions between the two sets of firms’ (Nolan, 2003, 317–318).

For example, Dedrick et al., (2008, 20) illustrate how US Giant Apple ‘maintains control over its supply chain by controlling essential elements such as core software, a propriety standard and valuable brand image’. Consequently, ‘Apple captures 53 per cent of the measured value from U.S. sales and 47 per cent from sales outside the U.S.’.¹⁴ In these ways TNCs attempt to manage the innovation process to better capture the entrepreneurial profits and rents associated with it. Already in the 1960’s Baran and Sweezy (1966), following (and quoting) Schumpeter’s arguments about tendencies towards monopolization in the capitalist economy, observed that ‘[o]nce the “largest-scale unit of control” has taken over, “the new commodity, the new technology, the new source of supply, the new organisation” all tend to be monopolised by a handful of giant corporations...’ Rather than TNCs competing against each other only on price, they engaged in non-price competition in order to achieve the ‘permanence of monopoly profits and their steady increase over time’ (Baran and Sweezy, 73–74).

While Baran and Sweezy overstated the monopoly form that capitalism took in the post-war period (Harman, 1984, 148–154) they did identify strategies that TNCs *sought to engage in*, and which constitute a driving force of the contemporary global business revolution. In centralizing their economic power, Strange and Newton (2006, 184) suggest that ‘monopsonistic’ buyer[s]... push down the prices of supplies to marginal cost and thus extract the full profits from the sales of the final goods from a smaller capital stake’. Milberg calls this the ‘mark-up effect’ through which ‘the lead firm in the global value chain is able to raise the mark-up over costs, not in the traditional oligopoly fashion of raising product prices, but through the control of input costs’ (Milberg, 2008, 429).

These strategies are observable across several GCCs. In the global food industry, for example, retailers impose a range of standards and conditions upon suppliers, generating continuous cost-down pressures. In the USA, between 1986 and 2006, the average annual percentage change in import prices for Beverages, Fruit, vegetables and nuts, meats and fish fell by 0.41%, 0.58%, 0.62% and 0.91%, respectively (Milberg, 2008, 432). As Milberg sums up, in the USA, significant import price declines (of over 40% between 1986 and 2006) have benefitted US firms engaged in computers, electrical and telecommunications products, clothing, footwear, textiles, furniture, chemicals and miscellaneous manufacturers (including toys) (Milberg, 2008, 433). Operating under fierce cost-down pressures, supplier firms to TNCs are characterized by low profit volumes and limited opportunities for innovations that generate entrepreneurial profits and rents (Kaplinsky, 2005). Furthermore, these ‘mark-up effects’ are dialectically related to lead firms organization and management of the global labour regime.

6.2. Hyperbabbagisation: capital–labour dimensions of the global business revolution

This article has argued, first, that creative destruction needs to be conceptualized as a global process, uniting firms within governed GCCs, in asymmetric relations across the world. The second element of this argument is that global creative destruction and stratification must also be understood from a class relational perspective. Class

14 Apple, has also been found to be relying on child labour in its supply chain (<http://www.guardian.co.uk/technology/2013/jan/25/apple-child-labour-supply>).

relations cannot be understood only as existing within nation states (or workshops), but must be conceived of as global social relations. That is, just as the most powerful units of capital (lead firms), with assistance from hegemonic states and international institutions, seek to organize their relations with subordinate units of capital, so too do they seek through the governance of their GCCs to organize global capital–labour relations. This is not to argue that lead firms (mostly located in core economies) directly manage the labour regimes of their supplier firms (mostly located in peripheral and semi-peripheral economies). Rather, the governance of GCCs enables lead firms to effectively sub-contract the management of labour to supplier firms. In this way ‘local labour control regimes’ (Jonas, 1996) exist as sub-regulatory systems of within the global labour regime.

The proliferation of GCCs has occurred in tandem with, and based upon, the expansion of the world’s labouring class, which has expanded from 1.1 billion people in 1980 to 3.05 billion in 2005 (Kapsos, 2007, 13). In 2010 there were ~942 million working poor (almost 1 in 3 workers globally living on under US\$2 a day) (ILO/KILM, 2011; ILO, 2013).¹⁵ The expansion of the global labouring class has been managed closely by the international institutions as an attempt to facilitate local and global capital accumulation through heightened labour exploitation (Rainnie et al., 2010). For example, Brady and Martin (2007) report how workers in countries that implemented IMF agreements were 60% less likely to be in a trade union after the programme. Cammack (2002, 125) argues that the World Bank’s objectives, as formulated in its annual World Development Reports, are ‘to deliver an exploitable global proletariat into the hands of capital... to deny the poor any alternative, and to create a reserve army of labour that will enforce the disciplines of capitalist labour-markets across the greater part of humanity’.

