Risk Management of Multinational Enterprise

CREATING GLOBAL STRATEGIC RESPONSIVENESS

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Question 1 – How to analyze, monitor, and manage economic exposure

1.1 Economic exposure

Economic exposure refers to the potential impact of fluctuations in foreign exchange rates on all prospective future cash flows (Andersen, 2006). Such exposures originate when multinational enterprises (MNEs) engage in operations denominated in foreign currencies. Under the umbrella of economic exposures, (Moffett et. al, 2003) distinguish between transaction, operation and translation exposure of which transaction and operating exposures are the primary components as they affect real cash flows (Andersen, 2006). For multinational enterprise, these exposures significantly amplify, necessitating a comprehensive risk management approach. For MNEs, these forms of exposure are greatly intensified, calling for a thorough and systematic approach to risk management. The ensuing discourse will delve into the methodology to appropriately analyze, monitor, and manage such exposures.

1.1.2 Transaction exposure

Transaction exposure encompasses risk on financial and commercial cash flows due to contractual obligations denominated in foreign currency (Moffett et al., 2003). Andersen (2006) defines it as the potential short-term effect of exchange rate changes on specific contractual cash flows not yet settled. This risk commonly occurs when an MNE engage in trade, secures loans or lends, settle contracts or future agreements in foreign currencies, leading to exposure to both interest rate and currency fluctuations (ibid.).

1.1.3 Operating exposure

Operating exposure arise from long-term gains or losses that affect projected cash flows not yet recorded (Andersen, 2006). Hence, it encapsulates the potential long-term impact of foreign exchange rate fluctuations on operating variables such as customer demand. Additionally, operational exposure refers to the change in a company's market value that arises from unforeseen fluctuations in exchange rates (Moffett et al., 2003), which can potentially alter a company's competitive standing in the international market.

1.2 Analysis and monitoring economic exposure

To address economic exposures, multinational enterprises can apply the basic risk management cycle of analysis, monitoring, and management (Andersen, 2006). Initiating with analysis, tools like gap analysis, Bartram's regression, and Value at Risk (VaR) can evaluate transaction exposures, while operating exposure can be assessed through breadth and depth measures. These instruments also foster monitoring by juxtaposing values to benchmarks or risk-appetite-based targets. (Andersen et al., 2014).

Gap analysis is instrumental in evaluating a company’s exposure to exchange and interest rates. The disparity between rate-sensitive assets and liabilities at book-value on re-pricing dates is assessed by interest rate gaps, while exchange rate gaps scrutinize the misalignment between foreign-denominated receivables and payables over time using liquidity gaps. For example, having a negative gap signifies that the firm is vulnerable to increases in interest rate, which

could impact their financial stability. The simplicity of comparing gap analysis outcomes to a significant benchmark like total assets, and setting upper exposure limits aligned with a multinational enterprise's risk appetite, underscores the primary advantage of these analyses. (ibid.)

Further, by consolidating multiple risk elements into a single quantitative measure, VaR portrays the potential loss a company might sustain over a specific timeframe with a particular probability While the prevalent practice is to use a 5% VaR, firms can modify the significance level based on their preferred level of risk aversion. Nonetheless, given the model's dependency on a normal profit distribution and a representative choice of time period, it's important to exercise discretion when applying it (Andersen, 2006).

As a supplement to this analysis, a firm can leverage Bartram's (2008) ex-post regression analysis to examine potential statistically significant associations between operating, financing, investing, or total cash flows and exchange rates, keeping the change in term spread and short-term interest rates in control. This approach's key strength, according to Bartram (2008), lies in its directness, with an absence of statistical significance suggesting effective management of the firm's economic exposure and the reverse implying otherwise.

