### A retaliatory response on the factor-market, would they?

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Abstract: An important part of a firm's strategy is the incorporation of anticipated moves by intelligent competitors. However, current strategic supply management literature lacks the incorporation of these anticipated moves. This paper addresses this gap by focusing on competitive actions on the factor-market which are less likely to cause retaliation. More specifically, this paper theorizes about these competitive actions, by linking the competitive dynamics stream to factor-market rivalry. This concept of retaliation is important within the competitive dynamics stream, whereas the stream focuses on the interaction between a firm's moves and the response of the firm's competitors. This study proposes that the likelihood of retaliation on the factor-market is dependent on a lot of characteristics. Characteristics which are both attack, attacker, and defender specific, as well as resource market dependent. These propositions create a backbone for further strategic supply management literature and help managers reconsider their planned competitive actions on the factor-market.

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#### Keywords

retaliation, supply management, competitive dynamics, competitive interaction, competitive repertoire & behavior, competitive perception, factor-market, factor-market rivalry

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#### **1. INTRODUCTION**

During the 1990s, Japanese car manufactures, such as Toyota, moved their production facilities to the United States to meet both the local content requirements and the demand requirements for their U.S. sales. By that time "Toyota purchased more than 70 percent of the total value of its parts in the United States from U.S. suppliers" (Dyer & Hatch, 2006, p. 702). Consequently, Toyota increasingly used the identical supply network as its U.S. competitors (Dyer & Hatch, 2006, p. 702). However, Toyota's suppliers produced components of higher quality at a lower cost for Toyota, compared to the competitors who used the identical supply network. Despite having the identical supply base, Toyota shared its knowledge and improved joint performance together with their suppliers (Dyer & Hatch, 2006). It is noticeable how the already established manufactures, including General Motors, Ford and DaimlerCrysler, failed to retaliate against Toyota for gaining superior performance (Dyer & Hatch, 2006). A superior performance Toyota achieved from using the identical supply base they used. D'Aveni (2004) comes up with one reason why the established firms did not retaliate against Toyota. Namely, retaliating against Toyota, considered the strongest player, would most probably lead to counter-retaliation as well.

An important consideration for a firm's strategy is adjusting its own repertoire of actions to its competitors' repertoire of moves (Pulles, Vos, & Veldman, 2014). Considering the growing stream within the supply management that takes a strategic perspective into account, it becomes more important to incorporate the reaction of intelligent competitors to a firm's own repertoire of moves (Pulles, 2014). Competitive dynamics could provide insights into the desired direction for strategic supply management, as competitive dynamics describes the interactions between a firm's moves and the responses of its competitors.

This paper defines competitive dynamics as an interplay of specific actions and probable reactions of firms (Chen & Miller, 2012; Lamberg, Tikkanen, Nokelainen, & Suur-Inkeroinen, 2009). This competitive dynamics literature focused on the product-market (Chen & Miller, 2012) and takes a closer look at the competitive actions which cause a retaliatory reaction as well. However, those actions have received only limited attention on the factor-market, especially the actions which do not cause this undesirable retaliation (Chen & MacMillan, 1992). First, overcoming this undesirable retaliation is important, because it is associated with negative performance (Chen & Miller, 1994) based on product-market rivalry research. Second, scholars stress the importance of a capable supply base (Petersen, Handfield, Lawson, & Cousins, 2008), and competition over scarce resources will heat up as more firms tend to competitor-oriented strategies on the factormarket (Capron & Chatain, 2008). Third, Capron and Chatain (2008) state that no action comes without retaliation, but the Toyota case shows how Toyota gained sustainable advantage by a supplier development (Pulles et al., 2014) without being retaliated for it. This paper will contributed to the field of strategic supply management, because anticipated moves of intelligent competitors are essential in a well-focused strategy (Pulles, 2014).

Therefore, this paper answers 'which *competitive actions* on the *factor market* are less likely to cause *retaliation*?

Three definitions take a center stage in this paper, namely *competitive action, factor-market* and *retaliation*.

A *competitive action* is defined as a market-based move that enhances a firm's competitive position (Ferrier, 2001; Ferrier, Smith, & Grimm, 1999).

The *factor-market* is defined as 'a market where the resources necessary to implement a strategy are acquired' (Barney, 1986, p. 1231).

And, *retaliation* is defined as the counterattack to a competitive action at some cost or risk to oneself (Hamlin, 1991; Kuester, Homburg, & Robertson, 1999).

The main deliverable of this thesis are propositions which suggest what kind of competitive actions a firm can undertake at the factor-market, those competitive actions are based on the different competitive dynamic streams and their concepts (Chen & Miller, 2012). This paper uses a stepwise approach to guarantee this. First, this paper examines the commonalities and differences between the product-market and the factor-market, by answering; What are the commonalities and differences on the product –and factor-market? Thereafter, this paper defends that competitive dynamics literature is applicable to factor-market rivalry, by applying three essential features which characterize the body of competitive dynamics to factor-market rivalry.

*Factor-market rivalry* is defined as the competition over resource positions that can then be used to implement strategies in product markets (Makadok & Barney, 2001; Markman et al., 2009).

Those three essential features are based on the work of Chen and Miller (2012) and state that the competition should be dynamic, based on action/response dyads. Second, (2) "the focus is on actual actions by firms: these may include new product introductions or advertising campaigns, entry into new markets, changes in pricing policy, and relocation or redesign of facilities" (Chen & Miller, 2012, p. 138). Third, relativity is a central premise, which means that firms should check their position relative to another firm based on their positions, intentions, perceptions, and resources. Satisfying those three essential features is important for the rest of the paper, because it defends that competitive dynamics literature is applicable to factor-market rivalry. This paper thereafter assumes that a firm undertakes a competitive action on the factor-market and shows how the competitive dynamics literature leaves a gap for competitive actions which are less likely to cause retaliation. By then we know that competitive dynamics literature is applicable to factor-market rivalry and that competitive dynamics literature leaves gaps for competitive actions which cause retaliation less likely. The last section creates propositions based on three competitive dynamics literature streams (Chen & Miller, 2012), namely the competitive interaction stream, the strategic competitive behavior & repertoire stream, and the competitive perception stream. Those propositions are based on the research question: which competitive actions on the factor market are less likely to cause retaliation?

