ARTICLE IN PRESS

Long Range Planning ■■ (2015) ■■–■■

Contents lists available at ScienceDirect

Long Range Planning

journal homepage: http://www.elsevier.com/locate/lrp

Performance Effects of Divesting Foreign Production Affiliates: A Network Perspective

Miriam Zschoche

The goal of this study is to examine the short-term performance effects of a firm's decision to divest foreign affiliates that are part of an integrated international production network. Previous literature stresses positive investor reactions toward divestment announcements in the short run. Stockholders seem to expect positive long-term performance effects from refocusing strategies. When evaluating the actual financial consequences of divestments, however, it is unclear whether the benefits of divesting unprofitable production locations will outweigh the costs that arise from withdrawal in the short run. By evaluating outcomes of the remaining network, this study suggests that withdrawing countries from a production network leads to an immediate decline in performance. Efficiency gains that result from more favorable labor cost conditions across the remaining locations, on the other hand, can mitigate the negative performance effects of divestments. A panel analysis of 631 foreign production networks maintained by German manufacturing firms supports the hypotheses.

Introduction

Corporate consolidation and refocusing by means of disinvestments are important strategy options for firms (e.g., Bowman and Singh, 1993; Harrigan, 1981). In many cases, firms try to strengthen their competitive position by downsizing an overdiversified business portfolio (Hoskisson and Hitt, 1994). In addition to divestment of business lines, firms may also decide to withdraw parts of their international network (Benito, 2005; Boddewyn, 1979). A growing body of research examines the determinants of international divestment decisions (e.g., Dhanaraj and Beamish, 2009; Kronborg and Thomsen, 2009; Mudambi and Zahra, 2007). However, to date, little is known about the performance outcomes of these decisions. This study addresses this question by analyzing the immediate financial consequences of firms' decisions to pull out of host countries in a multinational production network.

Facing uncertain future developments at the moment of investment, firms often evaluate their international activities differently over time and decide to retrace previously made foreign direct investment (FDI) decisions (e.g., Bane and Neubauer, 1981; Berry, 2013). Discrepancies between expected and actual outcomes of foreign investments can stem from diverse characteristics at the subsidiary, host country, and parent firm levels (Berry, 2013; Mata and Portugal, 2000). In regard to the subsidiary's investment mode, joint ventures and acquired affiliates induce more coordination problems and show a higher propensity to be divested than wholly owned subsidiaries and greenfield investments, respectively (Hennart et al., 1998; McCloughan and Stone, 1998; Ogasavara and Hoshino, 2008). At the host-country level, unfavorable market conditions seem to reduce the likelihood that a foreign affiliate will survive (Benito, 1997). Inexperience or inadequate technological resources of parent firms can also lead to higher divestment propensities (Belderbos, 2003; Delios and Beamish, 2001).

From a network perspective, foreign subsidiaries not only enable firms to capture new demand markets or access valuable production resources (e.g., Dunning, 1988), but they also enhance the efficiency of a multinational production network (e.g., Ghoshal and Bartlett, 1990; Jarillo and Martínez, 1990). A firm that maintains incorporated production sites that produce interchangeable outputs in a multiplicity of host countries possesses "operational flexibility" to shift production tasks temporarily across locations in response to short-term cost differentials (de Meza and van der Ploeg, 1987; Kogut, 1985). The divestment propensity of those affiliates depends on their value to the production system as a whole. Foreign affiliates that do not sufficiently contribute to overall production efficiency are more likely to be divested (Belderbos and Zou, 2009; Chung et al., 2008).

Even though international divestment decisions by multinational corporations (MNCs) involve massive shifts in resources, the performance outcomes of these strategic decisions have been largely neglected by researchers. However, numerous studies have analyzed the determinants (e.g., Bowman and Singh, 1993; Moschieri and Mair, 2011) and outcomes (e.g., Lee and Madhavan, 2010) of divestments from a more general strategy perspective. Empirical studies have shown that

http://dx.doi.org/10.1016/j.lrp.2015.12.001
0024-6301/

Please cite this article in press as: Miriam Zschoche, Performance Effects of Divesting Foreign Production Affiliates: A Network Perspective, Long Range Planning (2015), doi: 10.1016/j.lrp.2015.12.001

long-run performance can be enhanced through restructuring (Bergh, 1998; Chang, 1996). In the short run, however, restructuring activities that are oriented on long-term strategies might also reveal no (Wu and Delios, 2009), or even negative (Kang and Shivdasani, 1997), performance effects.

This study contributes to the literature in two ways. First, it advances research that points to operational flexibility characteristics as determinants of foreign divestment decisions (Belderbos and Zou, 2009; Chung et al., 2008; Fisch and Zschoche, 2012). The study further develops these approaches by investigating performance consequences of divestment decisions through the lens of operational flexibility. Second, the analysis broadens existing literature on the performance effects of corporate restructuring (Bergh, 1998; Brauer and Wiersema, 2012) by applying network considerations. That is, performance outcomes of restructuring decisions are viewed from the perspective of the remaining members of an interdependent network.

If foreign production locations are completely withdrawn from an integrated manufacturing system, the need to compensate for a location will distort established manufacturing processes in the remaining foreign production sites. This induces costs that lower the performance of the remaining network in the short run. However, each individual production location affects network efficiency very differently. From the perspective of operational flexibility, production units have varying value depending on their absolute cost conditions as well as their redundancy in terms of cost developments relative to the remaining locations. Therefore, the divestment of different locations is expected to have different consequences for overall network performance.

The remainder of this study is structured as follows. The next section offers a brief overview of the existing literature on corporate divestment and performance. In Section 3, we propose several hypotheses about the immediate performance effects of the decision to withdraw host countries from a multinational production system, focusing on the concept of operational flexibility. Section 4 describes our empirical research design, and Section 5 presents the results of an econometric panel analysis of 631 German MNCs. The final section concludes with a discussion of the findings and implications for management practice and future research.

Corporate divestment and performance

Divestment activities are regarded as part of a firm's corporate restructuring strategy. However, firms might restructure their business activities in a variety of ways. Bowman and Singh (1993) distinguish three categories of restructuring activities: organizational, financial, and portfolio restructuring. Organizational restructuring is intended, as the name implies, to increase the efficiency of management teams through changes in the organizational structure (e.g., team sizes, responsibilities, incentive structure, etc.). Financial restructuring affects a firm's capital structure (e.g., leveraged buyouts, asset sell-offs, etc.). Portfolio restructuring strategies produce the most sweeping changes through acquisitions or divestment of business lines. These divestments might be realized via different means such as spin-offs (establishment of a legally independent but controlled subsidiary), equity carve-outs (part of the divested unit's stock is sold through an initial public offering), or sell-offs (divested assets are purchased by another firm). In the most extreme case, the divested parts are ultimately shut down.

Despite a growing literature on firms' divestment strategies (Brauer, 2006), consensus has yet to be reached as to whether post-divestiture firm performance is positive or negative (Lee and Madhavan, 2010). One reason for this debate stems from different definitions of what exactly constitutes "divestiture." The term is often bundled with other activities under the broad category of strategic portfolio restructuring. Further, the effects of divestiture have been difficult to isolate because past studies have not provided an accurate definition of restructuring, let alone divestiture (Markides, 1992). Other areas of concern are the use of idiosyncratic definitions of divestiture and the measure of performance used (long-term vs. short-term performance, accounting-based vs. market-based measures).

