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MOBILITY OF CORPORATE HEADQUARTER FUNCTIONS: A Literature Review

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ABSTRACT: This paper reviews the recent literature on the relocation of headquarters (HQs). Overall results show that full and direct international relocations of corporate HQs are rare events. However, there is a trend that MNEs increasingly unbundle their HQs so as to spread their different HQs functions over several locations around the world. The literature on the organisation of companies shows that HQ unbundling can go hand in hand with different patterns of HQ relocations. The international trade literature underlines that falling communication costs enable firms to offshore HQ-tasks that were previously considered non-traded. International competition occurs now between individual workers performing similar HQ-tasks in different nations. The new economic geography literature explains the spatial concentration of HQs functions by the existence of agglomeration effects. Most empirical literature focuses on relocations within the United States. Relocations within the EU are less frequent which may be explained by legal and cultural barriers. An important finding is that many HQ relocations result from a merger or acquisition, but institutional factors, such as international tax incentives and labour market institutions, were also identified as key drivers of HQ relocations. The effects of relocations on the company performance are relatively small although results seem to depend on the motivation behind the relocation. For nations, the unbundling of HQs implies that the competition between (potential) locations for HQ functions will rise.

KEYWORDS: Internationalisation, corporate headquarters, divisional headquarters, corporate mobility, relocation, multinational corporations, taxation, FDI, foreign ownership

JEL-codes: F23, L22, H25, R38

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TIIVISTELMÄ: Tämä tutkimus tarkastelee viimeaikaista yritysten pääkonttorien siirtämistä käsittelevää kirjallisuutta. Tulokset osoittavat, että pääkonttorien täydellinen ja suora siirtäminen on harvinaista. Monikansalliset yritykset kuitenkin hajauttavat enenevissä määrin pääkonttoriensa eri toimintoja ympäri maailman. Organisaatiokirjallisuuden mukaan pääkonttorien ja niiden toimintojen hajauttaminen voidaan toteuttaa monella eri tavalla. Kansainvälistä kauppaa käsittelevän kirjallisuuden mukaan pienentyneet kommunikaatiokustannukset ovat tuoneet kansainvälisen kilpailun strategiselta tasolta yksittäisten toimintojen ja tehtävien tasolle tehden pääkonttoreiden toiminnoista siirrettäviä ja ulkoistettavia. Tämä saattaa selittää, miksi yritykset siirtävät pääkonttoriensa toimintoja yhä enemmän ulkomaille. Uusi talousmaantiede puolestaan liittää tiettyjen toimintojen maantieteellisen keskittymisen nk. agglomeraatiovaikutuksiin. Suurin osa empiirisestä kirjallisuudesta tarkastelee pääkonttorien siirtämisiä Yhdysvalloissa. Siirtämiset EU:n sisällä ovat harvinaisempia, mikä saattaa johtua juridisista ja kulttuurisista tekijöistä. Yksi keskeisimmistä löydöksistä on, että monet siirrot toteutetaan yritysfuusioiden ja -ostojen yhteydessä. Institutionaaliset tekijät, kuten kansainväliset verokannustimet ja työmarkkinainstituutiot, on tunnistettu myös tärkeiksi siirtämiseen vaikuttaviksi tekijöiksi. Pääkonttorien siirtämisen taloudelliset vaikutukset yrityksille on todettu olevan suhteellisen pieniä, vaikkakin tulokset näyttävät riippuvan siirtämisien alkuperäisistä syis-

tä. Valtioiden näkökulmasta pääkonttoritoimintojen maailmanlaajuinen hajauttaminen merkitsee sitä, että maiden välinen kilpailu pääkonttorien sijainneista mahdollisesti kiihtyy.

AVAINSANAT: Kansainvälistyminen, pääkonttori, liikkuvuus, pääkonttorien siirtäminen, monikansalliset yritykset, verotus, suora sijoitus, ulkomainen omistus

JEL-koodit: F23, L22, H25, R38

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1 Introduction

Headquarters (HQs) are increasingly mobile. From the international trade literature we know that superior management technology triggered falling communication and coordination costs enabling global companies to relocate several job tasks over different countries and regions around the world. International competition occurs now on a much finer level, directly affecting the task-level rather than just skills, products or sectors (Baldwin 2006). This new paradigm can explain why offshoring, both to affiliates and to subcontractors, has been moving up the value chain, reaching into offices and affecting tasks traditionally performed at the company's HQs. Indeed, there is empirical evidence that several HQ tasks are also tradable and geographically more mobile than they used to be.

Relocations of HQs are often part of the broader restructuring plans of multinational companies (MNEs) and typically trigger nervousness among local policy makers when made known[1]. In 2003, for example, the global mobile phone leader, Nokia, announced sweeping management changes and new divisions, including multimedia and enterprise solutions, in a move to strengthen its position. It also cut business units within mobile phones from nine to four main groups. The restructuring round also included the opening of a corporate office in New York in 2004, handling both regional operations and corporate functions that had been relocated from its US HQs in Dallas and from Nokia's corporate HQs in Finland. Although many policymakers want "their companies" to reach maximum efficiency and profitability, most also fear the effects of the relocation of HQs. For obvious reasons policymakers fear losing any kind of jobs but they have extra reason to do so if HQs and HQ jobs are at stake: (1) HQ jobs constitute an important stock of human capital involving high salaries and related income taxes, (2) HQs cluster with other HQs and important service jobs and last but not least (3) HQs can offer the state and municipalities considerable profit in the form of taxes. In essence HQs are important nodes in a knowledge-based economy (Braunerhjelm 2004).

The aim of this analysis is to review the recent international literature on the mobility of HQs. The need for this review lies in its relevance for policymakers in times of economic distress and in the current lack of a comprehensive summary of fresh empirical findings on the topic. In addition to reviewing results we will distill policy measures for Finland, since small countries with an open economy turned out to be more vulnerable to relocations (Pennings and Sleuwaegen 2000). The survey includes several stretches of literature and covers contributions from the company organisation literature, the international trade literature and the new economic geography literature. As the review focuses on the relocation of HQs only the relevant results from the FDI literature will be included. Although the main focus of this paper is on international HQ relocations also national HQ relocations are covered as the former are relatively scarce. Relocation of corporate HQs and sub-unit or regional HQs can be driven by different factors and therefore it is important to distinguish between

[1] For convenience this paper will use the terms *multinational companies* and *global companies* as synonyms.

both (Birkinshaw, Braunerhjelm et al. 2006). In addition it proved necessary to cover different gradations of HQ relocations, full, partial, hidden and virtual, because cases where entire HQs leave the country are relatively rare despite their extensive coverage in the press (Barner-Rasmussen, Piekkari et al. 2007).

The remainder of the paper has 5 parts. Section 2 focuses on the organisation of multinational companies and defines HQs. Part 3 looks at the main drivers of headquarters relocations. Section 4 analyses the effects of HQ relocations, on both the level of the company and the economy wide level. Part 5 describes the European context of HQ relocations. In the concluding section 6 the findings and the policy implications for Finland are discussed.

