



Original article

The Global Production Network for iron ore: materiality, corporate strategies, and social contestation in Brazil



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ABSTRACT

The purpose of this article is to make explicit the iterative relationship between economic and social agents in the Global Production Network (GPN) for iron ore. Focusing on the Brazilian node of this GPN, it argues that the structure of economic actors and their corporate strategies influence the organization of social actors, whose contestation practices impact the modes of action of economic actors. This iterative model of economic and social agency is reliant upon the integration of the GPN approach to ecological economics and political ecology to explain both the material dimension and ecological distributional conflicts associated with economic activities. Once the conceptual nexus of these domains is established, the Brazilian node of the GPN for iron ore is described and the materiality of this network related to the appropriation of value through commodification of natural goods and dispossession of common goods. Furthermore, the paper identifies how this process drives the reactions of different social actors that emulate practices and strategies of economic actors in developing contesting practices, which can be relevant for conditioning corporate behavior.

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1. Introduction

The aim of this paper is to integrate key approaches associated with the Global Production Network (GPN), ecological economics, and political ecology. Many researchers borrow theoretical and methodological ideas from these fields in an attempt to understand transnational production systems and the environmental disputes associated with them. It is argued that the structure of economic actors and their corporate strategies influence the organization of social actors, whose contestation practices impact the former's modes of action. The article is based on an appraisal of the iron ore industry.

The current study is based on a literature review and participant observation. It follows Denzin (1989), who defines participant observation as a research strategy that combines document examination, interviews, and direct observation, as well as Flick (2009), who argues that it allows researchers to observe their surroundings from the actors' points of view. For the case reported here, one of the authors has attended meetings and debates on the Brazilian Network for Environmental Justice since

2006, witnessing, inter alia, the evolution and eventual establishment of the Coalition on Mining and Steelmaking Working Group. Additionally, in 2010, this author attended the first workshops organized by the International Network of People Affected by Vale. Both authors have also followed the activities of the National Committee for the Defense of Territories against Mining, have taken part in policy debates, and carried out workshops for the Committee's members.

This paper comprises two main sections in addition to the introduction and final remarks. Following the introduction, the first substantive section examines the main theoretical and methodological approaches mentioned above. The GPN is considered a fruitful model for exploring and analyzing the relationships between globalization, production systems and economic development. In turn, it is assumed that ecological economics and political ecology bring to light the material dimension of economic relations, integrating their natural and social components in order to demonstrate the centrality of natural resources in shaping limits and possibilities for the economic 'success' of diverse actors. The second section is divided into two parts. The first focuses on economic actors in the GPN for iron ore and highlights the Brazilian node of the network. The second stresses the importance of social actors in shaping the GPN. It is also argued that the contestable character of private conversion of common goods makes economic actors the targets for strategies of social contestation. Such

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strategies are understood as modes of economically relevant agency, and influence the conditions for the exercise of corporate power.

The final section of the paper discusses the main results of the research. Most notably, it describes the pivotal role of controlling and replacing mineral reserves as a component of competition strategies in the market. It also addresses the importance of transportation systems in achieving corporate power in the network, as well as the mimetic capacity of contestation actors. Finally, it evaluates this approach in relation to other possible strategies for analyzing similar data.

2. Global Production Networks (GPNs) and the extractive industries

This section of the paper describes the two main conceptual aspects of the article. First, it presents a brief description of the GPN concept and its main analytical categories. It then introduces ideas from political ecology and ecological economics. Putting these aspects together is considered necessary for better understanding social contestation against extractive industries, as much of the emerging socio-environmental conflicts are not related to value capture, but to the use of common goods, a notion that is not fully debated within the GPN literature.

2.1. GPNs and economically-relevant action

Henderson et al. (2002) proposed the GPN approach as a theoretical and methodological framework for globally organized economic activities. New transnational production systems represent sets of economic activities that are functionally integrated and territorially dispersed (Coe et al., 2008), and they constitute the most representative example of increasing global interconnection (Dicken, 2011). Despite the availability of other theoretical models (e.g., the Value Chain, Global Commodity Chain, and Global Value Chain), this independent conceptualization has helped researchers map and track the growing complexity of the processes of extraction, production, distribution, consumption, and disposal of goods and services. The concept of “network” calls into question the linearity and unidirectionality of the “chain” approaches, which suggest rigid, inter-firm structures. In addition, the use of the term “production” instead of “commodity” is a reference to the social processes (especially labor) inherent to the variety of goods and services created and traded in such systems. Finally, the qualifier “global” rejects implicit state-centric concepts in favor of territorial processes through interwoven analytical scales (Santos, 2010). In this sense, a GPN is defined as ‘the nexus of interconnected functions and operations through which goods and services are produced, distributed and consumed’ (Henderson et al., 2002).

