

## **Internal Firm Conditions and Their Effect on Price Wars' Intensity: A Case of Status Quo in the Indonesian Lighting Industry**

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### **ABSTRACT**

In marketing terms, the phenomenon of a price wars is regarded as the result of intense competition and retaliatory reaction in order to win market share. However, several literatures had acknowledged that this condition was the result of an abnormal internal condition, where firms competed not to engage in competitive selling activities but rather as an effort to maintain performance. This paper was written and prepared as part of a recent study in the Indonesian lighting industry, where many players in the industry considered themselves caught in a severe price war condition. Based on a qualitative survey using open-ended interviews of seven lighting companies in Indonesia, the study found that the industry regard price wars as the result of severe intra-brand competition and an effort to maintain the "status quo" of continuous growth. Propositions to ease friction in price were suggested: exploration to other market segments; exploiting information to induce loyalty; understanding rivalry through capacity size; and management of short-term performance constraints.

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### **INTRODUCTION**

Considered as one of the most severe forms of competitive interplay, price wars have been regarded by many as a condition

where competitive advantage can only be provided through price (Rao et al., 2000). Although firms in conflict may have thrown into a price war without their consent (Pot et al., 2010), various research have managed to provide empirical evidence that the condition is caused by deliberate action in the effort to win market share (Eilon, 1993; Klepper, 2002). While reasons of price wars eruptions differ among industries, several researchers have defined the condition as a result of untargeted decisions made by a conscious act of a firm's internal management (Genenz et al., 2014).

Several aspects of internal firm characteristics are often represented in the market through competitive actions and reactions (Heil & Helsen, 2001). As modern competitive interaction is based on the notion of inequality, differences in resources can lead to a competitive advantage (Barney, 1991), where all activities conducted by firms ultimately created a network of operations that serve as a structure for the entire industry (Porter, 1991). These arguments suggest that, as a strategy, a price wars can also be regarded as a collective effort to gain a competitive advantage (Ramaswamy et al., 1994). Nevertheless, while the phenomenon can be argued as a common occurrence in economic activities (Bungert, 2003), it remains as a condition of conflict and possesses great potential to lead industries into ruin (Busse, 2000). In response to the impending threat of a price war, therefore, it is important for managers to understand their firm's internal capabilities in order to develop a strong

and unique competitive offering for their customers.

This paper answered to the need for empirical research on the topic and its relation to strategic management, especially within the context of the Indonesian lighting industry. This research also served as an extension of conceptual framework of the management of price wars that were previously introduced by Heil and Helsen (2001). As previous research in a price wars is mostly discussed in the context of quantitative empirical studies (Green & Porter, 1984; Krämer et al., 2016; Levenstein, 1997; van Heerde et al., 2008), research in this paper could provide a different outlook on the topic, as seen from the qualitative perspective, alongside the works of Fox (2005), Harper (2000) and Wang (2002). Because firms in their purest form are a collection of human emotions, results of severe price competition not only affecting a firm's quantitative measure (such as profit margins and revenue) but can also induce a negative qualitative effect on overall firm performance (Heil & Helsen, 2001; Rao et al., 2000).

The Indonesian lighting industry was chosen, as it was undergoing the most exciting changes since the early days of Edison's introduction of his electric light. With the recent advancement of LED lighting, incumbent companies in this industry were currently reorganising their product portfolio in order to provide better service to their customers. Nevertheless, while this new approach in lighting systems had been regarded as a solution to improve

the lives of many (Ciriminna et al., 2015; Jägerbrand, 2015), the industry's current competitive state was reflective of past conditions where initial introduction of artificial light brought with it severe competitive consequences in the form of a price wars (Hargadon & Douglas, 2001).

Constructed around the arguments on internal firm conditions (Heil & Helsen, 2001), research in this paper examined the effects of four variables, i.e., exit barrier, price leadership, reputation, and financial condition. These variables were later defined in smaller dimensions in order to ease result collection. Further explanation in regard to these dimensions was presented together with literature discussion where several propositions were offered as solutions to manage competitive interaction and price wars.

## LITERATURE REVIEW

In its most basic form, an internal firm condition can link to the resource-based view, where sustainable performance is derived from the exploitation of internal strengths, a proper response to environmental opportunities, and the ability to manage external threats and internal weaknesses (Barney, 1991). Seen as assets, these resources include capabilities, available inventory, organizational processes, market information, and business knowledge, which can control to create a specific competitive advantage in a particular market. While a majority of research argues that opportunities are a casual encounter constructed by a firm's external

condition (Caves & Porter, 1977; Porter, 1980), prospective collaborations between demand and supply can surely be induced by exploitation of internal resources (Klein, 1998; Porter, 1991).

