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Managing Corporate Exposures in Multinational Risk Scenarios

Risk Management of Multinational Enterprises

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Table of Contents

Question 1: Multinational Corporate Exposures

Risk management scholars differentiate between four types of risk: insurable, financial, operational and strategic risk. They are characterized by an increasing degree of uncertainty, potential impact on the business and accordingly, degree of importance for firms (Andersen, 2012a). Multinationality inevitably engenders greater corporate exposure to all risks and hence, the imperative to establish an integrative approach to handle them, as presented in this section.

Emergence of Economic Exposures

The utilization of various currencies in transnational transactions introduces foreign exchange rates. Following supply and demand, foreign exchange rates fluctuate which implicates cash flow gains or losses for multinational enterprises (henceforth MNEs), referred to as economic exposures (Andersen, 2006). Economic exposures are composed of transaction and operating exposure. Transaction exposure captures all changes in cash flows resulting from short-term contractual obligations denominated in foreign currencies (Moffett et al., 2003c). For instance, drastic de-/appreciation of a currency significantly impact short-term profits by altering the value of open accounts denominated in foreign currencies (ibid.). Operating exposure relates to the "change in the present value of the firm resulting from unexpected changes in expected future operating cash flows of the firm" (Moffett et al., 2003b, p. 197). Accordingly, it captures the long-term effect of changes in foreign exchange rates directly on customer demand and other operating variables. This, in turn, shapes the corporation's cash flows from foreign operations not yet contracted for (Andersen, 2006).

Relation to Operational and Strategic Risks

While traditional risk management covered insurable and financial risk in isolation, most recently operational and strategic risk occupy the majority of attention (Andersen & Young, 2020). As indicated by its name, *operational risk* occurs during a corporation's day-to-day activities and crops up as technology breakdowns, process disruptions, and compliance failure. These endogenous events disrupt the value creation process of the corporation. The source of *strategic risks* lies in exogenous events, wherefore they are most difficult to predict and manage. Their potential effect is vast as they impact the corporation's ability to fulfill its objectives by disturbing their strategy. Initiators can be competitor moves, political events and changes in market conditions (Andersen & Schrøder, 2010).

Amongst the most prominent concerns of today's Chief Risk Officer is the reciprocal effect of all risk types (TORM, 2022). The interdependency is found to be twofold: stemming from direct changes of exposures or as a consequence of risk management responses. Alongside strategic risks, the beforementioned economic exposures as a fundamental part of the financial risk are rooted in the exogenous environment of a corporation. Changes in operating exposure can affect the competitive position of a MNE, further triggering an opponent's behavior to adjust and potentially end up in the arousal of a major strategic risk (Andersen, 2006). As put forth by Miller (1992), an integrated risk management perspective recognizes the inevitable trade-off between uncertainties. More precisely, risk management measures aimed at mitigating economic exposures might result in the evocation of operational and strategic risks. By way of example, natural hedging of operating exposures can entail the establishment of new production facilities, requiring increased attention to internal processes to cope with operational risk, located in in various countries, that hold substantial strategic risk.

Identification and Analysis

In order to capture every kind of risks, the holistic approach of Strategic Risk Management (SRM) integrates more formalized Enterprise Risk Management (ERM) frameworks with strategic considerations (Andersen et al., 2014). ERM acknowledges the above outlined interrelation of different uncertainties and incorporates enterprise-wide risk implications with a focus on "downside risk prevention and enhancement of current opportunities" (Andersen, 2010a, p. 1; IRM, 2010). As the effectiveness of ERM frameworks has been debated by scholars, MNEs like LEGO utilize SRM to fully exploit the upside potential and growth prospects entailed in risk taking (Andersen, 2010; Girard, 2013; Paape & Spekle, 2012). Hereinafter, the principle-based ISO 31000 framework will guide the risk management process and will be extended by strategic risk concerns (IRM, 2018).

