MNC IMPACT ON LOCAL CLUSTERS
– The Case of Foreign Owned Subsidiaries in Sweden

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ABSTRACT

This paper offers a theoretical model explaining the impact of foreign owned subsidiaries on their surrounding local clusters. Four interlinked constructs are modelled explaining subsidiary impact: the dynamism of the local business environment within which the subsidiary unit is active; the control strategies of corporate headquarters; the development of subsidiary competencies; and finally the formalised mandate as a centre granted to certain subsidiaries by headquarters. Following from the model six hypotheses are formulated to link the constructs.

The model is tested on a set of data containing information on foreign-owned subsidiaries in Sweden. Results show that the more dynamic a local business environment is the more a subsidiary will tend to develop advanced capabilities and the greater the likelihood that it will be granted a strong formal position, e.g. a mandate as a centre of excellence, within the MNC. Furthermore, the more dynamic the local business environment is the more the subsidiary will receive autonomy in terms of making its own strategic decisions. Finally, the more competencies a subsidiary has accumulated the more it will generate positive impact on its surrounding local cluster. From this follows that the 'flag' of headquarters plays a less important role. Instead, it is the dynamics of the local business environment that plays the key role in deciding whether a foreign owned unit will have a positive or negative impact on its surrounding local cluster.

INTRODUCTION

An increasing amount of inward FDI places industrial operations across a local economy under ”foreign control” and makes local industrial development more dependent on strategic decisions made at corporate headquarters located elsewhere. Is local, regional or national self-reliance evaporating in the wake of this seemingly ever-increasing globalisation process? What happens with the local companies, their products, employees and so on when they are faced with foreign owners and foreign headquarters (HQ)? Can we expect positive or negative effects from foreign ownership on local industrial development overall?

In recent years, a rapid increase in inward investment has stirred up sentiments in many countries (Malmberg and Sölvell, 1998). Particularly in the small national economies of the OECD world, the 1990s meant that some of the more prominent national ’flagships’ did become subsidiaries of large foreign multinationals. So do these changes in ownership matter? What are the true implications of such a shift for the firms concerned and, perhaps more importantly, for the dynamism of the local clusters within which these firms are essential players?

A major influx of inward foreign direct investment into a national or regional economy may indeed have both strengthening and weakening effects and these may vary over time. Dicken (1998) illustrates the contested nature of these diverse impacts:

> According to viewpoint, TNCs either expand national economies or exploit them; they are either a dynamic force in economic development or a distorting influence; they either create jobs or destroy them; they either spread new technology or pre-empt its wider use and so on (...) Virtually every aspect of the TNC’s operations – economic, political, cultural – has been judged in diametrically opposite ways by its opponents and its proponents. (Dicken 1998, s. 245)

Our main concern in this paper is to understand how subsidiaries of foreign MNCs affect the development of their surrounding local clusters. The ambition is to go beyond the stereotyped positions according to which foreign ownership *per se* is inherently either good or bad for local industrial development. Rather, our intension is to understand the conditions under which we should expect one outcome or the other. Our analysis will proceed in the following steps. First, we offer a brief review of findings and propositions in the literature on the local and regional effects of "remote control" and foreign ownership. Second, a theoretical model designed to explain the impact of foreign owned subsidiaries on the local industry cluster is constructed. The key determinants in the model include the dynamism of the local business environment within which the subsidiary unit is active, the control strategies of corporate HQ with regard to the local unit, the evolution of subsidiary competencies, and finally the formal mandate as a centre of excellence granted to a certain local unit by HQ. To capture the strengthening effects of foreign owned subsidiaries on the local industry cluster we hypothesise that the two first factors – cluster dynamics and corporate control strategies – affect the subsidiary development, in terms of competence development and the granting of formal mandates, which in turn impact local cluster development. Thus, the impact of a subsidiary on its surrounding cluster is, we argue, determined by the corporate strategy of the MNC on the one hand, and the characteristics of the local business environment on the other (for a similar view, see Birkinshaw & Hood, 1998). Six hypotheses are developed so as to build paths between the five constructs of the model. Finally, the validity of the model is tested, based on empirical data on foreign-owned MNC subsidiaries in Sweden. The paper ends with concluding remarks on the effect of foreign ownership on local industry development. Specifically we will address this issue as a matter of a tension between MNC control and the dynamics of the local business environment.

Research on Foreign Ownership and External Control

There exists a voluminous research literature that, from rather different points of departure, addresses the question of the effects of foreign ownership. When this issue first found its way onto the research agenda of business studies, economics, economic geography and related disciplines, in the 1970s, most writers seemed to take a fairly negative position towards foreign ownership. Typically, it was considered bad for a local (national) economy if its industry was owned and controlled from the outside. One type of study was preoccupied with what was referred to as the geography of branch plants (Firn, 1975; Townroe, 1975; Watts, 1981; Malmberg, 1990). Here, one can find a rather pessimistic view on the impacts of external ownership. The message from this line of research was that externally owned/controlled firms for various reasons were seen to give a smaller contribution to overall the development of a local economy. A few quotations can illustrate this:

> The MNE tends to create a world in its own image that corresponds to the division of labour between various levels of the corporate hierarchy. It will tend to centralize high-level decision-making occupations in a few key cities in the advanced countries, thereby confining the rest of the world to lower levels of activity and income. (Hymer, 1972: 38)

> One aspect that has so far been relatively neglected (...) despite its obvious and important theoretical and policy implications (...) is the effects and problems associated with a situation whereby a large amount of ownership and control of key sectors lies outside the regions concerned. / When major decisions are made elsewhere (...) much of the drive, enthusiasm, and invention that lies at the heart of economic growth is removed, reduced, or at best suppressed. (Firn, 1975: 394/410).