These internal resources, nevertheless, can also be regarded as an influential aspect to irregular competitive interactions in a market where business differentiation is limited, and transactional commitment is usually driven by price rather than innovation. This condition has regrettably led firms to rely on strategies based on quantity (Eslaminosratabadi et al., 2013), where firms within a market are defined by the strength of their purchasing power.

Heil and Helsen (2001) argued that several firm characteristics could intensify price competition and in turn, led to the outbreak of a price wars. As firms' resources, in general, are rarely homogenous, the exploitation of a particular resource (i.e., financial strength, and excess capacity) in a specific market can create sudden demand shock, where competitive effects often result in retaliatory reactions among firms (Ramaswamy et al., 1994). Conclusively, therefore, competitive interplay during a period where price wars flourish can be seen as the effect of firms' collective internal conditions in a particular industry, created through networks of transactional interactions driven by limited innovative differentiation. Price wars in this sense, can also occur due to efforts made by firms to reach a desirable market position along the course of their organizational life-cycle (Wu & Arief, 2015).

In the framework of price wars competition, an internal firm condition can further be defined through four antecedent variables: exit barriers, price leadership, reputation, and financial condition (Heil & Helsen, 2001). While in some situations these variables may not directly affect the intensity of price wars, they can be regarded as an asset possessed by every firm in an industry, where inappropriate management can lead to devastating results. Details of chosen dimensions and variables of internal firm conditions are presented in Table 1, in relation to price wars' intensity.

**Exit Barriers**

Barriers to exit can be described as costs that a firm must carry if it decides to leave the market it serve (Gilbert, 1989). The cost of exit in this sense depends on the alternatives a firm has for its assets when industry exit is

definite (Heil & Helsen, 2001). In this study, three dimensions of market exit were defined in connection with sunk costs (Rosenbaum & Lamort, 1992), asset specificity (Porter, 1976), and mobility barriers (Gilbert, 1989). Heil and Helsen (2001) argued that exit barriers were an important part of a price wars because of its connection with a firm's long-term sustainability, where higher exit barriers lead to the likelihood of a price wars eruption.

Previous literature defined sunk costs as a barrier to both market entry and exit (Gilbert, 1989; McAfee et al., 2009; Rosenbaum & Lamort, 1992). Nevertheless, the effect of sunk costs is more crucial in relation to an exit because it is related to non-recoverable investments in assets. Where a rate of sales of items produced by these assets is declining, the need to recover sufficient financial returns

Table 1  
*Variables and dimensions*

No.	Dimensions	Independent Var.	Dependent Var.
1	Sunk Costs	Exit Barrier	Price Wars Intensity
2	Asset Specificity	Exit Barrier	Price Wars Intensity
3	Mobility Barriers	Exit Barrier	Price Wars Intensity
4	Informational Advantages	Price Leadership Characteristics	Price Wars Intensity
5	Loyalty	Price Leadership Characteristics	Price Wars Intensity
6	Capacity	Price Leadership Characteristics	Price Wars Intensity
7	Predation	Firm Reputation	Price Wars Intensity
8	Accommodation	Firm Reputation	Price Wars Intensity
9	Fear of Bankruptcy	Financial Conditions	Price Wars Intensity
10	Competitive Volume Pricing	Financial Conditions	Price Wars Intensity

will force companies to exploit resources to its performance limit. Seen from the perspective of an incumbent, sunk costs should allow an established firm to commit to a preferred output (Gilbert, 1989). However, this condition may have little effect when competitive interactions are driven by innovation. As an example in the lighting industry, the introduction of electric light was known to be one of the antecedents of price wars in the gas industry, which, at the time, had no longer become the preferred provider of artificial illumination (Hargadon & Douglas, 2001).

In relation to sunk costs, specificity of assets has been also mentioned as an important part of an exit barrier. As businesses are structured in strategic positioning in relation to the market it serves, changes in strategy which increase entry barriers in return, also increase exit barriers (Porter, 1976). In this sense, firms are suggested to have minimum asset specialization to ensure that changes in competitive position will not create strategic inflexibility.

