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Corporate Governance, Enterprise Risk Management, and Inter-temporal Risk Transfer

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This work is an initial attempt to describe the interconnections among corporate governance, enterprise risk management, and the phenomena of inter-firm risk transfer that occurs in combination with firms' income smoothing. Corporate governance is conceived as a set of rules according to which a firm is managed and governed by its top managers. Extant literature on corporate governance has pointed out the benefits of the adoption, at a firm level, of a comprehensive enterprise risk management process. We note that, although such an adoption favors the smoothing of a firm's income, in smoothing the income a firm, it also gives rise to an inter-temporal transfer of risk from the firm itself to its stakeholders, specifically to suppliers and employees. Such transfer of risk depends on the strength of a firm contractual power and on the structural relationships established by a firm with its stakeholders. We therefore argue that larger-sized organizations affiliated with a business group are likely to smooth income to a greater extent than smaller-sized organizations unaffiliated with a business group. The paper also offers some discussions of the findings and points out some important issues to be addressed in future studies.

Keywords: enterprise risk management, corporate governance, risk transfer, net operating income smoothing

Introduction

There is a broad consensus around scholars and practitioners that the effectiveness of a corporate governance system in a firm highly depends on the adoption of a comprehensive and organic enterprise risk management (ERM). For example, extant policy documents suggest governance structure to incorporate a risk management framework, making the ERM an integral part of the governance structure and process of a firm (e.g., see Basel Committee on Banking Supervision, 2008).

In such a view, the general goal of an ERM is to generate economic value through the coverage of firms' business risk, on the one hand, and by exploiting the positive side of uncertainty conditions, on the other hand. The ERM has assumed increasing importance from a theoretical and a professional point of view. It is a common opinion that the capability of both financial and non-financial companies to create value – while following strategies for growth and/or for innovation in conditions of a relatively low volatility about net

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incomes – requires the adoption of a proper ERM.

ERM is defined as a holistic tool (Alviunessen & Jankensgård, 2009) to face overall firm risks, taking into account the interrelations between different managerial issues, such as strategic planning, financial decision, operations, firm reputation (Nayak et al., 2010). From this perspective, Razali and Tahir (2011) argue that the general meaning of ERM is "(…) to integrate or aggregate all types of risks" (p. 32). According to Lam (2000) the ERM logic aims to create economic value by managing several types of risks (e.g., credit risk, market risk, and operational risk) through an integrated approach. The general idea is behind the ERM logic is to look, as much as possible, at a firm's risk in a systemic logic, where internal and external pressures play a crucial role to manage such risks, given the several expectations coming from a firm's stakeholders. Therefore, the ERM rises like an enlargement of the traditional risk management. In fact, during the nineties of the last century the risk management discipline attempted to find a common ground among the different, developed firms' risk-metrics (related to financial investments and bank loans) to size a proper equity-capital level as a cushion against the failure risk. In such a research stream, traditional risk management tools are based on stochastic and statistical approaches aimed to figure out a unique value (or distribution of values) that shows a measure of a firm level of exposure to risk, without considering linkages between a firm's risk and a firm's risk and other internal and external stakeholders' risks. Thus, traditional tools are inconsistent to manage business risks with a systemic logic. This doesn't mean that traditional risk management and ERM are as alternatives to each other. The traditional risk management is an antecedent of ERM and techniques and methods coming from the traditional risk management field are useful for implementing the quantitative component of ERM process.

The increasing attention attributed to the ERM in the creation of economic value has led to even greater interactions between risk management mechanisms and the corporate governance system at the firm level. Basically, the holistic view that is proper of the ERM implies an involvement of the company board of directors with respect to both methods of risk analysis and periodic objectives that managers in charge of the ERM process must pursue in terms of mitigation and of exploitation of the overall risks related to a given firm. Consequently, the complementarity between corporate governance and ERM increased since the latter has been considered more and more as a critical driver to combine strategic objectives and actions with a relative low volatility of a company's performance or, in other words, with a smoothed flow of income over time. The basic idea is that a good corporate governance system must deal, at a firm level, with both specific risks along with their interactions and a firm's business risk as a whole. Moreover, ERM system not only provides clear information about the linkages between strategic opportunities and risk exposure, but also it offers methods and models able to support a manager's attempt to effectively exploit the negative side of the business risk (or downside risk) as well as its positive side (or upside risk). Such a role of ERM is linked with the concept of real income smoothing that is "due to economic/physical/organizational (but not accounting) decisions made. These could include timing of particular investments like machinery and equipment, new venture expenditures, advertising, and a host of other activities. The smoothing literature makes the case that 1) this activity is in fact economic and, well done, can raise long run average profits, and that 2) successful managers have the flexibility to engage in such smoothing" (Bowman, 1980, p. 19).

