

Impact of Global Companies' Real Options Implementation on Their Hungarian Subsidiaries

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8.1 INTRODUCTION

Most contributions to the burgeoning scholarship on global companies' (GCs) responses to the global financial crisis of 2008–2011 rely on the conceptual framework of the real options (RO) theory (Christopher and Holweg 2011; Chung et al. 2010; Driouchi and Bennett 2011, 2012; Lee and Makhija 2009). RO theory refers to a portfolio of options that firms can use to calculate in the context of environmental uncertainty. The theory offers a framework of analysis that supports managerial decision-making with regard to investments and other strategic decisions.

Options that managers consider and evaluate are (1) commitment, (2) withdrawal, or (3) deferral. Accordingly, executives may opt for increased investment (they can buy up rivals, expand activity in existing subsidiaries, enter new markets, or invest in research and development—R&D); conversely, they may decide to withdraw from certain locations

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or business areas, terminate joint ventures, scale down activities, or sell or close subsidiaries. The third option to consider is to adopt a wait-and-see attitude.¹

Above and beyond considering and selecting from a portfolio of options, another advantage of the real options framework is its flexibility. The theory recognizes that investments are not once-and-for-all actions; hence, RO valuation and reasoning embody the possibility of sequencing, staging, and—more importantly—reversing commitments.

Most RO research has focused exclusively on headquarters (HQ) when investigating adjustments of GCs' investment commitments in response to fluctuations in the global, or, even more frequently, in the local host-country environment. The objective of these papers is to identify how RO implementation allows GCs to preserve strategic flexibility, reduce risks, and open new growth opportunities (Chung et al. 2013; Dikova et al. 2013; Lee 2013; Lee and Makhija 2009; Song et al. 2014).

In contrast, relatively little research has addressed the heterogeneous impact of global companies' RO implementation on their subsidiaries (Belderbos and Zhou 2009; Chung et al. 2010; Lee 2013; Maitland and Sammartino 2009; Song 2013). In the wording of Chung et al. (2010), it is “a general assumption that MNE subsidiaries are more or less the same because they belong to the same parent firm” (p. 501).

The global crisis of 2008 has, however, confronted researchers and practitioners with a highly complex and multifaceted real-world situation. In an era when turbulence in the overall business environment is coupled with rapid and disruptive technological development, when the spectacular expansion of some host country markets coincides with drastic contraction in some home countries, when stock markets are particularly vulnerable and bound to overreact to firms' selected announcements, GCs' flexible and staged approaches to both downside risk reduction and upside potential enhancement (Tong and Reuer 2007b) may yield a wide variety of outcomes for individual subsidiaries. Moreover, GCs' actual responses to the global crisis usually involved a combination of the possible options listed above, making the prediction of subsidiary-level effects even harder to fathom.

This chapter is intended to contribute to the RO literature from a subsidiary-focused perspective. Drawing on interviews carried out at GCs' manufacturing subsidiaries, we analyse the micromechanisms of actions undertaken by GCs to reconfigure their network organizations as a response to the crisis—as perceived by their subsidiaries.

More specifically, we investigate (1) the factors that determined the timing of investments/divestments, and (2) the role of organizational experimentation in preserving GC-level flexibility. The other research issue concerns the impact of organizational restructuring and resource reallocation on Hungarian subsidiaries.

Another purpose of this chapter is to contrast the empirical experience of the surveyed companies with the findings of the received literature. This will help us refine and possibly extend the literature on RO implementation in times of crisis.

The macroeconomic context of our investigations is Hungary—a small, open economy whose modernization and industrial upgrading has been driven mostly by the inflow of efficiency-seeking foreign direct investment (Csáki 2001; Szanyi 2001). The corporate context comprises subsidiaries that specialize in activities represented at the bottom of the smile curve of value-added in manufacturing.²

The rest of the chapter is structured as follows: Sect. 8.2 briefly summarizes the theoretical background; Sect. 8.3 presents the research method and the sample of the companies that we interviewed; Sect. 8.4 reviews the findings; and Sect. 8.5 provides conclusions and presents some limitations of our research.

8.2 CONCEPTUAL FRAMEWORK

Our research is related to multiple literature streams, including those concerned with corporate restructuring (Bowman and Singh 1993), general post-crisis developments in global value chains (Cattaneo et al. 2010), the drivers of offshoring firms' location choices (Jensen and Pedersen 2011), subsidiary upgrading (Birkinshaw et al. 2005), and the application of RO theory in drafting business strategies (Reuer and Tong 2007).

Due to space limitations and the breadth of each of these streams of literature, our review will be limited to, first, crisis-related aspects of RO literature and, second, to literature that focuses on changes in the perspectives of GCs' Central and Eastern European subsidiaries after the global crisis.