## 2. THE PRODUCT-MARKET AND THE FACTOR-MARKET

The literature about inter-firm rivalry focuses mainly on product-market rivalry (PMR), and factor-market rivalry (FMR) falls outside the boundary of most models and mental conceptions (Ellram, Tate, & Feitzinger, 2013; Markman et al., 2009). However, more companies increasingly rely on their supply base (Petersen et al., 2008), and firms tend to focus on competitor's actions on factor-markets as well. This increased focus leads to FMR becoming more important, and due to the probable differences it's important to compare PMR and FMR.

FMR is an upstream activity and a derivative of product market demand. Therefore FMR differs, coincides and relates to product market-rivalry. This paper puts forward an example of product-market rivalry and factor-market rivalry to create a clearer understanding of both markets, before elaborating on the theoretical insights, Sull (1999) describes EasyJet's entry to the European air carrier market, by then dominated by major flag-carriers, as a \$500 million gamble. \$500 million was spent on twelve 737s to compete with the already established flagcarriers, 'Flying to Scotland for the price of a pair of jeans!' (Sull, 1999, p. 23). By entering this product market, EasyJet faced strong rivalry from British Airways (BA), KLM and Lufthansa. Where BA tried to outcompete EasyJet by predatory pricing, KLM matched their prices with EasyJet's, but without results. "To support EasyJet's growth, EasyJet's owner recruited several seasoned airline executives" (Sull, 1999, p. 23). This recruitment is an important aspect of FMR as EasyJet tries to harm their rivals by incorporating the best human capital (Gardner, 2005). Another case which helps to explain FMR and stresses the importance of FMR, is Davenport (2006) in his competing on analytics. He refers to analytics as a main resource of performance, and explains how completely different firms, for example Amazon and the Oakland Athletics, compete for the same skilled analytics. Completely different firms later described as firms with resource similarity and uncommon product-markets (Markman et al., 2009). So, in general we state that PMR relates to the competition for the end customer's demand, while FMR relates to the competition over resource positions (Makadok & Barney, 2001).

# 2.1 What are the differences and commonalties between the product –and the factor-market?

The main body of competitive dynamics literature is based on PMR (Chen & Miller, 2012), such as Chen, Kuo-Hsien, and Tsai (2007) their AMC approach, Baum and Korn (1996) their research about market domain overlap and multimarket contact and Ferrier et al. (1999) their research about market share erosion and dethronement. On the other hand, researchers conducted less research on competitive dynamics on factormarkets and to use competitive dynamics in factor-markets one needs to find out how those markets differ and relate. This section is inspired by the work of Markman et al. (2009) who created a set of dimensions to compare product -and factor market rivalry. And, comparing those two types of rivalry will help to explain competitive action and retaliation in terms of FMR. One should keep those differences and commonalities in mind if we apply competitive dynamics to the factor-market. PMR is associated with symmetry within strategic groups (Chen, 1996), made visible by common markets and

recognition of their interdependence. However, if focusing only on strategic groups firms cannot oversee the danger of dissimilar firms competing for the same resources. This feature is known as resource similarity and product-market uncommonality (Chen, 1996); a situation in which Amazon and Walmart are competing for the same logistic personnel notwithstanding they are not product-market competitors (Markman et al., 2009). This product-market un-commonality describes the asymmetric content of FMR. Firms which do not make up the same strategic group on the product-market, are still able to compete for the similar resources at the factormarket. So, PMR occurs if firms serve a common productmarket (Chen, 1996), however this product-market could be served by the use of different resources. This blind spots (Zaiac & Bazerman, 1991), created by resource dissimilarity, could lead to inferior decision making if a firm misjudges the alternative use of resources by its competitors. This feature is also explained by Markman et al. (2009) as asymmetric awareness in which they put forward an example of eBay blindsiding live auctioneers and garage sellers by leveraging different resources. The eBay example (Markman et al., 2009) shows how the use of dissimilar resources could change the whole infrastructure of the product-market, and how the use of established resources becomes obsolete. Hence, customers do not face a live auction anymore, but buy their products online. And, the capable auctioneer becomes obsolete and a steady internet platform replaces his work.

Another difference is the location of the competitive space (Markman et al., 2009). FMR occurs within the entire value chain, whether this is based on the firms' infrastructure, human resources or technology development. PMR occurs within the customer oriented activities, focusing on their access to customers. PMR focuses on a firms' offerings and how firms acquire their access by new product/service offerings, communication and branding actions (Rindova, Ferrier, & Wiltbank, 2010).

Probably the biggest difference arises within the focus of competitive space, as companies such as Coca-Cola spend billions on marketing campaigns (Zmuda, 2014), while their branding towards suppliers remains untouched. This difference is important, because competitive actions based on brand image may not exist on the factor-market, despite being valuable (Leek & Christodoulides, 2011). Marketing campaigns are an important aspect of PMR as "The Cola Wars" may highlight. This war has been going on for decades and started with Pepsi's 'Beat Coke' corporate focus and still goes on with one off sport sponsorships, such as the NFL Super Bowl sponsorship (McKelvey, 2006). While firms spend billions on one-off branding campaigns towards customers, firms neglect to brand their firms towards their suppliers. This branding towards suppliers is associated with perceived product quality and could create a prolonged brand image (Leek & Christodoulides, 2011). Rivalry based on brand image may not occur on the factor-market, however we could relate the importance of brand image to the factor-market by stretching the importance of its limited supply. Coca-Cola and PepsiCo competed for a quasi*fixed* market share on the same product-market, but resources used by firms could be superior to others and fixed or quasifixed in their supply as well (Peteraf, 1993).