Depending on the definitions of divestment and performance, previous studies have found positive and negative outcomes of divestment. A first major stream of the divestment literature considers market-based performance measures (e.g., Alexander et al., 1984; Jain, 1985; Mulherin and Boone, 2000). Specifically, such studies assess divestiture performance in terms of stock market reactions (cumulative abnormal returns) and, assuming capital market efficiency, focus on the present value of future income streams (Markides and Berg, 1992). Several of these studies find that divestment announcements have positive effects on performance (e.g., Gertner et al., 2002; Lang et al., 1995; Markides, 1992). These positive effects might be theoretically attributed to wealth transfer (stockholders benefit due to wealth transfer from other stakeholders), agency problem resolutions (divestiture serves to enhance firm performance by addressing agency issues), or better fit (the divestment aligns the unit with a firm that can extract more value than the divesting company; Denning, 1988).

Other studies, however, observe no or negative stock market reactions to divestment announcements (e.g., Schill and Zhou, 2001; Wright and Ferris, 1997). One theoretical explanation for these findings could be that divestiture signals that management perceives the firm as having poor liquidity, a weak outlook, etc. In this view, divestiture is an effort to fend off financial distress such as bankruptcy. Therefore, divestiture could equally plausibly lead to any outcome, depending on a firm's specific situation (Denning, 1988).

Another stream of literature uses accounting-based measures, which — although potentially subject to manipulation — focus on the realized performance of divestiture. Such measures include return on assets (roa), return on sales (ros), and earnings before interest, tax, depreciation, and amortization (ebitda). Here, too, results regarding the outcomes of divestment are ambiguous. Both positive (e.g., Bergh, 1998; Hoskisson and Johnson, 1992; Markides, 1995) and negative (e.g., Bergh,

Please cite this article in press as: Miriam Zschoche, Performance Effects of Divesting Foreign Production Affiliates: A Network Perspective, Long Range Planning (2015), doi: 10.1016/j.lrp.2015.12.001

1995; Montgomery and Thomas, 1988) performance outcomes have been observed. In contrast to market-based measures, these outcomes do not represent investor beliefs but actual changes in efficiency or profit. Therefore, it is crucial not only if but how and why a divestment took place.

A broad array of theories explain why divestments are successful or not. For example, if the divested unit is sold to another company, the quality of the negotiation process determines the performance outcomes (Defren et al., 2012). Markides (1995) shows that only firms that divest proactively rather than reactively improve their performance. Pashley and Philippatos (1990), who argue that a firm's life-cycle stage determines the performance effects of divestments, obtain similar results.

Divestment can also be driven by the relatedness or interdependence of the divested unit within a corporation (Duhaime and Grant, 1984; Harrigan, 1981). Accordingly, previous research has analyzed the effects of relatedness on divestment success. In line with the theoretical notion that firms benefit from reducing over-diversification of their business portfolio, Bergh (1995) finds that post-divestiture performance is positively associated with unrelatedness of the divested unit. Divesting unrelated units allows firms to refocus on their core business. Unrelated units do not provide core resources the parent needs to maximize profits (Bergh, 1995).

In a similar vein, our analysis considers the divested units as interdependent, acting as an integrated network. From a multinational perspective, interrelatedness of units largely stems from characteristics of the involved host countries; thus, we analyze complete country withdrawals rather than divestments of single foreign production subsidiaries. We focus on realized short-term performance effects when an MNC divests parts of its network.

International network divestment and performance

Network-based considerations as divestment determinants

In recent decades, the international management literature has increasingly come to see FDI as a process of sequential allocation decisions within a multinational network rather than a result of static national factors and market imperfections (Kogut, 1983). Being internationally active provides firms with the flexibility to reduce the costs of operating in an uncertain world (Brews and Purohit, 2007) and is the primary advantage of MNCs over national corporations (Kogut, 1985). The advantages of a multinational system can be subsumed under two categories: arbitrage and leverage opportunities.

Arbitrage opportunities stem in the first place from multinational production shifting. Firms may react to changing costs of locally sourced inputs that are not priced at the world market — labor being probably the most important factor — by shifting production capacities across countries. A second arbitrage opportunity is tax minimization within the MNC. Since countries have different tax regimes, an MNC can minimize its tax bill through adjustment of transfer prices and choice of remittance channels. Thirdly, firms can benefit from financial investment incentives such as subsidies, tax holidays, or guaranteed loans since countries often compete for inward FDI. Finally, having an international presence can give firms an information advantage in terms of matching sellers and buyers or finding innovations on product and process developments.

Leverage opportunities are offered through higher bargaining power with customers, competitors, and governments. Multinational firms may, for example, cross-subsidize their products internationally in order to carry out aggressive price-cutting strategies in certain foreign markets or to counter political risks by relocating activities to other countries within their network when negotiations with governments fail.

These benefits associated with multinationality are referred to as "operational flexibility" (Kogut, 1985). Aspects of operational flexibility have been quantified by a number of studies that model the value of an international production network under uncertain external conditions (Dasu and Li, 1997; Huchzermeier and Cohen, 1996; Kogut and Kulatilaka, 1994). Empirical research has shown that MNCs that maintain operational flexibility actually alter their production configuration according to exchange rate fluctuations (Rangan, 1998), due to labor cost changes (Belderbos and Zou, 2007), or during times of economic crisis (Chung et al., 2010).

In this view, a "network" is regarded as an intrafirm system of incorporated units rather than an interfirm network such as an industry cluster or agglomerations within a host country (Miller and Eden, 2006; Tan and Meyer, 2011). For MNCs in the manufacturing sector, the most important source of operational flexibility within the network is the potential to shift capacities in accordance with short-term cost differentials in the production process (de Meza and van der Ploeg, 1987; Kogut, 1985). Hence, "network" in this study is understood as a manufacturing MNC's portfolio of foreign production units. This working definition is congruent with the literature on MNCs' strategic international production flexibility (e.g., Belderbos and Zou, 2007; Chung et al., 2010; Fisch and Zschoche, 2012).

Several studies have used operational flexibility arguments to analyze a foreign subsidiary's divestment propensity; that is, the value of an individual affiliate or location to an MNC's entire international network. Chung et al. (2008) employ a composite figure incorporating the number of foreign subsidiaries and the number of host countries to measure the importance of a subsidiary to the network. They find that as network size increases, the divestment probability will first decrease and then increase. Thus, the net value (subtracting the maintenance costs from the benefits) of a foreign affiliate will be rising in small production networks and falling in large networks.

Looking at characteristics of the individual facilities, Belderbos and Zou (2009) show that the propensity to divest a foreign production subsidiary is higher when its macroeconomic conditions are strongly correlated with those of other locations in the network and when the subsidiary is not the sole investment in a foreign location. These results indicate that a subsidiary's value depends on its singularity within the network. The value of a location also depends on how similar its labor

Please cite this article in press as: Miriam Zschoche, Performance Effects of Divesting Foreign Production Affiliates: A Network Perspective, Long Range Planning (2015), doi: 10.1016/j.lrp.2015.12.001

cost trends are to those of other locations within the network (Fisch and Zschoche, 2012; Song, 2014). Further, the ease of capacity adjustments throughout the network in terms of layoff restrictions and export regulations factor into which location is likely to be divested (Fisch and Zschoche, 2012).

