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# Relational Antecedents of Organizational Slack: An Empirical Study into Supplier-Customer Relationships

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This paper builds on the relational exchange and power-dependency literature to explore the role played by specific relational antecedents that lead to the hoarding of slack resources. We hypothesize about the impact of four different aspects characterizing supplier-customer relationships on the level of slack resource hoarded by the suppliers: 1/ the interdependence equilibrium between supplier and customer, 2/ the reciprocal power of supplier and customer, 3/ the relational norms that structure the relationship, and 4/ the performance of the supplier. The hypotheses were tested on a sample of 98 French automotive component suppliers. Our findings allow us to distinguish between potential and available slack, and suggest that a supplier's level of available slack resources increases when its dependence on the customer is higher, when its power is lower, and when the relational norms governing the relationship with the customer are stronger. Moreover, the statistical results point out that the level of potential slack resources held by a supplier is explained neither by the relational behavior of the firm nor by the power-dependence equilibrium between the partners, however a high performance supplier enjoys a higher level of potential slack.

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## INTRODUCTION

The concept of organizational slack, introduced by the seminal work of Barnard (1938) and Cyert and March (1956, 1963), has largely contributed to a better understanding of organized action and there seems to be a renewed interest for it in the strategic management literature (Bowen, 2002; Hill and Rothaermel, 2003; Tan and Peng, 2003; Daniel, Lohrke, Fornaciari, and Turner, 2004).

Strictly speaking, organizational slack or slack resources are resources that are not necessary for the normal functioning of the organization. It corresponds to the difference between total resources available to keep a company going (maintain the organization) and the short and long term liabilities, namely the total necessary payments to the various participants to the organization (Cyert and March, 1963: 36). Organizational slack can take the form of unallocated financial resources, unutilized production capacity, or available engineering hours. These resources can be stored in the organization or left aside for future needs as implied in Bourgeois' definition of slack as a «cush-

ion of actual or potential resources» (1981: 30), a definition that is extensively quoted in the literature on organizational slack. Therefore, firms hoarding slack resources have more room to maneuver than those who are operating at full capacity, have limited cash flow, or a shortage of employees.

According to Bourgeois (1981), organizational slack can serve four primary functions. The cushion of actual and potential resources can first be used as an inducement as it allows the organization to offer salaries that are higher than what is actually required to retain the employees' services. Second, in situations where organizational subunits are able to allocate their share of the cushion of unused resources to problem resolution or process improvement, organizational slack serves conflict resolution. The third function of slack is that of a buffering mechanism used to adapt to sudden changes in the environment, for example when a customer suddenly increases the quantity of goods ordered from its supplier. As such, slack facilitates a short-term adaptation process. The last function of organizational slack is to facilitate strategic or creative behavior. Indeed, resources that are not necessary for the normal functioning of the organization can also be used to take long-term decisions such as seizing a business opportunity, developing a new product, or realizing a growth strategy. In summary, the first two functions of slack are related to internal tensions within the organization, whereas the two others are related to external tensions between the organization and its environment.

While Bourgeois (1981) has concentrated on the definition and measurement of slack resources, other strategic management scholars have tried to understand where it comes from and how it develops. According to Sharfman, Wolf, Chase, and Tansik (1988), three general sets of conditions, or antecedents, lead to the development of slack: environmental conditions, characteristics of the organization, and values of the dominant coalition. The framework proposed by Sharfman *et al.* (1988) is therefore articulated around the external and internal dimensions of slack. The magnitude of environmental changes, the availability of resources and the structure of the industry are a first set of external conditions that will shape the level of slack resources held by a firm. For example, traditional airlines with a heavy cost structure need a large amount of free cash flow to be able to match the fares offered by the new generation of low cost carriers, without eventually filing for bankruptcy protection. Second, Sharfman *et al.* (1988) suggest that internal characteristics such as size, age, performance, technology, and internal stability can be predictors of the level of slack that the firm will have. For example, during the troubled childhood of the personal digital assistant (PDA) industry, the unpredictable nature of the technology forced PDA firms to hold large amounts of high discretion slack resource. The third antecedent of organizational slack proposed by Sharfman *et al.* (1988) are the values and beliefs of the dominant coalition, such as the collective desire for safety, that will have an impact on the decision to hold slack resources. By considering the organizational dominant coalition as well as the availability of resources in the environment, Sharfman *et al.* (1988) shed light on the

political nature of the process whereby organizational slack is developed.

In the context of vertical disintegration that now characterizes many industrial sectors, such as computers, automotive, pharmaceuticals, and aerospace, the external dimension of slack is particularly relevant. Moreover, increased vertical disintegration translates as increased dependency between suppliers and customers. While the most powerful player is in a position to dictate the rules of the game, the dependent player may feel the need to hoard slack resources in order to protect himself from external fluctuations. In face of the trend towards vertical disintegration and closer supplier-customer relationships, it can be argued that the level of slack resources hoarded by suppliers and customers doing business together, partly determines how their relationship is going to unfold. For example, a supplier having spare capacity could more easily accommodate the requirements of its customer, and this in turn would contribute to the quality of the relationship. Therefore, identifying the factors that may enable business partners to face external fluctuations by developing organizational slack, appears like an appropriate research avenue.