Extant studies concerning the relationships between ERM and corporate governance have focused on the micro-level of analyses (i.e., the individual organization) and on a firm's benefit that, with corporate governance goals, stem from the adoption of proper ERM processes, in terms of both greater returns, lower volatility of such results associated to greater opportunities of a manager to smooth a firm's income (Klumpes,

Wang, Tang, & Abhyankar, 2011). Kleffner, Lee and McGannon (2003) have included, among the benefits of the adoption of ERM, "an increased awareness of nonoperational risks by operational risk management personnel and an increased awareness of operational risks by nonoperational risk management personnel, more coordination with different areas responsible for risk management, and more involvement and interactions in the decision making of other departments" (p. 53). Other benefits are associated to an increase of a firm's financial and market performance (Hoyt & Liebenberg, 2011) and "the introduction and development of ERM systems is deemed to reduce direct and indirect costs of financial distress and earnings variability [income smoothing], as well as negative surprises in financial markets. Moreover, it may improve the decision-making processes to select the best investment opportunities. As a consequence, ERM may favor the increase of firm value" (Florio & Leoni, 2017, p. 56).

Despite the meaningful contributions provided by extant literature on the benefits of the adoption of the ERM at the firm level, one potential, but relevant, although unintended, consequence of such adoption decision that has been neglected is the induced inter-firms risk transfer. Specifically, we may analyze the interdependence between ERM and corporate governance from a broader point of view by considering that the risk management process comprises a firm and its task environment, the latter composed by its suppliers, customers, and partners. In particular, our research idea is to enlarge traditional studies about the interrelations between corporate governance and ERM taking into account how such interrelations could be a driver of a risk transfer from the focal organization to other organizations that belong to its task environment.

Our paper aims to find new research areas by combining micro and macro issues tied to corporate governance, ERM, and inter-firm transfer of risk. We base the starting point of our work on the following set of assumptions. A firm complies to the ERM and to the corporate governance rules will reduce a firm business risk, while maintaining or improving the profitability level. Moreover, the reduction of a firm risk, as measured by a smoothed flow of income, combined with a top level of profitability, requires a firm to create a negotiated environment in which it can externalize its business risk through risk transfer mechanisms. Finally, the risk transfer, to maximize the overall risk-return profile, could favor some firm's stakeholders and harm others.

Starting from the above assumptions, the article focused on the relationship between ERM and corporate governance and how this relationship will lead to an inter-temporal risk transfers, induced by the aim to smooth a firm's income, specifically its net operating income, across different periods with selected stakeholders (e.g., suppliers). In addition, we propose some research hypotheses that stem from a related theoretical framework where the inter-temporal risk transfer intensity depends on the combination of firm size and of structural interactions established with its suppliers by a firm. Finally, we provide conclusions and some research perspectives.

Enterprise Risk Management, Corporate Governance, and Income Smoothing

The wide impact of ERM on several company areas and its role in terms of economic value creation are the foremost reasons for the relevance of the ERM within a firm's corporate governance structure and processes. Nowadays, corporate governance rules deal more and more on the availability at the firm level of integrated risk management processes and systems for communicating the ERMs' outcomes to external stakeholders. As suggested by extant studies, a firm adoption of the ERM depends also on both internal and external pressures that originate from a firm's corporate governance system. For instance, Kleffner et al. (2003) found that the corporate governance is one of the most influential factors of a firm adoption of the ERM process. In the same

vein, PricewaterhouseCoopers (2008) found that in Finland corporate governance rules combined with external regulations play a decisive role in order to stimulate firms to adopt the ERM.