Performance effects of international network divestments

We next explore how divestment decisions based on operational flexibility characteristics affect the performance of the remaining network of subsidiaries. First, how does the changed network size influence performance?

MNCs that seek to maximize the benefits of operational flexibility have to decide how many locations to include in the production system. The literature, however, cannot give a clear-cut optimal network size. One stream of research argues that the potential to exploit national cost differentials rises monotonically with the number of host countries (Allen and Pantzalis, 1996; Lee and Makhija, 2009; Tang and Tikoo, 1999). Others view the marginal returns of operational flexibility as decreasing while the coordination costs of maintaining production facilities in foreign locations are monotonically increasing with network size. This results in a non-monotonic relationship between the number of host countries and performance; that is, the influence of network size on performance is first positive, but becomes negative at later stages (Chung et al., 2008; Tong and Reuer, 2007).

The long-term performance effects of divesting parts of an international production network (i.e., reducing the number of locations) might depend on a firm's ability to coordinate its multinational network activities (Roth, 1992; Roth et al., 1991). Therefore, MNCs that correctly evaluate their managerial resources can maximize the net benefits of possessing operational flexibility in the long run. As reaction to changing business conditions MNCs would likely add new locations that offer favorable production conditions to the network and withdraw production facilities that perform below expectations. In the short run, however, divestment might lead to different results.

Decision makers might expect immediate performance improvements when leaving an unprofitable host country. However, if units are strongly interrelated, pulling out of a location could impede efficiency gains and adversely affect post-divestiture performance (Bergh, 1995). Within an international production network that was established to shift production tasks across units, the interrelatedness among units is particularly strong. The remaining locations have to compensate for the divested location by enhancing and/or modifying their production output in the short run (Belderbos and Zou, 2009). Production plans have to be rescheduled, employees have to perform new tasks, transportation routes of preliminary and final goods need to be changed, and so forth. This distortion of established routines within in the remaining foreign affiliates will induce costs that decrease efficiency when a host country is detached from an integrated system. This negative effect on performance in the remaining locations is expected to be stronger as the number of divestments increases, leading to our first hypothesis.

Hypothesis 1. A higher number of locations that are withdrawn from an international production network will negatively influence performance within the remaining network in the short run.

The immediate influence of divestment on the performance of the remaining network, however, might vary depending on the characteristics of the divested part. A network is more integrated if each location has a distinctive contribution to overall network efficiency (Duhaime and Grant, 1984). In such a case, the interdependence of units is strong, and divestment would disturb this well-balanced production system (Belderbos and Zou, 2009; Song, 2014). If a multinational production network has been established to exploit operational flexibility, investors have to evaluate each host country's specific contribution to the interrelatedness of the units within that network.

Labor costs are a primary means of exploiting temporary price differentials between countries (Fisch and Zschoche, 2012; Song, 2014). Accordingly, firms shift production tasks from a country with rising labor costs to a country with falling labor costs within the network (Tang and Tikoo, 1999). If, however, labor costs are growing throughout the network, shifting production might not recover production efficiency. Rising wage rates push MNCs out of foreign production locations (Belderbos and Zou, 2009).

From a network perspective, the MNC tends to consider leaving host countries with wage growth rates that are above the average of the remaining locations. If a firm divests locations that drive labor cost growth, the resulting lower mean level of wage growth across the network makes the overall production system more efficient. Because efficiency gains within a portfolio of existing production subsidiaries become instantly effective, improved cost conditions are expected to compensate for the negative effects of eliminating parts of an integrated production system. Hence, we derive our second hypothesis:

Hypothesis 2. Lower average wage growth rates within an international production network will mitigate the negative effect of divestment on performance in the remaining network in the short run.

In addition to actual labor cost conditions, the individual host countries contribute in varying degrees to the heterogeneity of cost developments within the network. The independence of cost conditions across locations, however, is crucial for the efficiency of an international production system. If cost developments changed in parallel across production units, a multinational network would have no opportunity to shift production capacity. Hence, MNCs cannot shift production internationally if macroeconomic conditions across their foreign locations are identical (Chung et al., 2010). Belderbos and

Please cite this article in press as: Miriam Zschoche, Performance Effects of Divesting Foreign Production Affiliates: A Network Perspective, Long Range Planning (2015), doi: 10.1016/j.lrp.2015.12.001

Zou (2009) show that multinational portfolio redundancy, measured as the correlation of exchange rates between an affiliate's host country and the other countries within its production network, leads to a higher propensity to pull out of that location.

The potential to benefit from operational flexibility is higher when there is diversity of labor cost developments across locations; that is, fluctuations in wage growth rates differ in magnitude and direction in the individual countries within the production network. When an MNC withdraws from countries that do not contribute to labor cost diversity within its portfolio (i.e., locations that are very similar in their cost developments), shifting production across the remaining network immediately becomes more efficient. Therefore, divestments that result in enhanced diversity of cost developments are likely to alleviate the negative performance effect of divestment in the short run, leading to our third hypothesis:

Hypothesis 3. Higher diversity of wage developments within an international production network will mitigate the negative effect of divestment on performance in the remaining network in the short run.

Empirical analysis

Data

We test our three hypotheses using a sample of German multinational firms. The Central Bank of Germany maintains a database that comprises anonymous information about all foreign direct investment objects of German parent firms above a balance sheet total of € 3 million. The reports include balance sheets, the stock of foreign direct investment, and other characteristics of the foreign affiliates and parent firm. This information is available as panel data on an annual basis between 2002 and 2007. In addition to this firm-level data, we obtain country-level data from the World Bank and the International Labour Organization (ILO).

Since investors and investment objects are classified by industry codes, it is possible to filter out the international production affiliates of manufacturing firms. Because of transportation and coordination costs, a high physical distance will impede a firm's ability to shift production (Rugman and Verbeke, 2004). In line with the extant research on capacity adjustments within an international production network of subsidiaries (Belderbos and Zou, 2007; Chung et al., 2010; Fisch and Zschoche, 2011), we limit our analysis of production affiliates to one geographical region, Europe, for two primary reasons. First, Europe is the most relevant target of German foreign direct investment, accounting for 67% of the foreign production in the dataset. Second, MNCs evaluate factor costs in the currency of their home country, while exchange rate fluctuations superimpose international factor cost movements. In European production networks, exchange rate fluctuations play a minor role due to the strong influence of the euro as a common currency (European Central Bank, 2007). Hence, changes in labor costs more explicitly affect production scheduling across locations. (As a robustness check, we abandon our focus on Europe and include in the analysis all locations for which data are available. Doing so increases the number of analyzed firms by more than one third. The results, shown in the appendix, echo those of the main analysis).

Since shifting production internationally requires at least one alternative location, the analysis is limited to investors who maintain production affiliates in at least two foreign markets. Further, production affiliates that reported zero employees or sales and outliers with a return on sales below –1000% or above 1000% are excluded. The final panel consists of 631 parent firms with at least two consecutive years of data, with an overall average of 3.96 years (2,498 firm years).