The relational exchange theory (RET) can help us further understand how slack may be formed to act as an external buffer. Rather than looking at exchanges between firms from a transactional perspective, relational exchange theorists have elaborated a social conception of exchanges (MacNeil, 1980). They posit that firms have common goals and are therefore impelled to collaborate rather than satisfy short-term individual interests. Seen in this light, supplier-customer relationships are win-win situations beneficial to all companies involved in them. However, the work of Pfeffer and Salancik (1978) reminds us that the power and dependency equilibrium between suppliers and customers needs to be factored in when trying to understand the role played by organizational slack as a buffer against external fluctuations. Indeed, power asymmetries make some partners more dependent than others. For example, in a context where original equipment manufacturers enjoying market power forward the end users' requirements down the supply chain, suppliers seem to have no choice but to acquiesce to buyers' demands for low prices, high quality, just-in-time delivery (Helper, 1991; Langfield-Smith and Greenwood, 1998), and high flexibility (Mouritsen, 1999).

Therefore, building on the relational exchange and power-dependency literature, our paper focuses on the external dimension of organizational slack and looks at the role played by specific environmental conditions, namely relational antecedents that lead to the hoarding of slack resources. By explaining why some dependent suppliers hold more slack resources than others, we hope to contribute to the further understanding of both organizational slack and supplier-customer relationships. We believe that this is particularly useful in a context where boundaries between firms seem to be disappearing, as pointed out by the debate on whether or not organizational walls should be tore down (Carr, 2004), and where the notion of what is internal and external to the firm becomes blur.

Our conceptual framework is presented in the next section. We hypothesize about the impact of four different aspects characterizing supplier-customer relationships on the level of slack resources hoarded by the suppliers involved in the relationship: 1/ the interdependence equilibrium between supplier and customer, 2/ the reciprocal power of supplier and customer, 3/ the relational norms that structure the behavior of supplier and customer, and 4/ the performance of the supplier. As pointed out by Kalwani and Narayandas (1995), Kotabe, Martin, and Domoto (2003), and Subramani and Venkatraman (2003), the majority of strategy researchers who have studied the relational aspects of inter-firm exchanges have tended to ignore the perspective of the dependent supplier who must incessantly adapt to fulfill the requirements of the powerful buyer. In this paper, we address this gap in the literature by developing a conceptualization of supplier-customer relationships that focuses on dependent suppliers. We then test our theoretical model on a sample of first tier automotive component suppliers, which are known to be dependent on car makers. Our research results are discussed in the last section of the paper.

## **CONCEPTUAL BACKGROUND**

### **DEPENDENCE AND SLACK**

The firm's adaptation to its environment is a basic notion of strategy theory and practice (Barnard, 1938; Thompson, 1967). Pfeffer and Salancik (1978) suggested that organizations are embedded in an environment comprised of other organizations on which they depend. Similarly, Porter (1985) has argued that the activities conducted by a firm are encompassed in the larger system of activities conducted by the upstream suppliers and downstream customers. As a result, individual organization performance is highly dependent on supply chain performance. The state of dependence in which organizations can potentially be has a key implication in terms of the slack resources that they hold. Indeed, firms that are highly affected by their external environment while having little control over it may need to react to external fluctuations. Slack resources can then play the role of external shock absorbers (Miner, Amburgey, and Stearns, 1990).

Studies on supplier-customer relationships within the automotive industry provide very good examples of this. Indeed, the five major car assemblers accounting for almost 90% of market share are facing strong market fluctuations that have led them to implement build-to-order assembly processes. As a consequence, automotive component suppliers have to bank slack resources enabling them to respond to car makers' flexibility and high reaction speed requirements (Helper, 1991; Langfield-Smith and Greenwood, 1998). Similar situations can be found in other vertically disintegrated industries such as pharmaceuticals and aerospace. For example, suppliers of Airbus were asked by the aerospace manufacturer to make «considerable effort» (Sparaco, 2003: 25) to allow their large client to survive difficult times and pro-

ceed as planned with the development of the new jumbo aircraft. This serves as a good illustration of how slack can allow firms—in this case suppliers—to “hang in there during rainy days” (Sharfman *et al.*, 1988; Tan and Peng 2003).

The above examples illustrate Cyert and March’s (1963) theoretical proposition stressing that the level of slack resources needed by a firm depends mainly on the external pressure that the firm is facing. It also supports Pfeffer and Salancik (1978) who emphasized that the level of resources of a firm will result from its dependence on its trade partners. Accordingly, we hypothesize that the interdependence equilibrium between suppliers and customers will have an impact on the level of slack resources hoarded by suppliers. Strictly speaking, the more dependent is a firm on its trade partner, the more it will have to react quickly to sudden fluctuations imposed by the dominant partner. Banking slack resources enables the dependent supplier to better respond to unforeseen requests or meet future needs of the dominant buyer.

**H1:** A supplier’s level of slack resources is related positively to its dependence on its customer.

## POWER AND SLACK

Emerson (1962), Crozier (1964), Thompson (1967), and Perrow (1970) have all called attention to the relationship between power and dependence. According to these authors, power is the ability to get someone to do something that he would not have done otherwise. Furthermore, power is a function of the dependence upon someone’s resources and actions. Emerson (1962: 32) has clearly illustrated this assumption when proposing: «the power of A over B is equal to, and based upon, the dependence of B upon A». Dependent firms, such as the automotive and aerospace suppliers mentioned in the previous section, do not have power over their exchange partners. This is in keeping with Porter’s (1980) analysis of the relationship between dependence and power within an industrial setting. Indeed, the structure and the relative concentration of an industry impact on the dependence equilibrium and therefore determine the bargaining power of buyers and suppliers. Porter and others (Cool and Henderson, 1998; Michael, 2000; Subramani and Venkatraman, 2003) have emphasized that customers are powerful when they purchase a large portion of a supplier’s output or when they can switch to another supplier at little, if any, cost. This illustrates how dependent firms can be deprived of power over their trade partners.