A more obvious reason on top of the aforementioned reasons of how the product –and factor-market relate, is that firms buy resources to produce and sell goods they are not able to make by themselves. One the one hand, firms need to compete for which they cannot develop internally (Chatain, 2014), as derived from Capron and Mitchell (2009). On the other hand, they need to compete for the end customer's voice. Figure 1. shows a schematic depiction of the aforementioned differences, commonalities and relationships between FMR. Yahoo! and Excite were competing for customer demand on the just arisen search engine market. Google was founded in 1998 (Vise, 2007), so Yahoo! and Excite were the only two dominant players. They pulled each other through a sequence of competitive actions both on the product-market as well as on the factor-market. Yahoo creating brand image by their five million dollar campaign 'Do you Yahoo!?' and Excite responding by their eight million Jimi Hendrix television campaign. To accomplish the transformation from search



Figure 1. The differences and commonalities between the factor-market and product market, as inspired by Markman, Gianiodis, and Buchholtz (2009)

## **2.2** Applying competitive dynamics to the factor-market

This sections explains the use of competitive dynamics literature, and thus the concept of retaliation to FMR. Competitive dynamics is mainly applied to product-markets and we know by now how factor-market and product-markets relate. This section answers the sub question: If applicable, how could we apply competitive dynamics to FMR? This paper defines competitive dynamics as an interplay of specific action and probable reactions of the firm (Chen & Miller, 2012; Lamberg et al., 2009). To find out if competitive dynamics literature is applicable, this study checks if the three essential features which characterize the work on competitive dynamics are applicable to FMR. Chen and Miller (2012) state that the competition should be dynamic, based on action/response dyads. Second, "the focus is on actual actions by firms: these may include new product introductions or advertising campaigns, entry into new markets, changes in pricing policy, and relocation or redesign of facilities" (Chen & Miller, 2012, p. 138). Third, relativity is a central premise, which means that firms should check their position relative to another firm based on their positions, intentions, perceptions, and resources.

Much of the early work on strategy did not take it beyond the simple and static characterization of competition (Chen & Miller, 2012), as scholars for example focused on industry structure analysis (Porter, 1980). Later on, scholars considered the market to be a dynamic process in which the market moves toward and away from equilibrium (Chen & Miller, 2012). This dynamic market process makes competitive dynamics literature applicable to FMR, as it examines the *action/response dyads* and their relative position towards one competitor. As firms on the product-market compete over the end customer's demand, they compete on the factor-market for the critical resources to create the end-product (Chen & Miller, 2012). The following example illustrates the action/response dyad on both the product-market and factor-market. During the mid '90s,

engine to destination site, Yahoo! and Excite both used numerous partnerships; Yahoo! with Reuters and Excite responding with their three-way deal with Dell and AT&T. (Rindova & Kotha, 2001). While branding campaigns are associated with PMR and partnerships with FMR (Markman et al., 2009), this example shows the importance of action/response dyads on the factor-market as a driver for organizational transformation. And, therewith, this example validates the use of competitive dynamics for FMR based on the first essential feature.

Second, whereas firms used to deduce their strategy from operational and financial state, competitive dynamics focuses on '*actual actions* exchanged by firms' (Chen & Miller, 2012, p. 138). The aforementioned *actual actions*, such as new product introductions or advertising campaigns build up those *actual actions* on the product-market. However, FMR also consists of those *actual actions*, one could think of personnel poaching, factor-market entry/exit, joint ventures, and mergers (Markman et al., 2009). A factor-market entry could be considered as an actual action, and is based on a firm's perception of future value for a particular strategy (Barney, 1986). So, the strategy is based on an actual action, rather than on operational and financial state. This is consistent with the second essential feature which characterizes competitive dynamics literature.

Third, competitor analysis is an integral part of competitive dynamics as it deals with positions, intentions, perceptions and resources, and those parts contribute to the *relativity premise* (Chen & Miller, 2012). The aforementioned FMR without product-market commonality fulfills this premise as it deals with the relative position towards another firm, without them acting within the same industry. This relativity premise, could also be backed up by the idea of managerial myopia, describing the perception of competitive threats relative to another firm, which happens both on the factor-market as well as the product-market due to substitutability (Bergen & Peteraf, 2002). Consider the battle between Kodak and Polaroid which unfolded during the '70s, while they perceived each other to be their rivals, the real threat came from the introduction of other

resources. While checking their position relative to each other, they forgot to check their position relative to other competitors entering their market by using different resources (Bergen & Peteraf, 2002).

So, testing FMR for the essential features of competitive dynamics (Table 1). One could state that it passes the test and we could therefore assume competitive dynamics literature applicable to factor-marker rivalry. To answer the second of the question, how could we apply competitive dynamics to FMR? This paper focuses on three research themes within the competitive dynamics literature as described by Chen and Miller (2012). The paper focuses on three streams within competitive dynamics literature, namely *competitive interaction, strategic competitive behavior & repertoire, and competitive perception* and therewith limits the scope for the next sections.

 Table 1. Applying the essential features of competitive dynamics to FMR

Competitive dynamics essential feature	Applicable to factor- market rivalry
Action/response dyad	Yes
Real action based	Yes
Relativity premise	Yes

Those research themes could be applied to FMR by relating their characteristics to competitive actions as described in FMR literature. All in all, this section showed that competitive dynamics is applicable on FMR and therewith helps to work towards the research question. Retaliation is described as a product-market concept within competitive dynamics, but by now we do know that the concept of retaliation could be applied to FMR as well.

#### **3. CURRENT GAP IN LITERATURE: COMPETITIVE ACTION WITHOUT RETALIATION**

Retaliation is a well-known concept in competitive dynamics literature, however this literature is mainly based on product– markets (Chen, Smith, & Grimm, 1992; Chen & Miller, 1994; Rindova, Becerra, & Contardo, 2004). On the other hand, the concept of retaliation has not yet been introduced to factormarkets. It is important that firms consider possible retaliations if they develop a strategy (Chen & Miller, 2012), but even more interesting is overcoming this undesirable consequence. This retaliation is associated with negative performance (Capron & Chatain, 2008), and actions which are less likely to cause retaliation have not yet been introduced to the factor-market.