A common argument stating that foreign ownership can have negative effects for a local economy is that they make for increased vulnerability since it is easier to close down operations

located at a distance from corporate HQ, and that they tend to be geared towards standardised/routinised manufacturing and sales operations rather than explorative types of activity, since external control is easier to exert on the previous type of operations. Furthermore, foreign-owned firms have been argued to create less qualified jobs (mainly as a consequence of the argument above), and to give rise to fewer economic spin-off-effects and since they are less embedded in the local milieu.

There is, at the same time, also a literature that regards FDI and MNCs as a carrier of economic modernisation and development (see Hood & Young, 1979, for an overview). A crude summary of the main arguments stating that inward FDI and foreign-owned firms give positive effects on an economy is that they open up increased access to capital, increase the value of local resources by inducing new demand, are needed to balance outward FDI, create more intense local competition, contribute to variety by bringing in new knowledge in the fields of organisation, management, technology, marketing etc., speed up structural change, create new job opportunities, and give domestic firms access to international markets.

The empirical support for the different arguments brought forward regarding the impacts of "foreign control" vary. Some of the propositions above get more or less support in different studies, but the results of such studies are far from unequivocal (see Allard & Lundborg, 1998 for a review of the evidence).

There are serious problems related to research methods in this field of study. In order to say something certain about differences between locally owned and foreign owned firms, one would need to compare sets of twin firms: one group of locally owned and one group of foreign owned

firms which are identical in terms of industry, size etc. Even if it would be possible to isolate such groups, there is still the problem of counter-factuality – what would have happened otherwise? For example, if we are interested in the development of a particular firm subsequent to a foreign acquisition, we can never know for certain what would have happened had the acquisition not taken place, or had another domestic owner stepped in. To this is added the long term and dynamic effects of structural change. Even if it would be possible to document cases where a newly acquired firm had to go through a period of tough rationalisation or even closure, we cannot know whether this, in the long term, will harm or benefit the local economy. In principle, such a restructuring may relief resources for other and possibly more productive tasks, but it may be extremely difficult to assess to what degree this potential is fulfilled. One condition, of course, is that there are well functioning markets such that resources, e.g. labour, can be smoothly transferred to other firms and industries after a downsizing or closure.

THEORETICAL MODEL: SUBSIDIARY IMPACT ON LOCAL CLUSTERS

In the following section we will identify a number of key factors, some related to the internal operations and organisation of the MNC and some related to the characteristics of the local business environment, which we believe have a determining influence on the impacts of foreign-owned subsidiaries on a local cluster. Six hypotheses will be specified discussing the relations between our explanatory factors and how they can together be expected to affect the long-term development of a local cluster. It must be stressed, though, that the question of the "strengthening or weakening impact" of foreign owned subsidiaries on the local cluster may concern a number of aspects, as indicated above. This article will specifically focus on one aspect, that is the attraction of further investments, as a direct consequence of local subsidiaries developing their competencies and their formal mandate within the MNC. The discussion will be summarised in a structural model that involves the hypothesised relations.

The Dynamic Local Business Environment

The starting point of the model is the dynamics of the local business environment, conceptualised here in Porterian terms as a "diamond" (Porter, 1990). Despite the alleged homogenising effects of globalisation, countries, regions and individual cities continue to exhibit dramatic differences in terms of specialisation, competitiveness and industrial dynamics. Successful industries in a country or region often retain their leading edge over extended periods of time, despite attempts by others to imitate their success. Competitive strength is often not embedded in machinery or even in patents; anyone may get access to these. Competitiveness, or more importantly, innovative capacity, has a markedly local element and is often built through a series of small steps (Malmberg et al 1996; Maskell et al 1998).

Some technologies move across the globe, while other types of technologies and competencies are spatially "sticky" (i.e. they are kept "secret" or are retained in certain individuals) and are therefore relatively immobile (Malmberg et al. 1996, Markusen 1996). Standard components and machinery may be purchased by anyone, anywhere, while the latest technology is often being fine-tuned in interaction between actors in local clusters (Power 2001). Network relations between buyers and suppliers within which new products and technologies are developed, and where production flows are perfected, are traditionally stronger if they are local than if they are international (Gertler 1995). In the local milieu, people speak the same language (not only do they share the same mother tongue, in addition they have often learnt to "talk the same way" through shared schooling and experiences etc.) and a common culture may bond people together. Local networks include links between firms and universities, research institutes and public authorities. Even the most modern forms of communication technology are inferior to face-to-face contacts between people when it comes to building trustful relations and to

communicating non-codified types of information. In addition, personal travel is both costly and time-consuming.

The more codified the knowledge involved is, the easier it can be transferred across borders. The more tacit the knowledge, the more attached it is to the local milieu. Knowledge and competencies that are embodied in people or are "in the air" can often neither be articulated nor moved from one place to another. Such tacit knowledge is typically transferred through various apprenticeship systems in the local milieu.

Porter (1990) argues that certain national (or sometimes more local) circumstances determine the innovative, and thus competitive, strength of a given industry. All the four determinants in Porter's well-known diamond model relate to the existence of a system of interdependent industries embedded in a local milieu. Specialised *factors of production* are seen as being formed historically in interaction between firms and institutions. Firms needing products with specific characteristics by and large raise *sophisticated demand*, and to meet such demand on the domestic market implies the co-existence of buyers and sellers in the same local milieu. The existence of a critical mass of *related and supporting industries* adds to the local dynamism. Finally, *domestic rivalry* presupposes the presence of more than one local firm in a particular industry.