**H2a:** There is a negative relationship between the dependence of a supplier and its power over its customer.

As we have discussed previously, dependent suppliers are forced to bank slack resources in order to absorb environmental fluctuations. Hypothesis 2a allows us to further develop our argument and explore the potential impact of power on slack resources. Indeed, building on the conceptual relation between dependence and power, we suggest that the more powerful is a firm (i.e., the less dependent), the less it has to bank slack resources in order to respond to external changes.

For example, powerful information technology suppliers benefiting from the reluctance of customers to switch vendors do not feel the need to sustain extra technological capacity to respond to sudden increases in the service levels required by customers. However, a key point needs to be clarified given that we focus on dependent suppliers, namely firms that in theory do not have power. While hypothesis 2a could lead us to believe that highly dependent firms can hardly exercise any power, Crozier (1964) and Crozier and Friedberg (1980: 30) have shown that «power does not exist in itself (...) It is not an attribute of the actors (...) it can develop only through exchange among the actors involved in a given relation». The authors demonstrated how actors a priori excluded from the power arena manage to develop specific strategies in order to compel respect from others. It could therefore be argued that, within the limits of constraints imposed on them, firms may be able to gain some margin of freedom that corresponds to areas of uncertainty for their exchange partners. The search for a margin of freedom, which in turn creates resistance, is the very consequence of the dependency experienced by the constrained partner. Neuville (1998) observed such phenomena in his empirical study of purchasing activities, which shed light on suppliers' resistance to their clients. Another example of this is «supplier obstructionism», defined by Flynn and Flynn (2003), which occurs when suppliers intentionally behave in a way that can be harmful to buyers.

Given this background, we posit that firms that are at the mercy of dominant trade partners, similar to the condemned prisoner facing its executioner, or Dostoievsky's player who is driven to the brink of ruin but still find ways to bet every night, can always find a margin of freedom giving them some level of power. To a certain extent, such power may protect dependent firms and allow them to elude external fluctuations. We therefore suggest that a firm that can find a margin of freedom vis-à-vis its trade partner can use its power to lessen its level of slack resources. This translates into a negative relationship between a firm's level of slack resources and its power over its exchange partners.

**H2b:** A supplier's level of slack resources is related negatively to its power over its customer.

## RELATIONAL NORMS AND SLACK

As mentioned before, there is a trend toward vertical disintegration in many industrial sectors and strong emphasis is placed on building long-term exchanges between buyers and suppliers, namely vertical partnerships. Building on Thibaut and Kelley's (1959) and MacNeil (1980), relational exchange theorists have developed a social conception of exchanges. They postulate that firms cooperate over time to achieve mutual gain rather than behaving opportunistically to satisfy their own immediate interest. Therefore, RET takes into account the historical and social context in which relationships unfold and demonstrates how exchange partners share common goals and control each other on the basis of shared values.

In this context, the concept of relational norms has received a great deal of attention. Relational norms are defined as shared values and expectations about appropriate or inappropriate behavior of exchange partners (Heide and John, 1992). More precisely, the relational norms commonly presented in the literature are: perfect exchange of information between partners, expectation of continuity, communication, solidarity, cooperation, flexibility allowing adaptations to unforeseen changes, and assistance to partners (Noordewier, John, and Nevin, 1990; Heide and John, 1992; Gundlach, Achrol, and Mentzer, 1995; Aulakh, Kotabe, and Sahay, 1996; Joshi and Arnold, 1997). Dwyer, Schurr, and Oh (1987) have explained how emerging exchange partners adopt norms and establish standards of conduct that set the ground rules for future exchange. Such relational norms and standards of conduct facilitate the coordination of exchanges, operate as safeguards against opportunism in a context characterized by uncertainty and dependence, and improve the effectiveness of cooperation over time. For instance, Joshi (1998) noticed that manufacturers involved in vertical partnerships governed by strong relational norms were more confident that 1/ the supplier would not opportunistically re-interpret contractual terms in light of changes in the original contracting environment, 2/ the supplier would provide any and all information which may be of relevance to the manufacturer, and 3/ the supplier would only act in a manner that benefits both parties. Once relational norms are considered fair, they constitute the basis of future expectations of trust (Ring and Van de Ven, 1992). Indeed, Dyer and Chu (2000) have demonstrated that the length and the intensity of the relationship as well as continuity and assistance—these are precisely the relational norms defined by Heide and John (1992)—favor trust between customers and suppliers in the automotive industry.