Measures and method

Dependent variable

The goal of this study is to identify the short-term financial consequences of international divestments. Therefore, an accounting-based measure rather than a market-based measure is used in the analysis. Among others, return on sales is a commonly used indicator of profitability in international business research (Capar and Kotabe, 2003; Li, 2001; Qian et al., 2008). To measure performance within the current international production system, we calculate the joint return on sales over the (European) production affiliates of an MNC that are remaining after divestment within the network.

Independent variable

Divesting a subsidiary that is not the only production affiliate in a foreign location would not eliminate an MNC's ability to exploit labor cost differentials in that location (Belderbos and Zou, 2009). Hence, in this analysis, divestment is defined as a complete withdrawal from a country (i.e., either the only, or all, subsidiaries in a country). The extent of divestment activities is captured by calculating the relation between the number of countries that have been withdrawn from and the number of locations in the full network. This ratio delivers the variable divestment.

Figures on labor cost developments in foreign locations were taken from ILO's Key Indicators of the Labour Market (KILM) databank, 6th edition (International Labour Organization, 2009), which includes data for consecutive years. The real manufacturing wage index, which is the nominal wages index corrected for changes in purchasing power measured by the consumer price index (100 * nominal wage index/consumer price index), is used as a basis. The wage index of the previous year is subtracted from the wage index of the present year to obtain annual growth rates. We then calculate mean annual wage growth rates across the network's locations. Changes in average wage growth rates are obtained by subtracting average cost conditions

Please cite this article in press as: Miriam Zschoche, Performance Effects of Divesting Foreign Production Affiliates: A Network Perspective, Long Range Planning (2015), doi: 10.1016/j.lrp.2015.12.001

in the previous year (network including divested location(s)) from those of the current year (network of remaining locations). Finally, these figures were subtracted from the maximum value in the sample to mirror advantageous cost developments, giving us the variable Δ wage decrease. The higher its value, the more favorable wage growth rates have become for an investor compared to the previous year. To capture changes in the heterogeneity of labor cost developments within the production network, we calculate the variance in real manufacturing wage growth rates across an MNC's set of host countries in a year. We then subtract from that value the variance of the previous year, which yields the variable Δ wage diversity.

This setup allows us to compare a firm's actual multinational production configuration in two periods. The independent variables capture how the characteristics of the previous configuration (which includes divested location/s) differ from those in current configuration (after divestment). The current configuration also includes host countries that were not part of the previous network; i.e., locations established just in the current year. However, the analysis abstracts away from potential new host countries the investor might have chosen as new production locations. In that way, the study differs from approaches such as that of Henisz and Delios (2001), who consider how characteristics of potential foreign locations affect firms' location choices.

Control variables

Performance of an international production network is not only driven by current divestment activities. We include as controls corporate-level and multinational network-level factors that could potentially influence performance. Firms owned by individuals or families are characterized by different internationalization strategies and performance outcomes than firms with other ownership structures (Anderson and Reeb, 2003; George et al., 2005; Zahra, 2003). The dummy variable private ownership takes a value of one if the firm is held by a domestic private individual or family, and zero otherwise.

Firm size has also been shown to influence profitability (Kotabe et al., 2002; Lu and Beamish, 2001). As a measure of company size, the number of employees of the corporate group is included. Previous research argues that the potential to benefit from exploiting national cost differentials is reflected in the number of foreign markets included in a network (Allen and Pantzalis, 1996; Lee and Makhija, 2009; Tang and Tikoo, 1999). In line with previous studies (Tang and Tikoo, 1999), we include the number of host countries (NOC) as a measure of multinational diversification. In addition, the volume of foreign production activities could influence a network's performance. A higher volume could have positive performance effects due to economies of scale and scope — although with decreasing strength. Therefore, the total logarithmized foreign sales volume is included as a control. Because our goal is to investigate the immediate performance outcomes of strategic management decisions, performance effects that stem from past actions and business conditions should be isolated. We use the return on sales across the production network of the previous year as measure for past performance. Because it is possible that the affiliates produce at least partly to satisfy demand within the network, we incorporate the average GDP growth (source: World Bank) across locations in each observation year. Moreover, econometric panel techniques control for unobserved firm-specific factors that are constant or do not change considerably during the observation period such as a firm's technological capabilities or industry effects. Finally, we include time dummies to account for effects that impact all firms the same way in the individual years (e.g., inflation rates, demand shocks, etc.).

Method

In recent decades, countries and financial entities have become increasingly economically and financially integrated, implying strong interdependencies among cross-sectional units. Firms are likely to respond similarly to each other due to unobserved influences such as common social norms, neighborhood effects, or herd behavior (De Hoyos and Sarafidis, 2006). A growing body of research concludes that panel data models are likely to have substantial cross-sectional dependence in the errors (e.g., Baltagi, 2005), which leads to a rejection of the assumption of independent and identically distributed (i.i.d.) error terms. Pesaran's (2004) cross-sectional dependence test shows that the null hypothesis of no cross-sectional dependence is strongly rejected. Further, a Breusch-Pagan/Cook-Weisberg test (Breusch and Pagan, 1979; Cook and Weisberg, 1983) indicates the existence of heteroskedasticity in error terms. Therefore, we apply a Prais-Winsten feasible generalized least squares (FGLS) estimation that allows for panel-specific autocorrelation as well as heteroskedastic and contemporaneously correlated disturbances across panels (Wooldridge, 2003).

Results

Table 1 summarizes the descriptive statistics of our variables. All minimum and maximum values refer to the average of the three highest and lowest observations due to confidentiality policies that apply when using Central Bank data. The correlation matrix indicates that the variables are largely independent of one another. We find a strong correlation between foreign sales volume and NOC, which is plausible. Nevertheless, both variables are included because they might have different effects on performance. The variance inflation factors displayed in Table 1 are close to one (mean: 1.26), indicating low levels of multicollinearity.

Table 2 presents the regression results. Model 1 is the base model comprising only the control and moderator variables. At the corporate group level, neither private ownership nor size seems to exert an influence on multinational network performance, as their coefficients are insignificant in all models. In regard to the network characteristics NOC and foreign sales volume, only the possibility to exploit the benefits of multinational diversification, reflected by the number of locations, exerts a positive influence on network performance. Economies of scale and scope, mirrored by the absolute volume of the

Please cite this article in press as: Miriam Zschoche, Performance Effects of Divesting Foreign Production Affiliates: A Network Perspective, Long Range Planning (2015), doi: 10.1016/j.lrp.2015.12.001

Table 1
Descriptive statistics, correlation matrix, and variance inflation factors