A consequence of the system of determinants is that a nation's competitive industries are not spread evenly throughout the economy but are connected in *clusters of industries* related by links of various kinds. One of the main empirical observations that from the point of departure for Porter's model is that a nation's successful industries are usually linked through vertical (buyer/supplier) or horizontal (common customers or technology etc.) relationships. The

dynamism of the business environment, or diamond, gives rise to challenges and pressures towards the incumbent firms to be innovative and thereby upgrade their competitive advantages.

In our reasoning, proposed here, the dynamism of the cluster is a major determining force. Cluster characteristics are assumed to have long term effects on the average level of competence among all business firms present, including foreign subsidiaries, and it will affect the degree to which foreign HQ can or wish to exert control over a local subsidiary unit. First we will discuss with the impact of a dynamic business environment on the subsidiary competence, then on the control strategy of the MNC.

The Dynamic Local Business Environment and Subsidiary Competencies

Over time, firms develop certain capabilities and build up more or less unique resources. This holds true also for MNC subsidiaries. Taken together these capabilities and resources constitute a certain level of competence. The level of competence in turn determines the strength of the subsidiary within the MNC network, and has a decisive influence on the power with which the subsidiary management can make strategic and operational decisions. The competencies of an MNC subsidiary consists of a combination of relatively tangible assets or resources, such as plants and R&D laboratories, and intangible assets, or capabilities, such as organising principles, human skills, and decision rules and processes. The latter are of particular importance as these define and determine the effectiveness and efficiency with which the resources of the subsidiary are combined. These are typically subsidiary specific, experience-based, tacit and path-dependent.

The evolution of subsidiary competence, or 'subsidiary development', has recently attracted increased interest in the literature (for reviews see Birkinshaw & Morrison, 1996; Birkinshaw & Hood, 1998; Holm & Pedersen 2000). An important source of this competence lies in the local

business environment or country specific advantages that emanate from the uneven distribution of knowledge and technological or organisational capabilities among nations and locations (Porter 1990, Benito 2000, Forsgren et al, 2000). Thus, the competence of the subsidiary is driven by environmental considerations, related to the dynamics of the local business environment. The quality of the business conditions will therefore ultimately determine the quality of the strategies of the firm and the competencies and resources built up within the firm. In addition, internally generated acts of entrepreneurship and change will add to competence accumulation (Birkinshaw, 1995). Thus, depending on the history of a subsidiary unit and the quality of the surrounding cluster—whether a green-field unit or acquired unit—we expect subsidiary competence to vary. Resting on the argument, which states that dynamic local business environments leads to higher levels of firm competence, we formulate the following hypothesis:

Hypothesis 1*: The more dynamic the local business environment, the stronger the competencies of the subsidiary.*

The Dynamic Local Business Environment and MNC Headquarters Control Strategy

Essentially, a dynamic local business environment supports innovation activities and thus an ability to upgrade and create *new* competitive advantages in the form of new skills and technologies. To enhance competence development, subsidiaries operating within such environments will need a certain degree of autonomy. MNC control is therefore sometimes organised around the so-called innovation logic. The innovation logic typically involves the adding of capabilities to facilitate mutual learning between home and host units. In recent international business research, the aspects of global learning and the creation of new competitive advantages through international operations have come to the forefront. A diverse and emerging body of literature is concerned with the MNC as a learning organisation or as a collection of knowledge and capabilities, addressing the processes of upgrading of competitive

advantages (Cantwell 1991, Madhok 1997). In the context of the MNC as a learning organization, involving cross-border innovation processes (Ridderstråle 1997), transfer of tacit knowledge and best practices (Kogut & Zander 1996, Arvidsson 1999), the local unit is seen as a vehicle for building an insider position in the local cluster. The MNC can gain access to specialised and advanced factors of production, sophisticated demand, leading supplying and related industries, a unique science base (university and specialised research institutes), and proximity to the home base of leading rivals. Innovation and learning in this case is mainly carried out in the local context, which is often manifested in the granting of regional/global mandates for the local subsidiary for certain products or technologies, implying autonomy and a lesser degree of central control.

Therefore, we expect a relation between the dynamics of the local business environment and HQ control strategy, such that the former factor will give rise to control strategies following the innovation logic, which in turn will mean low control over the subsidiary by corporate HQ. A low degree of control implies a hands-off policy when it comes to operational and even strategic decisions at the subsidiary level. Such decisions include everything from investment decisions (plants, machinery, new investment and replacements), hiring decisions, product line choices (diversification and vertical integration), product features (quality levels, add-on services, pricing), and market choices (segments, exporting), and so on. This also implies that the subsidiary can act in accordance with local needs and preferences, which is of significant importance when developing a competitive position within a dynamic environment. Consequently, in more dynamic settings one can expect that HQ will exercise less control over the subsidiary strategic decisions, and vice-versa, in weak local business environments one can expect tighter control. We hypothesise:

***Hypothesis 2**: The more dynamic the local business environment, the weaker the corporate headquarters' control over subsidiary strategic decisions.*

Headquarters' Control Strategy and Subsidiary Mandate

In the interest of creating a globally competitive organisation, the MNC may adopt a long-term strategy imposed by corporate HQ. In contrast to the use of autonomy and low control, related to the ability to develop new knowledge as discussed above, some MNCs may adopt a more tight control strategy which has been described as the global commercialisation logic. Through this strategy, the MNC tries to develop far-flung networks of subsidiaries in order to penetrate local markets (through local marketing, sales, service and assembly), and sometimes to rationalise production on an international scale. In later years, the literature has started paying more attention on how to organize and locate the corporate sub units in different geographical areas in order to accumulate knowledge and resources from different parts of the world (Cantwell, 1991; Madhok, 1997). Such a perspective depends on the ability to control the intra-corporate exchange between sub-units. Thus this type of strategy is based on designing and defining corporate roles and the content of flows between corporate units. In such a structure, subsidiaries may very well be granted local or sometimes regional mandates. However, it still remains that the driving force behind this organisational solution is the HQ managers' motivation to create an efficient competitive corporation on the basis of every unit following their formal organisational roles, rather than subsidiaries organising their own roles and activity flows. Thus, the corporate HQ will keep some control over strategic decisions, especially if they impact the development of the MNC as a whole.