The RO theory is concerned with firms' discretionary investment opportunities (in real assets) carried out under uncertainty (Trigeorgis 1996).³ Obviously, most of the options investigated are related to growth and expansion, such as decisions on (1) market entry modes, (2) investment in R&D and in new technology, (3) the establishment

of strategic partnerships and/or joint ventures, and (4) the transfer of assets and resources to subsidiaries (see the survey by Driouchi and Bennett 2011, 2012).

In contrast, crisis-related RO theorizing investigates the abandonment or deferral of investment plans, the reduction of resource commitments, and the reconfiguration and switching of assets and resources (Kogut 1985; Kumar 2005; Tong and Reuer 2007a). It is no surprise that, following the global crisis of 2008, the number of contributions focusing specifically on the application of RO theory in divestment decisions increased rapidly (Belderbos and Zhou 2009; Damaraju et al. 2015; Song et al. 2014; Zschoche 2015).

This latter research suggests that multinationality offers a portfolio of resource reconfiguration options, which ensures operational flexibility and reduces risks. Exercising these options, however, involves considerable costs (Barnett 2003; Maitland and Sammartino 2009). Zschoche (2015) warned that, in the short run, the benefits of disposing of unprofitable production locations will not necessarily outweigh the costs that arise from withdrawal. In turbulent environments, when the value of specific business units considered to be divested is not known, a wait-and-see attitude (deferral of the divestment) may be the rational reaction (Damaraju et al. 2015).

There are few subsidiary-focused research papers that distinguish among the perspectives of individual subsidiaries. One example is Belderbos and Zhou (2009), who investigated the factors that influence strategic decisions on foreign subsidiary divestment. They found that crisis-triggered resource reconfiguration leads to the relocation of activities from subsidiaries in high-cost, to ones in low-cost, locations. Export-oriented manufacturing subsidiaries are more likely to be divested if they share this role in the host country with other affiliates of the owner or if the macroeconomic conditions in the host country are similar to those in other host countries, i.e., with partner manufacturing subsidiaries of the same owner.

Chung et al. (2010) and Lee (2013) found that subsidiaries with a within-country-growth orientation turn out to be less valuable for HQ and, consequently, are more likely to be scaled down or closed than cross-country-oriented subsidiaries that contribute to GC-level operational flexibility.

Subsidiary fate is also influenced by a multitude of additional factors, such as behavioural factors in decision-making, specific attributes of the host country environment, the structure of GCs' existing portfolios of

subsidiaries, and existing interdependencies among subprocesses across subsidiaries (Barnett 2003; Nachum and Song 2011). Furthermore, a subsidiary's fate is closely associated with the path dependency thesis emphasized in Adner and Levinthal (2004). These authors claimed that future investment opportunities are contingent upon prior investment commitments.⁴

As for the regional context of our investigations, Rugraff and Sass (2016a, 2016b) investigated the factors that determine GCs' reactions to the crisis (relocation or, conversely, counter-cyclical investments and acquisitions aimed at strengthening their market positions). Drawing on field interviews with Hungarian automotive suppliers, they found that size, structure, and network embeddedness influence GCs' strategic choices in turbulent times. They posited that the relocation of production to even lower-cost locations was not characteristic in the context of foreign-owned facilities operating in Hungary; a number of "keep factors" locked automotive investors into their Hungarian locations.

Zooming in on the Czech Republic and Slovakia, Pavlínek (2015) scrutinized the divestment of peripheral facilities. He found that there had been only a few divestments and plant closures in the automotive industries of these countries; however, local subsidiaries (as well as domestically owned suppliers) faced enormous pressures to improve efficiency and reduce costs. Filippov and Kalotay (2011) presented a comprehensive overview of GCs' responses to the crisis in the new EU member states. They found that responses were heterogeneous, including both contraction and expansion. Some subsidiaries in the new member states faced downsizing and partial closures; others benefited from the relocation of additional production and of advanced functions. This contributed to their functional upgrading.

Several other papers that examined GCs' organizational reactions to the crisis from the perspective of a host country or a peripheral subsidiary, in general, and in a Central and Eastern European (CEE) context, in particular, also emphasized the possibilities for upgrading opened up for local actors by the crisis-triggered restructuring of global value chains (GVCs) (Domański et al. 2013; Sass and Szalavetz 2013; Sturgeon and Kawakami 2011; van Tuijl 2014). Upgrading occurred partly as a consequence of owners' pressure on subsidiaries to reduce costs and improve efficiency (Pavlínek 2015) and partly as a result of the increasing delegation of more advanced functions to local subsidiaries (Sass and Szalavetz 2013).