The first competitive action in a sequence does not occur randomly (Capron & Chatain, 2008) and as an action is a prerequisite for a reaction linguistically, we need to keep in mind that competitive actions are more or less likely to occur in different circumstances. Hence, to whom would KLM have reacted if EasyJet did not enter the scene?

This paper assumes a firm undertakes a competitive action on the factor-market and asks: which competitive actions on the factor market are less likely to cause retaliation? Competitive dynamics literature helps solving this question, because its broad array of theories leaves room for actions which do not cause retaliation (Chen & MacMillan, 1992). To illustrate that competitive dynamics literature leaves room for actions which are less likely to cause retaliation, we take a closer look at the awareness-motivation-capability approach, short AMC approach, by Chen (1996). This AMC approach has a central place within competitive dynamics literature and describes the visibility of a competitive action, the motivation to act or respond, and the perceived capability a firm has to respond or act (Chen & Miller, 2012). Hence, the AMC perspective has a lot of directions to draw from, as awareness is a prerequisite for any move (Chen, 1996), motivation is based on psychological motives (Livengood & Reger, 2010), and capability depends on strategic endowments (Chen, 1996) So, a firm should take a rival's AMC into account with planning its strategic actions, because a competitors AMC greatly determines their enactment towards a retaliatory response (Pulles et al., 2014). However, if one of the components lacks, either the 'A', 'M', or 'C', component, retaliatory behavior is less likely and the action on the factor-market becomes more successful (Pulles et al., 2014). Hence, if a competitor is unaware, motivation and capability play no role. Or, if a competitor is aware, but not motivated, it will not address their capabilities. So, if the AMC approach's sequence of steps is incomplete the competitive



Figure 2. The AMC approach as an explanation of a nonretaliatory response

action will not cause a retaliatory reaction (Figure 2). Makadok and Barney (2001) stress the importance of information acquisition contrary to the 'luck aspect of strategic factormarket rivalry' brought up by Barney (1986). The following example illustrates how the most fundamental type of asymmetry (Makadok & Barney, 2001); the skill at collecting, filtering, and interpreting information could help to explain how a competitive factor-market action does not result in a retaliatory response. The example does so by explaining how a competitor could be unaware of the competitive action undertaken. In 1994, the WordPerfect Corporation purchased Quattro Pro spreadsheet for a premium from Borland International Inc. This Quattro Pro could fill a void, because Word Perfect, an application software producer, faced fierce competition from the Microsoft Office suite. WordPerfect paid a premium, but may have paid more if Borland knew WordPerfect was strongly competing with Microsoft (Makadok & Barney, 2001). Despite this concerns a buyerseller relationship, this case shows how WordPerfect gained an advantage by using information their supplier was unaware of. So, theorizing, if a firm on the supply market is not able to collect, filter, and interpret important information, the firm will not be aware, and therefore motivation and capabilities play no role, which results in no retaliatory response undertaken by the competitor. This example assumes that the AMC approach from the competitive dynamics literature leaves gaps for competitive actions on the factor-market which cause a retaliatory response less likely. Therefore we continue to focus on the different streams of competitive dynamics. Namely, competitive interaction, strategic behavior & repertoire, and competitive perception (Chen & Miller, 2012).



Figure 3. Propositions based on competitive dynamics literature, derived from Chen and Miller (2012)

#### 4. COMPETITIVE ACTIONS WHICH CAUSE RETALIATION LESS LIKELY

"If scholars are ever to understand the complexity of competitive rivalry, it is important to move the level of analysis down to the basic building block of competition -the competitive action-response dyad" (Chen & MacMillan, 1992, p. 541). In other words, the effectivity of an action does not only depend on the decision of the one firm, but also on the reaction of its competitor. Below this paper builds propositions based on the competitive dynamics literature to theorize which actions could be undertaken on the factor-market which are less likely to cause retaliation. These propositions are divided among three streams: the competitive interaction stream, the strategic competitive behavior & repertoire stream, and the competitive perception stream (Chen & Miller, 2012). This paper uses these streams to explain which competitive actions on the factor-market are less likely to lead to retaliation (see Figure 3).

#### **4.1** The competitive interaction stream

The competitive interaction stream focuses on individual actions, to analyze the drivers of a competitive response (Chen & Miller, 1994). The attributes of a response are functions of three different characteristics: the characteristics of the initiated attack, characteristics of the attacker and characteristics of the defender (Chen & Miller, 2012). Whereas competitive interaction mainly focuses on market entry and-exit on product-markets (Baum & Korn, 1999), one could apply competitive interaction to factor-markets as well. Examples of potential competitive actions on factor-markets are contracting, supplier development, relation-specific investment or shared patents (Pulles et al., 2014). This section creates propositions based on the competitive interaction towards a competitive action on the factor-market (Chen & MacMillan, 1992).

Irrevocability describes a competitive action in terms of tangible -and intangible reversal costs, Chen and MacMillan (1992, p. 545) state that: "The greater the cost of reversing a move, the more likely it is the attacker stays put". The attacker's irrevocable dedication is a strong signal towards a defender, that the attacker will not back down (Chen & MacMillan, 1992). Such irrevocable dedication, has been described in times of war. Literature tells heroic stories about conquerors which burned their ships behind their selves to show their enemy they would fight them at any cost, leaving themselves no retreat (Reynolds, 1959). It could be this irrevocable dedication of an attacker which makes a retaliatory response less likely. Irreversibility can have multiple sources, but competitive actions are highly irreversible if these actions creates legal and/or moral obligations towards another party (Chen & MacMillan, 1992). The next example illustrates the irrevocability concept on factor-markets. For example, in times of technological discontinuities, existing technologies become obsolete and by the end replaced by new technologies (Conway