One of the main corporate governance tasks is to define rules and procedures which aim, on the one hand, to increase company survival, and to spread firm information among different stakeholders. In the corporate governance perspective, the ERM plays a double role. On the one hand, it is an internal tool for both mitigating the downside of volatility and exploiting its upside. It will improve firms' relationships with several stakeholders such as banks, financial investors, rating agencies, public authorities. For example, Jung and Yang (2013) provided evidences that earnings smoothing is a mechanism to decrease the credit risk perception by rating agencies and thus to improve firms' relationships with the financial intermediaries.

The above considerations lead us to look at the ERM process as because risk-return objectives defined at company level by its board of directors. The latter decision makers are influenced by the expectations projected on them by several economic actors (e.g., bondholders, shareholders). However, the judgment about the quality of a certain ERM process may be given only in relative terms. For example, a traditional financial trader, who aims to achieve high returns in the short run, will be much interested in an ERM process able to optimize the risk-return in a short run. A stakeholder interested in achieving financial performance in the long run, will look at an ERM process able to create sustainable value over longer time periods. Despite such unique perspectives, all stakeholders pay attention to firms' capability to hedge negative shocks with shocks of opposite sign and, thus, to a firm's ability to smooth its income while keeping its level to a chief point. This leads the corporate governance members to use the ERM process to smooth a firm's income (which implies, given the return, a lower risk) even in very adverse conditions. They may create a negotiated environment and externalize to different players of such an environment (e.g., suppliers, partners) the volatility of performances caused by internal and or external risk factors.

In risk-return analysis, several studies, belonging both finance and accounting, tried to link internal firm features with idiosyncratic and systemic risk. A greater part of such studies focused on operating and financial leverage as internal determinants which will amplify the equity stock risk premium (e.g. Hamada, 1972; Mandelker & Rhee, 1994). The basic idea is: given a certain intrinsic business risk level, the operating leverage affects positively the unlevered risk (or operating risk) and financial leverage is likely to cause a positive difference between levered and unlevered risk (Ho, Xu, & Yap, 2004, p. 400).

Concerning the unlevered risk, the potential operating leverage degree depends on the ratio of fixed costs to operating income. This means that, *ceteris paribus*, an increase in the level of fixed costs acts positively on the net operating income elasticity against revenue changes. The potential degree of operating leverage, for fixed costs, amplifies the positive correlation between the net operating income or EBIT (earnings before interests and taxes) and revenue changes. A high operating leverage level could then act positively and negatively on the risk-return trade-off. It is a driver for a strong exploitation of economy of scale and/or scope during a period of growth in revenues; instead, in a period of decline in revenues, a high operating leverage level will reduce the EBIT. The potential degree of operating leverage arises as an internal driver of the EBIT volatility. The standard deviation of EBIT depends from the combination between the volatility in revenues and the operating cost structure (Renzi, Sancetta, & Orlando, 2017). Given a firm's revenues (REV) and net operating income (EBIT), we derive the effective degree of operating leverage (DOL) from the following expression.

$$DOL = \frac{\Delta Ebit}{Ebit_{(t0)}} \Big/ \frac{\Delta REV}{REV_{(t0)}} = \frac{\Delta Ebit}{Ebit_{(t0)}} \cdot \frac{REV_{(t0)}}{\Delta REV}$$

Given the firm's fixed costs (FC), we express the potential degree of the operating leverage (DOL_P) according to the following equation.

$$DOL_P = 1 + \frac{FC}{Ebit}$$

If fixed costs, price per unit and variable cost per unit are constants, then it follows that DOL= DOL_P and

$$\text{Standard deviation of Ebit} = |DOL_P| . \sqrt{\frac{Demand\ Variance}{(Initial\ Demand)^2} . (Initial\ Ebit)^2}$$

A firm can avoid or mitigate the effect of shocks in revenues on its net operating income if it can change its cost structure by modifying the purchasing conditions (in terms of volume and/or price) of production inputs and the level of its fixed costs, those associated with employees. Yet, as shown in Figure 1, a firm's attempt to change its cost structure may originate an inter-temporal transfer of risk to suppliers and employees.