However, according to Schuh's (2012) persuasive arguments, scenarios suggesting that the successful upgrading of products, processes, and functions will contribute to the CEE-based subsidiaries' upgraded position within GVCs (e.g., that they might become regional headquarters) are less likely after the crisis. Lead firms would rather reconsider the organizational model they adopted for CEE countries; they no longer consider the region as a homogeneous bloc. Instead, they increasingly differentiate among CEE countries, assessing them according to the opportunities they (i.e., the individual countries and the given subsidiaries) can offer. This argument is reiterated by Szent-Iványi and Vigvári (2012), who scrutinized the evolution of CEE countries' potential to benefit from FDI by constructing a composite indicator of countries' spillover potential. These authors found substantial cross-country differences and argued that GCs should, therefore, clearly diversify their investment strategies toward the CEE region, rather than treating the countries as a homogenous group.

8.3 RESEARCH METHOD AND SAMPLE

Since the objective of this chapter is to open the black box of organizational processes and study them as they unfold over time, exploratory research based on multiple case studies was considered the most appropriate method of investigation (Doz 2011; Eisenhardt 1989). An interview guide containing predominantly open-ended questions (see Annex) allowed interviewees to provide rich descriptions of complex, multifaceted processes—to speak about the real-world phenomena of crisis-driven organizational transformation and its impact on the surveyed manufacturing subsidiaries. The interviews, 60–90 minutes in length, were conducted between September and November 2015. Interviewed managers were, in most cases ($N = 11$), CEOs of Hungarian subsidiaries; in two cases, divisional leaders were interviewed. To preserve anonymity, neither corporate names nor main products will be specified.

In the process of sample selection, we applied a purposeful sampling method (Patton 1990). Our aim was to select information-rich cases—companies whose insights draw on a multiplicity of experiences, i.e., companies whose cases promise observations about issues of central importance to our research. For this purpose, we selected large companies—local manufacturing subsidiaries of GCs that are important global actors in their industries (Table 8.1). At the time of the interviews, these companies had been operating in Hungary for at least a decade.

Table 8.1 Summary of surveyed companies

<i>No.</i>	<i>Industry</i>	<i>HQ location</i>	<i>Interviewee</i>	<i>No.</i>	<i>Industry</i>	<i>HQ location</i>	<i>Interviewee</i>
1	E	SE	CEO	8	E	USA	Divisional leader
2	M	DK	CEO	9	E	USA	CEO
3	A	DE	CEO	10	M	DE	CEO
4	E	DE	CEO	11	AE	USA & DE	CEO
5	A	USA	CEO	12	AE	DE	CEO
6	M	USA	Divisional leader	13	AE	DE	CEO
7	M	DE	CEO of the carved-out and sold division				

Note: *A* automotive; *E* electronics; *AE* automotive electronics; *M* machinery; *SE* Sweden; *DK* Denmark; *DE* Germany; *CEO* chief executive officer; *HQ* headquarters

Source: Author's compilation

Altogether, our sample consists of 13 manufacturing subsidiaries of American, Danish, German, and Swedish GCs operating in the automotive (2), automotive electronics (3), electronics (4), and machinery (4) industries. On average, these companies had been operating in Hungary for more than 20 years at the time of the interviews. They exhibited strong upgrading performances, in terms of both products and processes. Moreover, a number of advanced functions have been moved to the local facilities, including R&D (nine companies have R&D departments), process engineering and testing, software development, procurement, repair, logistics, and distribution.

The surveyed GCs had an average of 99,700 employees in 2014 (four companies had less than 10,000 employees, and six GCs had more than 100,000 employees). The Hungarian subsidiaries averaged 1920 employees in 2014. The average global turnover was €24.1 billion in 2014.⁵ As for the surveyed Hungarian subsidiaries, the average net sales amounted to €608.6 million. The importance of the surveyed Hungarian subsidiaries, considered in terms of their contribution to their parent companies' total production and/or total revenues, is heterogeneous; some are listed among the largest production facilities of their mother companies, contributing to 15–23% of the total turnover, while others account for a mere 0.2% of total sales. The surveyed Hungarian companies are highly export oriented; the average share of exports in total sales amounts to 82.8%.⁶

When selecting the sample, we immediately faced the problem of respondent bias. In line with global developments with respect to the average tenure and turnover of executives (average tenure shows a continuous decline, and CEO turnover increases—Schloetzer et al. 2015), also in Hungary, it was difficult to find large local subsidiaries with interviewed managers who had been in the same managerial position during the crisis years. In our sample, only six managers of the 13 would fulfil this requirement. Not all the interviewed managers had been with the same firm seven or eight years prior to the interview; only 11 of 13 had remained within the same company. Interestingly, the two “newcomer CEOs” worked previously (during the crisis years) at another firm in our sample. Nevertheless, all interviewed managers confirmed that they had sufficient information about firm-specific developments during and after the crisis years to assist us. Moreover, we believe that the quality of the respondents compensates for their occasional lack of personal experience in the given position.

The first couple of questions were intended to set the context and collect information about the multiplicity of crisis-driven organizational transformation processes that affected the organization of the surveyed firms’ value chains. The core part of our questions investigated the mechanism by which organizational transformation was decided and implemented (e.g., the factors that determined the timing of investments/divestments, the factors that shaped the valuation of options, and the impact of organizational restructuring and resource reallocation on the mandates and responsibilities of the Hungarian subsidiaries).