Strong relational norms can therefore prevent trade partners from behaving opportunistically. This leads us to posit that expectations of continuity, solidarity, cooperation, and flexibility between trade partners restrict the use of the margin of freedom that could otherwise allow them to elude external fluctuations. In the context of vertical partnerships, this suggests a negative relationship between supplier power and the strength of the relational norms governing the vertical relationships (H3a). Similarly, firms involved in supplier-customer relationships governed by strong relational norms will feel compelled to hoard slack resources. For example, in order to act in accordance with the relational norm of flexibility by adapting to unforeseen changes required by customers, suppliers will have to adjust stock levels, accumulate inventory or make sure to have spare capacity (Mouritsen, 1999). The same argument holds for the relational norm of assistance, which entails helping exchange partners in need and is more easily achieved if partners keep slack resources and nurture competencies such as dedicated technical assistance, hotline services, or any other mechanisms allowing the supplier to assist its client on value analysis, or recommend substitute products in case of delivery problems. Drawing on these arguments, we suggest that a supplier's level of slack resources is positively related to the strength of the relational norms

governing the supplier-customer relationship (H3b). Formally stated, the two hypotheses are:

**H3a:** A supplier power over its customer is negatively related to the strength of relational norms governing their relationship.

**H3b:** A supplier's level of slack resources is positively related to the strength of relational norms governing the relationship with its customer.

## PERFORMANCE AND SLACK

Organizational slack theorists have raised the very interesting question whether slack is something to wish for, i.e. something that either «follows and promote success» (Bourgeois, 1981: 31), or a sign of inefficiency. Indeed, there is no consensus in the literature about the relationship between the firm's performance and its level of slack resources (Cheng, Simmons, and Ritchie, 1997; Tan and Peng, 2003), although Daniel *et al.*'s (2004) recent meta-analysis tends to validate a positive relationship between slack and performance. Upholders of a positive relationship between slack and performance suggest that organizational slack is necessary to protect the organization, create future opportunities to increase outputs, trigger innovation, and facilitate change. An alternative view, supported by Jensen (1986), Phan and Hill (1995), and lean management advocates (Womack, Jones, and Roos, 1990) argue that slack is a waste and should be minimized for the sake of efficiency.

While the debate on the desirability of slack seems difficult to resolve, we noticed that authors conceptualize slack either as a cause (Hambrick and D'Aveni, 1988) or a result of organizational success (Singh, 1986). The two perspectives can be integrated in a virtuous circle, where high performance firms that generate more sales and better control their costs also end up with higher levels of slack resources. In turn, firms enjoying high levels of slack resources have a higher capacity to innovate and embrace strategic change in order to increase their long-term performance.

While our paper focuses on the role played by relational antecedents, such as dependency, power, and relational norms in the hoarding of slack resources, organizational performance must also be considered. In keeping with authors who have concentrated on the impact of performance on slack, we posit that low performance suppliers will not be able to hoard the level of slack resources that would enable them to react quickly to sudden fluctuations imposed by dominant partners. Even if they wanted to, low performance dependent suppliers would not even be able to comply with the requirements of their customers. Therefore, the question whether or not suppliers choose to hold slack resources in order to better respond to external fluctuations applies only to suppliers who achieve a minimal level of performance. We argue that in the case of low performance suppliers, a lower level of slack results from an economical constraint rather than from a margin of freedom.

**H4:** A supplier's level of slack resource is positively related to its level of performance.

## RESEARCH DESIGN

### SAMPLE

Several empirical studies have highlighted how much car assemblers have gained from reorganizing their supply chain and passing competitive requirements on their suppliers (Helper, 1991; Langfield-Smith and Greenwood, 1998). An industrial context where customers put pressure on suppliers for productivity gains, price reduction, product and process innovation, and just-in-time delivery, is an ideal setting for studying the relational antecedents of slack resources. Therefore, our research also focused on the automotive industry but from the perspective of the dependent supplier. The hypotheses were tested on a sample of French automotive component suppliers. In France, there were 328 automotive component firms (French SIC codes 343, 316, and 341) employing more than 20 people in 2002. Our final research sample contained 98 firms, accounting for 29.87% of the entire population; however, t-tests found no significant differences between the excluded firms and those included in the study in terms of number of employees and sales. The 98 companies in the research sample were first tier suppliers, selling components directly to global car makers present on the European market.

Data collection was conducted in two stages. First, financial and accounting data were obtained from the Diane database, which contains information on 880,000 French firms. Second, we collected primary data through a survey conducted with key account managers and sales managers at trade shows (Mondial de l'automobile, Salon Equipauto, and Midest) or during field visits.

### MEASUREMENT OF THEORETICAL VARIABLES

The focal scales of the questionnaire used to conduct structured field interviews were adapted from previous studies. A preliminary version of the questionnaire was developed from an initial pool of scale items based on a thorough review of the literature and initial interviews with managers of the supplying firms. A number of questions designed by previous researchers to be asked to customer firms were adapted to suppliers. As recommended by Churchill (1996), the directionality of several items was reversed to improve the psychometric properties of the measures. A first version of the questionnaire was tested during a pilot study conducted at an outsourcing trade show. The pilot study provided a basis for a thorough statistical evaluation, including consideration of item response distributions, estimates of scale reliabilities, item-total correlation, and item scale discrimination. Several scale items were modified, deleted or added prior to the final survey. The scale items and bibliographic references are listed in **Table 1**. Moreover, Tables 2, 3, 4, 5 and 6 present the scale reliability estimates, eigenvalues and extracted average variance, while Table 7 presents correlation among variables.