2 Definition and organisation of HQs

HQs of global companies are still too often seen as static entities. A vast share of policymakers believes that the tasks executed by HQs, contrary to, for example, production tasks, are not prone to off-shoring, but headquarters units are also forced to be dynamic having to adapt their organisation to a rapidly changing economic environment. Over time, the headquarters dynamics have surfaced in different waves. In the 1970s the HQs of rising multinationals were typically very large. In the 1990s the trend shifted to minimalistic HQs. Over the past few years HQs have been expanding again, but with the unfolding of a global financial crisis that trend may already have reversed and several HQs started shifting tasks to their subsidiaries (Economist 2008). The above evolution shows that companies are constantly searching for the right relationship between the centre and the periphery. An overall trend in management shows that global companies have become more horizontal as the number of hierarchical levels diminished (delayering). This section will focus on the definition of HQs and will pay attention to current trends in the organisation of the HQs of global companies.

2.1 There is no generally accepted definition of HQs

Academics and business leaders can have different opinions on what constitutes HQs. The literature has presented broad and narrow definitions of *corporate HQ*. According to Porter (1990) a corporations *home base* is where strategy is set, core product and process development takes place and the essential and proprietary skills reside. Porter focuses on the HQ, and essential corporate activities. According to Goold et al. (1994) the *parent* organisation includes only those people who work at levels above or outside the business units, whether in the corporate centre or at the divisional, group, sector or country levels. Baaij et al. (2004) restrict themselves to the analysis of the physical *corporate centre* as part of the home base or corporate parent. Whereas *central administrative offices* (CAOs) refer to corporate HQs also embracing other offices that perform clerical, administrative and managerial tasks, which are essential to the company. Although there is no well-established definition of the HQs of a global company, from the empirical literature nevertheless evolves that global HQs have three essential elements:

(1) global decision-making centre: a **top management group** that has an official location

(2) expertise centre: a series of **HQ functions**

(3) fiscal legal centre: a **legal domicile**

Legal domicile refers to the registration of the MNE in a particular sovereign nation, under which all the other legal entities that make up the MNE can be grouped. Possi-

bly one has to make a difference between the administrative company and the principal company as it is fairly common that HQs have their legal domicile in a tax paradise. In addition global HQs can also be regional decision-making centres or business HQs. The literature often makes a clear difference between corporate HQs and regional or business unit HQs. Indeed, the definition of HQ used may have an impact on the empirical results and there is empirical evidence that both HQs have different drivers when it comes to relocation (Birkinshaw, Braunerhjelm et al. 2006). However, it must also be underlined that the difference between both HQs is not always clear as they may share common HQ functions (Barner-Rasmussen, Piekkari et al. 2007).

Collis, Goold et al. (2007) examine the unique functions of corporate headquarters in diversified companies and look at the structure and staffing of more than 600 corporate HQs from 7 countries. Based on the previous literature they divide HQ functions into 4 basic roles: (1) value creation, (2) loss-prevention (control of business units), (3) obligatory functions such as external tax and financial reporting, and (4) centralised provision of service function for businesses. According to their findings corporate HQs should be designed to fit corporate strategy. This can partly explain why there is much variation in the size and structure of HQs and in the functions they execute.

2.2 HQs relocation is not just another step in the internationalisation of the company

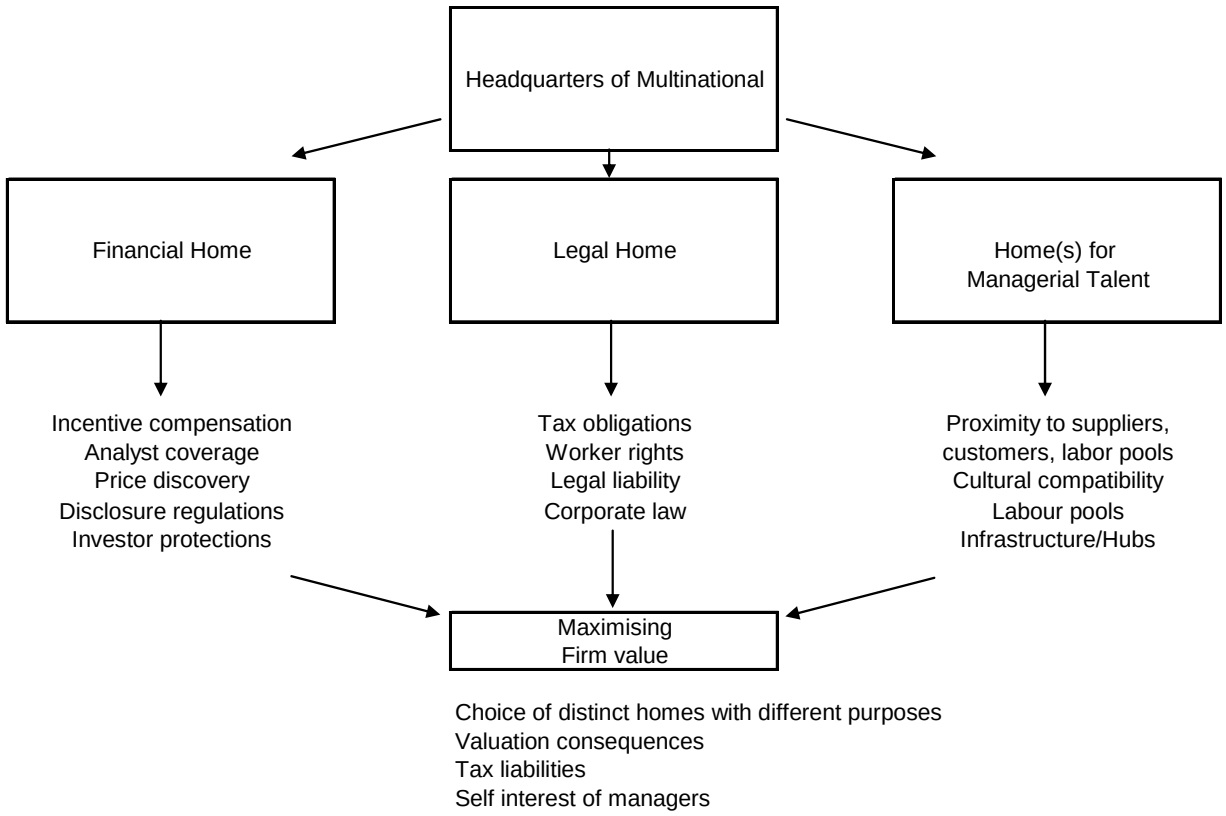
In the management literature the international relocation of HQs is treated as an advanced stage in the internationalisation process of a company (Forsgren, Holm et al. 1995). In the early stage of internationalisation a company typically transfers marketing, sales, production and R&D functions abroad. In a second stage the company's subsidiaries may become strategic centres with more than just local responsibilities. In a third stage, once a considerable share of sales and production originates from foreign markets, management functions may also be considered for transfer abroad. But according to Barner-Rasmussen et al. (2007) the relocation of HQs is a **dynamic** and more **complex** phenomenon that does not completely fit the above-described internationalisation process perspective. More specifically the above authors challenge the implicit assumptions of the previous research that (1) HQs are unitary, existing units where all management functions are located, (2) relocation is a one-off type decision and (3) there is a continuous development towards an ever-increasing degree of internationalisation.