In line with the framework proposed by Doz (2011), we ensured internal validity through three measures. First, we tried to control for factors that may distort the causality of the arguments. The restructuring of GVCs, including developments such as network consolidation, the establishment of shared services centers (SSCs), relocations, divestments, and outsourcing, may be the outcome of “normal” organic development, or these developments may be a response to the crisis. In an effort to distinguish between the outcomes of organic evolution and organizational changes prompted by perceived environmental turbulence, we repeatedly asked our interviewees to confirm whether the specific organizational transformation action they recounted was a reaction to the crisis.

Second, we applied a constant comparative method in which each case helps to confirm or reject the insights emerging from previous cases

(Glaser and Strauss 1967). Third, we relied on both primary and secondary information sources and triangulated the findings to maximize reliability. In addition to interview information, we collected secondary data about both the interviewed subsidiary and its parent company, such as annual reports, corporate information, press releases, newspaper articles, balance sheets, and notes pertaining to the financial statement.

Construct validity was ensured through systematic cross-case analysis, which allowed us to look at the identified commonalities from multiple angles (Yin 2003). This facilitated analytical generalization, while cross-case analysis helped identify the contingent limitations of our research method.

Cross-case analysis was assisted by a predetermined technique of making case study notes and dedicating some time at the end of each interview to reviewing the chief findings, and asking interviewees to identify additional issues that they perceived to be relevant and important that were missing from the interview. External validity (Gibbert et al. 2008) was also enhanced by sending the draft paper to the interviewed managers for approval and feedback. The question we particularly emphasized in the covering letter that accompanied the draft paper was whether the interviewed managers considered the general statements formulated as key findings of the interviews to adequately generalize the issues raised by them and/or by their peer interviewees. Focused feedback helped us improve analytical rigour, and, at the same time, it enhanced the cross-sectional validity of the arguments.

8.4 FINDINGS

8.4.1 Timing of RO Implementation, as Perceived by the Hungarian Subsidiaries

Inquiring about the micro-mechanisms of real options implementation, we asked executives to provide details about crisis-driven changes within the organization of their GC owner. The first conspicuous commonality of the answers was that it was difficult to establish an unambiguous direct association between organizational changes and the crisis.

On the one hand, relocation and divestment actions had already been frequent before the crisis, while decisions to expand in new areas and acquire competitors or actors in adjacent technological fields were made with seemingly non-abating frequency during and after the crisis as well.

I really cannot tell whether these consecutive relocation actions were driven by the crisis or they would have been implemented anyway. We have been experimenting with organizational simplification actions for a while. The crisis may have accelerated and intensified these reconfiguration moves. (Case No. 2)

On the other hand, the majority of managers interviewed maintained that organizational reconfiguration decisions presumably driven by the crisis have been implemented with relatively long time lags after the crisis. This calls into question the direct association of organizational transformation with the adverse turn in the business cycle.

Delays in divestment were sometimes caused by experimentation with alternative solutions, such as the merger of subsidiaries, merger of business areas, creation of spinoffs, reclassification of business divisions, and changes in the reporting structure.

There were so many changes before arriving at the present organizational setup! It would be quite difficult to recall all the changes we have experienced in the past couple of years. Even our name [that of the Hungarian subsidiary] changed several times, as well as our reporting structure. And finally, after a number of organizational changes, seven years after the crisis, our business segment was carved out from the equity of our parent company and sold to a financial investor. Whether this action, or any of the previous rearrangements, can be associated with the crisis or not, that's a good question. (Case No. 7)

Another reason for the time lag in GCs' responses to the crisis is the consideration of the stock market's expected reaction. Accordingly, the successful disposal of a business segment requires its restructuring first. Consequently, disposal transactions are preceded by investments in retrenchment and turnaround. HQs concentrated operations to improve capacity utilization and profitability, stabilize revenues, and increase operating cash. These reorganization actions continued for several years before they culminated in the disposal of the given segment.

Therefore, subsidiary executives found it difficult to interpret these developments and assess whether the seemingly straightforward signs of "commitment" reflect a systematic and proactive medium-term organizational strategy *culminating* in a successful disposal transaction or a reactive organizational experimentation. In this latter case, the disposal of the segment can be interpreted as the failure of previous strategic steps.