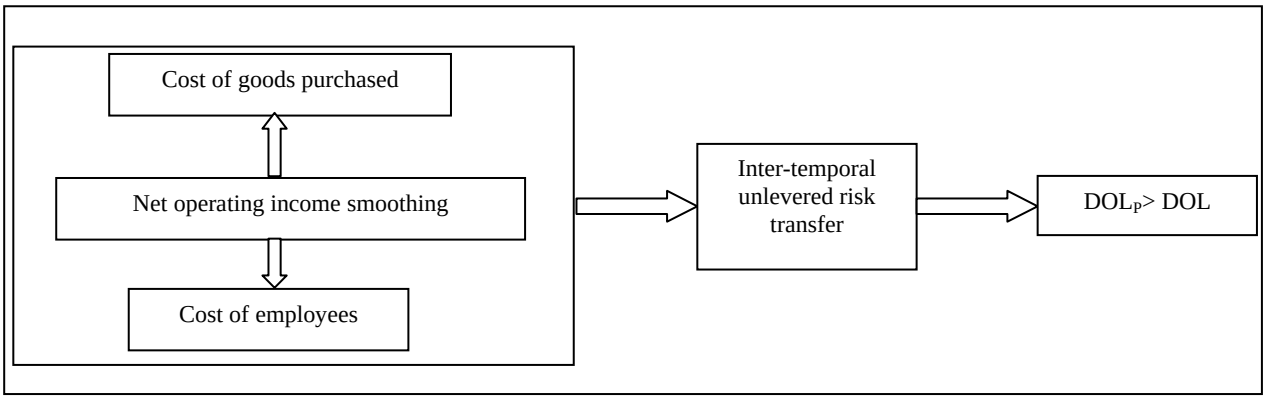

Figure 1. Net operating income smoothing and the decrease of the operating leverage effect on the unlevered volatility through a transfer risk process

Changes in variable costs of inputs or in fixed costs, will reduce the effective operating leverage (DOL) well below the level of the potential operating leverage level (DOLp) (see Figure 1). Therefore, we write the following inequality.

$$\text{Standard deviation of Ebit} < |DOL_P| . \sqrt{\frac{Demand\ Variance}{(Initial\ Demand)^2} . (Initial\ Ebit)^2}$$

A firm can achieve the income smoothing by accounting techniques (i.e., defined as artificial smoothing) and/or by real changes in its operations (i.e., defined as real smoothing). Concerning the latter, Huang, Chang, and Chou (2008) used a real option perspective and provided evidence on firms' smoothing strategies within the production planning activity to hedge profits against shocks on demand forecasting. Concerning the former smoothing, Albrecht and Richardson (1990, p. 713) argue that "artificial smoothing occurs when management manipulates the timing of accounting entries to produce smooth income streams". An artificial smoothing occurs when a firm compensates external shocks by accounting operations and/or by financial decisions which hide the real volatility of its performances in a period. The artificial smoothing performed by a manager, by

either respecting or eluding the accounting law (Worthy, 1984), implies a profit manipulation that will cause not only a difference between a firm's economic income under volatility conditions and the dynamic of a firm's accounting results, but also "due to continuing and flexible treatment of reserves, i.e. bad debt, obsolete inventory, business closing" (Bowman, 1980, p. 20), better hedging conditions of a firm against business risks. We tie the latter type of artificial smoothing and the real smoothing to a typical ERM goal that consists in controlling and hedging as much as possible the operational and financial drivers of firms' performances volatility by acting on firms' operations.

We argue that both real and artificial smoothing imply an inter-temporal transfer of unlevered risk, considered as a one period risk externalization which may increase and reduce symmetrically the remuneration of both suppliers and employees. Risks that a firm cannot eliminate by diversifying its sales activities can be "averaged over time in a way that reduces their impact on individual welfare. One hedging strategy for non-diversifiable risks is the use of the intergenerational risk sharing, which spreads the risks associated with a given stock of assets across generations with heterogeneous experiences" (Allen & Gale, 1997, p. 525). Given the concept of income smoothing and considering the pressures that stem from corporate governance rules to reduce a firms' risk, we argue that, at a firm level, the adoption of the ERM will favor a firm's attempt to smooth its income. Such an attempt is likely to give rise to an inter-temporal risk transfer of firms to its negotiated environment components (e.g., suppliers, employees).