2.3 HQs of global companies increasingly unbundle their functions

A recent contribution of Desai (2009) challenges the idea that national actors are rooted in their home countries by calling it increasingly outdated. In line with the findings of Barner-Rasmussen et al. (2007) he argues that a company's legal home,

financial home and home for managerial talent no longer need to be co-located. Companies are redefining their homes by **unbundling** their headquarters functions and **reallocating** them opportunistically across nations. He further stresses that this recent evolution in the shape of the global company also implies changes in the relationship between companies and nations. Figure 1 shows the different parts of unbundling HQs of MNEs and lists the factors that influence their location.

Figure 1 The unbundling of the headquarters functions of global companies



Source: based on Desai (2009)

Today new companies do not automatically establish a legal identity, locate their HQs and list their shares in a single country. The above changes challenge governments that are accustomed to considering corporations as captive citizens. Rules based on national identities have to be reconsidered. According to Desai (2009) governments should react to these changes by removing restrictions on ownership, by taxing corporate income based on the activities occurring within the borders, by making sure investor rights are brought in line with worldwide norms, by increased specialisation and by a greater investment in human capital.

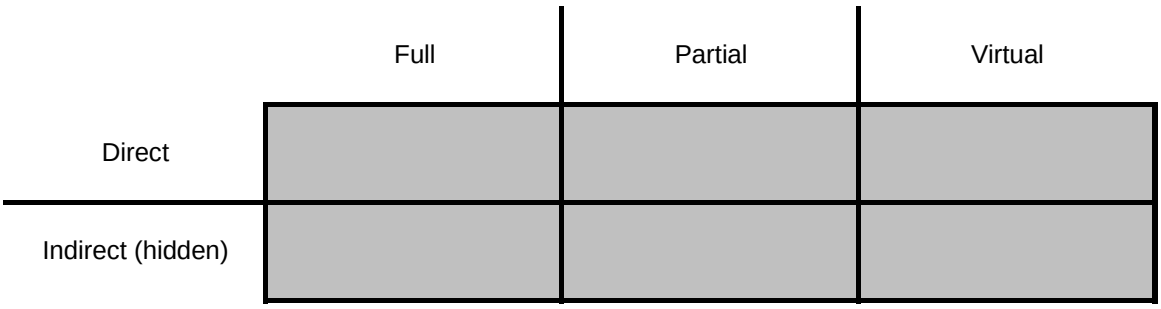
The changing shape of multinationals also leads to several challenges for researchers. It is not straightforward to determine the nationality of a multinational company as its operations are not local and because it may also have more than one home. Empirical work on the ways companies are unbundling these homes would be useful

so as to determine large sample methods for capturing these developments. The problem is that theory on tax competition and investor protection typically takes the national identity of the company as a given. In future it may be better to analyse how managers choose distinct homes with different purposes. The factors that inhibit more aggressive splintering of homes may also be worth investigating.

2.4 There are different patterns of HQ relocation

In their multiple case study of Finnish MNEs Barner-Rasmussen et al. (2007) distilled different patterns of HQ relocation. Figure 2 divides these patterns of HQ relocation into six blocks.

Figure 2 Patterns of the relocation of HQs



Source: based on Barner-Rasmussen et al. (2007)

Relocation can either be direct or indirect. Direct relocation occurs when a HQ unit relocates whereas indirect relocation is characterised by a decentralisation of HQ functions to another unit that subsequently relocates. Indirect relocation may be difficult to trace and has, therefore, also been referred to as 'hidden relocation'. Relocation can also be full or partial. Full relocation involves all the members of the top management and all the headquarters functions. The phenomena of full and partial relocation had already been described in earlier studies (Forsgren, Holm et al. 1995; Birkinshaw, Braunerhjelm et al. 2006) but Barner-Rasmussen et al. (2007) revealed that HQ relocation can also be virtual. In the case of virtual relocation top management responsibilities are handled through frequent travel and modern IT support systems.

Most discussions about HQ relocations implicitly refer to full and direct relocations. However, due to the small number of full and direct HQ relocations it seems likely that other less visible patterns of HQ relocation dominate. Although home countries of companies fear mostly direct and full HQ relocations they should monitor all patterns of relocations so as to be able to fine-tune their policies.

3 Propellers of HQ location

HQ relocation is a complex phenomenon. Several factors drive the relocations of HQs (for an overview of the empirical literature see appendix 1). On one hand, companies can relocate a share of their HQ functions because the current location becomes less attractive (push factors). On the other, other countries, regions and cities may be or become magnets in attracting HQ functions (pull factors). Although it is not always straightforward to categorise propellers separately, this section focuses on four groups of factors that can influence the relocation of headquarters. Determinants that drive relocations can relate to the company-level, industry level or country level. Factors that turn out to be important for the relocation of headquarters relate to company and industry specific characteristics, external stakeholders, spatial concentration of HQ functions and institutions. Neoclassical and behavioural theories have been criticised as they assume that that the company is an active decision-making agent in a static environment. The institutional theory starts from the assumption that economic activity is not shaped by company behaviour but by institutions and value systems. Company location is the outcome of negotiations between suppliers, government, labour, unions and other institutions about prices, wages, taxes, subsidies and other factors. Institutional theory is more suitable for large companies that have more negotiating power and are able to exert a substantial influence upon policy makers. Both taxes and labour institutions can influence the location of FDI and HQ functions (Brouwer, Mariotti et al. 2004).

3.1 Company and industry specific propellers

Early literature focused on the relocation of production and till the mid 90s services were believed not to be mobile. Indeed, contributions that looked at company relocations made no distinction between HQs and plants. This section briefly revises earlier relevant results on what drives the relocation of companies.

The analysis of a sample of business relocation announcements from the U.S revealed that *cost savings* and *business expansions* are the main reasons for relocation regardless of whether it is a plant or a headquarters (Chan, Gau et al. 1995). In the European context *restructuring* and flexible reactions to *new market conditions for new innovative products* were found to be the most important reasons for relocations (Mucchielli and Saucier 1997). Relocations can also be a response to discriminatory *trade measures (Belderbos 1997)*.