Peripheral subsidiaries in low-cost regions first experienced mainly the benefits of corporate reorganization (additional tasks have been relocated,

responsibilities increased, and investments implemented). Consequently, the ultimate decision about the disposal of the given segment often came as a shock for them. The accounts of informants in two firms illustrate this exasperation:

I think it was a strategic mistake to give up that manufacturing site and sell it. What a waste of resources! Our owner kept investing in that facility; it was expanded with relocated activities, capital investment soared, accompanied by considerable intangible investment. Additional blue collar workers and new executives were hired. Within a relatively short time frame, crisis years' unsatisfactory key performance indicators started to improve. Last year, the given facility was even publicly praised as one of the top performers within the organization. Everybody was astonished when our owner's decision was announced. (Case No. 7)

Although I was really surprised at that time, I must acknowledge that our owner chose a good exit strategy. What we discerned during the crisis was only that the global HQ managed business difficulties with extraordinary success through capacity alignments, relocations, streamlining, and occasional closure of operations in advanced economies. Now I realize that in this process, our owner recognized that the consolidation of financial performance indicators is a necessary but insufficient condition of survival. If you try to compete with stand-alone products or product families in the automotive industry, you will be out; you have to offer integrated solutions. This recognition prompted our owner to make a fundamental decision: he sold the firm [i.e., the global company] to another automotive company that is specialized in complementary products and technologies. (Case No. 5)

Altogether, the often-perceived lack of a direct association between the crisis and the organizational restructuring actions of HQs and, in particular, their action lag, i.e., the long period between the cyclical downturn and fundamental organizational restructuring steps, suggests that deferral was a frequently selected strategic option among the surveyed companies.

8.4.2 RO Implementation: Experimentation and Reversibility

Another finding that crystallized from the accounts of our informants was that parent companies' organizational realignment actions—however strategic they are—can often be reversed or easily modified. Organizational reconfiguration is considered experimental, and flexibility is deliberately incorporated in the design of actions. The subsequent paragraphs provide some illustrations.

The first example is the case of a subsidiary where functional upgrading, more specifically, gaining responsibility for the procurement function, was followed by the loss of this mandate. Already before the crisis, the subsidiary had assumed ever-greater responsibilities with respect to core activity-related procurement. During and after the crisis, the subsidiary kept increasing its procurement responsibilities. It became entrusted with scanning the regional market for new suppliers. It hired supplier relationship management experts, performed supplier audits, designed and implemented supplier development programmes, and was responsible for the localization of selected inputs. However, at one point in time, several years after the crisis, it lost its procurement mandate because HQ decided to centralize procurement activities in a group purchasing department to be located in Switzerland.

Another subsidiary also gained a regional procurement mandate and did its best to develop (enhance the knowledge intensity of) this support function. It accumulated knowledge about the specifics of regional partner subsidiaries' activities and procurement needs. It managed to efficiently organize a regionally integrated procurement system, together with the related logistics and other support activities. Later, however—again, years after the crisis—HQ decided to decentralize procurement. Thus, the interviewed subsidiary lost its regional mandate, and the partner subsidiaries in the region assumed responsibility for operational procurement themselves.

In a third case, local manufacturing operations were discontinued in 2007, i.e., already before the crisis, and the Hungarian subsidiary became a pure R&D facility—a center of excellence within the group. In 2013, the owner decided to restart manufacturing activities in Hungary in a new, greenfield facility. Production expanded rapidly; in 2016, a second greenfield manufacturing facility was under construction in Hungary.

The accounts of two informants illustrate the turbulence local subsidiaries occasionally experienced as a result of their parent companies' experimentation with the organizational structure.

During the crisis year, we became entrusted with a number of group-level procurement tasks. Later, however, these were partly recentralized to Germany. Nevertheless, I don't think the organizational position of procurement has stabilized. It is true—problems and inefficiencies emerged after the relocation of procurement to Hungary. However, recentralization did not solve these problems, since similar inefficiencies were experienced also in Germany. You know, an organizational transformation step will not yield the expected results if you

realign one single function. Functions consist of a number of interrelated activities, and functions themselves are interrelated. If you centralize only one function in an isolated manner without realigning the whole organizational architecture, a number of new problems will emerge. And indeed, they did. (Case No. 3)

We have gained responsibility for the production of a newly developed sophisticated product. Since the launching of a new product requires the development department experts' quasi-continuous support, i.e., the joint work of product developers, design engineers, process engineers, technicians, and assemblers, the relocated processes turned out to be excessively costly (German experts had to spend long months in Hungary). Moreover, quality problems were numerous. Finally, HQ decided to backshore the given production activity to Germany. Although the factory in Germany experienced similar problems, it was decided that scale-up development will be finalized in Germany. When production gets standardized, it will probably be relocated again, but this time not to Hungary, rather to the rapidly growing Romanian subsidiary of HQ. (Case No. 12)

According to the managers interviewed, parent companies consider these actions neither as sunk investments nor as failures, but rather as signs of organizational flexibility that ensure efficiency gains. Several managers interviewed mentioned that scheduled organizational reviews took place every (second) year; hence, reorganization and experimentation with new organizational setups were normal.