& Steward, 2009). For instance, by the time cellular phones replaced regular wire services, other factor-market such as radio transmission became important (Rothaermel, 2000). In times of such discontinuities, firms are able to leapfrog their competitors by exploiting their 'new' resources better than their competitors (Markman et al., 2009). A manner to leapfrog your competitors and take action on the factor-market is contracting (Pulles et al., 2014). Contracting can be seen as a factor-market move which creates legal and moral obligations towards another party. Therefore, firms could leapfrog their competitors by contracting a key supplier to show the irreversibility of the competitive action. However, the firm does not have to show their 'true type', while seemingly committing to an irrevocable competitive action (Chen & MacMillan, 1992). Hence, a defender faces troubles identifying the attacker's strategic and behavioral characteristics and has trouble identifying the true means of a competitive action (Chen & MacMillan, 1992). So, an attacker's competitive action does not have to be irreversible as long as long as the defender perceives it is. Referring back to heroic war time stories, even though they burned their ships behind their selves, there could still be some ships behind the horizon.

Proposition 1: The higher the attacker's stake in terms of the irreversibility of the supply management action as perceived by the defender, the less likely the competitive action will be retaliated

The second proposition will be based on the characteristics of the attack caused by product-market uncommonality, and the characteristics of the defender acting on this uncommon product-market. Competition over the same resources by firms from different product-markets is typically less visible (Markman et al., 2009). However, it is the visibility or industry attention (Young, Smith, & Grimm, 1996) which makes a retaliatory response more likely. So, vice versa, if an action is less visible, a defender will not see the acitons coming and the chance of a retaliatory response is less likely. For example, trucking company J.B. Hunt had difficulties to find highquality workers in the open labor market. Consequently, they increased starting wages to attract higher quality applicants. Competing trucking firms, retaliated J.B. Hunt by luring their truckers with improved quality-of-life (Gardner, 2002). This competitive action by J.B. Hunt draw a lot of industry attention as they attracted personnel from firms competing on the same product-market.

Such competition for human resources does not only exist between product-market rivals. For example, the American bank Goldman Sachs employed FBI agent Patrick Carroll as vice president compliance, surveillance and strategy. Whereas Patrick Carroll served the FBI for twenty-five years, he's best known for bringing Bernie Madoff, the world's biggest Ponziscammer, to justice. The reason for poaching Patrick Carrol is the tightened scrutiny of financial institutions by prosecutors. And, as the former FBI agent used to unmask financial misbehavior, he is probably hired by Goldman Sachs to mask the bank's misbehavior (Hurtado, 2015). This example draw a lot of media attention in the aftermath, but the FBI did not see this poaching of their key personnel coming on beforehand, paradoxically, and left them maybe therefore with no response. Or, the FBI did not see Goldman's competitive factor-market action as a real threat (Gardner, 2002), because Goldman is operating on a different product market. So, resource similarity under conditions of product-market un-commonality (Ellram et al., 2013), makes competitive actions on the factor-market less visible and threats the competitor less. Therefore, those competitive actions are less likely to provoke retaliation.

Not only the visibility and threat of the attack are important, also the characteristics of the defender play a role. In case of personnel poaching the retaliatory reaction depends on the role employees fulfill within their firm (Gardner, 2002). If employees work within the core business function, firms are more likely to retaliate (Gardner, 2002). However, firms from different product-markets are more likely to have different core functions. For example, while an IT specialist works within the core business of an online shop, the IT specialist probably has a secondary role in a physical shop. If firms serve different product-markets, or have different core functions and employees may be less valuable for the one firm compared to the other. Thus, poaching personnel which could work in the attacker's core business, but does not in the defender's, will less likely result in retaliation.

Proposition 2: Retaliation of a supply management action is less likely, if this action is aimed at firms which operate in different product-markets

#### 4.2 The strategic competitive behavior &

#### repertoire stream

The strategic competitive behavior and repertoire stream focuses on the organizational and the contextual antecedents that drive competitive behavior and repertoires. Thus, the stream is complementary to the competitive interaction stream and focuses on the whole configuration rather than the action/response dyad (Chen & Miller, 2012). Whereas the stream focuses strategic competitive behavior on characteristics that underlie a whole set of actions, the strategic competitive repertoire stream focuses on the repertoire of micro-competitive behavior as a foundation for a firm's strategy (Chen & Miller, 2012). So, the characteristics of a set of actions mark the firm's strategic behavior, and a whole repertoire of those characterized actions make a firm's competitive strategy. For example, Toyota's competitive actions follow each other rapidly and the whole repertoire of those rapidly following actions make up their aggressive competitive strategy of a firm (Chen & Miller, 2012; Dyer & Hatch, 2006; Pulles et al., 2014).

The information processing ability is part of the strategic competitive behavior & repertoire stream (Chen & Miller, 2012). Therewith, section 3 assumed how the incapability to process information correctly leads to the unawareness of the competitive action undertaken. From here, the absence of a firm's competitive response can be predicted from the manner in which the firm interprets and processes information (Smith, Grimm, Gannon, & Chen, 1991).

Processing information is highly sensitive to delays and the delay lowers the likelihood of a retaliatory response on productmarkets (Smith et al., 1991). However, this delay can lead to the inability for a firm to preempt (Capron & Chatain, 2008) resources on the factor-market as well. The interpretation and processing of information could be delayed within three stages of the process, namely within (1) the transfer of information from the environment, within (2) the information processing and analyzing, and (3) within the decision making. The delay could, respectively, be caused by the internal orientation of a firm, the structural complexity and the further information search by managers (Smith et al., 1991). However, processing and interpreting information quickly is key in times of resource discontinuities, capacity constraints (Chopra & Sodhi, 2012), and resource scarcity. The reason for this is the one-off characteristic of these new, limited, or superior resources. For example, key employees which are raided cannot offer the same level of service anymore (Capron & Chatain, 2008), taxi medallions are only offered once (Kitch, Isaacson, & Kasper, 1971), and air cargo capacity for example is fixed within a short period (Ellram et al., 2013). This resource pre-emption or captivity is defined as: "rendering the resources of rivals' partially or completely inoperable or inaccessible" (Markman et al., 2009, p. 431).