Based on Belgian data from 1990-1996 it was found that *labour intensity*, *access to global networks*, *company size* and the *rate of innovation* have a positive effect on the probability of (partial) relocation. *Uncertainty* has a negative effect on the probability of relocation. This is an important finding in the context of the current negative economic environment. The positive effect of *company size* and *profitability* on

the relocation decision is clearly distinct from its effect on the exit decision of a company. Overall this results can be explained by two streams of literature, the cost minimising literature which says that companies produce where it is less costly and the multinational investment literature underlining the importance of transferable technological advantages and operational multinational flexibility in the presence of high uncertainty (Pennings and Sleuwaegen 2000).

In a more recent contribution the international relocation of production issue is revisited using a new Belgian sample and findings show that *wages* and *market potential of host countries* are important determinants for location choice. Large companies have a higher probability to relocate to remote countries. In addition it was found that *public aid* only plays a decisive role for relocations to neighbouring countries. As such they potentially distort competition (Sleuwaegen and Pennings 2006). In line with the behavioural theory Brouwer et al. (2004) find that relocation propensities decline with the company size and maybe with the company age. Location factors that can be explained by the neoclassical theory, like market size and region, also play a role in the decision to relocate. Many recent papers have looked at the impact of market potential on the location of producers. It is found that market potential does matter for location choice but that traditional non-structural agglomeration variables retain an important role in the location decision. This suggests that downstream linkages are not the only cause of agglomeration (Head and Mayer 2004). Although earlier contributions from the U.S. found cost savings to play a significant role in relocations (Chan, Gau et al. 1995), more recent evidence shows that in the U.S. high wages can increase the probability of HQs being located in one's city (Strauss-Kahn and Vives 2009).

3.2 External stakeholders

The location of headquarters functions is increasingly affected by international mergers and acquisitions. The change of ownership is often seen as an opportunity to restructure and an effective way to reduce administrative and managerial employment (Nilsson Hakkala, Heyman et al. 2008). Therefore, the rationalisation of headquarters services leads to a relocation of management and other overhead functions to the HQs that are located abroad. Both the unbundling of HQs and the rise in mergers and acquisitions, have underlined that the home of global companies must be redefined (Desai 2009). It is important for countries to understand that shift as a prerequisite to be able to keep and attract HQ jobs. The rise in mergers and acquisitions has also been accompanied by a rise in dual listed company structures. By and large the emergence of a global shareholder and lender bases certainly reinforced the mobility of headquarters.

3.2.1 Global financial markets and shareholders

There is empirical evidence that external stakeholders prove to be important drivers for the overseas relocation of corporate HQs. Provisional results based on a small

cross section of 35 Swedish MNEs show that business unit HQs typically move overseas following their existing *internal* activities, while corporate HQs move to get closer to important *external* influencers, primary shareholders and financial markets (Birkinshaw, Braunerhjelm et al. 2006). So corporate-level and business unit-level HQ relocations are driven by different factors. The analysis distinguishes between internally and externally facing roles of the corporate HQ and this complements the traditional distinction between the administrative and entrepreneurial functions (Chandler 1991). Overall, there appears to be a need to enrich the conceptualisation of the role of HQs by incorporating the multiple external relationships that HQs build with their stakeholder groups. MNEs can strengthen their visibility and relationships with shareholders and financial institutions in different ways, from depositary receipts, through a full overseas listing, to a relocation of the corporate HQ to a global financial centre. These approaches can be viewed as a series of steps towards a greater level of commitment to the capital markets offering important rewards in terms of borrowing costs, stock liquidity and corporate governance. Monitoring changes in shareholders of Finnish companies may shed light on which companies are potential movers of headquarters tasks.

3.2.2 External company growth and the role of mergers and acquisitions

HQ relocations can be triggered by mergers and acquisitions (M&A). M&A may be categorised as a radical change of external stakeholders (see 3.2.1). External growth factors turn out to be particularly important to explain the relocation behaviour of large companies. Corporate HQs typically move after foreign share ownership has increased (Birkinshaw, Braunerhjelm et al. 2006). Strauss-Kahn & Vives (2009) analyse the determinants of the relocation of HQs in the US for the period 1996-2001 and also find that companies that are the outcome of a merger tend to relocate more (by definition). Brouwer, Mariotti et al.(2004) offered more detailed empirical evidence that companies which have been involved in a merger, an acquisition or take over are much more likely to relocate than others. They investigate the effect of internal, external and location company factors on the probability of relocating employing a 1999 cross-section of large companies from 21 countries. As institutional theory stresses companies that experience external factors like a decline or an increase in employment are more willing to relocate. However, results for the US from Klier & Testa (2002) underline that HQs (of public listed companies) do not migrate so much as they grow and decline.

Companies settled in Northern Europe have higher chances of relocation, than those located in Southern Europe (Brouwer, Mariotti et al. 2004). For Sweden Strandell (2008) found that the most common reason for HQs to be located in other countries is a consequence of an increased number of foreign controlled enterprises in Sweden due to mergers and acquisitions. Strandell (2008) summarises Swedish evidence of the international relocation of HQs between 1990 and 2004. Her analysis is motivated by the common Swedish belief that the fact that HQs increasingly relocate abroad causes strategic activities such as R&D to also move away from Sweden. However, the author lists evidence that the correlation between location of HQs and

location of R&D has diminished. It seems that factors other than the location of HQs are more important for the geographic location and expansion of R&D. For example, the increase in R&D investments abroad is often related to acquisitions or the location of a certain kind of production. Further evidence shows that the number of HQs outside Sweden has increased while the size of the HQs has decreased. The Swedish results are in line with the findings of Ali-Yrkkö & Ylä-Anttila (2002) underlining that the relocation of both Swedish and Finnish HQs were in most cases the result of a merger or an acquisition.

Baaij et al. (2004) analyse the relocations within the Fortune Global 500 corporations in the 1994-2002 period. They found that out of these 500 corporations 19 relocated their corporate centre across metropolitan areas. They categorise relocations into three groups and find that out of the 19 relocations 9 occurred between metropolises within the same nation and within the same US State, 9 between metropolises within different States of the US and a single relocation between nations. Furthermore a distinction is made between direct relocations (58%) and relocations due to mergers and acquisitions (42%). In the case of acquisitions it was found that in most cases the corporate centre of the acquirer was selected as the centre of the combined corporation. Based on previous literature and their empirical findings they present a conceptual framework for the determination of the location of a corporate centre. These determinants may explain why corporate centres are sticky within national borders compared to the international mobility of corporate businesses.

3.3 Spatial concentration of HQ functions

The new economic geography literature shows that HQs are generally concentrated in a limited number of large metropolitan areas, while plants are generally more dispersed across a bigger demographic and geographical range. Unbundling of headquarters functions within global companies shows up when new regional HQs are created, when traditional HQs activities are relocated to the regional HQs best suited for the purpose and when companies are becoming de-centred. If companies do not use the room for improvement of efficiency by unbundling their HQs, they may become a target for the very same reason.