8.4.3 RO Implementation: Impact on the Hungarian Subsidiaries

Overall, the interviewed managers considered the outcome of their HQs' reconfiguration of the global organization beneficial for the subsidiary. Crisis-driven organizational realignment reinforced subsidiaries' ongoing organic upgrading processes. A crisis often prompted the owners to relocate additional production activities from high-cost subsidiaries, among others from newly acquired competitors, to the relatively low-cost Hungarian location. Moreover, the recognized synergy effects of locating production-related support tasks to production sites prompted the owners to locate development and testing activities in Hungary also, i.e., activities that would support the newly located production activities.

Consequently, the most frequent outcome of RO implementation by GCs was the increase of their local commitment (see Table 8.2, regarding the composition of RO outcomes from the perspective of the surveyed firms).

Table 8.2 Summary of real options implemented at the companies in the sample

<i>No.</i>	<i>C</i>	<i>W</i>	<i>D</i>	<i>Examples</i>
1	X	X		(C) Launching of programmes that improve efficiency and cut costs (intangible investments) and frequent organizational changes; (C+W) Concentration of selected activities in Hungary and the relocation of other activities away from Hungary
2	X	X		(C) Relocation of new production lines to Hungary, the establishment of SSCs in Hungary, and the location of selected production-related R&D activities to Hungary; (W) Relocation of selected support activities to other subsidiaries, the creation of SSCs (outside Hungary), and the relocation of support activities there
3	X	X		(C) Relocation of production to Hungary; (C) Relocation of R&D activities to Hungary; (C+W) Organizational experimentation: the relocation of several support activities to Hungary and the backshoring of selected activities; (W) Global centralization of selected support activities and the loss of the related mandates of the Hungarian subsidiary
4	X	X	X	(C) Relocation of logistics and the warehousing of other technical activities from Germany to Hungary, the establishment of an R&D facility in Hungary, production relocation, and the expansion of local R&D; (C+W) During and immediately after the crisis: substantial investment in and expansion of a new division that had been established before the crisis and withdrawal from that division years after the crisis; (W) Relocation of selected high-volume, standard activities from Hungary to the Romanian subsidiary; (W) Loss of regional procurement mandate: decentralization of regional procurement
5	X	X	X	(C) Investments to improve efficiency and stabilize revenues and the location of new activities to Hungary; (W) Closure of one of the Hungarian facilities but consolidation of and additional investments in the other facility; (D) Takeover of the GC by a competitor
6	X	X		(C) Investments to improve efficiency and reduce costs; (C+W) Frequent organizational changes: the location of new production and support activities in Hungary, investment in the expansion of locally performed support activities, the establishment of a new center of excellence, relocation (away from Hungary), and the backshoring of selected production activities
7	X	X	X	(C) Production relocation from HQ's Swedish subsidiary to Hungary; (W) Equity carve-out and sale of the subsidiary but new support tasks (new responsibilities) under the new owner

(continued)

Table 8.2 (continued)

No.	C	W	D	Examples
8	X	X		(C+W) Continuous changes in the product mix, the location of new production to Hungary, the relocation of selected activities to even lower-cost subsidiaries (e.g., Ukraine), and reshoring from China to Hungary
9	X	X	X	(W) Downsizing and changing the reporting structure of production; (C) Expansion of services activities and new responsibilities in the field of IT related to the support of major organizational transformation
10	X			(C) Production relocations, capacity expansion, the location of a new SSC to Hungary, and the location of support activities to Hungary
11	X			(C) Capacity expansion, production relocation to Hungary, the location of production-related support activities, and substantial tangible and intangible investments
12	X	X		(C+W) Production relocation to and from Hungary, the expansion of R&D activities in one facility but the loss of the R&D mandate at the other Hungarian facility, and the restructuring of production activity at one facility (shift to higher-volume but lower unit value-added production)
13	X		X	(C) Expansion of local R&D activity and greenfield investments many years after the crisis: the establishment of manufacturing facilities and the location of new production activities in Hungary

Note: C commitment; W withdrawal; D deferral

Source: Author's compilation

Increased commitment was manifested in (1) capacity expansion and product upgrading; (2) tangible and intangible investments in process upgrading and efficiency increases; and/or (3) functional upgrading of subsidiaries driven by HQs' delegation of additional tasks and responsibilities.

Although the synergy effect of co-locating production and advanced support processes was recognized well before the crisis, nevertheless, these moves became more frequent after the crisis years. These are some typical answers to a question about the impact of HQs' crisis-driven consolidation moves on the Hungarian subsidiary:

The development of the Hungarian location has been going on quite rapidly through consecutive production relocation decisions. New production sites have been added to the original one; now we have four factories in Hungary. We host some production-related research activities as well, and the volume of R&D activities keeps expanding. Upgrading took a new qualitative turn with the location of various SSCs to Hungary. Over time, a finance and an information

technology SSC were located to Hungary and a regional sales and distribution center that is responsible also for repair and service activities. As I see it, the next functional consolidation step will be in the field of human resource (HR) management; we are competing now for the possibility of hosting an SSC in HR. (Case No. 2)

One positive impact of the crisis (positive for us) was the relocation of R&D activities; our HQ decided to locate a number of R&D tasks to us and to India. (Case No. 3)

Alongside a considerably upgraded product mix, we gained responsibility for corporate-wide accounting tasks, for testing and programming (writing software embedded in the production machinery), and for selected operational procurement tasks. Additionally, we have a patent engineering team working for the parent company. (Case No. 10)

Not even the occasional disposal actions (e.g., the sale of the business division) resulted in the closure of the surveyed subsidiaries; ownership changes often represented new opportunities within the new owners' organization.