	Variable	Mean	StdDev	Min	Max	1	2	3	4	5	6	7	8	9	VIF
	performance	0.03	0.14	–2.29	0.98										
1	*divestment*	0.07	0.20	0	1	1									1.01
2	*Δ wage diversity*	96.49	306.08	–1539	3330	–0.02	1								1.12
3	*Δ wage decrease*	54.23	5.39	13.56	85.9	0.00	–0.28	1							1.21
4	*GDP growth*	3.28	1.42	–0.29	12.18	0.04	0.25	–0.36	1						1.19
5	*past performance*	0.03	0.12	–1.82	0.76	–0.07	0.03	–0.06	0.06	1					1.02
6	*foreign sales volume*	11.65	1.37	8.44	17.02	–0.03	0.02	0.01	0.03	0.04	1				1.87
7	*NOC*	3.50	2.50	2	24	–0.01	0.06	0.01	0.05	0.06	0.62	1			1.62
8	*size*	21297	60594	0	472500	0.04	0.03	0.02	0.01	–0.01	0.43	0.28	1		1.24
9	*private ownership*	0.37	0.48	0	1	–0.02	0.00	–0.02	0.03	0.04	–0.20	–0.10	–0.17	1	1.06

Number of observations: 2498.

subsidiaries' transactions, however, do not seem to affect network efficiency. Not surprisingly, past performance exerts a strong positive influence on current performance; many factors that define a network's profitability are stable and long-term in nature (e.g., managerial capabilities, market knowledge, etc.). GDP growth is insignificant, indicating that current macroeconomic conditions do not influence performance in our dataset. In our sample of production networks, market motives seem to be of minor importance, underpinning the view of multinational manufacturing systems being established to enhance overall production efficiency. Both moderator variables, Δ wage decrease and Δ wage diversity, have no impact on network performance when considered separately from the influence of divestment.

The model variables are introduced in Models 2 to 4. Model 2 delivers support for Hypothesis 1, since the coefficient of divestment is negative and significant. The more locations within an international production network are divested at the same time, the more negative is the performance of the remaining network in the short run. Model 3 introduces the interaction of divestment and Δ wage decrease to test Hypothesis 2. Before interacting them, we normalize the variables. As the positive and significant coefficient indicates, the second hypothesis is supported: If divestments lead to more favorable labor cost conditions within the remaining locations, the negative effects of eliminating parts of a production system on network performance can be alleviated in the short run. The positive and significant coefficient on the interaction of divestment and Δ wage diversity in Model 4 supports Hypothesis 3. A higher diversity of cost developments in the remaining network can immediately compensate for the negative effects of divestment on performance. Model 5 is the full model comprising all hypothesized performance effects of divestment decisions. As Model 5 indicates, the results remain stable when all model variables are tested together.

These results underpin the importance of a firm's divestment decision on firm performance. Previous studies have shown that poor performance can induce divestment (e.g., Berry, 2013; Haynes et al., 2003). We expand on this literature by showing that divestment decisions, in turn, affect the performance of the remaining production network. Our empirical design ensures that we are measuring the influence of divestment on performance (and not the opposite relationship). In particular, we consider as our dependent variable the performance of the remaining network without the divested location. From that design, it follows that a weak performance of the current network cannot be attributed to the performance of the divested location(s). Further, the independent variables Δ wage decrease and Δ wage diversity measure changes from the previous network configuration to the post-divestment network configuration; that is, we measure how changes in network characteristics from the previous to the current year affect performance in the current year.

As a robustness check (Table A1 in the Appendix), we abandon our regional focus on Europe. Consequently, our sample size increases by more than one third from 631 to 856 analyzed firm networks. The results, however, are very similar to

Table 2
Panel regression on short-term performance effects of divestments

Performance	Model 1	Model 2	Model 3	Model 4	Model 5
divestment X Δ wage diversity				0.0002*** (0.0001)	0.0002*** (0.0001)
divestment X Δ wage decrease			0.0093** (0.0045)		0.0083** (0.0042)
divestment		–0.0363** (0.0142)	–0.0351** (0.0143)	–0.0328** (0.0137)	–0.0314** (0.0138)
Δ wage diversity	9.91e-07 (6.50e-06)	8.72e-07 (6.54e-06)	–2.05e-06 (6.25e-06)	7.62e-06 (7.79e-06)	5.09e-06 (7.24e-06)
Δ wage decrease	–0.0002 (0.0005)	–0.0002 (0.0005)	0.0001 (0.0005)	–0.0004 (0.0005)	–0.0002 (0.0005)
GDP growth	–0.0016 (0.0023)	–0.0014 (0.0023)	–0.0012 (0.0023)	–0.0017 (0.0023)	–0.0015 (0.0023)
past performance	0.5288*** (0.1691)	0.5243*** (0.1696)	0.5258*** (0.1693)	0.5207*** (0.1697)	0.5221*** (0.1694)
foreign sales volume	–0.0018 (0.0026)	–0.0017 (0.0026)	–0.0018 (0.0026)	–0.0016 (0.0026)	–0.0017 (0.0026)
NOC	0.0021** (0.0010)	0.0021** (0.0010)	0.0021** (0.0010)	0.0020** (0.0010)	0.0020** (0.0010)
size	2.17e-08 (4.44e-08)	2.55e-08 (4.52e-08)	2.17e-08 (4.44e-08)	3.10e-08 (4.32e-08)	3.61e-08 (4.43e-08)
private ownership	0.0054 (0.0064)	0.0052 (0.0064)	0.0049 (0.0063)	0.0048 (0.0064)	0.0045 (0.0063)
Wald Chi^2	34.91***	38.73***	45.06***	40.53***	43.62***
Objects	631	631	631	631	631

Estimation with time dummies; ***p < 0.01; **p < 0.05; *p < 0.1; Standard errors in parentheses.

Please cite this article in press as: Miriam Zschoche, Performance Effects of Divesting Foreign Production Affiliates: A Network Perspective, Long Range Planning (2015), doi: 10.1016/j.lrp.2015.12.001

those of the main analysis. Among the control and moderator variables, private ownership, size, GDP growth, Δ wage decrease, and Δ wage diversity still have insignificant coefficients. The coefficients of NOC and past performance remain positive and significant. Only the coefficient of the variable foreign sales volume differs in the two sets of regressions, changing from insignificant in the main regressions to significant and negative in the robustness test. The results of the model variables are nearly identical in the European and global network samples. All three predicted influences are observable in the extended sample. The significance levels are only slightly different between the two samples. Altogether, these findings suggest that either production networks maintained by German MNCs are mainly influenced by European locations or that the proposed influences apply to all locations in the network.

Discussion

This study aims to reveal the short-term performance effects of MNCs' long-term strategic decisions to divest production units within an internationally integrated system. The notion of operational flexibility suggests that withdrawing production locations from a multinational portfolio interrupts established production processes and routines and leads to an immediate decline in performance in the remaining locations. This effect becomes more pronounced as a larger proportion of host country facilities are divested. If divestments of locations, however, lead to lower average wage growth rates and to a higher diversity of cost developments, the negative effects of divestment on performance can be offset.

The study advances research that points to operational flexibility characteristics as determinants of foreign divestment decisions (Chung et al., 2008). Previous studies have found that labor cost conditions are major determinants of both multinational network efficiency and the decision to withdraw foreign affiliates from a multinational production system (Belderbos and Zou, 2009; Fisch and Zschoche, 2012; Song, 2014). Our analysis further develops these approaches by investigating performance consequences of divestment decisions through the lens of operational flexibility. We find that the extent of divestment has a direct negative effect on the performance of the remaining network. Further, this direct effect is moderated by the changed network characteristics. The analysis reveals that lower average labor cost growth in the remaining locations can compensate for the negative effects of divestment even in the short run since it has an immediate impact on production efficiency. In addition, MNCs whose network of subsidiary locations encompass a wide range of cost developments can more readily exploit labor cost differentials and therefore may see short-run benefits from contracting their international production system. This finding underpins the importance of an MNC minimizing redundancy when reconfiguring its foreign network units, thereby amplifying insights of previous work showing that dissimilarity of economic conditions is a precondition for the exploitation of operational flexibility (e.g., Chung et al., 2010).