Risk identification enables a corporation to realize its exposure to risk and uncertainty (ibid.). For this purpose, the classification of the corporation's dimensions into general environment, industry, and the company itself is helpful for an in-depth examination (Andersen et al., 2014; Miller, 1992; Sharma et al., 2020). The ISO 31000 (2010) suggests a SWOT analysis which should be supplemented by scanning for weak signals to account for any strategic risks (Schoemaker & Day, 2009). Finally, a risk profile is assigned to each corporate exposure to determine the approach of its subsequent analysis (IRM, 2018).

To begin with, the risk profiles will be *analyzed* separately as their degree of quantifiability differs significantly. However, keeping a holistic view to detect potential interdependencies is crucial. *Economic risks* are analyzed using methodologies such as value-at-risk (VaR), gap and regression analyses. Applying the VaR model with a confidence level of five percent for a given time frame, the aggregate potential loss in portfolio value, or economic exposure, is calculated under the assumption of normal distribution. A second method to analyze the magnitude of economic exposures is via the mismatch between assets and liabilities either sensitive to disparate maturity and interest rates or denominated in foreign currencies. These "gaps" need to be put into relation with existing assets or net income to quantify economic exposures (Andersen, 2006). Lastly, regression analysis as proposed by Bartram (2008) explores the relationship between the company's operating, investing, and financing cash flows and foreign exchange rates whereas statistical significance indicates the presence of economic exposure.

Operational risks frequently cause disruptions in the global value chain, of which the length can be estimated based on historical data (Andersen & Schrøder, 2010; IRM, 2010). Accordingly, the later the resumption of operations, the greater the operational exposure. As the resilience of the global value chain is ameliorated by more geographically diversified supply chain networks (Todo et al., 2015), the breadth-and-depth analysis is additionally recommended to estimate operational exposure. Pantzalis et al. (2001) initially aimed at quantifying operating exposure, yet the abovementioned interrelation of various risks justifies the application for operational risks. Breadth represents the spread of subsidiaries in different foreign countries, and depth accounts for the concentration in the two largest markets (ibid.). The effects of breath and depth on corporate exposure are context-dependent (Andersen, 2012b).

Strategic risks are most difficult to predict and hence, analyze and quantify. The IRM (2010) proposes qualitative approaches to benchmark strategic exposures, the likes of estimated changes on stakeholders' behavior in terms of political and financial support. Risk managers can additionally resort to scenario analysis, as implemented at LEGO (Girard, 2013). By selecting two relevant environmental risk factors, the generic being level of demand and speed of change, different hypothetical situations can be created and their impact on the corporation, the strategic exposure, roughly evaluated (Andersen et al., 2014; Andersen, 2012a; Moffett et al., 2003b).

Monitor and Management

In the following, the *management* of corporate exposures is interpreted as evaluation and treatment of the previously identified and analyzed risks. *Evaluating* risks reintegrates all types of risk into one conspectus customized to the corporation. Common practice is the creation of an impact-likelihood framework that maps all identified risks and allows risk managers to prioritize the risks with high severity (Andersen, 2012a). Furthermore, IRM (2010) refers to a risk register entailing current data and future actions on corporate exposures as outlined hereinafter. In the case of NIRAS (2022), both approaches are established in the risk assessment process, leading to a “risk rating” which is further utilized in determining risk treatment.

To increase further complexity, *risk treatment* is closely related to results of the analysis, wherefore the responses differ for each type of risk. Nevertheless, consequently to the interrelatedness of risks, some treatments cover multiple types simultaneously (Andersen & Schrøder, 2010). Generally, *economic exposures* are mitigated with “sophisticated hedging and risk-transfer instruments” (Andersen & Schrøder, 2010, p. 84). BMW serves as a practical example on the matter, using a combination of natural and financial hedges, thus diversifying its operating and financing base, to successfully minimize its economic exposure (Andersen, 2022; Moffett et al., 2003c, 2003b). Moreover, imposing maximum acceptable gap levels can restrict foreign exchange and interest rate exposures (Andersen, 2006).