3.3.1 Agglomeration economies

The new economic geography literature analyses agglomeration forces (for overview of relevant empirical literature see table A.2 in appendix 1). Baldwin (2006) defined agglomeration as *the tendency of a spatial cluster of economic activity to generate forces that foster spatial clustering*. Most empirical papers of interest look at domestic or foreign companies operating in the U.S. having the choice to locate their HQs in different metropolitan areas. Few papers use European data to analyse the effect of the characteristics of HQs locations.

Agglomeration forces are important in explaining why knowledge intensive activities, such as R&D, finance or headquarters functions increasingly cluster in metropolitan areas. The agglomeration intensity in cities is typically driven by forces that have a quite limited geographical impact, basically commuting distances and a need for face-to-face interaction. Distance agglomeration forces, that are most relevant for globalisation, stem from nearness to customers and to suppliers (forward and backward linkages). Indeed, companies that relocate over a long distance are usually motivated by other factors than companies that relocate over shorter distances. Agglomeration forces tend to be strongest for intermediate levels of trade freeness. Market density has a positive effect on the agglomeration forces and agglomeration forces do fuel market size.

The market size itself can influence a nation's competitive advantage. Competition is more localised when trade costs are high, which is why companies are more footloose when trade costs are low as more companies have to relocate to equilibrate profitability. Migration of companies also leads to the concentration of innovation. As agglomerations are increasingly thriving, economic growth and innovation, regional and international gaps in knowledge potential, income and growth are widening (Baldwin 2006).

Finally it is important to underline that headquarters relocations are unpredictable because coordination costs have a convex nature and because of agglomeration economies. The message from the new economic geography literature is that marginal changes can lead to very large shifts (Puga & Venables, 1996).

3.3.2 Separating the HQs from production

The spatial organisation of companies shows that they can decide to separate their production functions from the administrative functions (Duranton and Puga 2002). Relocating HQs away from production plants involves higher coordination and communication costs but can enhance company efficiency due to the access to crucial information offered by the existence of more competitive and diverse business services and other HQs. As individual company organisations became increasingly characterised by the separation of the management and production facilities, cities evolved from sector to functional specialisation. Evidence from the U.S. shows that cities either specialised in management and services or in production (Duranton and Puga 2005). The rise of multi-location companies implied a growing importance of separate establishments acting as HQs. Business centres are big and few and manufacturing centres are more numerous and smaller in size. This can be explained by there being greater benefits from proximity for HQs and business services than for manufacturing.

The new and traditional economic geography literature has analysed the economic forces behind the agglomeration of HQs. Companies can decide to relocate their HQs into larger metropolitan areas, away from their production facilities. Although this separation induces higher intra-company communication costs it can indeed be beneficial to the company due to the existence of different scale externalities. Recent pa-

pers that pay attention to the relationship between HQs and the rest of their company are Strauss-Kahn & Vives (2009), Davis & Henderson (2008), and Henderson & Ono (2008). Their work focused on the location of HQs within the different counties or metropolitan areas in the U.S. The results obtained underline that local HQs and business services are important determinants of headquarters location patterns.

Aarland et al. (2007) found that bigger companies, companies with manufacturing, retail and wholesale businesses, companies that are more industrially diversified and more geographically dispersed, and companies with their main production facilities in smaller cities, are more likely to separate production activities and administrative activities. However, even if a separation occurs, the Central Administrative Office (CAO) is mostly located nearby. The authors also found evidence for high opening and closing rates of CAOs, possibly due to low fixed set-up costs, and for the fact that the spatial organisation of a company and its components requires some experimentation period. HQs also have a strong propensity to outsource business services. For US HQs expenditure on legal, accounting and advertising services alone equals more than two thirds of their wage bill.

Ono (2003) offers empirical evidence for the impact of HQs on the efficiency of the company. Results suggest that companies choose their HQs to be where they can better serve the rest of the company by procuring services inexpensively. Plants that belong to a company with a stand-alone headquarters outsource less on their own than plants that belong to a company without stand-alone HQs. The propensity of companies to rely on their HQs to buy business services increases with the size of the market that surrounds them.

Henderson & Ono (2008) contribute to the understanding of the location choice of HQs by empirically analysing the trade-off between its proximity to production facilities and a better access to information and intermediate services suppliers. For a sample of manufacturing companies that first established a single stand-alone HQ between 1992 and 1997, they found that not only the greater variety of services and the local scale of other companies' headquarters activities, but also geographical proximity to their production facilities matters in choosing the location of HQs. Due to increased communication and coordination costs it seems to be very costly to send the first stand-alone HQ away from countries where companies have production facilities. Once companies do send their HQs away from their base production countries they mainly prefer to choose a location that enhances their outsourcing possibilities although also a shorter distance to the geographical centre of a company's production activities plays a role.

Strauss-Kahn & Vives (2009) analyse the determinants of the relocation of HQs in the US for the period 1996-2001 and find that HQs at locations with relatively few other HQs and business service providers moved away to locations with a greater presence of both. Based on a company level database of about 30,000 US HQs they study the company- and location specific characteristics of HQs that relocated over that period. Their model for location choice uses a nested-logit estimation with the decision where to locate forming the lower and medium nest level, and the decision whether to relocate forming the upper nest level. Their results show that the rate of

relocation is significant (5%) and that larger HQs (in terms of sales), foreign companies, global companies (in terms of the number of HQ) and companies that are the outcome of a merger tend to relocate more, whereas older HQs are less likely to move. Location choice tends towards metropolitan areas with good airport facilities, low corporate taxes, low average wages, high levels of business services, same industry specialisation, and agglomeration of HQs in the same sector of activity. These results imply that a metropolitan area that wants to have an impact, to keep and attract HQs, must improve airport facilities, lower taxes, promote the location of business services and other HQs. It was also found to be helpful to increase recreational amenities and the education of the labour force (which tends to be correlated with the level of business services). Strauss-Kahn & Vives stress that their results can offer rough guidelines for policymakers but they conclude that for precise policy prescriptions, such as the direct subsidies and incentives, one would need a more complete estimation of externalities due to agglomeration.

By the time the above conclusion was written a more complete estimation of agglomeration externalities was already on its way and published by Davis and Henderson (2008). Their two main findings are that (1) the agglomeration forces linking business services and HQs are very large compared to those estimated for manufacturing and that (2) HQ location decisions are mostly driven by the existence of large and diverse local supply of business services rather than by the presence of a large number of HQs. The authors distinguish and quantify two types of scale effects that can lead to the agglomeration of HQs: industry scale externalities and diversity scale externalities. Their results show that a 10% increase in the number of local intermediate business service providers increases the expected headquarters births in a country by 3.6%. For the service sector they calculated that a 10% increase of the HQs' own industry scale increases the efficiency with 1.7 %, what is clearly higher than the (maximum of) 1.2% previously obtained for the manufacturing sector. The marginal own industry scale benefits were found to diminish as local scale rises. They conclude that both HQ localisation economies and business service input diversity matter for the HQ agglomeration but that the very large HQ count in a city like New York is explained by the heavy concentration of business and financial services there.