Our analysis also builds on the previous literature concerning the performance effects of corporate restructuring decisions (Bergh, 1998; Brauer and Wiersema, 2012). Prior work reveals that restructuring can create positive (Markides, 1992) or negative (Kang and Shivdasani, 1997) stock market reactions in the short run. Even when investors expect increased returns due to efficiency gains in the future, the immediate financial consequences of divestments might differ. This study shows that strategic decisions designed to increase profitability in the long run can lead to financial performance declines in the short run. Further, we show that the characteristics of the divested units determine the short-term performance effects of multinational network divestments.

These results have important implications for MNCs that maintain international production networks. Changing environmental conditions require MNCs to make divestment decisions about locations to enhance efficiency of the overall system. The decision to shut down a production facility, however, is associated with massive sunk costs and is typically part of a long-term strategy rather than the result of a subsidiary's singular efficiency deficit. Therefore, firms might have to accept a decline in short-run network performance following a divestment before the advantages can be felt in the long run. If a firm, however, divests locations that had caused the average labor cost conditions within its network to weaken, long-term oriented strategic decisions can have positive performance effects within the remaining production locations even in the short run. When evaluating countries as candidates for divestment, MNCs should focus on their cost characteristics in relation to the other locations within the network. In addition to relative labor cost growth rates, dissimilarity of labor cost conditions is one key to making the remaining international production locations more efficient.

MNCs, however, might not only rely on improved labor cost conditions when balancing immediate negative effects of divestment against efficiency gains. Generally, enhanced efficiency within the remaining locations of an international production network can be achieved through a better fit across the production facilities, too. Cultural aspects such as similar behavioral norms and working styles (Hofstede, 1980) or a common language can help streamlining working routines. Further, geographic proximity can influence the ease of coordination across locations (Johanson and Vahlne, 1977), although each firm has to evaluate the fit across its foreign production locations individually through its specific managerial and production capabilities in a location. This study focuses on one aspect of efficiency improvement (labor costs), which is a rather objective fact. Managers of MNCs, however, might individually interpret the findings of the analysis in a way that fit to their situation regarding potential efficiency improvements through divestment.

Our results also have implications for host country governments interested in keeping foreign investors in the country. MNCs that maintain production subsidiaries in a host country in order to exploit national cost differentials will base their divestment decisions on different considerations than firms that have other motivations such as access to demand markets. Cost efficiency within a production network is largely influenced by national labor cost developments. Host country governments could try to moderate labor cost developments. Further, local authorities could respond to country-specific efficiency

Please cite this article in press as: Miriam Zschoche, Performance Effects of Divesting Foreign Production Affiliates: A Network Perspective, Long Range Planning (2015), doi: 10.1016/j.lrp.2015.12.001

declines stemming from rising wages by improving the productivity of the workforce. In a location that offers a well-qualified workforce, technology-based production techniques can ensure that manufacturing is efficient, even if wages are rising.

Location-specific characteristics, however, are evaluated by the MNC in relation to the remaining locations. Efforts to influence production efficiency might be ineffective if firms base their decision to divest a location on its cost characteristics in comparison to other foreign locations. It seems difficult for a single local authority to influence divestment decisions that are based on a foreign investor's multinational production configuration. A solution might be for local authorities to align their interests transnationally in order to prevent an erosion of economic and social achievements, such as rising wage rates or employee protection regulations.

The limitations of the study should be kept in mind when applying our findings to management and policy decisions. The divestment processes and management behavior of the corporate firm as well as the focal affiliate have a substantial impact on the financial consequences of disinvestments. Because our dataset is anonymous, however, we cannot examine the firms' applied management techniques or divestment routines nor can we determine the extent to which production shifting takes place or if subsidiaries produce interchangeable outputs within the analyzed networks. Future research building on more fine-grained data sources may overcome these shortcomings and refine our results. Subsequent studies may also choose a different empirical setting outside of Europe. In addition to labor cost developments, exchange rate movements are an important source of cost differentials when there is no common or dominant currency within an international production system.

Acknowledgements

I would like to thank the Editor-in-Chief, James Robins, and one anonymous reviewer for very valuable comments and suggestions, which helped to improve the manuscript a lot. Further, I am thankful to discussants at the Academy of Management Annual Meeting 2012 in Boston, and the Strategic Management Society Annual Conference 2012 in Prague for remarks. Data was kindly provided by the German Central Bank.

Appendix

Table A1
Panel regression on short-term performance effects of divestments within global networks

Performance	Model 1	Model 2	Model 3	Model 4	Model 5
divestment X Δ wage diversity				0.0002** (0.0001)	0.0002** (0.0001)
divestment X Δ wage decrease			0.0087*** (0.0029)		0.0084*** (0.0029)
divestment		–0.0523*** (0.0136)	–0.0498*** (0.0138)	–0.0496*** (0.0132)	–0.0476*** (0.0135)
Δ wage diversity	2.34e-06 (6.33e-06)	1.56e-06 (6.38e-06)	–1.36e-06 (6.30e-06)	7.47e-06 (7.24e-06)	4.27e-06 (7.08e-06)
Δ wage decrease	–0.0004 (0.0003)	–0.0003 (0.0003)	–0.0001 (0.0004)	–0.0004 (0.0003)	–0.0002 (0.0004)
GDP growth	0.0012 (0.0020)	0.011 (0.0020)	0.0016 (0.0020)	0.0009 (0.0020)	0.0015 (0.0020)
past performance	0.4703*** (0.0665)	0.4682*** (0.0665)	0.4658*** (0.0664)	0.4679*** (0.0665)	0.4654*** (0.0664)
foreign sales volume	–0.0044** (0.0022)	–0.0051** (0.0022)	–0.0040* (0.0023)	–0.0047** (0.0022)	–0.0037 (0.0023)
NOC	0.0017*** (0.0005)	0.0017*** (0.0005)	0.0017*** (0.0005)	0.0017*** (0.0005)	0.0016*** (0.0005)
size	–9.75e-09 (4.05e-08)	1.14e-09 (4.12e-08)	–4.69e-08 (4.77e-08)	–9.24e-10 (4.11e-08)	–4.94e-08 (4.76e-08)
private ownership	0.0015 (0.0048)	0.0017 (0.0048)	0.0018 (0.0048)	0.0017 (0.0048)	0.0016 (0.0048)
Wald Chi^2	109.17***	148.55***	149.97***	150.73***	152.03***
Objects	856	856	856	856	856

Estimation with time dummies; ***p < 0.01; **p < 0.05; *p < 0.1; Standard errors in parentheses.