Having taken our company over, the new owner could expand its portfolio with our products and, thus, offer even more integrated solutions to its customers. (Case No. 7)

In another case, the weight of the subsidiary increased considerably within the organizational structure of its new owner, as compared to its importance in the previous organization. Before the ownership change, the interviewed subsidiary was a simple manufacturing facility, one of its owner's several manufacturing sites in Hungary. Equity carve-out (the sale of the business division) necessitated investment in separating the given company's information system from its previous owner's system and integrating the subsidiary in its new owner's system. Consequently, new IT experts were hired (transferred from the previous owner's organization), and they undertook these knowledge-intensive development tasks. Similarly, sales specialists and procurement officers were transferred from the previous owner's organization. Altogether, the activity mix of the subsidiary became much more diversified under its new owner than previously.

Nevertheless, we also identified adverse developments from the subsidiaries' perspective, i.e., examples of HQ opting for withdrawal. In one case, the takeover of a competitor indirectly resulted in the downgrading

of the Hungarian subsidiary. One of the R&D centers of the acquired competitor was in Romania, and HQ decided to consolidate R&D activities in its Romanian subsidiary. This brought an end to the period of gradual, R&D-based upgrading of the Hungarian subsidiary; R&D activities in the Hungarian location have been phased out.

Relative downgrading was driven in some cases by the shifting composition of global demand. The new market imperative (Coe and Yeung 2015, p. 101) was mentioned by almost all of our informants as a trigger for strategy transformation. The flip side of the coin was a relative degradation of the importance of Europe and of the Central European facilities, as perceived by our informants. Here is what some of them said:

While rationalization moves addressed mainly our owner's European operations, buzzwords in other regions were different, for example, "expansion of the global footprint" and "next frontiers of growth". (Case No. 9)

Relatively well-capitalized when the crisis erupted, our owner took over one of our major competitors that had been hit hard by the crisis. Several executives of that company have been kept following the takeover, and they received key positions. The new executives brought a new orientation; we have increasingly turned toward the global markets. This implied, however, diminished attention to Europe, at least in relative terms. In our case, what I notice is that our owner pays somewhat less attention to us; HQ is less willing to consider our initiatives. (Case No. 4)

Why not Hungary for the location of the new global IT-development facility? You know what our global strategic officer would ask himself before making a location decision? He would ask: "Where are our most important customers located?" As you know, there are tremendous opportunities in Southeast Asia; that's what influences the location decision of new corporate functional centers. (Case No. 1)

In summary, the factors that determined the ultimate outcomes of organizational restructuring and resource reallocation for the Hungarian subsidiaries were rather heterogeneous. Moreover, some of the effects became evident with such a long time lag (deferral was a frequently chosen option) so that the direct association of subsidiary-level developments with the crisis was not considered straightforward. As detailed in Table 8.2, GCs' responses frequently involved a combination of possible options; hence, the balance (the ultimate outcome) of HQs' strategic actions proved difficult to predict.

8.5 CONCLUSIONS

The surveyed empirical evidence indicates that the complexity of the business environment shaping the valuation of options has increased considerably. Our first finding is that in the volatile economic environment of the crisis years, flexibility was regarded of utmost importance when deciding on organizational reconfiguration actions. Flexibility was ensured through a variety of techniques, including staged investment and divestment, the avoidance of hasty decisions (deferral of decisions that may destroy options), and deliberate organizational experimentation.

The flip side of the coin is that the impact of managerial decision-making on subsidiaries has become even harder to predict, irrespective of the fact that some of the observed subsidiary-level developments have supported the received literature on the determinants of the impact of HQs' RO implementation on subsidiaries.

The surveyed evidence supports, in particular, the importance of host country attributes (wage level) for subsidiary survival. In line with the literature (Barnett 2003; Nachum and Song 2011), the structure of the owners' existing portfolios of subsidiaries and interdependencies among activities have also proved to be important explanatory factors of subsidiaries' benefiting from the crisis-driven concentration and consolidation of value-chain activities (consider the location of advanced support functions near production that had been relocated from high-wage countries).