The firm in a GPN remains central in the model, expanding its scope of agency in its search for specific economic purposes (Weber, 1978). These include cost reduction, sales revenue, and market share to maximize short-run profits. Advocates of the GPN view design and control as exclusive properties of the economic actor. These two aspects constitute the primary means through which firms transform common goods into value.

Along with power and embeddedness, value is a key conceptual category in the GPN perspective. According to Marx’s (2004) Theory of Value, labor is the connecting of the energo-physical conversion and incorporation processes that yield a good. The realization of the good, however, is nonetheless contingent upon complementary circulation activities. In short, the commodity – understood as the synthesis of extraction, transformation, and distribution processes – remains bound to a ‘sole source of value’ (Böhm et al., 2012) without being confined to it. Accordingly, processes related to incorporating ‘technologies of branding,

advertising, and marketing that build consumer sentiments’ (Weller, 2008) align with the activities performed by extraction and logistics systems. This, in turn, strengthens the link between consumption and appreciation. Given this, an understanding of a GPN’s inherent materiality can be advanced by discussing the dimensions of (a) value appropriation through processes of accumulation by dispossession¹ (Harvey, 2003); and (b) value enhancement by material and energy incorporation from large-scale logistics systems.

The introduction of power (both collective and institutional) exercised by different social actors further illustrates the decentralization of agency in the GPN framework. Henderson et al. (2002) extend the power exercise to non-governmental organizations, trade unions, governments, business associations and international agencies. Nonetheless, it is argued this analytical perspective should be fully implemented with the aim of developing a multicentric approach. In this sense, economic actors serve as a pathway to the GPN analytical unit (i.e., the “network”), setting structures and processes around which a myriad of embedded actors orbit. Therefore, in order to advance the proposed approach, it is necessary to recognize the importance of social agency in conditioning economic activity. Thus far, social agency has been largely ignored in the literature on transnational production systems (refer to Wilson, 2013; for example.).

The GPN framework also highlights the capacities of actors in their development of different forms of association, which both influence and are influenced by social relations (Santos, 2011). In addition, it is critical to consider both social (Hess, 2004a) and territorial (Henderson et al., 2002) embeddedness. Thus, in shaping economic activities, the sociocultural history and institutional structures surrounding the economic actor can influence behaviors within the actor’s home or host countries (Hess, 2004a).

The analytical use of the GPN approach in this regard addresses the problem of economically-relevant agency (Weber, 2011). It also allows researchers to understand the formation and operation of GPNs as complex and all-encompassing phenomena that have multiple sources of autonomous and influential agency.

2.2. The materiality of extractive industries

This section addresses an issue that has gone understudied in research related to transnational production systems. Past work on GPNs has focused most primarily on industry and the consumer goods sector (Coe and Hess, 2013), while overlooking the extraction and primary processing of raw materials (Bridge, 2008; Wilson, 2013). As part of broader ‘dispersed functional networks’, natural goods and raw materials are intrinsic to all production processes (Ciccantell and Smith, 2009). More importantly, according to Dicken (2011, “the race for resources” has been a central component of the development of a global economy for centuries.’ Therefore, comprehensive strategies for ensuring consistent, safe, and growing access to minerals (Bunker and Ciccantell, 2005) have become increasingly important. This is particularly true with respect to corporate tactics related to the creation and control of transnational production systems and opportunities for national economic development (Wilson, 2013).

In turn, transnational primary economic activities give rise to globally-integrated, locally-disarticulated economic structures (Ciccantell and Smith, 2009). Therefore, the integration between the primary goods sector and the consumer goods sector becomes

¹ Harvey (2003, p. 145) defines ‘accumulation by dispossession’ as the ‘continuation and proliferation’ of the primitive accumulation by various processes, including the commodification of land, the conversion of various forms of collective property and the suppression of alternative forms of production.

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