References

Alexander, G., Benson, P.G., Kampmeyer, J., 1984. Investigating the valuation effects of announcement of voluntary corporate sell-offs. Journal of Finance 39 (2), 503–517.
Allen, L., Pantzalis, C., 1996. Valuation of the operating flexibility of multinational operations. Journal of International Business Studies 27 (4), 633–653.
Anderson, R.C., Reeb, D.M., 2003. Founding-family ownership and firm performance: evidence from the S&P 500. The Journal of Finance 58 (3), 1301–1328.
Baltagi, B.H., 2005. Econometric Analysis of Panel Data. Wiley, New York.
Bane, W.T., Neubauer, F.-F., 1981. Diversification and the failure of new foreign activities. Strategic Management Journal 2, 219–233.
Belderbos, R., 2003. Antidumping and foreign divestment: Japanese electronics multinationals in the EU. Review of World Economics 139, 131–160.
Belderbos, R., Zou, J., 2007. On the growth of foreign affiliates: multinational plant networks, joint ventures, and flexibility. Journal of International Business Studies 38, 1095–1112.
Belderbos, R., Zou, J., 2009. Real options and foreign affiliate divestments: A portfolio perspective. Journal of International Business Studies 40, 600–620.
Benito, G.R.G., 1997. Divestment of foreign production operations. Applied Economics 29, 1365–1377.
Benito, G.R.G., 2005. Divestment and international business strategy. Journal of Economic Geography 5, 235–251.
Bergh, D.D., 1995. Size and relatedness of units sold: an agency theory and resource-based perspective. Strategic Management Journal 16, 221–239.
Bergh, D.D., 1998. Product-market uncertainty, portfolio restructuring, and performance: an information-processing and resource-based view. Journal of Management 24 (2), 135–155.
Berry, H., 2013. When do firms divest foreign operations? Organization Science 24, 246–261.
Boddewyn, J.J., 1979. Foreign divestment: magnitude and factors. Journal of International Business Studies 10, 21–27.
Bowman, E.H., Singh, H., 1993. Corporate restructuring: reconfiguring the firm. Strategic Management Journal 14 (S1), 5–14.

Please cite this article in press as: Miriam Zschoche, Performance Effects of Divesting Foreign Production Affiliates: A Network Perspective, Long Range Planning (2015), doi: 10.1016/j.lrp.2015.12.001

Brauer, M., 2006. What have we acquired and what should we acquire in divestiture research? A review and research agenda. Journal of Management 32 (6), 751–785.
Brauer, M.F., Wiersema, M.F., 2012. Industry divestiture waves: how a firm's position influences investor returns. Academy of Management Journal 55 (6), 1472–1492.
Breusch, T.S., Pagan, A.R., 1979. A simple test for heteroscedasticity and random coefficient variation. Econometrica: Journal of the Econometric Society 47, 1287–1294.
Brews, P., Purohit, D., 2007. Strategic planning in unstable environments. Long Range Planning 40 (1), 64–83.
Capar, N., Kotabe, M., 2003. The relationship between international diversification and performance in service firms. Journal of International Business Studies 34, 345–355.
Chang, S.J., 1996. An evolutionary perspective on diversification and corporate restructuring: entry, exit, and economic performance during 1981-89. Strategic Management Journal 17, 587–611.
Chung, C.C., Lu, J.W., Beamish, P.W., 2008. Multinational networks during times of economic crisis versus stability. Management International Review 48 (3), 279–295.
Chung, C.C., Lee, S.H., Beamish, P.W., Isobe, T., 2010. Subsidiary expansion/contraction during times of economic crisis. Journal of International Business Studies 41 (3), 500–516.
Cook, R.D., Weisberg, S., 1983. Diagnostics for heteroscedasticity in regression. Biometrika 70, 1–10.
de Meza, D., van der Ploeg, F., 1987. Production flexibility as a motive for multinationality. The Journal of Industrial Economics 35 (3), 343–351.
Dasu, S., Li, L., 1997. Optimal operating policies in the presence of exchange rate variability. Management Science 43 (5), 705–722.
De Hoyos, R.E., Sarafidis, V., 2006. Testing for cross-sectional dependence in panel-data models. The Stata Journal 6 (4), 482–496.
Defren, T., Wirtz, B.W., Ullrich, S., 2012. Divestment-management: success factors in the negotiation process of a sell-off. Long Range Planning 45 (4), 258–276.
Delios, A., Beamish, P.W., 2001. Survival and profitability: the roles of experience and intangible assets in foreign subsidiary performance. Academy of Management Journal 44, 1028–1038.
Denning, K.C., 1988. Spin-offs and sales of assets: an examination of security returns and divestment motivations. Accounting & Business Research 19 (73), 32–42.
Dhanaraj, C., Beamish, P.W., 2009. Institutional environment and subsidiary survival. Management International Review 49, 291–312.
Duhaime, I., Grant, J., 1984. Factors influencing divestment decision-making: evidence from a field study. Strategic Management Journal 5 (4), 301–318.
Dunning, J.H., 1988. The eclectic paradigm of international production: a restatement and some possible extensions. Journal of International Business Studies 19, 1–31.
European Central Bank, 2007. Review of the international role of the Euro. Frankfurt am Main.
Fisch, J.H., Zschoche, M., 2011. Do firms benefit from multinationality through production shifting? Journal of International Management 17 (2), 143–149.
Fisch, J.H., Zschoche, M., 2012. The effect of operational flexibility on decisions to withdraw from foreign production locations. International Business Review 21 (5), 806–816.
George, G., Wiklund, J., Zahra, S.A., 2005. Ownership and the internationalization of small firms. Journal of Management 31 (2), 210–233.
Gertner, R., Powers, E., Scharfstein, D., 2002. Learning about internal capital markets from corporate spin-offs. Journal of Finance 57, 2479–2506.
Ghoshal, S., Bartlett, C.A., 1990. The multinational corporation as an interorganizational network. Academy of Management Review 15, 603–625.
Harrigan, K.R., 1981. Deterrents to divestiture. Academy of Management Journal 24, 306–323.
Haynes, M., Thompson, S., Wright, M., 2003. The determinants of corporate divestment: evidence from a panel of UK firms. Journal of Economic Behavior & Organization 52, 147–166.
Henisz, W.J., Delios, A., 2001. Uncertainty, imitation, and plant location: japanese multinational corporations, 1990–1996. Administrative Science Quarterly 46 (3), 443–475.
Hennart, J.-F., Kim, D.-J., Zeng, M., 1998. The impact of joint venture status on the longevity of Japanese stakes in U.S. manufacturing affiliates. Organization Science 9, 382–395.
Hofstede, G.H., 1980. Culture's Consequences: International Differences in Work-Related Values. Sage Publications, Newbury Park, CA.
Hoskisson, R., Hitt, M., 1994. Downscoping: How to Tame the Diversified Firm. Oxford University Press, New York.
Hoskisson, R., Johnson, R.A., 1992. Corporate restructuring and strategic change: the effect on diversification strategy and R&D intensity. Strategic Management Journal 13, 625–634.
Huchzermeier, A., Cohen, M.A., 1996. Valuing operational flexibility under exchange rate risk. Operations Research 44, 100–113.
International Labour Organization, 2009. Key Indicators of the Labour Market (KILM) Databank. Geneva.
Jain, P., 1985. The effect of voluntary sell-off announcements on shareholder wealth. Journal of Finance 40 (1), 209–224.
Jarillo, J.C., Martínez, J.I., 1990. Different roles for subsidiaries: the case of multinational corporations in Spain. Strategic Management Journal 11 (7), 501–512.
Johanson, J., Vahlne, J.E., 1977. The internationalization process of the firm — a model of knowledge development and increasing foreign market commitments. Journal of International Business Studies 8 (1), 23–32.
Kang, J.K., Shivdasani, A., 1997. Corporate restructuring during performance declines in Japan. Journal of Financial Economics 46 (1), 29–65.
Kogut, B., 1983. Foreign direct investment as a sequential process. In: Kindleberger, C.P., Audretsch, D. (Eds.), The Multinational Corporation in the 1980s. MIT Press, Cambridge, MA, pp. 38–56.
Kogut, B., 1985. Designing global strategies: Profiting from operational flexibility. Sloan Management Review 27, 27–38.
Kogut, B., Kulatilaka, N., 1994. Operating flexibility, global manufacturing, and the option value of a multinational network. Management Science 40, 123–139.
Kotabe, M., Srinivasan, S.S., Aulakh, P.S., 2002. Multinationality and firm performance: the moderating role of R&D and marketing capabilities. Journal of International Business Studies 33, 79–97.
Kronborg, D., Thomsen, S., 2009. Foreign ownership and long-term survival. Strategic Management Journal 30, 207–219.
Lang, L., Poulsen, A., Stulz, R., 1995. Asset sales, firm performance, and the agency costs of managerial discretion. Journal of Financial Economics 37 (1), 3–37.
Lee, D., Madhavan, R., 2010. Divestiture and firm performance: a meta-analysis. Journal of Management 36, 1345–1371.
Lee, S.H., Makhija, M., 2009. The effect of domestic uncertainty on the real options value of international investments. Journal of International Business Studies 40, 405–420.
Li, M., 2001. Firm internationalization and economic performance: a conceptual synthesis and an empirical assessment of the Chinese experience. In: Axinn, C.N., Matthyssens, P. (Eds.), Advances in International Marketing. Elsevier, Amsterdam, pp. 179–196.
Lu, J.W., Beamish, P.W., 2001. The internationalization and performance of SMEs. Strategic Management Journal 22, 565–586.
Markides, C.C., 1992. Consequences of corporate refocusing: ex ante evidence. Academy of Management Journal 35 (2), 398–412.
Markides, C.C., 1995. Diversification, restructuring and economic performance. Strategic Management Journal 16, 101–118.
Markides, C.C., Berg, N.A., 1992. Good and bad divestment: the stock market verdict. Long Range Planning 25 (2), 10–15.
Mata, J., Portugal, P., 2000. Closure and divestiture by foreign entrants: the impact of entry and post-entry strategies. Strategic Management Journal 21, 549–562.
McCloughan, P., Stone, I., 1998. Life duration of foreign multinational subsidiaries: evidence from UK northern manufacturing industry, 1970–93. International Journal of Industrial Organization 16, 719–747.
Miller, S.R., Eden, L., 2006. Local density and foreign subsidiary performance. Academy of Management Journal 49, 341–355.
Montgomery, C., Thomas, A.R., 1988. Divestment: motives and gains. Strategic Management Journal 9, 93–97.
Moschieri, C., Mair, J., 2011. Adapting for innovation: including divestures in the debate. Long Range Planning 44 (1), 4–25.
Mudambi, R., Zahra, S.A., 2007. The survival of international new ventures. Journal of International Business Studies 38, 333–352.