## DEPENDENT VARIABLES

Given that the measurement of slack is mired in controversy, we have paid special attention to it. While Nohria and Gulati (1996) and Tan and Peng (2003) have recently argued that perceptual measures can be used, Bourgeois (1981) had previously pointed out the limitations of such measures suggesting that individuals may not be enthusiastic about making revelations concerning their firm's over-capacities. We chose to follow Bourgeois's (1981) recommendations and assess information by using traditional accounting based slack measures that offer reasonable proxies. Authors usually differentiate available, recoverable, and potential slack (Bourgeois and Singh, 1983; Bromiley, 1991; Steensma and Corley, 2001; Daniel *et al.*, 2004). Available slack indicates a firm's ability to meet its immediate obligations with liquid resources. Recoverable slack represents the level of discretionary resources absorbed in the operations, and potential slack reflects the extent of a firm's debt capacity and excess resources not

**Table 1.** Scales, items and references

Concept Number of items, and format	Items	Research source
Dependence 5 items, 5 points Likert Response Format (LRF)	Dependence on Customer X (CX) Easiness to replace CX CX's demand varies continually Stability of the market for the product Uncertainties in orders from CX are a real problem	Noordewier <i>et al.</i> (1990); Buvik and John (2000)
Power 3 items, 5 points LRF	Attempt to influence CX decision making on at least one decision area Say to CX that he would receive better service and cooperation if he complied with this respect to the supplier's request or proposal Say to CX that he would receive poorer output if he did not listen to the supplier	Frazier and Summers (1984); Gaski and Nevin (1985); Gaski (1986); Anderson and Narus (1990); Frazier and Rody (1991); Frazier and Antia (1995)
Relational norms 4 items, 5 points LRF	The parties in this relationship: Expect to be able to make adjustments in the ongoing relationship to cope with changing circumstances Expect that any information that might help the other party will be provided to them Are committed to improvements that may benefit the relationship as a whole and not only the individual parties Expect that the relationship will continue in the future	Noordewier <i>et al.</i> (1990); Heide and John, (1992); Gundlach <i>et al.</i> (1995); Aulakh, Kotabe and Sahay (1996); Joshi and Arnold (1997)
Available Slack	Firm's current ratio: current assets / current liabilities Working capital as a percent of sales Inventory / sales	Bourgeois (1981); Singh (1986); Bromiley (1991); Miller and Leiblein (1996); Steensma and Corley (2001)
Potential Slack	Interest coverage ratio = EBIT* / interest charges Cash flow / investments	
Performance	Return on sales (ROS) Return on investments (ROI) Return on equity (ROE)	Greenley and Oktemgil (1998)
Control Variables	Number of years the customer has been purchasing items from the supplier Level of customization of components supplied to the customer	Heide and Miner (1992)

\*: EBIT = Earnings Before Interests and Taxes

yet absorbed in operations. Except for the selling as well as general and administrative expenses on sales ratio, we had access to all the measures of available, recoverable, and potential slack measures suggested by researchers. Given that financial results of automotive component suppliers tend to vary considerably from year to year, we have used three-year averages in order to level the impact of fluctuations.

A factor analysis based on the principal component analysis method with varimax rotation was performed on the five slack indicators listed in Table 1. Two factors have emerged from this analysis. There are displayed in **Table 2**. The first factor combines three indicators of available slack, namely the current ratio, working capital as a percent of sales, and the inventory on sales ratio. The second factor brings together the interest coverage and the cash flow on investments ratios, and therefore represents potential slack. The Cronbach alpha confirmed the scale reliability. Indeed, while an alpha close to one is indicative of the internal consistency of a scale, 0.6 and 0.8 coefficients are acceptable in the context of exploratory and confirmatory research respectively (Nunnally, 1978). Some authors, including Nunnally (1967), suggest a minimum level of 0.5 for study conducted on novel subjects (Anderson, 1988; Ittner and Larcker, 1997). Nunnally argued that it is sometimes relevant to retain lower consistency items if they represent an interesting aspect of the phenomenon investigated. In this regard, a 0.63 coefficient for available slack and .69 for potential slack are satisfactory.

#### INDEPENDENT VARIABLES

As mentioned above, the four independent variables displayed in Table 1 (dependence, power, relational norms, and performance) were adapted from existing scales. We used subjective measures of dependence but the questionnaire also asked suppliers how easily they could replace their main customers. In addition, given the need for dependent suppliers to respond to unforeseen requests of the dominant buyers, dependence was measured by the demand uncertainty or the unpredictability of the task and market environments. As indicated in **Table 3**, the five-item scale showed a reliability of .87 and the confirmatory factor analysis showed a single-factor solution.

**Table 2.** Slack Measurement Scales

Measures	Factor: Available Slack	Factor: Potential Slack
Firm's current ratio: current assets / current liabilities	<b>.821</b>	.282
Working capital as a percent of sales	<b>.767</b>	.102
Inventory / sales	<b>.652</b>	.203
Interest coverage ratio = EBIT* / interest charges	.007	<b>.876</b>
Cash flow / investments	.162	<b>.836</b>
Cronbach alpha	.63	.69
Eigen value	2.14	1.17
Percentage of variance accounted for	34.4	66.3

\*: EBIT = Earnings Before Interests and Taxes

The power scale was based on items previously developed by Frazier and Summers (1984) and Frazier and Rody (1991) who suggested that the power of a firm depends on the influence that it can exert on its exchange partners. The three-scale items used to measure power take into account two types of influence, namely coercive or not. As indicated in **Table 4**, the factor analysis resulted in a single-factor solution and a 0.66 alpha, which is satisfactory. Furthermore, in keeping with previous research on relational exchange, four items were gathered to construct the relational norms scale. As indicated in **Table 5**, the reliability and validity of the scale is satisfactory as confirmed by the factor analysis and the Cronbach alpha value of 0.66.

