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"Does global sourcing pay-off? A competitive dynamics perspective"

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ABSTRACT

The supposed benefits of global sourcing in supply chain management remain subject to debate. Here this study investigates the potential benefits of global sourcing using a large dataset obtained from a leading European automotive original equipment manufacturer, spanning a period of five years. Contrary to expectations, this study found no evidence that low-wage country sourcing leads to cost reductions relative to sourcing from suppliers based in industrialized countries. However, the data does show that global sourcing induces increased competition within the industrialized country supply base when low-wage country suppliers participate in negotiations. Additionally, a new method for assessing competitive dynamics in supply markets is introduced.

1. Introduction: increasing competition through global sourcing

In recent decades, research has principally addressed antecedents, barriers and success factors of global sourcing (Alguire et al., 1994; Birou and Fawcett, 1993; Rajagopal and Bernard, 1994; Trent and Monczka, 2003b). However, already Quintens et al., (2006b) highlighted the limited amount of empirical evidence on global sourcing outcomes. It remains unclear whether global sourcing actually produces the supposed benefits (Horn et al., 2013). For example, there is a gap between the estimated and the actual cost savings associated with global sourcing (Horn et al., 2013; Schiele et al., 2011). In addition, the current literature reports inconsistent results ranging from highly positive (Frear et al., 1992; Petersen et al., 2000; Schiele et al., 2011; Trent and Monczka, 2003a) to neutral or negative effects of global sourcing (Horn et al., 2013; Kotabe and Omura, 1989). The issue remains, if there are really direct cost reduction effects through global sourcing.

In addition, several researchers have also discussed the potential indirect effects of global sourcing, such as a spread of risk and increasing competitive price pressure on industrialized country suppliers (Kerkhoff, 2005; Petersen et al., 2000; Piontek, 1997). However, despite conceptual discussions, there is a dearth of empirical support for global sourcing increasing price pressure on industrialized country suppliers (Agrawal and Nahmias, 1997; Gadde and Snehota, 2000; Wagner and Johnson, 2004). Prior research addressing supplier configurations mainly focused on aspects such as number of suppliers and lot sizes (Gadde and Snehota, 2000), rather than on the competitive effects of including suppliers from countries with comparative lower price levels in negotiations. Hence, this research wants to add to global sourcing literature an analysis of the competition-inducing effects of low-wage country (LWC) supplier sourcing. More specifically, next to the effects on cost-savings, this study investigates whether global sourcing (i.e. having LWC suppliers in price negotiations) exerts indeed higher competitive dynamics on industrialized country (IC) suppliers, as assumed by many supply management authors (Arnold, 1989, 2002; Petersen et al., 2000; Schiele et al., 2011). This leads to the research question:

> *In addition to cost-savings, what are the other (indirect) effects of sourcing from low-wage countries in product-price negotiations?*

The contributions of this study are threefold. Firstly, in the past, the measurement of cost-savings were either based on estimated savings by purchasers (Alguire et al., 1994; Kotabe and Omura, 1989; Petersen et al., 2000; Schiele et al., 2011) or on a limited basis of selected company projects (Horn et al., 2013). The assessment of the effects of low-wage country sourcing on an IC company's cost-savings beyond projects that source from China cannot be found. Hence, through analyses of cost-savings achieved in more than fifteen thousand sourcing projects, this study tries to broaden and replicate previous findings with a focus on low-wage country sourcing. Secondly, despite the vast amount of works addressing global sourcing (Hartmann et al., 2008b; Hultman et al., 2012; Schiele et al., 2011; Shelton and Wachter, 2005; Steinle and Schiele, 2008), research regarding its competitive effects have mostly been neglected or remains conceptual in nature. By applying a competitive dynamics perspective this research addresses empirically the question whether supplier competition effects of global sourcing do actually exist (Arnold, 1989; Glen et al., 2001;

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Quintens et al., 2006b; Steinle and Schiele, 2008). Thirdly, even though several researchers stress the importance of distinguishing between newly sourced and straight rebuy items (Cardozo, 1980; Doyle et al., 1979), only few studies specifically addressed this issue (Trautmann et al., 2009). This study contributes to existing literature by making a distinction between newly sourced and straight rebuy items in global sourcing. As final contribution, in contrast to popular industry-level assessments of resource concentration or market share distributions (e.g., Herfindahl–Hirschman Index) to measure competition in markets, this study uses a new measurement facilitating the assessment of competition though analyzing price-dispersions (i.e. the difference between the accepted and the closest rejected offers). This new measurement allows researchers to assess competitive dynamics at the product level and, thus, allows a more fine-grained study of competitive dynamics than through previous industry-level measurements.