Please cite this article in press as: Miriam Zschoche, Performance Effects of Divesting Foreign Production Affiliates: A Network Perspective, Long Range Planning (2015), doi: 10.1016/j.lrp.2015.12.001

Mulherin, H.J., Boone, A.L., 2000. Comparing acquisitions and divestitures. Journal of Corporate Finance 6, 117–139.
Ogasavara, M.H., Hoshino, Y., 2008. The effects of entry strategy and inter-firm trust on the survival of Japanese manufacturing subsidiaries in Brazil. Asian Business & Management 7, 353–380.
Pashley, M.M., Philippatos, G.C., 1990. Voluntary divestitures and corporate life-cycle: some empirical evidence. Applied Economics 22, 1181–1196.
Pesaran, M.H., 2004. General diagnostic tests for cross section dependence in panels. University of Cambridge, Faculty of Economics: Cambridge Working Papers in Economics, No. 0435.
Qian, G., Li, L., Li, J., Qian, Z., 2008. Regional diversification and firm performance. Journal of International Business Studies 39, 197–214.
Rangan, S., 1998. Do multinationals operate flexibly? Theory and evidence. Journal of International Business Studies 29 (2), 217–237.
Roth, K., 1992. International configuration and coordination archetypes for medium-sized firms in global industries. Journal of International Business Studies 23 (3), 533–549.
Roth, K., Schweiger, D.M., Morrison, A.J., 1991. Global strategy implementation at the business unit level: operational vapabilities and administrative mechanisms. Journal of International Business Studies 22 (3), 369–402.
Rugman, A.M., Verbeke, A., 2004. A perspective on regional and global strategies of multinational enterprises. Journal of International Business Studies 35, 3–18.
Schill, M.J., Zhou, C., 2001. Pricing an emerging industry: evidence from internet subsidiary carve-outs. Financial Management 30 (3), 5–33.
Song, S., 2014. Subsidiary divestment: the role of multinational flexibility. Management International Review 54, 47–70.
Tan, D., Meyer, K.E., 2011. Country-of-origin and industry FDI agglomeration of foreign investors in an emerging economy. Journal of International Business Studies 42, 504–520.
Tang, C.Y., Tikoo, S., 1999. Operational flexibility and market valuation of earnings. Strategic Management Journal 20 (8), 749–761.
Tong, T.W., Reuer, J.J., 2007. Real options in multinational corporations: Organizational challenges and risk implications. Journal of International Business Studies 38, 215–230.
Wooldridge, J.M., 2003. Introductory Econometrics: A Modern Approach. South-Western, Mason, OH.
Wright, P., Ferris, S., 1997. Agency conflict and corporate strategy: the effect of divestment on corporate value. Strategic Management Journal 18 (1), 77–83.
Wu, Z., Delios, A., 2009. The emergence of portfolio restructuring in Japan. Management International Review 49 (3), 313–335.
Zahra, S.A., 2003. International expansion of U.S. manufacturing family businesses: the effect of ownership and involvement. Journal of Business Venturing 18 (4), 495–512.

Biography

Miriam Zschoche is post-doctoral researcher at WHU — Otto Beisheim School of Management in Vallendar, Germany. She received her Ph.D. from the University of Augsburg, Germany. Her research interests include internationalization strategies, multinationality-performance relationship, disinvestment strategies, and behavioral strategy. Her research has been presented at various international conferences, and is published in academic journals such as *Strategic Management Journal*, *Journal of International Management* and *International Business Review*. E-mail: miriam.zschoche@whu.edu

Please cite this article in press as: Miriam Zschoche, Performance Effects of Divesting Foreign Production Affiliates: A Network Perspective, Long Range Planning (2015), doi: 10.1016/j.lrp.2015.12.001