In contrast, the analysis and monitoring of operating exposures, which concentrates on uncontracted cash flows, present a greater challenge. Nevertheless, estimates can be made through ‘’breadth’’ and ‘’depth’’. The two dimensions explains the firm’s degree of network in foreign countries such as financial subsidiaries and level of industrial diversification and how these network attributes affect the extent of the multinational corporation's foreign exchange exposure. Further, the framework measuring a MNEs network against competitors can be applied to evaluate and monitor operational risk (Pantzalis et al, 2001). By doing so a firm can implement diverse operational hedges that could provide a competitive edge. Strategies could include spreading risk by diversifying operations across more countries (enhancing breadth), or focusing operations in select major markets to take advantage of local expertise and resources (augmenting depth). The optimal balance depends on the company and specific circumstances, however (Pantzalis et al, 2001) suggests that a broad foreign spread (breadth) and low concentration of subsidiaries in the top two markets (depth) correlate with reduced operational exposure, with the inverse situation escalating it.

1.3 Managing economic exposure

Beyond analysis and monitoring, firms must also endeavor to manage their exposures. Management can be efficiently achieved through financial and operating hedges, with the goal of shifting profit to a leptokurtic distribution that exhibits a lower variance, as detailed in Appendix 1 (Moffet et. al, 2003). Theory argue that operational hedges are superior at managing long-term exposure, while financial hedges demonstrate greater effectiveness in handling short-term exposures (Pantzalis et al, 2001). Operating exposure mitigation strategies could encompass diversifying the company's financial or operational base, and proactive tactics that preemptively offset future exposures like risk-sharing agreements or natural hedges to match cash flows and local currencies. (Moffett et al., 2003). BMW exemplifies the effective

use of a natural hedge strategy by aligning expenses with revenue currencies and establishing factories in target markets. This strategic approach significantly shielded BMW from a potential negative impact of €2.4 billion on its earnings (Andersen, 2023, S5).

Contrarily, due to their contractual nature, transaction risks can be more directly managed, allowing multinationals to utilize derivatives like put options or futures (ibid.). The significance of hedging can be demonstrated through the case of KN Energy in the late 90s. The company had made substantial investments in natural gas assets but failed to implement suitable hedging strategies. Unexpected changes led to a decrease in natural gas prices, pushing KN Energy to the brink of bankruptcy. This financial crisis could have been averted if they had properly hedged against their exposure of natural gas prices (Andersen, (2010a). Further, Risk management extends beyond the simple reduction of risks, and also encapsulates the enhancement of financial benefits. By utilizing the tools highlighted above, firms can use financial/operating hedges that yields larger upsides. For instance, should a company exposed to appreciating foreign currency rates, indicating a positive liquidity gap, purchase a call option and thereby capitalizing on the opportunity to generate substantial profit without incurring additional cost. (Andersen, 2023, S3). However, firms should bear in mind that hedging involves costs and is only beneficial if the advantage of reduced variance exceeds the monetary expenditure (ibid.).

Conclusion

In conclusion, transaction, operating, and economic exposures arise in multinational enterprises due to their extensive operations in diverse currency zones. Analysis, monitoring, and management of these exposures require a blend of strategic approaches such as gap analysis, VaR and breadth and depth measures. By implementing a mix of operational and financial hedges to manage these risks, can ensure a firm's resilience and profitability amidst these exposures.

Question 2 – Structuring a Resilient Global Value Chain: Overcoming Operational Risks and Optimizing Foreign Direct Investments.

An integral step in evolving into a multinational entity involves extending the value chain beyond domestic boarders. When engaging in foreign direct investment (FDI), a company often transitions from a simpler environment to a more volatile and dynamic one (Benito et al, 2019). - a complex environment where structures must be adjusted to manage the associated risk and to obtain operational flexibility (Andersen et al., 2014). The management of such risks, inherent in cross-border investments, is a fundamental aspect of structuring resilient global value chains (GVC).

2.1 Building Resilient Global Value Chains through Strategic FDIs

Upon a multinational enterprise determining to proceed with a Foreign Direct Investment (FDI), perhaps following the OLI framework, it becomes necessary to evaluate and compare the appeal of various investment opportunities in order to establish a resilient GVC. In relation to that, capital budgeting has been put forth as a tool applied at traditional NPV, IRR and

payback period models. (Moffet et al., 2003). An increased risk premium, a shortened payback period, reduced expectations for cash flow, or a higher requirement for earnings multiple can adjust can adjust the analysis in alignment with risks specific to a given country.