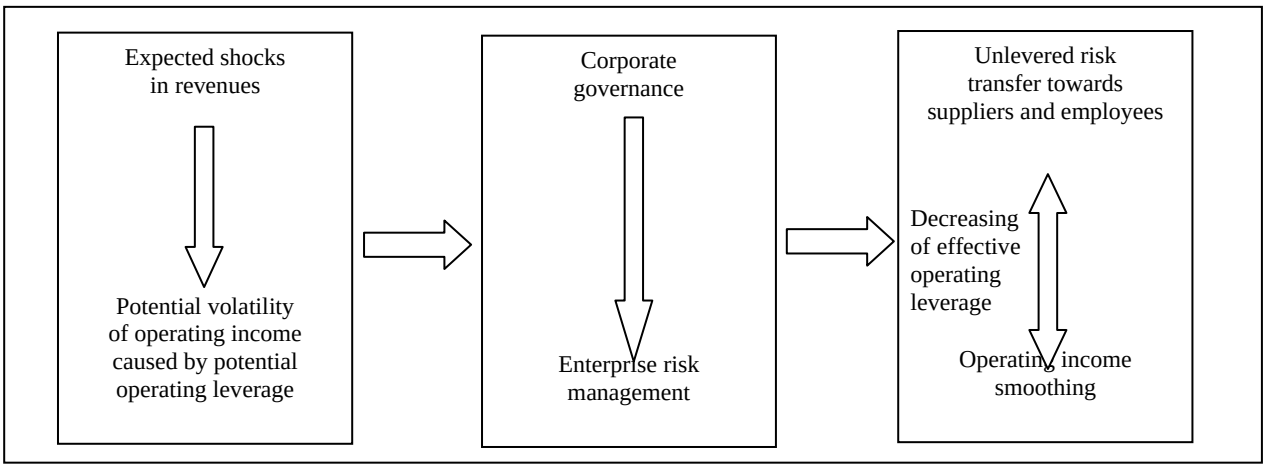

Figure 2. Revenues volatility, corporate governance pressures, ERM, and the smoothing of EBIT

Figure 2 shows a path where the potential EBIT volatility, caused by the interaction between shocks in revenues and the potential operating leverage level, rises like an input to stimulate within a corporate governance system a firm to adopt the ERM process. Such adoption is likely to favor a firm's attempt to smooth its EBIT via risk transfer processes to its negotiated environment components. The inter-temporal unlevered risk transfer is then a consequence and a condition to smooth a firm's income using relationships with its negotiated environment components.

The proposed Figure 2 suggests that the adoption of an ERM at a firm level may produce positive and negative consequences for different stakeholders included in a firm negotiated environment, when a firm reduces its risks via an associated inter-temporal risk transfer. For instance, a transfer of unlevered risk to a

firm's supplier to compensate an expected non-diversifiable reduction in revenues, would decrease the credit risks incurred by one or more loan banks, yet increase the business risk of a firm's suppliers. The above example is under the corporate governance perspective since a firm's attempt to smooth the EBIT by leveraging its established relationships with its suppliers and/or employees is conducive to reduce a firm's credit risk and to improve the focal firm's relationships with bank(s) or others financial actors.

Research Hypotheses and Theoretical Framework

The above conceptualization about the inter-temporal transfer of unlevered risk comes from the corporate governance pressures on a firm to adopt the ERM as a way of smoothing net operating income under revenue volatility conditions. We then propose a new theoretical framework in which a firm attempts to smooth its income, and thus to reduce its business risk, depends on two main factors: the firm size and its affiliation with a business group, with the latter defined as a set of legal independent firms linked by formal and informal ties, accustomed, with a different extent, to take coordinated decisions and actions and subject to a holding company (Khanna & Yafeh, 2005). In addition, we argue that the income smoothing via cost of goods purchased, which implies a transfer of unlevered risk towards suppliers, is more achievable than via the cost of employees, which requires a transfer of unlevered risk toward laborers. In particular, our theoretical framework starts from the following four hypotheses.