3.3.3 The rise of the second-tier cities and the decline of the biggest metropolitan areas

HQs have a clear preference for large urban areas. But U.S. evidence shows that the distribution of HQs shifted away from the biggest metropolitan areas to the second tier cities. In addition it was found that company HQs do not migrate so much as they grow and decline. There is a high degree of turnover and migration of HQs but an even higher degree of headquarters growth that has come as small local companies have grown large. Implications for policy are that assisting growth of local indigenous companies of smaller size may be more beneficial than policies aimed at recruitment of footloose companies (Klier and Testa 2002).

3.3.4 The role of communication costs and the importance of being an airport hub

Communication costs play an important role in the overall costs structure in a large global corporation. Communication costs that differ with location must play an important role in sitting decisions. This is particularly true when analysing location choices of HQs since their output is information. In this context HQs will be located where they can maximise their contribution to the profits of the company.

In an empirical study of the location of European HQs, transport infrastructure and the costs of tacit information exchanges between cities were found to be important for the location of HQs of large companies (Bel and Fageda 2008). In the analysis large European companies can locate their HQs in 87 urban areas all over Europe. Analysing the determinants of headquarters location, they focus on the identification of the causal relationship between the location of the HQs of (large) companies and the supply of intercontinental flights between European urban areas. They find that the availability of direct non-stop flights has a large influence on HQs location. Indeed, a 10% increase in the supply of intercontinental flights involves roughly a 4% increase of the number of HQs of large companies located in the corresponding urban area.

Strauss-Kahn & Vives (2009) found U.S. evidence that being an airport hub increases the probability of HQs being located in the city. Other determinants found to have an important positive effect on the location of HQs were the proximity of large markets and specialised providers, the high salaries and the fact that the main city of the urban area is the political capital in the home country.

The data listed by Bel & Fageda (2008) show that in 2003 1% of the HQs of the 1000 biggest European companies are located in Finland, compared to 2.5% in Stockholm, 2.1% in Copenhagen and 1% in Oslo. This ranks the Helsinki area 25th out of 87 European urban areas. Very similar shares are obtained when comparing industry employment in the Helsinki area with the total employment in all the major European urban area's (1%) or when undertaking the same exercise for the market services employment (0.9%).

Given the communication costs of the location choices, companies will also avoid other costs (congestion costs, tax payments, labour costs, number of HQs). Moving people is still costly as travel time's opportunity cost is high and the effects of advances in I.T. on the need for face-to-face interactions are ambiguous. In summary, the information that makes the geographical difference is of the type that can be transmitted only by face-to face contact.

3.4 Institutional factors

Countries increasingly compete to become legal or financial homes for corporations. An important tool for countries to attract HQs is an advantageous tax system.

Whereas high levels of corporate or income taxes can make HQs leave. Countries that tax the worldwide income of global companies lose HQs via corporate inversions[2]. A higher mobility of HQs, hostile mergers and acquisitions, and a low number of new big companies put the competitive position of countries under increasing pressure. Indeed, HQs of companies that partly or fully shift away from a country have a negative effect on its tax income and on its employment of high paid jobs. (Delbecque, Méjean et al. 2008).

3.4.1 International tax incentives

Taxation is often mentioned as an important determinant for the location of capital, companies and profit[3]. High taxes can make companies leave whereas low taxes may attract companies. The mean value of the tax rate elasticity in the literature is around -3.3, meaning that a 1% point reduction in host-country tax rate raises FDI in that country by 3.3% (Mooij and Ederveen 2001). But evidence on the importance of taxes for relocation substantially varies as studies covering the issue use different tax measures and different data. However, an overall conclusion may be that effective average tax rates tend to play an important role in discrete location choices, and hence in the overall location of capital (Devereux and Maffini 2006).

Important components of a tax system for the relocation of HQs are not only the corporate taxes but also the income taxes on individuals. Another distinction to make is between exemption countries and indirect tax credit countries. Exemption countries, like Finland, Sweden and Germany, exempt dividend repatriations from taxation. This means that Finnish MNEs only pay taxes in Finland on the profits generated from their Finnish activities whereas their foreign activities are only taxed abroad. Indirect tax credit countries, like the US and the UK, tax their MNEs on their global activities. An additional, but less visible, factor of importance for the relocation of companies is the use of bilateral package agreements between governments and MNEs. These packages often include agreements on reduced taxes, subsidies and employment guarantees. Finally it must be stressed that for MNEs both the tax system of their home country and that of their host country(s) are important. The following paragraphs summarise recent findings of the effect of tax systems on relocations.

Individual taxation turns out to be an important factor when location of Swedish HQs is to be decided, at both the corporate and the business unit level. There is evidence that it increases in the degree of the companies' internationalisation (Braunerhjelm 2004).

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[2] U.S corporations pay taxes on their worldwide income. A way to limit the U.S. taxation to the activities in the U.S. is corporate inversion. In this case a U.S. corporation creates a parent company in a tax-haven country, a country that imposes little or no taxes on income received by international corporations headquartered in that country. The U.S. corporation then engages in a merger or re-organisation, the result of which makes the U.S corporation a subsidiary of the foreign parent. Thus, only U.S. source income received by the newly created foreign parent is subject to U.S. federal taxation.

[3] For recent discussions on taxes and globalisation see Egger (2009).

Based on information from the U.S. Desai and Hines (2002) analyse the causes and consequences of corporate inversions or corporate expatriations. This form of legal relocation of the parent company recently became more common in the United States. American companies that seek to avoid U.S. taxes on their foreign incomes can do so by becoming foreign corporations, typically by inverting the corporate structure, so that the foreign subsidiary becomes the parent company and the U.S. parent company becomes the subsidiary. They found that large companies, those with extensive foreign assets, those with considerable debt and companies facing low tax rates in the foreign countries in which they operate are the most likely to expatriate. This suggests that U.S. taxation of foreign income, including the interest expense allocation rules, significantly affects inversions.

According to Huizinga and Voget (2009) international double taxation greatly affects the selection of the parent after an M&A. For countries with a worldwide tax system the rate of double taxation of foreign-source income generally increases with the national corporate tax rate. Hence, a higher corporate tax rate discourages merging companies from locating their parent in the high tax country. Simulations show that the proportion of mergers locating their parent in a given country declines by 0.36 percentage points if that country increases the corporate tax rate by 1 %. This result implies that countries can compete for the establishment of HQs of MNEs by reducing or eliminating the international double taxation on resident MNEs.