So, if firms are unable to process information quickly, resources are pre-empted before a firm could act accordingly. For example, real estate is limited in its supply, but Michael (2003) describes how McDonalds took their advantage by preempting this limited real estate. McDonalds pre-empted real estate through favorable lease contracts in times of banker's reluctance to lend money to upcoming fast food and restaurant concepts (Michael, 2003). This spatial pre-emption can be obtained by being first and the spot is already pre-empted by a competitor if a firm is unable to process their information without delays (Figure 4). Likewise, the attacker pre-empts the most valuable real estate location if a defender is unable to process their information without delays. This delay disregards retaliation, because there is only one opportunity to pre-empt the best resource. The defender might be able to pre-empt the next resource at cost of the attacker, but only if they improve their ability to process information without delays. Another



#### Figure 4. Pre-emption as an one-off event

example shows how the inability to process information from the environment eliminates the raise of a rival's cost during acquisition of key resources. Competition over resources raises a rival's cost to acquire resources (Salop & Scheffman, 1983), but if a firm is internally orientated and neglects to transfer information from the environment correctly (Smith et al., 1991), it is less likely that the firm participates in resource competition. As price-cuts are associated with retaliation on product-markets (Chen & Miller, 1994), one could state that this up bidding on resources entitles retaliation on factormarkets. However, this bidding on prices will not happen if a firm is unable to process their information without delays. Hence, if only one Hollywood film studio approaches an actor and offers him a contract on time X (Miller & Shamsie, 1996), the resource is pre-empted and competitors are not able to retaliate against the attacker based on this resource.

Those two examples show the importance processing information on factor-markets. Quickly processing of information on factor-markets is important, because competitors can pre-empt resources earlier than their competitors. Therewith, a firm leaves the defender with no chance to retaliate against the attacking firm. All in all, the oneoff character of the best location, or even the best price leave firms unable to lag behind and give firms no opportunity to retaliate if the resource is pre-empted.

Proposition 3: Supply management actions aimed at firms with an incapable information processing system are less likely to provoke retaliation.

The fourth proposition is based on the inability or unwillingness to react to non-conform actions (Miller & Chen, 1996), carried out by the attacker and faced by the defender. Non-conform actions or atypical actions, are actions which are not commonly used or avoided by competitors within an industry. For example, alliancing is less commonly used than cutting prices. Those non-conform actions are hard to imitate and provoke retaliation less likely (Miller & Chen, 1996). So, a firm could undertake a non-conform action which is not compatible with a defender's strategy to avoid a retaliatory response. The following example adds to the understanding of non-conform actions, by showing how a strategy pursued by competitors could be non-conform to a single firm's strategy. Even though high expected returns on technology investments during the technology boom, Warren Buffet, CEO of an American holding firm, avoided those technology investments. Warren Buffett believed them to be too risky, which was not in line with the small wins over almost no risk strategy Warren Buffet pursued (Schroeder, 2008). While competing holding firms entered the technology market, Warren Buffet never invested in these technology stocks. So, while the whole industry changed their investing behavior and entered a new market, Warren Buffet, CEO of Berkshire Hathaway, kept his stand, because investing in these stocks opposed his strategy. Non-conform actions have a strategic character and purchasing firms have different attitude towards strategic supply management actions, such as supplier development (Krause & Ellram, 1997) and alliancing (Hitt, Lee, & Yucel, 2002). This supplier development stretches from tactical activities, such as informal supplier evaluation, to strategic activities, such as investment in supplier's operations (Krause & Ellram, 1997). So, attacking a firm which perceives their supply management as tactical, provokes retaliation less likely compared to a firm which takes a strategic perspective on supply management. The reason is that those strategic actions are non-conform the defender's tactical strategy. So, this non-conformity is caused by the perspective a firm takes.

And, this perspective is backed up by the idea of path dependency (Teece, Pisano, & Shuen, 1997), or specifically the constraints firms face, due to their historic decisions. For example, the defending firm agreed to pay a fixed price for coal to their suppliers during the coming months, regardless of the actual price. But, the attacker who has closer ties with the same supplier settles a contract just below the defender's contract. In this case the defender is bound by its historic decision, and is unlikely to retaliate against the attacker. Concluding, the perspective a defender takes on supply management backed up by the historic decisions the defender made, add up to the nonconform nature of an action the defender faces. And, it is the non-conformity which results in a lower likelihood of retaliation. Proposition 4: A competitor is less likely to retaliate against a supply management action if the action on the factor-market is non-conform their supply management strategy

#### 4.3 The competitive perception stream

The competitive interaction and the strategic competitive behavior & repertoire streams focused mainly on the actual behavior of firms (Chen & Miller, 2012). However, the application of those streams in this paper tended already a bit more towards the perception of those actions faced by the defender. Hence, the chance of a retaliatory response is less likely if the defender 'perceives' a high attacker's stake and the chance of a retaliatory response is less likely if a defender 'perceives' an action non-conform their strategy. This human perception is central to the competitive perception stream and is based on the idea that actions only take place via human agency (Chen & Miller, 2012) filtered by their perception (Staw, 1991). The incorporation of perception within the competitive dynamics literature began by the time Chen and Miller (1994) created the forerunner of the aforementioned AMC model (Chen & Miller, 2012). Every element of the AMC approach has a perceptual component, and that is why the AMC approach takes a center stage in this competitive perception steam. "Awareness involves perception, motivation is driven by perceptions, and capability cannot lead to action unless it is perceived to be adequate" (Chen & Miller, 2012, p. 153). From here we focus on this human perception to explain which actions are less likely to provoke retaliation.