Headquarters strategies for subsidiaries following the commercialisation logic treat local units as sales and service organisations for local markets. For example, when firms are acquired following

this strategy, the acquired unit will often experience restructuring processes put in place to enhance efficiency in the overall international production network. This implies tight control from HQ. In this scenario the MNC has a strong incentive to drain the local unit by not allowing further investments in products and people, limit the product range and furthermore to close down plants, R&D laboratories and headquarter functions. Such drainage can be expected in small national markets with scale disadvantages, unless the MNC wants to utilise them as regional platforms for larger areas. Such platforms often involve logistics functions, production and HQ functions. Another case of the commercialisation logic is related to 'pure tapping'. Pure tapping is when the MNC acquires a foreign unit or establishes a scanning unit to 'take out' resources and competencies to be further improved at home. In this case we expect foreign ownership to lead to a weaker mandate and more likely negative consequences for the local cluster. In the case of an acquisition the unit is likely to be drained on resources over time.

The control strategy of HQ relates to the kind and level of formal mandate assigned to a subsidiary. We expect the innovation logic combined with a lower degree of control, as discussed in the former section, to drive clear and far-reaching subsidiary mandates. A weak mandate, on the other hand, implies tighter control and more of the commercialisation logic. Thus, as a strong formal mandate reflects an autonomous subsidiary responsibility, we expect it to be negatively related to HQ degree of control over strategic decisions. Our hypothesis is that:

Hypothesis 3*: The stronger the headquarters' control over subsidiary strategic decisions, the weaker the subsidiary formal mandate.*

Subsidiary Competencies and Mandate

Subsidiaries are often assigned a certain mandate by corporate HQ, sometimes formalised in roles as centres of excellence, centres of competence or world product mandate. Centres of

excellence often consolidate internal profit and loss statements within their product or technology mandate, and are typically the nexus for strategic and operational reporting. The given mandate in turn is driven by HQ strategy and the degree to which HQ exert control over the unit.

The classical green-field subsidiary (sales and/or manufacturing unit) has a weak mandate, where strategic choices related to product range and market coverage is severely limited. For example, a typical sales subsidiary cannot export its products if local demand weakens since other markets belong to other sales subsidiaries within the MNC (SOU 1981:43). Similarly, a typical sales subsidiary cannot get involved in other product areas or areas of technology than those decided on by the HQ. In tightly organised MNCs, local sales units do not even have the autonomy of setting prices or hiring key personnel. A domestic firm, on the other hand, can look for new products, new technologies and skills, and new markets to secure survival and future growth.

For corporate units with a long history (including newly acquired units with a prior 'domestic' history) the 'subsidiary' role sometimes changes over time due to local entrepreneurial effort and through the long-term build-up of local resources. Depending on the size and uniqueness of these resources, subsidiary units can come to play more strategic roles (Hedlund, 1980). Especially, subsidiaries in large and sophisticated markets and within leading clusters tend to develop their own unique capabilities and fields of technological expertise (Dunning, 1958; Ronstadt, 1978; Behrman & Fischer, 1980; Pearce & Singh, 1992; Pearce, 1994; Chiesa, 1995; Zander, 1997; Patel & Pavitt, 1998; Gerybadze et al. 1997). These unique capabilities seem to play an important role in the formation of multi-home based MNCs (Sölvell et al, 1991), particularly when foreign acquisitions add new product areas and technologies to the acquiring

firm (Dunning, 1988; Forsgren, 1989; Ghauri, 1990). In some cases, the result is a weakening of traditional HQ-subsidiary relationships in the MNC and the establishment of divisional HQ outside the country of origin (Holm, 1994; Forsgren et al, 1995).

Overall, the mandates of foreign units have tended to become more diverse, reflecting an increasing number of units capable of contributing to the overall development of the MNC. Several attempts to classify subsidiaries have been presented in the literature. One of the more prominent taxonomies makes a distinction between 'strategic leaders' who are granted formal responsibility to develop, manufacture and market specific products on a global corporate-wide basis, and 'contributors' whose distinct capabilities could be employed as inputs into projects of corporate importance (Bartlett & Ghoshal, 1986). Researchers working on similar frameworks emphasise the natural progression towards more sophisticated and independent subsidiaries (White & Poynter, 1984; Gupta & Govindarajan, 1991; Taggart, 1996, 1997; Birkinshaw & Hood, 1998).