**Table 3.** Dependence Measurement Scale

Measures	Factor: Dependence
Dependence on Customer X (CX)	.881
Easiness to replace CX	.839
CX's demand varies continually	.834
Stability of the market for the product	.829
Uncertainties in orders from CX are a real problem	.708
Cronbach alpha	.87
Eigen value	3.36
Percentage of variance accounted for	67.31

**Table 4.** Power Measurement Scale

Measures	Factor: Power
Attempt to influence CX decision making on at least one decision area	.799
Say to CX that he would receive better service and cooperation if he complies with this respect to the supplier's request or proposal	.774
Say to CX that he would receive poorer output if he did not listen to the supplier	.749
Cronbach alpha	.66
Eigen value	1.79
Percentage of variance accounted for	59.91

**Table 5.** Relational Norms Measurement Scale

Measures	Factor: Relational Norms
The parties in this relationship: Expect to be able to make adjustments in the ongoing relationship to cope with changing circumstances	.823
Expect that any information that might help the other party will be provided to them	.712
Are committed to improvements that may benefit the relationship as a whole and not only the individual parties	.684
Expect that the relationship will continue in the future	.610
Cronbach alpha	.74
Eigen value	2.02
Percentage of variance accounted for	50.61

Lastly, in order to consider the relationship between the hoarding of slack resources and performance impact, we used three commonly used financial indicators: return on sales (ROS), return on equity (ROE), and return on investment (ROI). **Table 6** confirms once again the uni-dimensional character and the reliability of the scale, as indicated by the 0.91 alpha.

**CONTROL VARIABLES**

In accordance with Heide and John (1990) and Heide (1994), the logarithm of the number of years the customer had been purchasing components from the supplier (length of the relationship) and the degree of customization of the products supplied to the customer (customization) were used as control variables in the statistical model. However, the “Length of the Relationship” variable was discarded due to a large number of missing values and also because the dates used by respondents were not comparable. For example, some respondents considered the last contract signature date as the beginning of the relationship while others used the date of the signature of the very first contract.

**RESULTS**

Hypotheses H2a and H3a suggested a negative relationship between dependence and power and a negative relationship between relational norms and power respectively. The correlation matrix presented in **Table 7** confirmed the existence of these negative relationships. The correlation coefficients were not particularly high (–.269 for H2a and –.330 for H3a) but they were highly significant. Moreover, we observed a positive correlation between the dependent variable and relational norms (.422). This finding is in keeping with Heide and John (1992) who have demonstrated that highly dependent partners rely on relational norms as safeguard against dominant partner’s opportunism.

In order to test the antecedents of the level of slack resource hoarded by suppliers, we first performed a factor analysis with varimax rotation on the regression variables in order to verify that the independent variables were not related to each other. **Table 8** presents the score of the four orthogonal factors representing the four independent variables

**Table 6.** Performance Measurement Scale

Measures	Factor: Performance
Return on sales (ROS)	.972
Return on investments (ROI)	.835
Return on equity (ROE)	.969
Cronbach alpha	.91
Eigen value	2.57
Percentage of variance accounted for	85.9

scores and indicates that the set of independent variables explains 66.9% of the variance.

Two regressions were then run. The first regression (Model 1) measured the impact of the four independent variables (dependence, power, relational norms, and performance) on the level for available slack held by suppliers. The second regression (Model 2) was performed to determine the impact of the independent variables on the level of potential slack. Furthermore, the control variable "Customiza-

**Table 7.** Correlations among Study Factors

Factors	1	2	3	4	5	6	7
1: Dependence	1.000						
2: Power	-.269** (.007)	1.000					
3: Relational Norms	.422** (.000)	-.330** (.001)	1.000				
4: Available Slack	.382** (.000)	-.631** (.000)	-.520** (.000)	1.000			
5: Potential Slack	-.083 (.449)	.095 (.388)	.068 (.534)	-.000 (1.000)	1.000		
6: Performance	.054 (.615)	-.090 (.402)	-.022 (.838)	.091 (.415)	.228* (.040)	1.000	
7: Customization	.014 (.894)	-.300** (.003)	.070 (.495)	.166 (.128)	.107 (.327)	.109 (.308)	1.000

\*\* : Correlation is significant at the 0.01 level (2-tailed); \* : Correlation is significant at the 0.05 level (2-tailed).

**Table 8.** Independent Variables Factor Analysis (Rotated Component Matrix)

Factors	Dependence	Performance	Relational norms	Power
Dependence on Customer X (CX)	<b>.893</b>	-.084	.126	-.121
Easiness to replace CX	<b>.839</b>	.086	.121	.044
CX's demand varies continually	<b>.801</b>	-.049	.156	-.147
Stability of the market for the product	<b>.786</b>	.170	.192	-.157
Uncertainties in orders from CX are a real problem	<b>.636</b>	-.014	.329	.035
Return on sales (ROS)	.028	<b>.959</b>	.060	-.113
Return on investments (ROI)	.017	<b>.838</b>	-.152	.131
Return on equity (ROE)	.030	<b>.958</b>	.054	-.121
Expect to be able to make adjustments in the ongoing relationship to cope with changing circumstances	.084	-.014	<b>.823</b>	-.172
Expect that any information that might help the other party will be provided to them	.212	-.192	<b>.675</b>	-.081
Are committed to improvements that may benefit the relationship as a whole and not only the individual parties	.253	-.018	<b>.625</b>	-.015
Expect that the relationship will continue in the future	.144	.170	<b>.562</b>	-.170
Attempt to influence CX decision making on at least one decision area	.011	-.075	-.107	<b>.787</b>
Say to CX that he would receive better service and cooperation if he complies with this respect to the supplier's request or proposal	-.007	.035	-.121	<b>.757</b>
Say to CX that he would receive poorer output if he did not listen to the supplier	-.305	-.051	-.128	<b>.706</b>
EigenValue	4.392	2.677	1.768	1.200
Percentage of variance accounted for	22.642	17.750	14.080	12.438
Percentage of cumulative variance	22.642	40.393	54.473	66.911