As for the role of path dependency influencing subsidiary fate (Adner and Levinthal 2004), our findings are ambiguous. In several instances, prior commitment was considered to be an important explanatory factor of subsequent developments during and after the crisis. However, as outlined earlier, parent companies' decisions often proved reversible. RO implementation necessitated substantial organizational learning that was driven and facilitated by a process of systematic organizational experimentation. Consequently, some of subsidiaries' previously gained mandates were sometimes lost as a result of HQs' new strategic direction.

Notwithstanding occasional turbulence, on balance, the surveyed Hungarian subsidiaries have benefited from their owners' cost-cutting and restructuring actions. Production activities relocated from owners' facilities in advanced economies led to capacity expansion and product upgrading. The location of advanced support activities to the expanding local production facilities contributed to subsidiaries' functional upgrading. In this respect, path dependency, i.e., the volume of existing, committed

assets in the Hungarian subsidiaries, proved an important motive in shaping HQs' subsequent investment decisions.

Altogether, the experiences of the surveyed subsidiaries are consistent with the well-known commitment–flexibility trade-off (as surveyed in Driouchi and Bennett 2012) that makes predictions based on RO theorizing so difficult for subsidiaries.

This research has a number of limitations. One limitation is sample selection bias; large, global companies may weather the crisis more easily than family-owned internationalized ventures with a couple of low-cost production facilities. Crisis-driven adjustment and reorganization steps, as well as reliance on counter-cyclical strategies, may significantly differ across various size categories.

Another limitation is our reliance on subsidiary managers' subjective perceptions. However, since the purpose of our research was to explore the micromechanisms of RO implementation, reliance on local executives' accounts, i.e., on their perceptions of these developments, is not a problem. At the same time, these perceptions affirm that, in today's global environment, even the RO framework—however sophisticated it is as compared to conventional financial analysis methods, such as net present value or discounted cash-flow-based reasoning—seems indecisive, as the drivers of RO implementation are so complex and multifaceted.

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ANNEX: INTERVIEW PROTOCOL

1. Please describe the changes the global financial crisis of 2008–2011 induced in your parent company's global organization. (Consolidation/rationalization of the value chain—relocations, offshoring/outourcing, closing down or sale of selected subsidiaries; OR expansion—establishment of new subsidiaries and acquisition of competitors).
2. How did the owner schedule his organizational restructuring actions? Which factors influenced the timing of implementation?
3. Did the above-described organizational transformations have an impact on the activities/position of the Hungarian subsidiary? Please specify.
4. Did the crisis-driven reconfiguration of the owner's organizational structure create any upgrading opportunities for the Hungarian

subsidiary (in terms of new production tasks and new functions, such as R&D, procurement, etc.), or did it rather provoke a loss of previous mandates in specific functions? Please specify.

5. Are you aware of any crisis-driven changes in the development of partner subsidiaries in the region? Did these changes have an impact on the mandates of the Hungarian subsidiary?
6. Do you perceive any other changes in the organizational configuration, in management practices, or in the business model over the past five to seven years that occurred as consequences of the crisis?
7. How do you assess the alignment of the overall organizational strategy with the changes in the global/regional business environment?

NOTES

1. The portfolio of real-world options is, of course, much more variegated—and not only at times of crisis. For example, firms may consider relocating or outsourcing selected activities, or, conversely, increasing vertical integration. Although not mentioning the RO theory explicitly, some papers address one or two of these options: see, e.g., Kinkel (2012) on the production-relocation and backshoring implications of the global crisis, Fisch and Zschoche (2012) on the withdrawal from and closure of foreign production locations, or Knudsen and Foss (2015) on changes in the vertical integration of core activities as a response to a crisis.
2. Mudambi (2008) used the metaphor of *smile curve economics* following Shih (1996), to describe the relation between global value chain specialization (i.e., specialization in specific activities along the value chain) and value-added. The curve depicts the distribution of value-added at each stage of the chain. It makes it obvious that production activities, represented at the bottom of the smile curve, generate much less value-added than do pre- and post-production types of service activities.
3. Over time, the application domains of RO theory have expanded considerably, and have included internalization and network options for GC management, the choice of governance modes and options related to the management of GCs' international operations, and options concerning diversification and resource reallocation (Driouchi and Bennett 2012).
4. Indeed, according to some critiques of the RO logic, the issue of path dependence is not sufficiently considered in the RO reasoning (Adner and Levinthal 2004; Barnett 2003; Driouchi and Bennett 2012).
5. This average masks large differences. Four companies had net sales below €1 billion. The turnover of three companies ranged between €1 billion and €10 billion; five companies accounted for net sales between €10 billion and €100 billion, and the revenues of one GC exceeded €100 billion.

6. In reality, the share of exports is even higher, since, in some cases, a substantial share of “domestic sales” is delivered to an independent legal entity partner subsidiary of the same GC in Hungary or to an independent legal entity distribution center of the headquarters (located in Hungary). These products will, presumably, be exported as well; however, exports are accounted for by the given intermediary entity and not by the company in the sample.

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