Today's global firms are organised around a mix of subsidiaries with local mandates and subsidiaries with global mandates, often referred to as centres of excellence (Holm & Pedersen, 2000) or multiple home bases (Sölvell & Zander, 1995). Thus, besides the control strategy of the MNC, the mandate is also affected by the competencies developed historically inside the subsidiary (Birkinshaw 1996). Through the development of high competencies, i.e. an ability to sustain unique capabilities, the subsidiary may earn a formal mandate with an extended autonomous responsibility outside its local undertakings. The following hypothesis therefore leans on the argument that the more advanced and unique the competencies of a subsidiary is within the MNC framework, the more likely it is that this will be recognised by top corporate

managers which, in turn, will strengthen the possibility of granting a formal mandate. We hypothesise:

Hypothesis 4: *The stronger the competencies of a subsidiary, the stronger the formal mandate.*

Subsidiary Impact on the Local Cluster

As mentioned, we expect that strong subsidiary competence and/or formal mandate will impact the future development of the local cluster. First, high subsidiary competencies in certain activities, developed within the business environment, will to some extent be recognized both within the MNC as well as by external members of the local cluster (Forsgren et al, 2000). It is reasonable to assume that members of the local industry cluster will recognise if a subsidiary performs its activities with a high quality, and through direct or indirect relationships they will experience a certain level of impact on their need to innovate in order to adapt to the development. Thus, strong competencies add to the local innovative climate and will strengthen the competitive power within the local cluster, as this will increase the attraction of new investments by the MNC and by cluster members. Thus, we formulate the following hypothesis:

Hypothesis 5. *The stronger the competencies of a subsidiary, the stronger the positive impact of the subsidiary on the development of the local cluster.*

Second, when a subsidiary is recognised within the MNC organisation as strategically important it may receive a formal mandate in the corporate hierarchy. By gaining such a mandate and by being able to decide on the development of valuable capabilities and resources the subsidiary has the possibility to bring in new knowledge and technology, capital, expatriates and other inputs. Receiving a formal mandate within the corporate hierarchy also sends a signal to the external members of the local cluster asserting that such a subsidiary will have a strategic role for the

development of business. We therefore expect that subsidiaries with strong formal mandates will have a more positive impact on the local cluster than subsidiaries with weaker mandates, thus in accordance with the former reasoning we hypothesise:

Hypothesis 6*. The stronger the formal subsidiary mandate, the stronger the positive impact of the subsidiary on the development of the local cluster.*

The hypotheses can be organized and summarized in the following theoretical model as shown in Figure 1 below.

FIGURE 1 ABOUT HERE

EMPIRICAL TEST

In the following section we describe the collection of data and present the methods of analysis, in which the choice of indicators is discussed in relation to the concepts and hypotheses of the model in Figure 1.

Constructs and Indicators

Five constructs are included in the hypothesised model shown in Figure 1, which means that observable indicators will be selected for each of them. The aim is that chosen indicators together should form the broader theoretical construct. The first construct, *Dynamic local business environment,* involves three indicators. The first is to which degree the subsidiary has access to *skilful personnel* (IndSkil) in the local business environment. The second concerns the level of *local competition* (comLev) and the third concerns the level of pressure from *local customers* (CusPres). The second construct, *HQ control strategy*, is built up by two indicators, measuring the degree to which corporate HQ keep control over decisions relating to the subsidiary entering *new markets* (MaEntry), and decisions relating to entry *into new product segments or services* within the local market

(NewPro). The third construct, *Subsidiary competencies,* comprises the competencies of the subsidiary in developing *new products and processes* (SubCom), and the subsidiary's level of *investments in developing products and processes* during the last three years (SubInv). The fourth construct, *Subsidiary mandate* refers to the formal position of the subsidiary in terms of the *number of corporate units reporting* to the subsidiary (CorpRep), and whether or not it has been assigned a formal role as a *centre of excellence* within the MNC (SubCoE). Finally, the *Subsidiary impact on local cluster* concerns the subsidiary's ability to *attract new investments* to the local cluster (AttraInv).

Data Collection

This specific study is based on data from Swedish based subsidiaries of MNCs with foreign parent companies. For the data gathering a questionnaire was sent out in a two-step procedure to 1,050 subsidiary managers. The first response resulted in 350 answers. To reduce the level of missing values and to clarify obvious misunderstandings, contact was established with specific respondents. In the second step, the questionnaire was redistributed to those subsidiaries that had not yet answered, a procedure which resulted in a further 180 replies. The total original sample contains 530 observations and the average level of missing values for individual questions is low, or about three per cent.

In the questionnaire the indicators of the theoretical constructs were all measured on a seven-point scale ranging from 1, meaning very low (or not at all), to 7, meaning very strong (or very high). An exception is the two indicators of HQ control strategy, which have been measured on a three point-scale, where 1 equals decisions made at the subsidiary level, 2 equals decisions being made at the sub-corporate level and 3 decisions being made at the corporate level. Another exception was the subsidiary mandate which was measured as a dichotomous variable where 0 means no and 1 means yes.

Within the sample, subsidiary business activities vary in number and magnitude. In this study we focus on "complete subsidiaries", that is, complete in the sense that they are not specialised within only one activity, such as only research, production or marketing. The reason is that we want to generate data about comparable subsidiaries that have the possibility to develop competencies in more than one activity and receive formal mandates. Thus, subsidiaries included in the study conduct some development of products and processes, and they carry out production and sales and marketing. It was deduced that 237 out of 530 subsidiaries conduct those activities simultaneously. It should be noted that in about 90 per cent of the cases additional activities such as logistics and distribution, and purchasing are also conducted by the subsidiaries.

The sample includes all kinds of subsidiaries both within the service and manufacturing sectors. The company size ranges from 9 to 8,500 employees, with the average being 424. The business volume ranges from 3 to 2,300 million USD, with an average of 105 million USD. Descriptive statistics for the indicators are presented in Table 1, below.