tion” was entered in the regression to examine its direct impact on available and potential slack. A residuals analysis was carried out to test regression violations. The residuals value and dependent variable scattergram did not show any non linear pattern and therefore suggested that the application of our models was justified. A visual examination of the normal probability plot of the residuals showed that there were no significant or systematic departures, indicating that the regression variate met the assumption of normality. The results are displayed in **Tables 9** and **10**.

As indicated in Table 9, dependence and relational norms were positively related to available slack, while power was negatively related to available slack. This confirms hypothesis H1, H2b and H3b. However, no support was found for H4 on the positive impact of performance on available slack. Similarly, the degree of customization of the products supplied to the customer (customization) had no significant impact. Table 10 shows that the performance variable was the only one leading to statistically significant results in our second model, which measured the antecedents of potential slack. This finding suggests that the level of potential slack held by suppliers is explained neither by the relational behavior of the firm nor by the power-dependence equilibrium between suppliers and clients. However, this result indicates that

**Table 9.** Model 1: Results of Regression Analysis for Available Slack

Variables	Unstandardized B	Coefficients Standard Errors	Standardized Coefficients $\beta$	t	Significance
(Constant)	-.152	.210		-.725	.471
Dependence	.327	.077	.329	4.224	.000
Power	-.500	.079	-.504	-6.336	.000
Relational Norms	.391	.081	.377	4.842	.000
Performance	.064	.078	.064	.821	.414
Customization	.050	.063	.063	.788	.433

Adjusted R<sup>2</sup> = 51.3 ; F = 18.04 ; significance = .000

**Table 10.** Model 2: Results of Regression Analysis for Potential Slack

Variables	Unstandardized B	Coefficients Standard Errors	Standardized Coefficients $\beta$	t	Significance
(Constant)	-.294	.223		-1.318	.191
Dependence	-.091	.082	-.117	-1.110	.270
Power	-.055	.084	-.071	-.660	.511
Relational Norms	.118	.086	.146	1.383	.171
Performance	.252	.083	.322	3.033	.003
Customization	.067	.067	.108	1.002	.319

Adjusted R<sup>2</sup> = 10.9 ; F = 2.97 ; significance = .017

high performance suppliers enjoy a higher level of excess resources not yet absorbed in operations. This is in keeping with Hambrick and D'Aveni (1988) whose research on bankruptcy has allowed them to observe a positive link between the performance of firms and their level of slack resources.

## DISCUSSION AND CONCLUSION

Several authors (Hill and Rothaermel, 2003; Tan and Peng, 2003) have recently stressed the need for revisiting the role of slack resources and questioning the efficiency of hoarding resources that are not strictly necessary for the normal functioning of the organization but facilitate its adaptation in case of unforeseen events. By shedding light on the relational dimensions of organizational slack, this paper looked from a new perspective at the reasons why organizational slack exists. Our findings support the existence of some power-dependence and relational variables that favor the development of available slack resources, allowing us to re-investigate the seminal work of Cyert and March (1963).

The factor analysis did not confirm the existence of the three types of slack (potential, recoverable, and available slack) identified in the literature, corroborating Bourgeois's (1981) observation about the complexity of evaluating spare resources that are not necessary for the normal functioning of the organization. However the two factors identified, which we have labeled available and potential slack, are in keeping with the work of Singh (1986), Greenley and Oktemgil (1998), and Tan and Peng (2003) who also recognized two types of slack. The analyses that we have conducted to determine the antecedents of both available and potential slack resources suggest that slack is not only driven by internal and firm specific factors and should not be solely considered as a buffer against organizational tensions. Furthermore, the results of the two regressions that we have performed differ enough to allow us to refine the work of Sharfman *et al.* (1988) by suggesting that each type of slack have distinctive antecedents. We have highlighted the fact that a firm's level of available slack resources increases when its dependence on its external partner is higher and when the relational norms governing the relationship are stronger. However, our results also indicate that relational antecedents do not impact on the level of potential slack. Similarly, we have observed that the performance of a firm highly determines its level of potential slack but not the level of available slack. We believe that these findings, made possible because we have chosen to look at slack from a relational perspective, constitute a valuable contribution to the literature. Indeed, our research results depart from the seminal work of Cyert and March and their followers who have conceptualized slack as a homogeneous bundle of spare resources.

Our results also support the work of Singh (1986) and Hambrick and D'Aveni (1988) who have confirmed the positive association between potential slack and performance. However, as mentioned above, avail-

able and potential slack indicators were not equally linked to the performance measures in the regressions. Although potential slack did not seem to be influenced by external antecedents, financial performance explained 11% of the variance of our second model. On the other hand, we noticed no statistical relationship between the level of available slack resources (Model 1) and the financial performance of the firm. This questions our initial suggestion that low performance suppliers will not be able to hoard the level of slack resources that would enable them to react quickly to sudden fluctuations imposed by dominant partners.