MNEs respond to *operational risks* with internal and external measures. Firstly, the establishment of internal control processes and management accounting systems draws early attention to abnormalities (Andersen & Schrøder, 2010). Secondly, external collaborative efforts and information sharing are enablers for resilience (Scholten & Schilder, 2015). By expanding operations into additional countries, relating to greater breadth, operational flexibility is reinforced due to the ability to substitute between locations (Andersen, 2012b).

Managing *strategic risk* imposes the greatest challenge and is largely conducted by means of a risk-aware corporate culture and real options. MNEs must provide means of communication and guide their leadership teams to act as role models to facilitate a common risk culture within the entire organization (Andersen & Young, 2020; Shim & Steers, 2012). The detrimental incidences in British Petroleum’s operations highlight the relevance of appropriate culture in risk management, as they resulted in tremendous fines and more importantly, reputational damage (Andersen, 2014). Besides, real options create valuable flexibility by allowing incremental investments with the option to expand or abandon, as well as timing options where temporal information reduces the uncertainty of consequences of investments (Andersen & Schrøder, 2010; Moffett et al., 2003a).

Monitoring, as the final step before the risk management cycle recommences, ensures the preparedness of coping with corporate exposures. The Board of Directors, an audit and risk management committee should be in place to continuously assess the contribution of the SRM. This encompasses a feedback mechanism through testing of business continuity plans and disaster recovery plans (IRM, 2010). Finally, monitoring is conducted continuously to align the company's risk appetite to its actual exposure (Andersen et al., 2014).

Conclusion

An efficacious risk management system recognizes the interrelation between risk types and maneuvers them jointly using a "complementary toolbox" (Andersen & Schrøder, 2010, p. 84). Along the way, one must pay special attention to erratic strategic risks by rooting a risk-aware corporate culture, responsive risk management and continuous revision.

Question 2: Corporate Structure and Values in Risk Scenarios

A central part of becoming a multinational is expanding the value chain beyond domestic territory. When conducting these cross-border investments, the corporate exposure depends on a wide variety of factors. In this section, organization structure and core value are examined with respect to their implications for risk management in MNEs, followed an in-depth analysis on resilience in global value chains (henceforth GVCs).

Organization Structure and Risk

The *corporate structure* is specified as the entirety of organizational configurations of functions and processes. It allocates the distribution of decision rights, vertical and horizontal communication links, internal reporting and control, roles and responsibilities across organizational layers (Andersen, 2012a). Accordingly, organization structure determines the speed and accuracy of information flow as well as its subsequent reactive procedures, in both corporate and risk governance (IRM, 2010).

The Board of Directors (henceforth BoD) is a determinant element of the structure as its responsibilities encompass risk governance, hence setting the risk appetite and risk-taking policies, guiding foreign investment decisions. As to effectively integrate these in the mind of all employees, clearly defined accountability, authority, informing and reporting mechanisms are crucial (Andersen et al., 2014; IRM, 2010). Furthermore, the investment across borders drives corporations into "turbulent environments" with features of high risk-interrelatedness and frequent change. To deal with that, central handling of strategy and decentralization of operational autonomy should characterize the decision-taking process to allow rapid responsiveness to emerging risks (Andersen, 2012a; Andersen & Andersson, 2017). When investing transnationally, the dependency on information technology arises resulting in greater likelihood of business interruptions (Cerulo & Cerulo, 2004). Therefore, flat hierarchies that facilitate down- and upward communication are key for recognizing, reporting and responding to unexpected developments (Damodaran, 2008; Leveson et al., 2009).