While capital budgeting can be insightful, it often falls short in accurately addressing risks due to the significant estimation required. Hence, companies are recommended to also utilize methods such as sensitivity analyses, scenario planning, and stress-testing techniques, before committing to investments. This is expressed in Monte Carlo simulations, anchored in Real Option Theory (Moffett et al. 2003). Risk management practices that outline corporate exposures make the Real Option approach particularly beneficial for long-term projects with elevated uncertainty. The possession of real options, such as abandon, modify capacity, or switch provides managers with the flexibility to postpone decisions until uncertain future events occur. This facilitates timely and optimal decision-making, thereby enhancing the resilience of their Global Value Chains (GVC) (Black & Scholes, 1973).

These investments, despite escalating costs and uncertainties, offer opportunities to access new markets, human resources, and customers. Further, it enhances this aspect of operational flexibility, as it enables multinational enterprises to diversify production between different geographical markets and facilitating multinational flexibility through effective supply-chain management (Kogut & Kulatilaka, 1994), (Manuj & Mentzer, 2008). However, cross-cultural investment also comes with increased operational risk, which highlights the importance of looking at effective and proative risk-management structures in order to build a to build a resilient global value chain.

2.2 Building Resilient Global Value Chains by mitigating operational risks

Operational risk arises during a company's everyday operations and manifests as technological malfunctions, process disruptions, and compliance failures (Andersen, et al., 2014). These endogenous events interfere with the corporation's value-creation, making it crucial to consider as their prominence tends to increase when global value chains (GVC) are expanded.

Given the complexity of quantifying operational risks, Enterprise Risk Management (ERM) frameworks have been proposed to assist MNEs in managing such risks and establish a resilient GVC. The most notable among these frameworks include COSO and ISO3000 (IRM. 2010). Where COSO is more rule-based, ISO3000 focuses on a principles approach but both frameworks assist in identifying operational specific risks. As an example, COSO's cube framework guides MNEs through various risk types via distinct processes at every business level. Fostering adaptability, ERM practices allow firms to learn from past near-misses and errors by involving the entire organization, making them particularly valuable in ambiguous situations (Andersen et al., 2014). A proactive ERM approach aids in identifying and mitigating operational risks such as potential global value chain disruptions, compliance failures, and administrative errors. They offer tools for risk identification, analysis, and timely action, promoting active discussion of operations risk and risk management (Andersen, et al., 2014). Further, ERM practices foster a shared risk culture and vocabulary across the firm, breaking down silos and promoting active discussion of risk management (Andersen, et al., 2014). By

following a successful ERM practice, it can affect the likelihood of obtaining operational efficiency and thus a great source of gaining competitive advantage (IRM., 2010; Goshal, 1987).

Further, the importance of ERM and how it could be utilized to create resilience is showcased in the case of the Lehman Brothers. On the surface, the firm appeared committed to fostering a comprehensive risk management culture across all levels. However, they proved incapable of adequately addressing multiple risk factors, such as the Value at Risk (VaR) more than doubling from 2006 to 2007. While numerous risks impacting the company were specific to the financial industry, many other institutions managed to navigate the financial crisis successfully. Andersen, (2010b). This implies, that the mismanagement of economic risks cannot be considered the sole contributor to the company's collapse. Instead, an unsuitable corporate culture was the primary catalyst for their downfall. This underscores the necessity for a broader, more agile approach to corporate risk management which the ERM framework promotes. (IRM. 2010).

Conclusion

Irrespective of the type of investment-decision analysis approaches employed, cross-border investments equip companies with the capacity to undertake strategic investments that create resilient GVCs. These resilient GVC's unlock potential benefits in tackling operating risks, while allowing for the optimal allocation of firm ressources. By using tools such as capital budgeting and ERM frameworks in cross-border investment, it helps MNEs to consider market differences and how to optimize their GVC through diversity synergies. Further, it enhances their operational efficiency through exploiting factor cost differentials across national markets and expand and optimize the scale benefits for each business activity Goshal, (1987). By utilizing both, it helps create proactive practices resulting in a more resilient GVC.