The findings of this study show that low-wage country sourcing does not lead to higher cost savings than industrialized country sourcing. Industrialized country sourcing yielded in one instance even higher savings than low-wage country sourcing. The assessment of the indirect effects of global sourcing on supplier competition revealed no significant effects when analyzing the entire dataset. However, a further distinction between newly sourced and straight rebuy items showed that global sourcing increased competitive dynamics for newly sourced items, but not for straight rebuys. These findings imply that global sourcing does not automatically lead to higher cost savings, but can be used for increasing competitive dynamics in supply markets, in particular when items are purchased for the first time.

The next section gives an introduction to competitive dynamics research and applies its insights to global sourcing research.

2. Literature review: taking a competitive dynamics perspective in global sourcing

2.1. Competitive dynamics in supply markets: competition mirrored in price-dispersions of product prices

Current competitive perspectives were influenced by early game theorists' conceptualizations of non-cooperative games (Machovec, 2002). In this context, a main distinction is made between games being either one (static) or two-staged (dynamic) (van Witteloostuijn, 1992). Static games consider only sunk investments of firms, whereas in dynamic games rivals actively compete for market share (van Witteloostuijn, 1992). In relation to dynamic games, the competitive dynamics stream is currently the only management perspective that takes inter-firm competition into consideration and applies it in empirical research. Therefore, this study chose a competitive dynamics perspective on inter-firm competition.

The underlying rationale of competitive dynamics research is that competition is a dynamic process, rather than a static condition (Ferrier et al., 1999; Jacobson, 1992; Young et al., 1996). From this viewpoint, the market is believed to constantly move away and towards a state of equilibrium. Companies only possess temporary competitive advantages and constantly strive for dominance within their market-environments (Chen et al., 2009; Chen and Miller, 2012; D'Aveni et al., 2010; Roberts and Eisenhardt, 2003; Thomas and D'Aveni, 2009; Thomas, 1996). Similarly, competitive dynamics literature focuses on the battle for market position and the resulting implications for organizational outcomes (Ketchen et al., 2004). The competitive dynamics viewpoint is applicable to both micro and macro perspectives (Chen and Miller, 2012). As early as 1942, Schumpeter argued that to understand market success, it is first necessary to shed light on the interplay of action and reaction of market participants, as well as its respective consequences.

In recent years, the topic of competitive dynamics was increasingly addressed empirically in the field of strategic management (Chen and Miller, 2012; Chen and Miller, 2015; Pacheco and Dean, 2015; Yang and Meyer, 2015), but has yet to be applied to the purchasing and supply management field. The findings of competitive dynamics might help buying firms to use competitive dynamics in supply markets to their favor. For example, Ketchen et al. (2004) indicated that the market share of market leaders deteriorates faster when challengers are motivated to show more aggressive behaviors and perform more competitive moves. This is especially true when challengers' moves appear to be unpredictable and tenacious. Therefore, market environments can be prone to "Schumpeterian shocks", which can rearrange market configurations and thus competition (Ketchen et al., 2004). Accordingly, this study expects that the participation of LWC suppliers in price negotiations can rearrange market conditions for industrialized country suppliers.

The reasoning for this hypothesis is presented in the next section. With respect to analytical approaches to measure competition, until now researchers have mainly relied on archival records of firm-actions from third-sources, response-questionnaires from industry experts or managers and field interviews (Chen and Miller, 2012; Chen and Miller, 2015). Analyses beyond mainly qualitative assessments of competition have been rare. However, Furrer and Thomas (2000) identified several quantitative options for assessing competitive dynamics in markets. More specifically, they proposed their rivalry matrix to determine the appropriate methodological lens for research of competitive dynamics (Table 1). By this approach they were able to distinguish two defining factors: predictability of the environment and the number of decision variables scholars want to assess (Furrer and Thomas, 2000). Based on this distinction, an approach similar to game theory should be most suitable to analyze the competitive dynamics in this research. This is because: (1) this research assesses one principal *decision variable*: the price of items at the end of product-sourcing negotiations; and (2) in the context of the focal OEM, the *research environment* is considered relatively stable, since in producer-driven commodity chains (e.g., automotive OEMs), the control of supply chains is attributed to the manufacturers and product changes are mainly induced by them (Gereffi, 1999; Quintens et al., 2006a). Thus, as proposed by the classification of Furrer and Thomas (2000), this study opted for an approach close to game theoretic models to analyze competition.

There are several methods available to calculate competitive dynamics, the majority of which come from economics and

Table 1
Rivalry matrix of competitive dynamics research (Furrer and Thomas, 2000, p. 620).