Core Values and Risk

Andersen (2017) defines *core values* as “shared beliefs embedded in the corporate culture that influence how actions are taken based on informal guidelines”. Managerial behavior guides these values and their consistency throughout the organization (Shim & Steers, 2012). Having said that, the influence of leadership is diminishing for greater geographical dispersion of investments due to psychic distance and diverse sub-cultures. In addition to strong leadership, formal approaches to enforcing the core values are required to maintain a shared understanding of corporate values (Andersen, 2017; Child et al., 2009).

The attitude towards risk is attached to the core values and determines the risk behavior of the corporation and its individuals, in everyday as well as investing activities. Optimally, a risk-aware corporate culture is created where every employee replicates a risk manager for his individual environment. Jointly with mindful management, which emphasizes consciousness to multiple perspectives, this enhances the responsiveness to unpredictable risks not addressed by the risk management function (Andersen, 2012a; Andersen & Young, 2020; Bailey et al., 2019; Ueta, 2022). Besides supplementing formal risk management, shared corporate values can lower its costs by providing implicit rules and guidelines for risk behavior, eliminating the need to set up extensive written contracts when setting up investments abroad (Camerer & Vepsalainen, 1988). Furthermore, evidence suggests that core values highlighting corporate social responsibility tend to result in a reputation of trust, accountability and reliability that facilitates collaborative solutions to emerging issues and consequently, decreases risk (Andersen, 2017; Husted, 2005). On the contrary, core values hold potential to induce excessive risk taking. If major openness to take risks embedded in the corporation’s values is combined with a culture emphasizing competition, misconduct is more likely to occur (Greve et al., 2010). Further examples of harmful risk behavior are unrealistic estimations in multinational capital budgeting, and the escalation of commitment in investment decisions (Andersen, 2022; West & Waymire, 2022).

Economic Scenario: Lehman Brothers

Having considered the effect of organization structure and core values in isolation, one must acknowledge their potential to reinforce or counteract each other. In the following, the interplay between organization structure, core values and risk exposures will be illustrated by event of bankruptcy of Lehman Brothers in 2008.

Shaped by competitive pressures in the financial industry, Lehman Brothers' top management induced profit-driven core values on its employees, to a point where excessive risk-taking turned indispensable. Justified by previous success with high-risk strategies, Lehman Brothers increased its exposure to risky mortgage-backed securities as reflected in its mounting VaR (*Appendix A*), referred to by scholars as the "Napoleon tendency" (Clarke & Varma, 1999, p. 420). Furthermore, the present corporate culture did not allow room for front-line employees to point out early warning signals. Moreover, the lacking communication links disconnected day-to-day operations from the top management, indicating structural shortcomings (Andersen, 2010). As indicated by the CEO-duality and enormous executive bonuses, the BoD lacked independency and an objective viewpoint on top management, crucial for monitoring its performance (Supervisors Group, 2009; Ueta, 2022). The control function of the BoD was further impeded by inflated performance reporting (Andersen, 2010b). Altogether, this case demonstrates how inappropriate internal structure and corporate values become key contributing factors in the failure of risk management of predominantly economic exposures.

Relation to Resilient GVCs

Whilst the discussion in the preceding paragraphs focused on the generic impact of organizational aspects on transnational risks, the final parts of this section will explore the role of GVCs.

Driven by the ultimate goal to maximize value, corporations engage in cross-border investments to optimally reconfigure their value chains with flexibility and local responsiveness. Referred to as *global value chains*, these configurations face a multitude of risk exposures of which the mitigation is another central strategic objective for MNEs (Ghoshal, 1987; Moffett et al., 2003a). *Resilience*, defined as the ability of a system to return to its original or a more desirable state after a disruption, is one of the approaches to achieve the latter. Christopher & Peck (2004) argue that resilience must be designed, for instance by means of geographical diversification. Besides, building relational resources is critical for resilience as they ensure information sharing to prevent disruptions, and support the recovery process as needed (Benito et al., 2019; Scholten & Schilder, 2015; Ueta, 2022).