Our results also extend the antecedents of organizational slack framework developed by Sharfman *et al.* (1988) by giving a closer look at the question of power and dependency in vertical relations. Indeed, we pointed out that the level of available slack resources held by a supplier decreases when its power increases. Discussions with respondents during primary data collection provided illustrations of this. For example, a car body component supplier that sold eighty percent of its output to the largest French car company explained that it always put aside one or two spare workers in case its client needed help to assemble a particular vehicle. During the busiest time periods, this highly dependent supplier could even dedicate up to eight assembly operators to its key client. Moreover, several respondents commented on the cooperation and flexibility expectations characterizing their business relationships with car makers, stressing that they felt the need to quickly react to unforeseen changes. Indeed, before European car makers agreed on the implementation of a common electronic data information system, suppliers had to adopt the specific system of each of their client in order to comply with the relational norms of cooperation, communication, and flexibility. As a result, a firm supplying three different clients had to maintain a level of slack resources high enough to support three different information systems.

The clear distinction that we made between available and potential slack allows us to clarify the debate on the desirability of slack. As mentioned before, lean production advocates have argued that slack is a waste and should be minimized for the sake of efficiency. This consideration was reflected in the initial interviews with managers that we carried out at the beginning of our study. Interviewees explained that they sought to implement extensive cost-cutting programs in order to eliminate all of the over-capacities that we have identified as slack resources in our research framework. Although the pressure seemed higher in divisions that were considered as cost centers, most managers interviewed aimed at the reduction of any form of buffers. It seemed clear that achieving a lean profile impacted on the level of slack resources banked by their firms. While we focused on the impact of performance on slack rather than the impact of slack on performance, we suggest that the lean management argument holds only in the case of available slack. Indeed, an automotive component supplier operating according to just-in-time principles and having no slack in its production system could very well hoard a large amount of potential slack resources, such as free cash flows and available engi-

neering hours, that could facilitate strategic or creative behavior leading to long-term performance. However, the question of just-in-time production needs to be carefully considered. As mentioned before, the result of our first regression indicates that a supplier involved in a vertical relationship governed by strong relational norms will be able to avoid hoarding available slack resources if it has power over its customer. One could argue that a low level of available slack could be an indicator that the supplier operates in accordance with just-in-time principles precisely to comply with customer's requirements. The low level of available slack resources would therefore be determined by the absence rather than by the existence of supplier power over its customer. However, authors have shown that just-in-time deliveries to the clients often force suppliers to hoard a higher level of available slack resources (Oliver and Wilkinson, 1988). Indeed, dependent suppliers are often the ones who pay the price for the leanness of their clients.

Our findings should be considered in light of the research limitations. First, using financial indicators to measure slack did not allow us to know whether the presence of slack is the result of a conscious decision. Furthermore, both performance and slack were measured with financial indicators. While this approach is commonly used in the management literature, it is certainly not ideal. To avoid the circularity problem, further research on slack should follow the recommendations of Nohria and Gulati (1996) and Tan and Peng (2003) and take perceptual measurements of slack as well as financial ones. This would also resolve the issue of managerial intent.

Another limitation is that we did not control for the cycle phase of the relationship. Following Heide and John (1990) and Heide (1994), we have suggested that the age of the relationship should be included in our framework because the suppliers who manage to align their interests with those of their customers over time should be more likely to hoard slack resources. This proposition was also in keeping with relational exchange theorists who consider supplier-customer relationships as dynamic exchanges that evolve according to their life cycle (Dwyer *et al.*, 1987; Jap and Ganesan, 2000). It would therefore be necessary to take into account the three different phases of a vertical relationship identified by Larson (1992), namely contact, trial, and partnership, when studying the antecedents of slack resources. It could be argued that during the contact phase, dependent suppliers do not feel the need to hoard slack resources because the relational norms are not clearly established between partners. In the trial phase, when partners multiply exchanges, work on joint projects, and commit themselves to increasingly risky cooperation, relational norms come clearly into focus. Respecting these norms allows partners to enter into the deeper cooperation that characterizes the third phase of a vertical relationship known as the partnership or integration phase. We suggest that further research on slack should integrate this dynamic conceptualization of relational exchanges in order to control for the cycle phase of the relationship.

Beyond the research limitations, our results have some implications for managers who may want to determine the level of slack resources that their firm should hold. As competitive pressure urges companies to simultaneously increase their performance, minimize their excess capacities, and comply with their customers' requirements in terms of assistance and flexibility, it is crucial for managers to right-size their businesses in ways that decrease slack without risking to erode strategic leverage or lose customers. The distinction that we have empirically established between available and potential slack, and between the reasons why these two forms of slack come to exist in firms, may help practitioners to strike the right balance between short-term adaptation and long-term survival. Indeed, our study suggests that managers could decide which type of slack they want to bank with regard to their external constraints and profitability objectives.

Without suggesting that suppliers should intentionally behave in ways that can be harmful to their trade partners, our research indicates that it is possible for dependent suppliers to ease the effect of competitive pressure, and to develop a margin of freedom allowing them to resist their clients without putting at risk their long term survival. However, in order to better understand the phenomenon of supplier resistance, further research needs to be conducted to uncover the bases of the power to resist.

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