HP1—The extent of income smoothing that is achieved by managers of firms by acting on the cost of goods purchased, which implies a transfer of unlevered risk linked to revenue volatility towards suppliers, is likely to be greater in the cases of larger-sized corporations affiliated with a business group than in smaller-sized corporation unaffiliated with a business group;

HP2—The difference in the extent of income smoothing that is achieved by managers of firms in group-affiliated companies compared to group-unaffiliated companies is greater than the same difference in larger-sized organizations compared to smaller-sized ones;

HP3—The extent of income smoothing that is achieved by managers of firms with a greater extent by acting on the cost of goods purchased than on the cost of employees;

HP4—The income smoothing that is achieved by managers of firms acting on the cost of employees is likely to occur with greater extent in smaller-sized corporations than in larger-sized ones.

We link the first hypothesis with both the unbalanced power concept and structural interactions within a business group's (or structural interactions) effects. In particular, larger-sized corporations have a high contractual power in their relationships with a number of smaller-sized suppliers (Barla, 2000). Suppliers of a large-sized corporation are often forced to work in "captive conditions", to define, period by period, the dynamic of prices per unit and sales volumes of their goods. This implies that larger-sized corporations may have a large margin to mitigate the negative volatility of their revenues by reducing purchase prices and/or quantity of the production inputs. Concerning the role of structural interactions, firms belonging to a business group can exploit intra-group interactions for compensating revenue volatility by acting on costs which come from other organizations of the same group (Dewenter, 2003). The income smoothing process within a group can occur vertically or horizontally. Vertically in the sense that the parent company can optimize resources and related costs by moving activities and production factors from one company to another of the group, or even by intervening on the prices and volumes of those companies that act within the group as suppliers. From a horizontal point of view, the smoothing process occurs via formal or informal agreements established between

two or more firms, belonging to a group linked to each other by commercial, strategic, and/or technological interconnections.

The second hypothesis suggests that belonging to a group allows a firm more strongly than the firm size to smooth the income based on inter-temporal unlevered risk transfer. This hypothesis comes from the idea that structural interactions, which typically characterize firms' interactions within a group, strongly the possibility to transfer unlevered risk from one firm to another than the case of an unaffiliated firm with a business group. In the latter case, the income smoothing is achieved via interactions with group-unaffiliated companies which, free from group structural relationships and thus subjected to no coercive power from a third party, have more room to decide whether to accept a risk transfer from another entity or not. In other words, group-unaffiliated firms have the freedom to opt out from intertemporal trade and renege on all existing contracts with other entities. For group-unaffiliated, the only punishment for doing so, and hence the only enforcement mechanism for contracts, is that agents that choose to default on their contracts are banned from future intertemporal trade. Consequently, the group-affiliated companies exhibit a greater propensity to transfer risks with other companies of the business group than the group-unaffiliated companies with other firms. In this vein, Nakatani (1984) shows that the variance of operating profitability (and growth rates) is lower for group-affiliated companies than unaffiliated firms.

The third hypothesis depends, on the one hand, on the particular nature of human resources. A firm does not own human resources. Therefore, these are resources characterized by a greater rigidity in terms of remuneration and reallocation (Jacoby & Mitchell, 1990). In addition, given the flexible terms that often characterize the purchasing contracts, often combined with the adoption of target costing approaches at a firm level (Kato, 1993), considering the more rigid terms implied in labor contracts and the implied protection granted for employees within current regulation, we expect that companies rely more on the cost of goods purchased to a greater extent than cost of employees to smooth operating income.

The fourth hypothesis comes from the more protections, in terms of salary and work stabilization, that human resources receive in larger-sized corporations compared to smaller-sized ones (e.g., see Miller & Mulvey, 1996). The unions' role in protecting workers' rights is relevant in larger-sized corporations; unions themselves can reap more extended economies of scale. Large organizations pay attention to that part of human resources who own key knowledge and skills, which play a crucial role to archive successful strategies and related economic performances. Larger-sized organizations give more weight to work disruptions and to loss of key human resources associated to wage changes than smaller-sized organizations (Agell & Bennmarker, 2007). In a larger-sized corporation context, human resources often produce sunk costs because of contractual constraints and strategic issues which further attenuate the possibility to vary salaries and the number of employees to smooth income.