Voget (2008) offers empirical evidence on the role of tax in relocation decisions and differentiates between exemption countries (like Finland, Sweden and Germany who exempt dividend repatriation from taxation) and indirect tax credit countries (like US, UK, India, Estonia who tax their multinational companies on their worldwide income). He compares 213 multinationals that relocated their HQs over the last decade and compares them to a control group of 3,395 multinationals that have not done so. For the indirect tax credit countries he finds that the additional tax due in the home country has a significant effect on the relocation decision. The results suggest that a rise of 10 percentage points in the additional tax would lead to an additional 2% of multinationals relocating to an exemption country. For the group of multinationals originally based in an exemption country, the tax avoidance motive does not seem to hold when comparing the immobile and the relocating HQs.

The impact of taxation on FDI has been extensively studied. Most studies look at the effect of the host country taxation on the location of FDI but Mooij and Ederveen (2001) were the first to remark that controlling for the home country tax rate does affect the tax rate elasticity. Barrios et al. (2008) analyse multinational company location decisions while jointly taking into account the taxation of the host country and the parent country. They examine the independent impact at three levels of taxation (host country corporate taxation, host country non-resident dividend withholding taxation and parent-country corporate income taxation) on the location decisions of European multinationals in 33 European countries over the period 1999-2003. They find host country as well as parent country taxation to have a negative impact on the location of new foreign subsidiaries, even though parent country taxation can generally be deferred until income is repatriated. Parent companies tend to be located in countries with a relative low taxation of foreign-source income. In addition their con-

tribution shows the number of foreign subsidiaries and the number of foreign countries that multinationals consider having an impact on the estimated tax sensitivities of location choices. Overall, their results show that parent-country taxation is instrumental in shaping the structure of a multinational enterprise.

3.4.2 Labour market institutions

Empirical evidence shows that labour market institutions matter for FDI decisions. As such this finding does not relate directly on the relocation of HQs but may illustrate that institutional labour market factors may also play a role in choosing a new destination for HQ functions. Delbecque et al. (2008) analysed the empirical effect of labour market institutions on French companies expansion strategies abroad over the 1992-2002 period. They focus on French companies from the manufacturing sectors and their creation of foreign affiliates. Following Head and Mayer (2004) they estimate the determinants of French companies FDI decisions using a discrete choice model on all possible foreign locations. They explain the probability of a French company investing in a given country by a set of country and sector specific variables, including detailed information on labour market institutions using measures of employment protection, trade unions' bargaining power, the centralisation degree of wage bargaining, the minimum wage legislation and the generosity of the unemployment benefits. Two main findings emerge from their analysis. (1) The labour market does matter for FDI decisions of French companies. Labour market rigidity puts a brake on the host country's attractiveness. (2) In addition French companies were found to be more sensitive to the design of labour market institutions if the FDI decision takes place in a set of industrialised OECD countries. Their results advocate a social competition strategy that attracts foreign investors that decided to locate in OECD countries, instead of making the mistake of engaging in labour market reforms in order to convince companies to invest in France rather than in the emerging markets.

4 The effect of the relocation of HQs

4.1 The effect on the company and its performance

A separate stance of corporate relocation literature focuses on the effects of HQ relocations on the company performance (for overview see table A.3 in appendix 1). This stance of literature either examines the short-term stock market reactions of announced relocations or the mid-term effects on the operative performance of the company. All these papers belong to a broader group of research that looks at the company level effect of strategic investment decisions, such as internal corporate restructuring, plant closings and top management changes. Results show that the impact of HQ relocation has some short term positive-stock market wealth effect if the relocation is motivated by cost savings and consolidation of operations. Although the theory would predict that also in the longer run HQ relocation is a good thing for a company there is no clear empirical evidence in favour of a better operative company performance after relocating. The following section summarises the main company level effects from corporate headquarters locations within the US.

Alli, Ramírez et al. (1991) found that the announcements of corporate headquarters relocations of publicly listed companies fuel their stock prices significantly. Abnormal returns in stock prices are positively associated with the availability of labour and negatively related to the cost of living in the new location and the change in employment levels. A comparative analysis shows that relocating companies tend to be larger and less profitable. They also experience significant reductions in taxes during the year following the move. Logit regressions showed that larger companies with a higher rental expenses/sales ratio are more likely to relocate. Companies with a greater employment/asset ratio are more likely to locate to fortune ranked cities. In addition companies relocating to fortune ranked cities are characterised by a high level of insider ownership relative to companies moving to non-ranked cities.

Ghosh, Rodriguez et al.(1995) look at the investor's perceptions of the relative economies and dis-economies of spatial clustering. They contribute to the literature by showing that stock market reactions of corporate HQ relocations depend on the motives of the relocations. The stock market reactions are significantly positive when relocation decisions are attributed to cost savings. This is consistent with the notion that technological advances have made the benefits associated with agglomeration economies available to companies at less centralised locations. But market reactions are significantly negative when they involve managerial self-interest and desire for luxurious offices.

Based on a rather small sample of 37 companies that relocated within the US, Cox and Schultz (2007) find that stockholders react positively if the HQ relocation is based on cost/consolidation or on managerial interest rationale and they respond

negatively if space is the reason for relocating. However, none of their results are statistically significant.

Gregory, Lombard et al. (2005) not only control for motives for relocation, but also for the distance of relocation. A crucial difference with previous research is their focus on the mid- term effects of HQ relocation on the operating performance of the company. Overall, they find little evidence of improved operating performance after HQ relocation (only companies that relocate to reduce capacity tend to perform worse). More specifically, neither the motivation nor the distance has a significant impact on the mid-term performance of the company. These results are surprising as earlier studies found that the effect of relocation on company performance could vary over the motivation for the relocation (Ghosh, Rodriguez et al. 1995) and that relocations have different distance drivers (Burns 1977; O'Mara 1999). Collis, Goold et al. (2007) look at the determinants of the size and the structure of corporate HQs and find no support for the view that lean and mean headquarters lead to a better performance.

Pirinsky and Wang (2006) argue that price formation in equity markets has a significant geographic component linked to the trading behaviour of local residents. They found that stocks of companies that relocate their HQs experience a decrease in co-movement with stocks from the old location and an increase in co-movement with the stocks from the new location. The co-movement is not explained by economic fundamentals and is higher for companies with more individual investors and in regions with less financially sophisticated residents. But according to Moon and Le Sage (2008) the OLS results of Pirinsky and Wang suffer from endogeneity problems leading to biased and inconsistent estimates.

4.2 The aggregate effect

Assessing the aggregate effects of HQ mobility asks for including both the effects of complete and direct relocation of HQs and the effects resulting from other kinds of HQ mobility, such as the international outsourcing of HQ functions. The new international trade literature tells that decreasing trade costs lead to the spatial separation of tasks. To predict which headquarters tasks will be first offshored it is crucial to know their productivity edge and the comparative advantage. If falling coordination costs trigger the offshoring of HQ tasks the aggregate effect typically consists of three main components. The first component is the *job effect* leading to a decrease in employment and a lower wage for the offshored headquarters task. The second is the *terms of trade effect* telling that the price of the headquarters service goes down and the real wage for that task goes down. The final component is the *productivity effect* as the average productivity of the remaining tasks goes up and wages follow (Grossman and Rossi-Hansberg 2008). An additional negative wage effect may exist if offshoring involves task-specific technology transfer, since that would lead to an erosion of the technological edge in the export sector (Baldwin 2006).