The identity domain of a firm influences the attitude towards a retaliatory response by strengthening the perceived awareness, perceived motivation, and perceived capability of a defending firm (Livengood & Reger, 2010). This identity domain could be best defined as the member's shared understanding of 'who we are as a firm' (Livengood & Reger, 2010) and builds on what is core, enduring, and distinctive in a firm (Arora & Merges, 2004) as cited from Albert and Whetten (1985); (Whetten & Mackey, 2002). For example, Volvo identifies itself with safety (Livengood & Reger, 2010) and people within the firm speak of "Volvo-ness" or the "Volvo-way" (Urde, 2003). So, Volvo is more likely to retaliate against a competitive action on the factor-market which is aimed at resources underlying this safety identity. Contrary, a retaliatory response is less likely, if a competitive action is aimed at resources which are secondary to a defender's identity domain.

To illustrate the reduced likelihood of retaliation, this section builds on the work of Livengood and Reger (2010) and applies their thoughts to the watertight technology of Sony's smartphone (Sony, 2013). The smartphone industry is known for its strong competition and no dominant design has been introduced yet (Cecere, Corrocher, & Battaglia, 2015). Smartphone companies try to differentiate from each other and Sony introduced the first watertight smartphone, this phone still has the highest waterproof rating (Boxall, 2015). Competitive actions aimed at the resources underlying this waterproof technology (Sasamori, Ikeda, Yamamoto, & Saito, 2014) most likely end up in a retaliatory response, because this waterproof technology takes a central spot in their identity domain. This identity domain increases the awareness, and poaching the inventors of this technology most likely motivate Sony to retaliate. Sony is able to respond, because they allocated capital to introduce this smartphone. On top of this, Sony took other business -and corporate level actions to create this product (Livengood & Reger, 2010). So, aiming your competitive action at resources underlying a feature which is secondary to Sony's identity domain, for example battery power, is less likely to provoke retaliation.

Sony's smartphone battery power still outperforms Samsung's (Samsung, 2015; Sony, 2013) and could help to increase satisfaction among Samsung users (Ferreira, Dey, & Kostakos, 2011). Engaging with Sony's suppliers of more sustainable batteries could help Samsung improving their end-product without harming Sony's identity domain. So, a defending firm is (1) less aware, because a firm sometimes fails to look beyond its identity domain (Livengood & Reger, 2010). A defending firm is (2) less motivated, because the competitive action is aimed at secondary resources. And a defending firm is (3) less capable of responding, because a large amount of capital is used to support their identity domain (Livengood & Reger, 2010). Therefore, a retaliatory response is less likely (Figure 2).

Proposition 5: Supply management actions which are aimed at resources which are perceived as secondary to a defender's identity domain are less likely to provoke retaliation

Innovations on a firm's factor-market could influence different vocal firms positively, but innovations are idiosyncratic (Markman et al., 2009) in terms of use. Specifically, some innovations could be better linked to a firm's routines, assets or internal processes (Markman et al., 2009; Pulles et al., 2014). However, if a competing firm perceives this action mutually beneficial, competitive actions to explore this innovation may come without retaliation. So, retaliation is only less likely if firm A does not pre-empt the innovation and firm B benefits from the innovation. For example, EasyJet experiments with 3D printing to replace broken, non-critical, passenger aircraft parts and therewith tries to reduce idle time (van Mersbergen, 2015). So, why would competitors retaliate against EasyJet for trying to find out if 3D printing is applicable to replace broken aircraft parts? Those competitors will not, as long as they perceive the results as beneficial to them as to EasyJet (Figure 5).

It is quite difficult to know ex ante if an innovation creates value for a firm (Markman et al., 2009) and this ex ante belief leads to firms experiencing an innovation as mutually beneficial. However, referring again to the idiosyncratic nature of innovations, innovations are most likely more compatible with the processes of the one firm than with another firm's processes. EasyJet thinks they could both reduce costs and idle time by using 3D printing, which is key for a prizefighter air carrier (van Mersbergen, 2015). These reduced costs and idle time are beneficial for a regular air carrier such as KLM as well. For example, 3D-printing is associated with light-weight production (van Mersbergen, 2015) and research shows that replacing steel belt buckles with 3D-printed titanium buckles could lead to considerable kerosene savings (Berger, 2013). These savings are dependent on the amount of belt buckles within an aircraft, rather than the fit with a firm's routines, processes, or assets. Therefore, KLM benefits from a weightreduction as much as EasyJet benefits from this weightreduction (Figure 5). On top of this weight-reduction, KLM benefits without spending a lot of R&D effort (Conway & Steward, 2009). Whereas EasyJet spends money on R&D, KLM benefits by replacing non-critical aircraft parts, based on EasyJet's positive experimentation. So, understanding ex ante how an innovation creates value is hard (Markman et al., 2009), but KLM could benefit as much as EasyJet, without spending the same amount of R&D effort. Therefore, KLM is likely to perceive the outcome as beneficial to them as to EasyJet (See Figure 5).

However, EasyJet and KLM differ in one critical aspect. KLM is based in the Netherlands and EasyJet has small establishments all over Europe. These dispersed establishments force EasyJet to either store parts at every establishment, or ship parts from on establishment to another (van Mersbergen, 2015). This is costly, and putting down a 3D printer enables EasyJet to produce this better and lighter (van Mersbergen, 2015) parts where –and whenever needed. Concluding, this 3D printing technology is more compatible (Capron & Chatain, 2008) with EasyJet's strategy than with KLM's and therefore increases EasyJet's performance relative to KLM's. But, EasyJet's investments in this exploration are most likely to come without retaliation, as long as KLM perceives this factor-market innovation as mutually beneficial.