In collective, both sunk costs and specificity of assets create mobility barriers to firms that possess them. While market efficiency depends on the conditions that restrict the mobility of capital in all directions (Gilbert, 1989), changes in technology, skills, and common input could revolutionize industries where past investments are considered obsolete (Porter, 1998). Consequently, in conditions where economic environments are driven by technology and consumer taste, mobility

barriers should be regarded as a source of constant development, rather than long-term stability.

### **Price Leadership Characteristics**

In many industries, some firms perform the role as the price leader in their market (Heil & Helsen, 2001). In the case of a price wars, these firms are believed to possess the power to increase price levels through market discipline and barometric efforts. Within this variable, three indicators of price leadership are defined in connection to informational advantages (Rotemberg & Saloner, 1986), loyalty (Deneckere et al., 1992), and capacity (Deneckere & Kovenock, 1992). Heil and Helsen (2001) recognized price leadership as an important aspect of price wars because smaller firms in the industry were vulnerable to the pricing policy of large firms.

In cases where price acts as a strategic variable, informational advantages can become a decisive factor in securing transactional commitment. As holding a monopoly of contemporary commercial markets can be considered uncommon nowadays, an effort to monopolize an industry will lead to a breakdown in restraint, while an outcome further from monopolistic efforts will simply result in lower profits (Rotemberg & Saloner, 1986). Obtaining information in an open market, therefore, can provide incentives where firms are able to conduct pricing strategies in relative to the structure of their operational costs.

This idea can proof effective where firms have a distinct loyal segment at their

disposal. As previously shown by Deneckere et al. (1992), firms with a large loyal base of consumers provide the equilibrium price for the market in concern, which in turn, is used by smaller firms as their point of reference. However, as building awareness to generate loyalty often takes considerable time (Ramaswamy et al., 1994), the price variable became a commonly used method to manipulate customer loyalty (Diallo et al., 2015).

Constraints in capacity have also been viewed as the source of limitation to gain a competitive advantage. Certain perceptions exist where firms with high capacity have the ability to become the market's price leader (Deneckere & Kovenock, 1992). Because capacity is a natural way to model the size of firms, smaller firms are usually prone from being undercut by larger firms. This condition can be argued to the fact that they may not have the ability to influence competitive interaction in its industry, while on the contrary, larger firms must consider the plausible responses from competitors, prior to setting their standard in price.

### **Firm Reputation**

Past competitive behaviour usually indicates a firm's future competitive attitude (Milgrom & Roberts, 1982; Tirole, 1988), where firms that have shown a strong track record of combating past deviations in price possess the ability to prevent potential price collision from occurring (Heil & Helsen, 2001). Within this variable, two indicators are defined in connection to predation (Kreps & Wilson, 1982; Milgrom & Roberts, 1982)

and accommodation (Kreps & Wilson, 1982; Selten, 1978). Heil and Helsen (2001) considered reputation to be an important aspect of price wars because it represented market strength and a firm's establishment within it.

Predation strategies have been considered rational to deter market entry, in order to ensure that a rival's rate of return from entry cannot provide sustainable assurance of long-term business establishment (Milgrom & Roberts, 1982). It is also worth noting that predation is a costly strategy where losses cannot be rapidly recovered in a given market, even when the exit of rivals is imminent. In practice, predation is viewed as a sensible investment in order to sustain or enhance a company's reputation (Kreps & Wilson, 1982), even though it is only effective if entrants find the threat credible.

On the contrary, an incumbent firm may implement accommodating strategies when differing interests between them and the entrant exist (Selten, 1978). Accommodation may be the best response to entry when information in regard to the competitive structure is shared between rivals (Milgrom & Roberts, 1982). As a firm's reputation can be derived from its past competitive behaviour, availability of information can provide leverage in future interactions among firms within a particular industry.

### **Financial Conditions**

In a condition where competition has been emphasized too much on price, firms would likely face lower profit margins (Griffith

& Rust, 1997). Within this variable, two indicators are defined in connection to fear of bankruptcy (Bhattacharya, 1999) and competitive volume pricing (Dolan & Jeuland, 1981; Monroe & Della Bitta, 1978). Heil and Helsen (2001) noted that in such deteriorated financial condition, firms could find new incentives to cut price in the effort to capitalize on economies of scale and induced a price war in the process. Bhattacharya (1999) argued that price wars were caused by sufficiently low-net asset levels. In the condition where firms were faced with a short-term cash constraint and threatened by bankruptcy, price cutting became one of the only options to generate a margin in the present, even at the cost of reduced future demands. Because competitors would typically responded to a decrease in price, firms might want to charge a low price early on in order to create larger demand in the present that could minimize future competitive reactions from rivals.