Question 3 – Structuring responsiveness and resilience through leadership and culture

As organizations strive to leverage operational flexibility and tap into the advantages of globalized value chains, turbulence in the global markets, introduces increased uncertainty, unpredictable circumstances, and worst-case-scenario, black swan events (Pantzalis et. al, 2001). A successful and proactive respondence to such risks hinges heavily on the organization's structure, values, and leadership. Risk management must be inherently incorporated within these elements, in order to make risk management a key driver in corporate culture. (Andersen, 2017).

3.1 Optimizing Organizational Structure for Resilience

The distribution of decision rights, internal communication links, and open information systems within an organization are determined by its organizational structure, facilitating the flow of information from front line employees to management (Andersen, 2012). This is a critical factor in crisis management where timely and accurate information is paramount for effective decision-making. The deliberate design of an organization that empowers front-line

personnel to exercise decentralized actions can enable prompt responses to unanticipated developments. Simultaneously, it is imperative to equip front line employees with decision-making tools aligned with the risk appetite of management, as failure to do so may have adverse effects on risk behavior (Damodaran, 2008). Therefore, risk governance promoting transparency and accountability is essential in the strategic risk management process (Andersen et. al, 2014). Additionally, according to Damodaran (2008) organizations characterized by flat hierarchies are likely to exhibit enhanced responsiveness and flexibility, thereby improving MNEs ability to navigate unexpected and turbulent business conditions.

To best leverage a structure that fosters resilience, it is imperative to align the culture accordingly. High-reliability organizations (HROs). provide a valuable source of inspiration for adopting behavioral traits and organizing a risk-aware culture within MNEs. By cultivating an environment that encourages open communication mechanisms, proactive measures are taken to ensure risk resilience. This enables timely identification and agile handling of exogenous and endogenous risk before they escalate into crises. Additionally, HROs foster skepticism and encourage diverse opinions, aiding in overcoming cognitive biases like groupthink. Underlining this, Weick & Sutcliffe (2001) agues, that it is crucical to avoid bounded reality to effectively respond and manage unexpected disruptive events. Moreover, HROs prioritize decentralized decision-making to leverage frontline-expertise, albeit requiring a balanced approach to assure effective crisis management (Schmidt & Simchi-Levi, 2013; Todo et al., 2015). Further, HROs perceive system lapses as warning signs, leading to a strong focus on identifying and responding to weak signals, thereby building resilience. By employing HRO and implementing a ‘’mindful management strategy’’, organizations build strong defensive layers against unexpected and abrupt developments. Further, mindful management, deeply ingrained in an organization's core values, entails detecting the unexpected and proactively responding to weak signals to mitigate potential threats (Weick & Sutcliffe, 2001).

3.2 Fostering Resilience Through Effective Leadership and Ethical Governance.

The effective mitigation of global strategy issues and the cultivation of a risk-aware culture underscore the significance of effective leadership and the embodiment of core values through the implementation of risk governance. Corporate culture is defined as ”*a set of broad, tacitly understood rules which tell employees what to do under a wide variety of unimaginable circumstances*” (Camerer & Vepsalainen, 1988)This underlines the importance of ‘’setting the tone from the top.’’, where leaders promote desired risk-behavior to make the organization responsive and resilient to turbulent uncertain business conditions. The Boards of directors should serve as "buffers" or intermediaries between the external environment and the organization, while also assuming the role of internal "overseers" responsible for setting policies and ensuring desired outcomes (Jill Solomon, 2010). Additionally, it is through leadership that a company's espoused values and behaviors are imprinted into the organization. Managers, in particular, must be mindful of the values they project, as they set the standards for behavior within the enterprise (Andersen, 2017). Consequently, the utilization of corporate values through effective risk governance, becomes instrumental in fostering an appropriate risk culture across diverse organizational structures, encompassing different national norms,

institutional frameworks, and legal contexts. Such an approach has been shown to empower firms in effectively addressing unexpected risk situations with reliability, responsibility, and a commendable reputation (Andersen, 2017). However, instilling good risk behavior in MNEs can be difficult due to their global reach. The existence of cross-border subsidiaries often leads to the development of distinct sub-cultures, implying that the broader the MNE's scope, the greater the risk of dilution of espoused values (Andersen, 2017; Rodrigues et. al, 2009).