According to the above hypotheses, we base our theoretical framework on a matrix with four regions. The horizontal side concerns the structural interactions within a business group; its vertical side regards the firm size (see Figure 3).

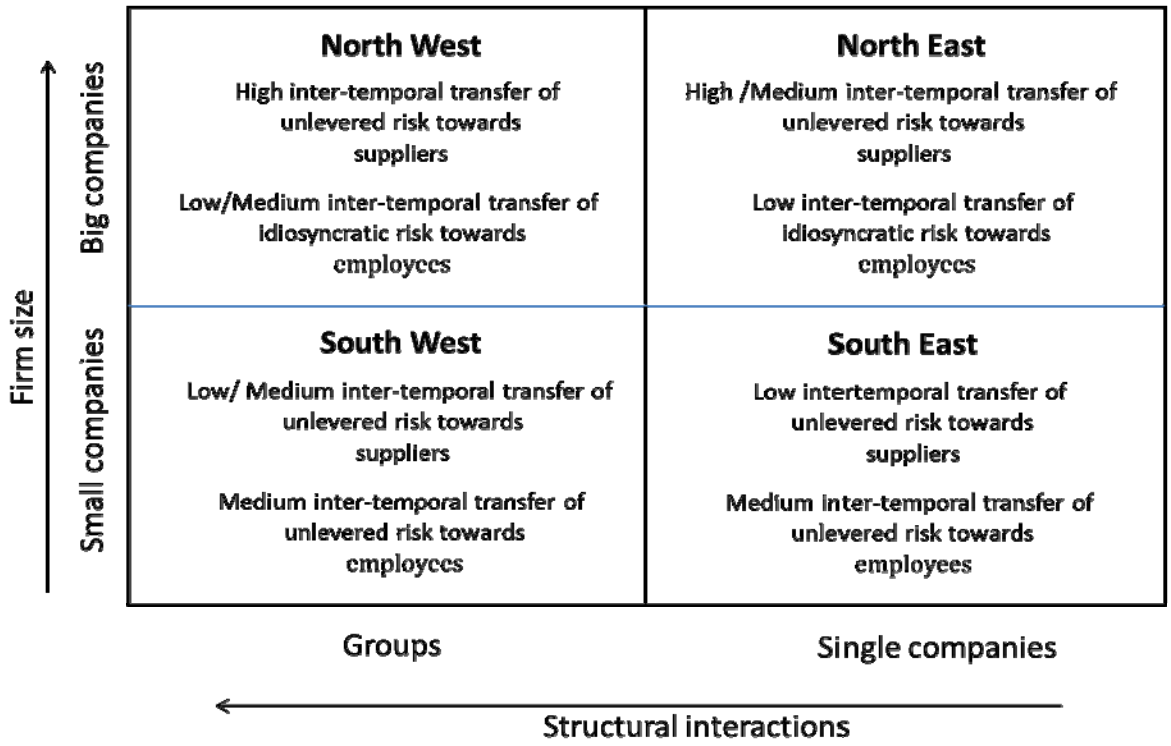

Figure 3. Inter-temporal risk transfer matrix.

The "North-West Region" includes cases in which both firm size and structural interactions are high. It means that group-affiliated, larger-sized organizations included in this region may have a greater margin to smooth EBIT by transferring towards suppliers a high quote of their revenues volatility than group-unaffiliated, smaller-sized firms. According to HP1, a group-affiliated, large-sized organization is likely to possess the ability for exploiting its power and leverage available structural interactions to compensate revenue volatility. Regarding the unlevered risk transfer towards employees, the "North-West Region" implies, somehow a lower possibility about a firm to transfer the inter-temporal unlevered risk to employees given the highest protection and sometimes the strategic importance that human resources play, in larger-sized corporations (HP3, HP4). However, in our theoretical framework, a firm can mitigate the low possibility to transfer revenue volatility to employees by leveraging structural interactions, allowing a firm to move an employee from one company to another and use an employee to provide service to another company which will pay for her salary (HP2).

The "North-East Region" shows cases of group-unaffiliated, large-sized organizations. Such firms have a potentially high level of power (HP1) but cannot leverage structural interactions that stem from firms affiliated with a business group to smooth the income via inter-temporal risk transfer. Therefore, "North-East Region" regards those firms that may compensate volatility in revenues with an extent that is high/medium, by changing, for example, the price per unit of inputs and/or volume of inputs purchased, and may make small revenues volatility compensations by acting on salaries and on the number of employees.