Table 1 shows some descriptive statistics on the measured indicators of the five constructs.
TABLE 1 ABOUT HERE

On the seven-point scale, the *dynamic local business environment* indicators averages are 4.56 (IndSkil), 5.63 (CusPres) and 5.44 (ComLev). This means that customer pressure and the level of competition are judged by the subsidiary managers to be relatively high whereas the access to skilled personnel is somewhat lower, although not weak. One should note that the standard deviation is slightly higher for the higher average of competition level (1.59), which implies a

variation that may relate to different industries, firm size etc. On the three-point scale of *HQ control strategy*, the averages for MaEntry and NewProd are 1.38 and 1.58. On the seven-point scale, the *subsidiary competencies* had average values of 5.38 (SubCom) and 4.45 (SubInv). It should be noted that the distribution of values of subsidiary competencies ranged from 3 to 7, meaning that all subsidiaries have claimed a competence level above the lowest extreme values. Next, the *subsidiary mandate* values show that the mean number of corporate units reporting to the subsidiary is 2.03 and the median is 0, which means that most subsidiaries are not receiving reports from any other corporate unit. However, the highest observed value is 40, which explains the relatively high standard deviation of 4.97. The average of the second indicator of subsidiary mandate reveals that about every fourth subsidiary is assigned a formal mandate within the corporation. This is somewhat unexpected but has probably to do with the criteria set for the choice of subsidiaries to be included in the sample, which was that all must conduct development, production, and marketing and sales. Finally, *subsidiary impact on local cluster*, i.e. the subsidiary functioning as an actor attracting new investments to the local cluster, has a somewhat lower value, i.e. 2.83, meaning that most individual subsidiaries have a moderate impact (the median is 3 on the seven-point scale).

Method of analysis - the measurement model test

The model has been tested using the structural modelling technique called LISREL (Jöreskog & Sörbom, 1993), which is a multivariate technique considered suitable to estimate causal models with multiple independent and dependent constructs. The purpose is to generate a coherent representation of data through repeated iterations. When a specific relation cannot be verified, it is omitted from the subsequent analysis (Bollen 1989). Thus we will aim to construct a structural model consisting of significant relations and with validity for the entire model, that is nomological validity.

The analysis was conducted in a two step procedure. The first step was that the observable indicators used for measuring the five constructs were run in a so-called measurement model in order to assess homogeneity of the constructs included in the model, that is convergent validity. Convergent validity is assessed by how well a construct represents its indicators, which is estimated by a test for t-values, factor-loadings and R^2-values between the construct and each indicator. T-values should be higher than 1.96 (5 per cent level) and R^2-values should be higher than 0.20, thus significantly explaining at least 20 per cent of the variation of the observable indicator. The procedure also involves a test for discriminant validity, which is a matter of ensuring that constructs are empirically separate from each other. Discriminant validity is confirmed by the fact that two constructs do not measure the same indicators. For example, if more than one construct has high factor loadings and significant t-values in relation to one or several observable indicators, the discriminant validity is negatively affected.

The validity of the five constructs was found to be good, as factor loadings were relatively high and as all t-values were significant. All R^2-values were also relatively high with the exception of the relation between two out of the ten indicators and five constructs (see Table 2). The two deviating indicators, with relatively low R2-values were; access to skilful individuals (0.10) and number of corporate units reporting to the subsidiary (0.07). This meant that their respective constructs did not represent the variation of these two indicators very strongly. However, both indicators have significant t-values (4.45 and 2.95) and will therefore remain in the subsequent analysis. Next, the discriminant validity was good as no construct had a significant factor loading in relation to any other indicators outside the ones specified. Also, the correlations between indicators were not close to one, indicating that they are discriminant (se Appendix).

TABLE 2 ABOUT HERE

The structural model

The second step in the analysis was to form the structural model by specifying the causal relations in accordance with the six hypotheses. In the following analysis, t-values, factor-loadings and R^2-values represent tests of single causal relations between the constructs in the model. The validation of the entire structural model is assessed by chi-squares and degrees of freedom and a probability estimate (p-value), which is a test of a non-significant distance between data and model (Jöreskog & Sörbom, 1993). The p-value should be higher than 0.05 where significance is at the 5 per cent level. Thus, the significance of each single casual relationship must be viewed within the context of all causal relationships. However, if a single relationship is not significant, it affects the possibility of attaining significance for the total model, and, not being verified there is no support for the corresponding hypothesis.

To test the model presented in Figure 1 the causal relationships were specified in LISREL according to the formulated hypotheses. The first series of iterations did not result in an acceptable model. The statistics indicated that the relationship between HQ control strategy and subsidiary mandate (H. 3) was weak, with a factor loading of 0.01 and a t-value of 0.54. In a next step we therefore omitted hypothesis 3 and tested all other hypotheses simultaneously. This resulted in a significant model with a Chi^2 of 38.04 (*df* 31) and a p-value of 0.18. However, this model still contained an insignificant relationship between subsidiary mandate and subsidiary impact on local cluster development (H. 6) as the factor loading was 0.05 and the t-value was 0.02. In a third series of iterations we therefore omitted this hypothesis and ran hypotheses 1, 2, 4 and 5 simultaneously. This resulted in a significant model with a chi^2 of 38.04 (*df*=32) at a p-

value of 0.21. All relationships in the resulting model were significant in accordance with Figure 2 below (t-values in parenthesis). Thus, the paths between the remaining constructs were significant: dynamic local business environment and subsidiary competence (H. 1) (factor loading = 0.16, t=1.96) and HQ control strategy (H. 2) (factor loading = -0.51, t=-4.07), subsidiary competence and subsidiary mandate (H. 4) (factor loading = 0.98, t=3.01), subsidiary competence and subsidiary impact on local cluster (factor loading = 0.18, t=2.26). The statistics also indicated that no further development of the model was needed since the RMSEA-measure (Root mean square error approximation) is 0.025 which indicates a good fit (Brown and Cudeck 1989).