Proposition 6: Supply management actions which are perceived mutually beneficial are less likely to provoke a retaliatory reaction



Figure 5. Perceived mutual benefit

#### 6. DISCUSSION, MANAGERIAL IMPLICATION AND FUTURE RESEARCH

As indicated by Capron and Chatain (2008), competition over scarce resources will heat up as more firms tend to competitororiented strategies on factor-markets. Yet, vital to a strategy are anticipated moves by intelligent competitors. However, current strategic supply management literature lacks the incorporation of these anticipated actions. As suggested by Pulles (2014), competitive dynamics literature could solve for the lack of incorporation of anticipated moves, as this competitive dynamics literature deals with the interplay of specific actions and probable reactions. An important concept within the competitive dynamics literature is the concept of retaliation. As Capron and Chatain (2008, p. 110) state: 'Hardly any competitive move comes without retaliation'. However, retaliation has been described in terms of product-market rivalry, but not yet in terms of factor-market rivalry. This study took a first step by creating propositions to address this gap in the current supply management literature, more specifically, by describing competitive actions on the factor-market which are less likely to cause retaliation. The study found that retaliation on the factor-market is dependent on many characteristics, such as the characteristics of the competitive action, characteristics of the attacker, characteristics of the defender, and characteristics of the defender's perception. Attackers may be able to take away the opportunity of retaliation, by pre-emption of resources. Or, attackers may take a move which is perceived mutually beneficial by the defender, and therewith reduce the likelihood of retaliation. Also, particular factor-market characteristics are likely to reduce the chance of retaliation. For example, actions under conditions of 'resource similarity and product market uncommonality' are less visible and lower the perceived threat by the defender. All in all, this study aimed to be a stepping stone for further strategic supply management research, by theorizing about competitive actions on the factor market which are less likely to cause retaliation.

#### 6.1 Managerial implications

The theorization in this paper opens up to several managerial implications, as the paper provides new insights into the concept of retaliation under conditions of FMR. Valuable insights have been given to supply managers, by theorizing about competitive actions on the factor-market which are less likely to cause retaliation. Before focusing on the concept of retaliation, this paper put forward the importance of competition on factor-markets as a driver for a firm's position on products-markets. Referring back to Yahoo! & Excite, who used various partnerships to drive their transformation from search engine to destination site.

Supply managers might realize that certain competitor's perceptions are less likely to cause a retaliatory response, from here, this knowledge might help deciding which competitor to attack. On top of this, a supply manager's consciousness of their ability to influence this perception is of major importance and supply managers should keep in mind that they could reduce the likelihood of retaliatory response by a competitor (Propositions 1, 5 and 6). The Sony example illustrates the ability to increase a firm's own performance, while a retaliatory response seems to be less likely. Also, the 3D-printing example illustrates how EasyJet influences KLM's perception of mutual benefit. KLM is less likely to retaliate EasyJet, because KLM perceives 3D-printing mutually beneficial, but EasyJet increases their performance relative to KLM.

Further, supply managers might realize that keeping in mind a competitor's product-market and core business could lower the chance of retaliation considerably. Hence, the J.B. Hunt example puts forward a managers propensity to aim for factor-market resources which serve firms on the same product-market. However, this paper stresses the relevance of looking beyond the usual suspects, firms should realize that personnel from uncommon product-markets could fit their firm as well. For example, Goldman Sachs decided to hire a FBI agent, rather than competing for a compliance, surveillance and strategy manager from another major bank. Therewith, poaching personnel from competitors from uncommon product-markets may lower the visibility and threat of a competitive action (Proposition 2).

On top of this, firms should keep in mind the capabilities of competitors if it comes to committing actions which are less likely to cause retaliation. A lack of the defender's ability to process information quickly may reduce the likelihood of retaliation in cases of pre-emption (Proposition 3). From here, supply managers should act fast in times of real estate preemption (e.g.). Finally, the defender's tactical perspective towards supply management lowers the likelihood of a retaliatory response. To reduce the likelihood of retaliation, supply managers should try to find competitive actions which are non-conform a defender's tactical supply management strategy (Proposition 4). All in all, this study helps supply managers to reconsider their planned competitive action on the factor-market, creates awareness of a supply manager's ability to lower the likelihood of a retaliatory response, and helps supply managers to undertake actions which are less likely to cause retaliation

#### 6.2 Future research

Merging the concept of retaliation from the competitive dynamics literature, with the FMR literature gives input for several directions for future research. This paper focused on competitive actions which are less likely to cause retaliation on one factor-market. However, literature about retaliation on product-markets admits that firms face each other on different product-markets as well (Chen & Miller, 2012). Interesting would be to see how the actions proposed hold under conditions of multi-factor-market competition. On the one hand, supporters of the mutual forbearance theory (Gimeno & Woo, 1996) state that multi-market competition reduces the intensity of rivalry. On the other hand, multi-market competition increases the opportunities for a retaliatory response (Jayachandran, Gimeno, & Varadarajan, 1999). Specifically, future research could assess whether multi-factor-market competition is beneficial, neutral, or harmful for the likelihood of retaliation on factor-markets.

Further, this research took a first step by theorizing about competitive actions on the factor-market which cause retaliation less likely. However, this thesis treated competitive actions almost merely in isolation and took only a relatively small sample out of the broad array of competitive dynamics concepts (Chen & Miller, 2012). From here, would it be interesting to see how a combination of these action characteristics proposed and new action characteristics found, lower the likelihood of a retaliatory response. Whereas firms must acquire valuable, rare, inimitable, and non-substitutable resources (VRIN) to achieve sustained competitive advantage, as cited by Kraaijenbrink, Spender, and Groen (2010). Further research may find a golden combination of competitive actions which brings the chance of a retaliatory response close to zero.

Finally, future research could focus on testing the propositions put forward in this paper. Most of the empirical research on competitive dynamics literature used to focus on the airline industry (Baum & Korn, 1996; Smith et al., 1991), but this paper calls for empirical evidence from factor-markets. Gardner (2002) took a first step by empirically assessing the drivers of a retaliatory response on the market for human resources. But, the call for more empirical evidence is urgent as more firms tend to competitor-oriented strategies on factormarkets (Capron & Chatain, 2008). Especially, testing the concept of perceived mutual benefit sounds appealing, as this perception lowers the likelihood of retaliation while increasing the position relative to a competitor (Capron & Chatain, 2008).

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