However, as pricing strategies usually carry a long-term market effect, it has been previously argued that a firm's price positioning during an invented monopoly period influences the rate of entry from rivals (Dolan & Jeuland, 1981). This period of monopoly, nevertheless, can be considered as an artificial condition structured by demand shocks, which on their own are created by sufficiently low prices in relation to the market standard. Price wars in this sense are the result of retaliatory actions induced by loss of volume at the

competitor's side and usually lasts longer than expected, even after the supposedly short-term constraint has been prevailed.

## **MATERIALS AND METHODS**

This study used the qualitative method to determine the social process of waging price wars. The approach was preferred because qualitative studies were hoped to provide comprehensive answers to questions that might have been missed in quantitative methods (Lune & Berg, 2017). Face-to-face interviews were conducted through a set of semi-structured and open-ended questionnaires based on several cases and articulating arguments in regard to price wars. Results were gathered manually and later organized into a collective conclusion. Because qualitative study limits our engagement to conduct an intensive examination of large samples, respondents to this study are specially selected due to their long-term experience in the Indonesian lighting industry. In this study, seven companies, which have operated in the Indonesian lighting industry for more than five years were selected and agreed to contribute to the research, as seen in Table 2.

The study consisted of two parts: (1) respondent's type of business and his or her perceived market role; (2) respondent's view in regard to antecedents of price wars seen from his or her own internal condition and a firm's characteristics. Based on the type of activities and product portfolio, two

Table 2

*List of participating firms (abbreviated due to request of confidentiality)*

No.	Firms	Years of Experience per 2017	Commercial Channel	Estimated Annual Turnover Value	Interviewee's Position
1.	ATY	8 years	Professional	US\$ 1.8 Mio	director (1), manager (3)
2.	SWJ	44 years	Traditional	US\$ 2.6 Mio	director (1), manager (2)
3.	GIT	22 years	Traditional	US\$ 1.1 Mio	director (1), manager (2)
4.	KRE	17 years	Professional	US\$ 2.2 Mio	director (3), manager (1)
5.	BMK	25 years	Professional	US\$ 2.1 Mio	director (1)
6.	SSJ	26 years	Traditional	US\$ 2.4 Mio	directors (2)
7.	IDL	13 years	Traditional	US\$ 3.7 Mio	director (1), managers (2)
8.	RJW	12 years	Traditional	US\$ 7.5 Mio	declined
9.	DIM	12 years	Traditional	US\$ 3.1 Mio	declined
10.	MGK	21 years	Traditional	US\$ 0.9 Mio	cancelled

different commercial channels had been identified: *traditional* and *professional*. As the understanding of price wars needed to be built based on solid conceptual perspectives of industry practitioners, the respondent's differences in the commercial channel could use to provide additional and valuable input to this research.

The traditional trade channel was a market that mainly consisted of traditional stores owned by private owners without formal institutional establishments. They operated not only in the lighting industry but also in a larger part of the electrical industry. Companies that operated in this market serves its customers as suppliers with diverse types of products and were not only limited to lighting. In this study, four companies operated in this category of business.

The professional trade channel was a market that consisted of contractors or building owners, who at times were also direct users or project owners. Sales in this market were usually combined with diverse types of services alongside products, such as lighting design, installation, after-sales warranty, and a *specialized approach* to project owners. In this study, three companies operated in this category of business.

## RESULTS AND DISCUSSIONS

It has been argued that practitioners should pay attention to the signals that may have contributed to the likelihood of price wars, as their organization's involvement and future profit opportunities are usually within the control of their operational activities (Heil & Helsen, 2001). However, many

practitioners, in general, are unaware that their firm's internal condition can affect activities in the market, especially if they are positioned higher in the industry, in relation to other companies that have less accessed to products and sales opportunities. Based on this argument, we discussed their input and responded to the internal aspects of price wars and its antecedents below.

### Exit Barriers

Sunk costs is a difficult topic to discuss in connection with sales. The majority of respondents who related directly to daily activities had little concern with the value of their sunk costs because this subject was often regarded as a *given facility* that supported their work. This indicated that most middle-level managers had limited knowledge in regard to sunk costs. Several reasons could base on the fact that sunk costs in itself could define in various context, including the cost of operations and cost of goods sold. In the case of the respondents, most middle-level sales managers were structured in different departments with procurement, which could explain why sunk costs were understood with limitations. While purchasing managers were typically concerned with the cost of the products they acquire, in most cases, sales managers were only concerned with the level of the end value of their sales activities.