FIGURE 2 ABOUT HERE

Main results

The primary finding of the test is that a dynamic local business environment strengthens subsidiary competencies while it weakens the HQ's control over the strategic decision-making of a subsidiary. Thus, hypotheses 1 and 2 were supported. We also found that HQ's control strategies do not have a significant impact on subsidiary mandates, thus not supporting the expected negative relationship in hypothesis 3. According to the model, the subsidiary formal mandate is instead a direct result of subsidiary competencies, and indirectly a result of the dynamics of the local business environment. Thus, we received support for hypothesis 4. Finally, the subsidiary impact on the local cluster is positively related to subsidiary competencies (hypothesis 5), but not related to the formal mandate. Thus, the impact from foreign ownership of a local subsidiary on the development of a local cluster and on the subsidiary formal mandate is in this analysis a consequence of the competencies developed by the subsidiary, rather than by the control over strategic decisions by the foreign HQ.

The results indicate that the more dynamic a local business environment is, the more resources and capabilities the subsidiary will build up, and a *de facto* stronger mandate will emerge. And, the more dynamic the local business environment, the more autonomy the subsidiary receives in terms of making its own strategic decisions. From this it follows that the 'flag' of HQ plays a less important role. The potential negative effects of foreign ownership identified in the literature are also less likely to materialise; i.e. the risks associated with distance to corporate HQ are less pronounced. Rather, the opposite is likely to emerge, i.e. the foreign owner will add more resources (capital, complimentary skills etc.) to the local units which will benefit the local cluster overall. With a weaker cluster it is more likely that the subsidiary controls less unique resources and capabilities and that the mandate is weakened.

CONCLUSIONS

In this paper, we have proposed a model and some mechanisms that we believe could be helpful in analysing the impact of foreign ownership on the long-term dynamics of local clusters. In doing so, we have been arguing in favour of a type of analysis where such impacts are seen in relation to the characteristics of the local business environment on the one hand, and the strategies of corporate HQ, on the other. In essence we have argued that foreign subsidiaries will tend to have a positive impact on the local cluster if they have developed valuable competencies and resources "on their own", or if they are assigned strong corporate mandates by corporate HQ. Furthermore, we have argued that it is more likely to find such competencies and strong mandates in subsidiary units located in dynamic business environments.

We have essentially tested two paths for subsidiaries' impact on the development of their surrounding clusters. The first is a story where local cluster dynamics occupies centre stage. The

more dynamic the local business environment, the more valuable the competencies in the subsidiaries, the stronger their corporate mandates, and the more positive the impacts on the further development of the cluster. The second is a story where corporate control strategy is focused. The hypothesized logic of the latter story is that a dynamic local business environment will weaken the MNC control over subsidiary strategic decisions and via such a low control it will strengthen the formal mandate of the subsidiary, which in turn will strengthen the subsidiary impact on the local cluster.

The model suggests two countervailing forces: On the one hand a dynamic business environment will strengthen the competence development of an MNC subsidiary, but on the other hand the same force will decrease the controllability of the subsidiary development in the perspective of corporate HQ. Thus, it seems that the benefit of competence development of a subsidiary in a foreign dynamic business environment impinges on the possibility for HQ to impact on strategic choices, such as market entry and introduction of new products. This may affect the ability of HQ to organize the links between MNC units in accordance with its strategic intentions. HQ therefore meets a strategic dilemma in which it can expect that the competence development of its subsidiaries will be negatively affected by the control initiatives. An extreme hypothesis would be that the least controllable MNCs are the ones that hold the greatest competencies, given that all their subsidiaries are embedded in dynamic business environments.

Whereas the results supports the notion that the dynamics of the local business environment has a decisively positive impact on subsidiary competencies, which in turn strengthens the local cluster by attracting new investments, we cannot say that the control exercised by MNC HQ play the same role. The first story thus meets the test provided here, while the empirical support for

the second story is not supported. This result has some interesting implications. Thus, the message to policymakers is that they should pay more attention to the dynamics of the local business environment, rather than worrying about who owns the locally active firms, i.e. the flag of corporate HQ is less relevant. Dynamic business environments lead to important subsidiary competencies that in turn lead to positive external effects on the surrounding cluster. Dynamic local business environments have little to fear from inward foreign direct investment. Rather than eroding the basis of competitiveness and attractiveness of a dynamic local cluster, an inflow of foreign firms and owners seem rather to strengthen its future development prospects. A local cluster with little or no dynamism at the outset will have more reasons to worry about the effects of foreign ownership but, then again, such an environment is also arguably in a vulnerable position in a case where ownership is and remains exclusively local.

The model, hypotheses and empirical tests presented in this article should be seen as a first attempt to develop structural models of the impact of foreign ownership on local clusters. We are convinced that such analyses will gain from dropping the assumption that foreign ownership in inherently "good" or inherently "bad". In contrast to such points of departure, we believe that a more fruitful starting point is to analyse the impacts of foreign ownership as it materialises in the intersection of the twin forces of corporate headquarter strategies and, more importantly as it seems, the dynamics of the local business environment.