In addition to the alluded external layout, internal organizational considerations, more precisely organization structure and core values, must support resilience in GVCs to circumvent "organizational misfit" (Camuffo & Wilhelm, 2016). To facilitate upsides from the relational resources, the willingness to share information must be embedded in the corporate values. For this purpose, employees must be able to share information via accommodating communication channels as part of the organization structure. Only if both prerequisites are accomplished, the external collaborative activities can succeed and reinforce resilience. Secondly, the desired responsiveness of GVCs cannot solely be achieved by undertaking cross-border investments. Risk-awareness is required to detect early warning signs of local exposures, while decentralized decision rights permit rapid reaction to those unexpected developments (Andersen & Andersson, 2017). Adding to further complexities, it is inevitable for corporations to face difficulties along the way, as the complexity of GVCs is growing consequential to foreign direct investments. However, the organizational learnings contribute to GVC efficiency and resilience in the long-term (Benito et al., 2019), provided that it is enabled by acceptance of mistakes in the corporate culture and established procedures for learning (Andersen, 2017).

Operational Scenario: Nissan

A prime example for the robustness of resilient GVCs to risk exposures is Nissan, more precisely its response to the earthquake in Fukushima in 2011. By utilizing a combination of fostering risk-awareness and practicing mindful management, the Japanese MNE aimed to empower its employees to capture weak signals at the front-line and communicate them throughout the organization. Established information-sharing practices facilitated this procedure, even in a crisis situation (Schmidt & Simchi-Levi, 2013). Building on well-enforced core values and decentralized decision rights, each division took rapid measures to minimize the local risk impact. Simultaneously, control and coordination were kept at the corporate level, with a dedicated risk management function, as suggested for turbulent environments (ibid.; Andersen, 2012a; Andersen & Andersson, 2017). Overall, the above exemplifies how organization structure and core values can contribute to highly competitive and resilient GVCs, constructed by means of cross-border investments.

Conclusion

In dealing with various risk scenarios and unknowns, the consideration of corporate structure and values provides insight on the prerequisites for executing foreign direct investments. As exemplified by the cases of Lehman Brothers and Nissan, the implied risk behavior and organizational mechanisms “make or break” the corporation. Nonetheless, it is crucial to realize that other factors may also disable successful risk management in complex global environments.

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Appendix

Appendix A

Lehman Brothers' VaR (Andersen, 2010a)

In millions	Average VaR for Year Ended Nov 30, 2007	Average VaR for Year Ended Nov 30, 2006	High/Low VaR for Year Ended November 30, 2007 High	2007 Low	2006 High	2006 Low
Interest rate risk	$ 64	$ 35	$ 123	$ 33	$ 64	$ 23
Equity price risk	43	19	79	21	31	11
Foreign exchange risk	9	5	16	5	7	2
Commodity risk	7	4	16	4	11	1
Diversification benefit	(32)	(21)				
	$ 91	$ 42	$ 155	$ 48	$ 74	$ 29

In millions	At Nov 30, 2007	Aug 31, 2007	May 31, 2007	Feb 28, 2007	Nov 30, 2006
Interest rate risk	$ 96	$ 79	$ 51	$ 58	$ 48
Equity price risk	50	46	54	26	20
Foreign exchange risk	11	7	6	7	5
Commodity risk	13	8	7	5	6
Diversification benefit	(46)	(40)	(31)	(21)	(25)
	$ 124	$ 100	$ 87	$ 75	$ 54

In millions	Average VaR Three Months Ended Nov 30, 2007	Aug 31, 2007	May 31, 2007	Feb 28, 2007	Nov 30, 2006
Interest rate risk	$ 89	$ 68	$ 54	$ 41	$ 41
Equity price risk	51	45	43	34	20
Foreign exchange risk	10	8	7	11	5
Commodity risk	11	8	6	5	5
Diversification benefit	(37)	(33)	(32)	(28)	(23)
	$ 124	$ 96	$ 78	$ 63	$ 48