The "South-West Region" is about the case of group-affiliated, smaller-sized organizations. According to our theoretical framework, these firms have a low/medium margin to smooth EBIT by changing the price/volume conditions with its suppliers and the medium margin about to smooth EBIT by modifying fixed

costs coming from human resources (HP4).

The “South-East Region” includes group-unaffiliated, smaller-sized companies. Such companies do not possess both market power and structural interactions. These firms are likely to smooth income with very little extent, since they will find it difficult to transfer risks to both suppliers and employees. The two “Regions” in matrix’s downside have in common to each other a greater flexibility in managing human resources, which is common in smaller-sized organizations.

Conclusions and Perspectives

Our paper provides a first attempt to develop a theoretical framework able to connect corporate governance, enterprise risk management, income smoothing, and inter-temporal risk transfer from a firm to its stakeholders in its negotiated environment. From such a framework we develop hypotheses which require a future empirical analysis to test them. Performing such empirical analysis, which is at the top of our research agenda will allow one to verify the extent to which the “matrix of inter-temporal risk transfer” is consistent with the actual companies’ behavior in terms of income smoothing and unlevered risk transfer under revenue volatility conditions to suppliers and employees.

The proposed theoretical framework is also implications for theory building and practice at both micro and macro levels of analysis.

At the micro-level of analysis, this work can be considered as the starting point for modeling, in a managerial perspective, the unlevered risk analysis, taking into account how a manager of a firm can manage internal and external relationships to vary her firm exposure to risk caused by the volatility of revenues. This may open the door to other several managerial issues, where the links between the smoothing process and the risk transfer strategies matter to optimize a firm’s investment decision. Such links are also relevant for other related managerial choices, such as the selection suppliers, the definition of the risk premium as a crucial component of the capital cost measurement, the improvement of the relationship between a firm and one or more actors of the financial system.

We believe that, from a micro-level of analysis, this first theoretical conceptualization can be enlarged by considering strategic constraints that a firm is likely to face in smoothing its income based on the transferring of revenues’ volatility to third parties. An interesting issue concerns the counterparty risk aversion. For instance, in a business-to-business market, a high-risk aversion of a supplier can produce initial higher costs of inputs for a buyer trying to transfer the volatility of its revenues to such a supplier. The above situation could happen when the supplier has a certain contractual power to define contractual latitudes and economic conditions. In addition, a high intensity of inter-temporal risk transfer from a firm to a supplier could act negatively on the economic value when it destroys crucial relationships with key suppliers and/or with human resources that possess high-specific capabilities. If the risk transfer processes exceed certain limits, this could create destructive effects on the economic value even with a low contractual power of suppliers and/or employees. An excessive transfer of the volatility of revenues could weaken the relationships of a firm with both its suppliers and employees, with further negative consequences for the firm itself in terms of reduced capacity to either produce high-quality products or achieve high levels of efficiency. Therefore, the matrix of inter-temporal risk transfer can be deepened, taking into account a set of constraints relating to the relationships that a firm has with internal and external stakeholders.

At the macro level of analysis, our theoretical framework provides a way to analyze systemic risk in a

fresh perspective. The systemic risk has been the object of increasing attentions since the last financial crisis. This has produced distinct ways to formalize the systemic risk concept. The systemic risk definition change is in relation to several perspectives (Smaga, 2014). However, extant studies about systemic risk focused on financial system, according to a macro-economic perspective. The few micro studies in this field inquire linkages between capital structure police at a single firm level and capital market instability. So far scholars have not deepened the linkages between strategies at the firm level aimed to smooth operating income, risk transfer from a single firm to its third parties in the negotiated environment, and systemic risk. Our theoretical model offers some insight to fill this gap, considering the domino and/or network effects connected to the tendency of non-financial companies to transfer business risk to their suppliers, which could adopt forms of risk transfer to other players in their negotiated environment. This process of risk transfer can determine a cascade effect which could be like that occurring within financial networks characterized by interconnected actors.

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