Lead firms have been at the forefront of intensifying labour’s exploitation on a global scale through their governance of GCCs, by what Schumpeter labelled the reorganization of industry. Buckley and Ghauri (2004) have emphasized how:

‘The managers of [Transnational Corporations] are increasingly able to segment their activities and to seek the optimal location for increasingly specialised slivers of activity... The more precise use of location and ownership strategies... is the very essence of increasing globalisation’ (Buckley and Ghauri, 2004, 83).

At the heart of this strategy lies the so-called Babbage principle.¹⁶ Charles Babbage (1835) argued that the division of labour could lead to general productivity increases and that it could be used to cut wage costs. He observed that skilled workers often undertook unskilled tasks, and argued that it would be possible to allocate skilled tasks only to skilled and higher paid workers and other tasks to less skilled and lower paid

15 The ILO calculates poverty levels using the World Bank’s (self-acknowledged) extremely conservative nominal poverty lines of US\$1 and US\$2 a day. Woodward (2010) suggests a more realistic (and humane) global poverty line, of US\$5 a day. If adopted, the ILO would have to conclude that the majority of the world’s labouring class lives in poverty. It would then have to enquire into the relationship between being a worker and poverty, which it finds extremely difficult to do in any systematic way, given its commitment to global capitalist development.

16 Charles Babbage was a 19th century English mathematician and utilitarian philosopher associated with Bentham, and was concerned, principally with the scientific organization of industrial society (Schaffer, 1994). In this way he was a predecessor to Frederick Winslow Taylor’s ‘scientific management’ (see Braverman, 1998).

workers, thus establishing a hierarchy of wages and reducing wage costs.¹⁷ Under contemporary globalization, his principle has been pursued with a vengeance by TNCs, and has evolved into what could be termed ‘hyperbabbagisation’, where the spatial disaggregation of production constitutes a strategy by capital to increase labour exploitation. Jonas (1996, 326), following Burawoy (1985) notes how ‘labour’s collective vulnerability to the national and international mobility of capital is the source of capital’s power to extract concessions and assert its hegemony in the workplace’.

Hyperbabbagisation strategies seek to work in at least six ways. First, they reflect TNCs’ ability to benefit from and purposefully structure a system of global labour arbitrage—where they are economically rewarded through their use and manipulation of the international wage hierarchy.¹⁸ Bernard and Ravenhill (1995) illustrate the strategic value of this principle to TNCs in 1990s East Asia. A Japanese calculator producer/exporter (Jinbao) sought to benefit from the Babbage principle by creating a hierarchical commodity chain across East Asia:

The innovation behind the product, the brand name and the marketing are Japanese. All key components for the calculators, such as liquid crystal displays and production equipment in the Thai factory such as insertion equipment, are imported from Japan. All procurement and administration are controlled from Taipei, and the management of the plant is (sic) Taiwanese. The labour is Thai (Bernard and Ravenhill, 1995, 186).

By locating production in peripheral regions with supportive states, firms can benefit from low-cost and potentially highly malleable labour, and can combine low wages, long hours and productivity drives, raising rates of absolute and relative surplus value extraction. For example, CAFOD (2004, 30–34) recently reported how in China in the electronics sector workers need to work an illegal number of hours (15–16 h per day under very poor conditions) in order to earn the minimum wage; while in Thailand, sub-contracted workers earn a ‘minimum wage’ that does not even cover their food and household expenses.

Second, TNCs attempts to increase the rate of labour exploitation are based upon real and imaginary gender divisions of labour. In their classic and still relevant study of export manufacturing factories in the global south, Diane Elson and Ruth Pearson (1981) highlighted how women’s work is often characterized by employers: ‘Women are considered not only to have naturally nimble fingers, but also to be naturally more docile and willing to accept tough work discipline, and naturally more suited to tedious, repetitious, monotonous work’ (Elson and Pearson, 1981, 93).¹⁹ These ascriptions served a higher and specific purpose for factory managers: ‘Female labour must either be cheaper to employ than comparable male labour, or have higher productivity, or some combination of both; the net result being that unit costs of production are lower with female labour’ (Elson and Pearson, 1981, 92).