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Figure 1 Theoretical Model

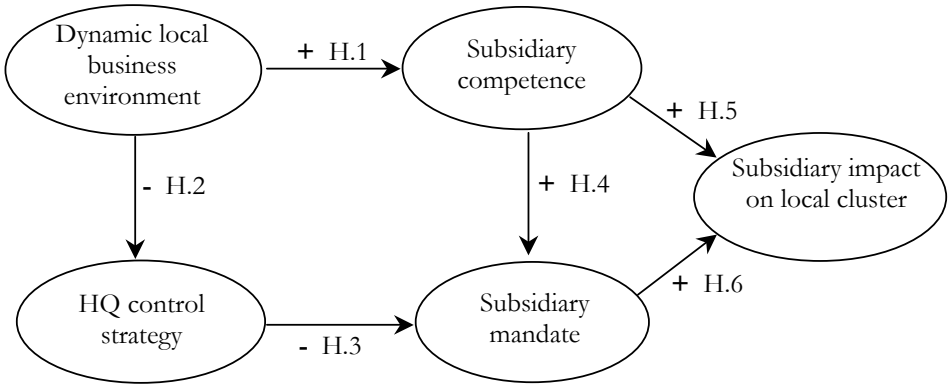


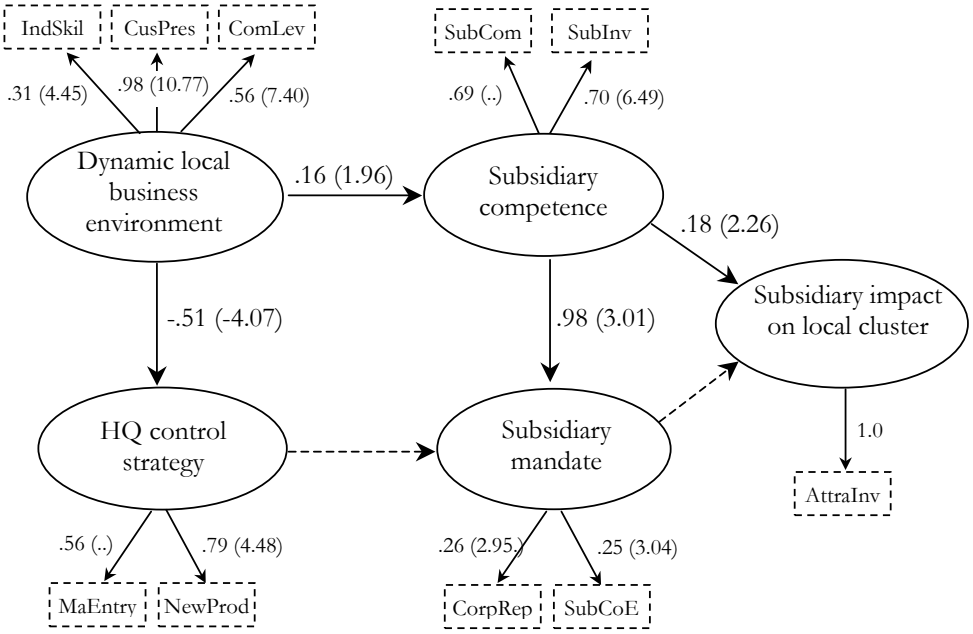
Table 1. Descriptive statistics of observed indicators

	Dynamic local business environment			***HQ control strategy***		***Subsidiary competencies***		***Subsidiary mandate***		***Subsidiary impact on local cluster***
Statistics	IndSkil	CusPres	ComLev	MaEntry	NewPro	SubCom	SubInv	CorpRep	SubCoE	AttraInv
Mean	4,56	5,63	5,44	1,38	1,51	5,38	4,45	2,03	0,26	2,83
S.D.	1,29	1,08	1,59	0,66	0,70	1,20	1,42	4,97	0,44	1,59
Median	5	6	6	1	1	6	5	0	0	3
Minimum	1	2	1	1	1	3	1	0	0	1
Maximum	7	7	7	3	3	7	7	40	1	7

Table 2. The Constructs and the Indicators

CONSTRUCTS AND INDICATORS	Abbre-viation	Factor Loading	T-value	R^2-value
Local Business Environment				
Access to skilful individuals	IndSkil	0.31	4.45	0.10
Pressure from customers	CusPres	0.98	10.77	0.96
Level of competition	ComLev	0.56	7.40	0.32
Headquarter Control Strategy				
HQ decides on new subsidiary market entries	MaEntry	0.56	- - -	0.31
HQ decides on subsidiary introduction of new products/services	NewPro	0.79	4.48	0.63
Subsidiary Competencies				
Subsidiary perceived competence in development of new products and processes	SubCom	0.69	- - -	0.47
Subsidiary investments in product and process development the last three years	SubInv	0.70	6.49	0.48
Subsidiary Mandate				
Number of corporate units reporting to subsidiary	CorpRep	0.26	2.95	0.07
Subsidiary formally assigned a centre of excellence role	SubCoE	0.25	3.04	0.38
Subsidiary Impact on Local Cluster Development				
Subsidiary attracts new investments to local cluster	AttraInv	0.47	4.00	0.20

Figure 2. The resulting model



Appendix

Table 3. Correlation matrix of observed indicators

	Dynamic Local Business Environment			***HQ Control strategy***		***Subsidiary Competence***		***Subsidiary Mandate***		***Sub. Impact***
	1	2	3	4	5	6	7	8	9	10
1. IndSkil	-									
2. CusPres	0,31	-								
3. ComLev	0,17	0,55	-							
4. MaEntry	-0,12	-0,28	-0,26	-						
5. NewProd	-0,10	-0,40	-0,21	0,44	-					
6. SubCom	0,18	0,13	0,05	-0,09	-0,04	-				
7. SubInv	0,14	0,13	-0,05	-0,08	0,00	0,47	-			
8. CorpRep	0,01	-0,05	0,01	0,0	-0,01	0,20	0,17	-		
9. SubCoE	0,12	0,06	-0,03	-0,11	-0,04	0,42	0,42	0,16	-	
10. AttraInv	0,10	0,03	0,12	-0,01	0,10	0,08	0,17	0,06	0,11	-