However, a slight difference in response was given from participants from higher positions in the institution's hierarchy. Directors with accessed to both procurement and sales regard sunk costs as an important

factor that influenced the intensity of price war. One particular responded to the concept of sunk costs indicated that,

*"It is important to ensure that products are acquired with the best price in relative to our resale price. Although the market has their own standards, it does not mean that our customers are willing to buy the products with prices within those standards. More often than not, customers actually only use those standards as benchmarks for additional discounts, which in our book, becomes an additional cost of operations."*

Based on this response, it could understand that firms view sunk costs from the context of its ability to generate a sufficient margin, which at the end led to the value of their overall profitability. This study indicated that sunk costs could see as one of many factors that influenced the intensity of a price war, but only if organizations understood the relationships of sunk costs from the context of acquirement and margin.

Asset specificity was also a difficult topic to discuss, as managers often regard assets only as a physical and supporting facility of their daily activities. Specificity of assets was rarely brought up in discussion during meetings because it was challenging for managers to view them as an issue of the internal condition. Almost all respondents regarded their asset specificity as the result of external (market) influence, where firms prepared and acquired assets specifically to provide what their customer required and

not to encourage customer requirement. Some responded to the topic as follows,

*“We prepare inventory based on what the market wants. Majority of the time it is the fast-moving items, therefore we emphasize the size of inventory based on the assurance of fast liquidation of goods to cash.”*

Others, however, had a contradictive view in regard to their asset specificity and mentioned,

*“We like to conduct tests to the customers by bringing new products at least once a year. When we offer them to try these new products, we emphasize more on their functional aspects. This consideration became the basic rule during the introductory period because customers often do not have the knowledge to understand how to maximize a product’s application and tend to generalized products.”*

These contradictive responses indicated that firms had a precise rule or internal guidance when it came to acquiring specific assets to support their commercial activities. As inventory can also be seen as part of a firm’s specific asset, the notion of asset specificity brought up an interesting point in a firm’s view of an exit barrier that caused a price war, from the context of a segment barrier. The study showed that firms were limited to the knowledge they possessed in regard to the customers they serve within a particular market segment in which they

were positioned at. Using examples from the respondents in this study, asset specificity’s connection to an exit barrier defined by a firm’s limitation to serve different segments in the same industry, due to the fact that customers from these two segments had different requirements in terms of products and service.

Lastly, in connection with exit barriers, mobility barriers were understood by the respondents as *a decision* made to stay or remained within their industry segments. For example, managers from the professional trade segment were reluctant to enter the retail segment because they regarded the segment was driven by price-conscious customers that limit a firm’s ability to drive innovative or specialized products. However, similar answers were also stated by managers from the traditional trade segment, where the choice to limit entry into the professional segment was mainly based on limited operational or product knowledge and the difficulties they encountered in the effort to reach customers in that particular segment.

These similar responses indicated that firms favour to remain in the segment where their previous experience gave them opportunities to generate a margin and reluctant to enter new and other segments because of limitation in new knowledge or product acquirement. This last indicator in an exit barrier showed that price wars’ intensity increased when firms engaged to exploit opportunities to generate sales from their existing segment. Limitation in portfolio and market size would eventually

drive competition towards price rather than innovation. Based on these results, the following proposition was proposed:

***PI:** A firm's inability to explore new market segments increase the likelihood of price exploitation in their current segment, which subsequently influences the occurrence of price war.*

### **Price Leadership Characteristics**

A majority of respondents viewed informational advantages as an important part of their firm's success in sales and transactional activities. However, in their connection with a price wars, most firms did not regard their advantages in acquiring information to be the cause of market conflict but rather as an effort to win customers and secure their transactional commitment. Most respondents mentioned that,

*"We need to acquire price information on regular basis, and it is a hard thing to do. We depend on our customers to provide us with the latest news of market price. When responses have been collected, we will try to the best of our abilities to match those prices to ensure that our customers do not run away."*

This response generates further dilemma when the issue was seen from the perspective of the whole industry because firms viewed themselves as ineffectual to the changes of market pricing structure. This condition indicated that practitioners was focused only on a limited portion of information, especially in regarded to their competitor's pricing strategy but not on the effects of

their own pricing policies. Nevertheless, it was reasonable to assume that firms did not regard informational advantages as the cause of price wars due to the fact that they operated within a restricted time-frame and observational constraints, meaning not all firms possessed sufficient ability to monitor their competitor's movement in detail.