17 Marx viewed Babbage, like Bentham, as an organic intellectual for the industrial capitalist class, and their interest in technology as reflecting deeply rooted class interests. In *Capital* he wrote how ‘It would be possible...to write a whole history of the inventions made since 1830 for the sole purpose of providing capital with weapons against working class revolt’ (Marx, 1990, 563).

18 See, for example, a recent discussion of global labour arbitrage in the *Economist* (2011). Available at: <http://www.economist.com/node/18682182>

19 Selwyn (2012) provides an up-to-date analysis of the feminization of work in North East Brazilian export agriculture.

Elson and Pearson cited evidence that in these factories women received wages between 20% and 50% lower than their male counterparts, in comparable tasks (Elson and Pearson, 1981, 92).

Sklair (1993) deconstructs the ideology of ‘nimble fingers’ as follows:

‘The image of the “ideal” woman worker . . . for TNC employment around the world is the image that the transnational capitalist class is gradually developing of the “ideal” worker, per se . . . Docile, undemanding, nimble-fingered, non-union, and unmilitant workers will be offered the jobs on the global assembly lines, while aggressive, demanding, clumsy, union, and militant workers will not’ (Sklair, 1993, 172).

He notes how this ideology is not immutable and how it is directed at the global working class as a whole:

‘Once the image of the ‘ideal’ . . . worker is institutionalised and accepted by the working class . . . the need to employ women in preference to men diminishes, and job opportunities for docile, undemanding, nimble-fingered, non-union and unmilitant men open up’ (Wallerstein, 1991, 92).²⁰

Third, hyperbabbagisation draws on much older divide-and-rule strategies of capital to ethnicize and racialize the world’s working class. As Wallerstein (1991, 87–89) pointed out, racism ‘provides the only acceptable legitimation of the reality of large-scale collective inequalities within the ideological constraints of the capitalist world economy’ and ‘the ethnicisation of the work force adds a degree of flexibility to the capitalist system’. He concludes that ‘[r]acism and underdevelopment . . . are . . . constitutive of the capitalist world-economy as a historical system. They are . . . essential manifestations of the unequal distribution of surplus value’ (Sklair, 1993, 92).

Fourth, hyperbabbagisation facilitates an increase in the rate of relative surplus value extraction of core economy labour. This is achieved by the effective subsidy to core economy capital through reducing the costs of wage goods imported from peripheral and semi-peripheral countries, and thus the costs of labour power, as reflected in Milberg’s observations above. In these ways core economy labour can be remunerated at lower pay rates while maintaining the consumption levels necessary for a healthy workforce, the generational reproduction of labour and the ideological glue that encourage core labour to identify with core capital. For example, very low cost production of wage goods in Asia has facilitated simultaneous wage reduction with increased consumption in the advanced countries (Harvey, 2005). In the USA, for example, between 1973 and 1988 median wages fell by about 8% (Collins et al., 1999, 10) and continue to fall into the 21st century.

Fifth, hyperbabbagisation enables TNCs to attack workers’ wages in core economies, as the latter often accept wage cuts through fear of losing their jobs off-shore (Dunn, 2009). In her study of 18 industrialized countries between 1985 and 2000, Guscina (2006) found that the combination of trade openness, FDI and imports from developing countries all contributed to the falling percentage of labour’s share in national income.

20 For a complementary account of female (and male) workers in contemporary North East Brazilian export agriculture see Selwyn (2012).

Finally, Stephen Hymer (1972, 104) observed a sixth component of TNC's hyperbabbagisation strategy in the early 1970s: 'The power at the bottom [amongst workers] is...weakened by the spatial division of labour. Each national or regional labour force performs a specialized function which is only meaningful to the integrated whole [the TNC managers] yet it has no understanding of this whole' (ibid). Through spatialisation labour 'remains an isolated group whose connections to other groups are matters foreign and external to it'. The potential/danger of labour-unity across the chain is minimised through the spatial disaggregation of production. Hyperbabbagisation thus cuts production costs, provides cheaper wage goods the better to further reduce the costs of labour power, divides the workforce along numerous lines (of gender, race and geography), and enables an intensification of exploitation of labour across the chain as a whole.