Building upon this foundation of strong governance and leadership, it is essential to delve into the larger role that a firm plays in the broader market dynamics. In particular, the importance of corporate social responsibility (CSR) and ethical leadership within today's volatile global marketplace cannot be understated. Research by Husted (2005) reveals a negative relationship between CSR and systematic risk, while crisis literature highlights the importance of positive stakeholder relationships and open communication in crisis prevention (Bundy et al., 2016). Notably, CSR and profitability are not mutually exclusive, as CSR can drive innovation, foster goodwill, and provide strategic flexibility (Husted, 2005). However, the absence of ethical leadership poses substantial risks, as seen in crises like the BP case, where profit-driven decisions prevailed. Thus, organizations must prioritize CSR and ethical leadership to navigate uncertainties, mitigate risks, and maintain long-term success (Behind the Logos, n.d.)

3.3 How Toyota and Hyundai responded to turbulent uncertain business conditions

Lastly, the contrast between organizations that effectively respond and adapt to turbulent global markets and those that do not is exemplified notably by Hyundai outperforming during the recall crisis of 2009 (Shim & Steers, 2012). Toyota's organizational culture and leadership approach can be characterized as 'steady-state,' marked by a lean and centralized operational framework. In contrast, Hyundai can be described as 'entrepreneurial,' displaying a proactive and dynamic orientation, with a deliberate emphasis on risk-taking throughout the hierarchical structure to capitalize on uncertain market conditions. Toyota's rigid cultural norms likely hindered their flexibility and responsiveness in crisis situations, as employees were culturally disempowered and less inclined to embrace risk-taking opportunities as Hyundai did. Additionally, Toyota's comparatively centralized leadership approach potentially exposed the company to biases in executive decision-making, while managers may have neglected to embody ethical leadership, prioritizing self-preservation over crisis resolution. Furthermore, Hyundai's open and transparent stakeholder communication approach resulted in a relatively less severe reputational impact. In contrast, Toyota's delay in acknowledging their mistakes over a prolonged period undermined their professed values of reliability and efficiency, resulting in significant reputational losses (ibid.) However, it is important to acknowledget, that the scales of the two crises make them rather hard to compare directly, hence making the analysis more illustrative (Andersen, 2013, S11).

Conclusion

To construct a multinational enterprise that is both responsive and resilient in the face of unpredictable global conditions, key elements such as the organization's structure, culture, and

leadership must be strategically aligned. An MNE should utilize a structure that promotes transparency, accountability, and flexibility, fostering a culture that prioritizes risk management. Leadership should set the tone, promoting ethical behavior and corporate social responsibility. Coupled with effective risk governance, such an MNE can navigate uncertainties, mitigate risks, and sustain long-term success amidst turbulent business conditions.

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Appendices

Appendix 1

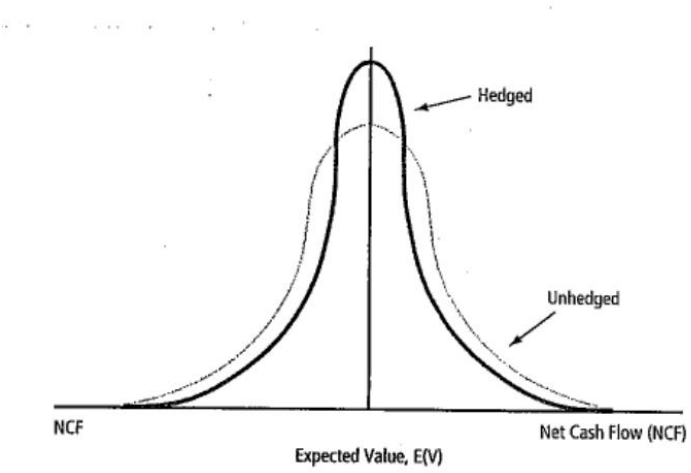

Figure 1. Impact of hedging on the expected cash flow returns
Source: (Moffett, et al. 2003.)