Loyalty, on the other hand, had been described as one of the causes of price wars because it entailed customer's approval of a firm's pricing structure. Respondents regarded loyalty to price was important because their market was mostly structured only by a few established brands. In a market where product selection was pre-defined by customers, engagement in transactional activities was influenced by price acceptance because product homogeneity limits a seller's creativity to promote products through their application features. Two managers responded to this query as,

*"If the customers think that the price is acceptable, then we are safe. However, if someone else comes with a bigger discount, we can be sure that the customers will not be hesitant to purchase their products from that particular supplier."*

Subsequently, in its relation with price leadership, respondents considered that size of inventory or production capacity related strongly to the number of price incentives that could pass through to the market, which in turn intensified price war interactions. Based on these results, the following propositions were proposed:

*P2A: Informational advantages are not seen to be influential to the occurrence of a price war, while customer loyalty to price increases the likelihood of a price war.*

*P2B: Firm capacity differentiates market positioning and subsequently increases the likelihood of price war due to its ability to influence market price through capacity size.*

### **Firm Reputation**

The concept of predation and accommodation was understood with limitation by the respondents. This condition occurred in part because they did not consider themselves were the trendsetter in their own segments but rather as followers in a bigger market. Most respondents regarded predation as a compulsory action needed to be executed when a competitor entered their market; at the same time, however, they also considered competition as an opportunity to create a new partnership, which required firms to accommodate rivals.

However, this concept was understood in connection with firm establishment. As the Indonesian lighting industry was shaped by a handful of large firms, competitive predation and accommodation occurred at different transactional levels, started from an inter-brand competition and later developing into intra-brand rivalry. At the brand level, firms used predation as their marketing strategy against other brands, while at the transactional level, the same strategy was used to secure a transactional commitment from customers. Accordingly, most respondents were unlikely to use

accommodating strategies unless they were unable to provide a particular service to their customers (unavailability of products or specific nonproduct services).

Because there was no physical or contractual barrier in the industry that could use to defend a market, most respondents who participated in this study realized that their short-term activities relied on strong pricing commitment with both their supplier and customers. One respondent mentioned that,

*“We never want war. We like it when the market accepts our prices on the grounds of product value and seller’s effort to service them. However, the other companies are also selling the same products and offer the same service to the customers. This condition has led us to the situation where we need to win against the other companies. One way to achieve this is by ensuring that our sales target is met, so we can receive better percentages in rebates from the suppliers.”*

Similar to informational advantages, therefore, respondents did not consider predation strategies as the source of price wars but rather as means of securing performance. While previous literature frequently mentioned that predatory pricing was strongly related to price wars’ antecedents, in the case of the Indonesian lighting industry, predation and accommodation might be a popular strategy among managers to be practised as the embodiment of their firm’s reputation.

Based on these results, the following propositions was proposed:

***P3:** Predation strategies are used by firms on a higher market position and increase the likelihood of a price war in an inter-brand context, while accommodation strategies can be used by firms on a lower market position to reduce the likelihood of a price war in an inter-brand context.*

### **Financial Conditions**

Although, in general, respondents were reluctant to share their firm's financial conditions, all of them agreed that a performance constraint could influence them to cut prices below the market standard in order to generate short-term income. A respondent replied to this query by saying,

*"We need cash to survive. As simple as that. Without a proper flow of cash, a company will not survive. Therefore, we need to ensure that our bank accounts have sufficient balance at the end of every month to cover costs."*

This answer had made the concept of fear in facing bankruptcy became an interesting topic of discussion. While some respondents regarded this issue as one of the definite caused of price wars, others disliked the word *fear* and replaced the concept with the notion of *short-term constraints*. Short-term constraints were thus considered more influential to the intensity of price war because firms were under pressure to generate revenue and proved their merit to remain in the market.

Nevertheless, financial conditions and especially financial distress were a difficult topic to discuss because a firm's future outlook mostly depended on how long it could sustain its reputation in the market. Attaining information in regarded to financial issues in relation to price wars therefore might not possible until a firm announces that it is withdrawing from the market it serves. As an acknowledgment of this proposition, two firms, which announced their exit from the Indonesian lighting industry, politely declined the request for an interview.