TNCs strategies of profit-maximization are not free from contradiction however. Following our discussion of the synergies between Schumpeter's and Mandel's analyses of leading sectors and dominant labour processes (Table 1 above) we would be justified in expecting that industrial innovations generate dialectical responses from labour through new forms of class mobilization and struggle. It is not that surprising, therefore, to note how Herod (2001), Dunn (2005), Feeley (2008) and Selwyn (2007, 2008b) illustrate how while just-in-time systems of production and delivery are designed by firms to enhance their profitability (through flexible sourcing and hyperbabbagisation) they simultaneously give workers the ability to disrupt the functioning of commodity chains through short bursts of strike action at strategic 'choke points' of the chain. This is particularly evident in contemporary China, where Applebaum (2008) shows how the emergence of huge factories has *encouraged* labour militancy because workers can understand disruptive effects of their collective action on the global supply chains. These strikes have turned China into the centre of 'world labour unrest' (Silver and Zhang, 2009). Further, Barboza (2010) argues that 'soaring labour costs in China could change the cost structure of global supply chains'. These observations suggest that despite TNCs best efforts to divide, discipline and exploit labour, responses from organized labour will force capital to seek further and continual innovative solutions to its perennial problem of spiralling costs and falling profits. In addition to these instances of class struggles within particular nodes of GCC's, writers such as Bieler and Lindberg (Bieler and Lindberg, 2010; Bieler, 2012) stress the increasing possibilities of international labour solidarity between geographically dispersed but functionally integrated sections of the global labouring class.

Conclusions

This article began by critiquing much GCC and GVC analysis because of their assumptions of developmental gains derived from supplier firm upgrading. Most GCC and GVC conceptions of upgrading reproduce a residualist developmentalism which obscures ways in which lead firm chain governance and supplier firm upgrading are strategies and practices that contribute to the reproduction of global poverty and inequality. It argued for a GCC approach that can operate simultaneously at the level of the single commodity chain and at the level of the

national economy within which these chains are embedded. This is not intended to deny the possibilities of unit-level upgrading within individual commodity chains, but to place the relation between lead and supplier firms in their world systemic context. It argues further that to better understand such developmental/anti-developmental dynamics, the GCC approach should be grounded in global class analysis.

Schumpeter's concepts of entrepreneurial profit and rent suggest how initial innovations by firms generate longer-term cumulative processes, whereby market-leading firms are able to reproduce their position in relation to (and through the hierarchical organization of) other firms. However, it rests upon a methodological nationalist conception of the economy, where economies are understood to operate as discreet national entities. A global conception of creative destruction helps us understand how relations between geographically dispersed but functionally integrated firms gives rise to a situation where, as Stephen Hymer argued, 'income, status and consumption patterns... radiate out from [the major] centres along a declining curve' (Hymer 1972b, 38). Lead firm governance of GCCs represents a strategy to reproduce this globally unequal relationship.

This article has also argued that the extension of the concept of creative destruction to the global level needs to be conceptually rooted within dynamic class relations. The fundamental difference between Marx and Schumpeter is that whilst the latter was concerned primarily with issues of firm profits, the former focussed on the nature, extent and intensity of the exploitation of labour by capital. Marx also focussed on how labouring classes attempt to resist such exploitation, the implications of these actions on capital's subsequent strategies of exploitation, and possibilities of transcending capitalism. A class-based conception of creative destruction potentially illuminates how, just as lead firms and hegemonic states seek to generate favourable conditions for capital accumulation in relation to other capitals, so too do they seek to organize a global labour regime to ensure the maximum extraction of surplus value across commodity chains in general and in the monopolized, high value-added sectors in particular. Under contemporary globalization this strategy has taken the form of hyperbabbagisation. A global class analysis also illuminates, however, that lead firm strategies are never free from tensions and contradictions, themselves generated by the capital-labour relation and particularly the ability of workers to disrupt global commodity chains through collective action.

Reconceptualizing GCC analysis through global class relations represents a potentially new source of vitality in the ongoing attempt by progressive social scientists to explain mechanisms that reproduce global poverty and inequality. It deconstructs the 'genius' of the bourgeois entrepreneur and illuminates the real sources of their wealth (in the exploitation of labour). It provides a class analysis of the formation, expansion and governance of GCCs and shifts our attention to the direct producers upon whose labour these systems of production are founded and evolve.

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