On the other hand, respondents regarded volume pricing as one of the reasonable causes of price wars. As the industry was structured by firms that differed in size and experience, competitive actions and decisive reactions were made based on acquired knowledge and previous success. A firm with a longer establishment, for example, had the opportunity to use past information in order to forecast future demand, which later could use to conduct purchases in large quantity. While the respondents mentioned that not all suppliers were willing to provide additional incentives, the size of purchase enabled larger firms to emphasize pressure to the market through volume demand. This condition indirectly proved that firms had the ability to influence market control through pricing strategies. Based on these results, the following proposition was proposed:

*P4: Short-term constraints and volume pricing increase the likelihood of a price war as firms seek to capitalize opportunities in a limited time period.*

## CONCLUSIONS

Most firms that contributed to this study regarded price wars as a serious issue in dire need of a solution. However, most firms did not regard their competitive actions and reactions influenced the price wars itself, due to the fact that their establishments were limited within their own segment. The inability of firms to move into new segments intensified the severity of price wars because competition turned out was driven by price policies rather than innovation.

It could be argued that firms in the Indonesian lighting industry were focused greatly on price information in order to ensure their own targets were met. When specific sets of offers were no longer accepted by the customers, innovative non-pricing solutions rarely became the outcome of competition, as they chose to attain and secured transactional commitment through price. Once firms had found their most profitable position in the market, they were reluctant to reach into new markets because explorations were less profitable than exploitation. Understanding this issue led to a situation where firms scuffle to maintain the *status quo* of their performance because, in their view, it was the least problematic solution to remain in the market.

While some respondents acknowledged the fact that price wars was a non-avoidable occurrence in business, the discussion

results showed that the condition was caused mainly by lack of internal control rather than by external influence. Especially in connection to the exit barrier and in line with the first proposition, firms in both segments were suggested to expand their current coverage by participating in larger industry scope. Although it might require firms to implement changes in their business model, this effort could lead to discoveries of new market segments where sustainable performance is driven by innovation and dynamic capabilities.

Advantages in gaining information, on the other hand, should be treated with cautious examination, especially if there are no specific methods to ensure their validity. Most firms in this study receive their market price information from the customers, which means that the pricing policies given by rivals are subject to a certain degree of adjustment. While it can be argued that customers tend to focus on the value of investment subsequent to their transactional commitment, homogeneity in products will continue to limit opportunities to generate margin at the supplier's end. As suggested by Proposition 2A, firms should carefully examine their pricing policies in order not to induce a price war among rivals but, at the same time, be able to provide assurance to the customers that they had been given the service they deserved to ensure loyalty was fostered.

Meanwhile, these policies, can also be influenced by the size of capacity a particular firm can carry. Although an exact size of the Indonesian lighting industry was difficult

to predict, the capacity measurement could forecast through historical sales data and customer consumption. Nevertheless, as the goal of any businesses was to capture market share, firms were emphasize the strength of their pricing policies through capacity size and later use them to eliminate competition from smaller rivals. Because firms with large capacity were able to obtain better product margin through their magnitude of purchasing power, predation strategies in this sense were strongly connected to capacity size and accompanying pricing policies.

Proposition 2B suggests that firms should develop different capabilities and not simply focus on a specific market segment with a limited opportunity for product development. Proposition 3 suggests that firms should be aware not to challenge firms with larger capacity if, in comparison, they have a clear transactional size disadvantage, while at the same time firms are recommended to work together with rivals to serve customers in different segments within the same market to reduce the likelihood of price wars. As customer structure between segments is more diversified in comparison with their product preference within the same segment, transactions with slightly different pricing policies in different segments can ease competition.

Finally, as an important part of internal management, firms should avoid resolving short-term constraints through volume pricing policies. As suggested by Proposition 4, price wars' intensity can be reduced if firms are able to manage their

financial performance and ensured sufficient margin can be constantly generated. Further research in regarded to the causes of short-term constraints are needed and can be the next objective of future research.

Results showed that even within their own environment, firms and managers had limited knowledge in regarded to the relational effects of internal policies that had been implemented in the market. Further studies needed to be conducted to ensure that these relational effects were truly interrelated to the intensity of price wars. As firms continue to consider their internal actions and competitive reactions as the result of market influenced, future research could also be conducted not only on the ground of internal conditions but on the external environment where a firm operated.

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