The relocation of headquarters functions are rather unpredictable because coordination costs have a convex nature and because of agglomeration economies (Baldwin 2006). The message from the new economic geography literature is that marginal changes can lead to very large shifts (Puga and Venables 1996). So it is extremely difficult to predict how many HQs will move away from a country. HQ are typically concentrated in a limited number of urban areas and in the presence of bandwagon effects a relocation of one HQ may trigger a relocation of several HQs (Braunerhjelm 2004).

Nevertheless it is possible to estimate an upper limit for what will be the aggregate effects if the HQs of all MNEs would move away from a country. This can be done by calculating the employment in all the HQs of all MNEs. Next to the direct employment effects it is also necessary to consider the linkage effects with other functions in the company and with interlinked sectors. Within a company it is possible that the relocation of HQ-functions trigger other functions to follow, such as production or R&D functions. It can be expected that the relocation of HQs will trigger a move of the procurement of locally provided services[4], given that many of those require local presence or country-specific knowledge. A worst case calculation of the aggregate employment effects of HQ relocations for Sweden shows that in the 1999-2001 period this involved an annual loss of roughly 8,000 HQ jobs, of which 800 belong to top management teams (Braunerhjelm 2004). In addition to employment effects HQ relocations may also reduce the knowledge creating interaction between HQs and the service sector. HQs also work as management training institutions and as such HQ relocations will affect the distribution of young and talented individuals.

The frequency and effects of relocations can be expected to vary over the business cycle. In upturns relocations may be more often driven by strategy and marketing whereas during downturns cost savings may be one of the main drivers of relocations. During downturns uncertainty may play an important role in postponing relocations (Pennings and Sleuwaegen 2000).

[4] Services such as investment banking, accounting, legal services, marketing services, R&D services, manufacturing consultancy, education and IT.

5 A small detour on the EU context

The evidence on HQ relocations within the EU is substantially different from what can be observed in the US. In the US relocations of HQs across state borders are fairly common whereas in Europe relocations between member countries are rather limited. Corporate centres within the EU are said to be sticky. This comes as no surprise, because legal barriers against cross-border relocation of corporate centres are still very high. At some point it was said that those legal barriers would be lowered as the European Commission intended to present a proposal for a "Fourteenth Company Law Directive on Transfer of the Registered Office" (Baaij, Van Den Bosch et al. 2004). The new directive would enable the relocation of corporate centres across Europe and as such it was predicted that corporate centres would gradually become less sticky.

Business leaders supported the idea that the efficiency and competitive position of European companies could be improved by providing them with the possibility of transferring their registered office more easily. In the absence of EU legislation directing the cross-border transfer of a company seat (their centre of activities and/or their registered office), the relocations of corporate centres were seen to be impossible or extremely complex. Indeed, even if a transfer were possible by applying both national laws, conflicts would frequently arise between those laws (Ringe 2007). But despite the demand for new legislation and high expectations, the EU recently decided that no special legal framework that would encourage the cross-border transfer of a company's registered office is needed (European Commission 2007) as Directive 2005/56/EC on cross-border mergers which entered into force on December 16, 2007 already has the right legal framework (European Commission 2005). This decision is in line with the empirical evidence that a substantial share of the HQ relocations in EU countries are the outcome of a cross-border acquisition or merger (Ali-Yrkkö and Ylä-Anttila 2002; Strandell 2008).

EU countries, just like US States, compete with each other when it comes to attracting HQs and HQ functions of MNEs. Indeed, HQs have become more sensitive to different conditions across countries (Braunerhjelm 2004). This competition is often said to create a race to the bottom although most countries prefer to call it "keeping up with the average". High taxes and a lack of skills can function as push factors. As tax levels converge within a more integrated European market it is possible that more specially designed incentives, less transparent than corporate tax levels, will be implemented more frequently in the future (for example the notional interest deduction in Belgium or the tax reduction schemes for R&D personnel in Holland). The extent to which incentives are used to attract HQs is often hidden. Countries that are known for their successful policy in attracting business unit HQs or corporate HQs are Switzerland (Arthur Little 2003), the Netherlands (Boston Consulting Group 2008), Austria (Sieber 2008), Sweden (Strandell 2008), Belgium and the UK (Ernst & Young 2005).

Overall, the implementation of the internal market within Europe – the harmonisation of company law, the labour law, the company tax legislation and other relevant legislation - influences the location of HQs and is one of the important determinants of HQ relocations within the EU.

6 Discussion and concluding remarks

Empirical papers on the relocation of headquarters (HQs) are relatively scarce and mainly focus on large global companies. Evidence is rather scattered as it has been offered by different types of literature, each of those covering certain aspects of HQ relocations. Business literature looks at the strategy and organisation of MNEs and their HQs. Economic geography literature analyses the location and relocation of companies and their HQs. International trade literature looks at headquarters functions by relating them to foreign direct investments, trade and international outsourcing. The overall reason why empirical evidence is limited is the lack of data. Most of the papers focus on the U.S. Empirical studies mainly use cross-sectional data or time series of the biggest listed companies. Despite these drawbacks, recent research has brought several interesting facts to the surface.

A fact emanating from the empirical research is that the relocation of HQs is rare. Especially the cross-border mobility of HQs is low. Figures from the U.S. illustrate that during the 90s only 5% to 8% of large publicly traded companies were involved in relocating their HQs within the country (Klier and Testa 2002). It is striking that the relocation is more common within the U.S than within the EU. The latter can be partly explained by the existence of stronger legal, cultural and linguistic barriers between the member countries of the EU. But recent evidence shows that HQ relocations occur more often than before. It is expected that relocations of HQs will also gain in importance for the EU although the current economic uncertainty may also dampen the relocations of HQs. It is therefore worth starting monitoring this phenomenon in more detail.

Several patterns of relocation are possible as relocation of HQs can either be full or partial (applying to only certain HQ functions), direct or indirect (functions first moving to business units and than abroad). In addition relocation is a dynamic phenomenon and there is evidence that certain relocation decisions are rescinded after a certain period. To stress this flexibility it seems appropriate to pay attention to all forms of HQ mobility and not just to the complete relocation of HQs. It is also important to differentiate between corporate HQs and business unit HQs as their drivers and strategy may differ. But the difference between both is not always clear. All these possible patterns of relocation illustrate that HQ mobility is very complex.

HQ mobility can be driven by different factors. Important drivers are situated at the level of (1) external stakeholders, (2) agglomerations and (3) the institutional context.

(1) External stakeholders - global financial markets and shareholders - turn out to be important drivers for the overseas relocation of corporate HQs. Empirical evidence

shows that external company growth plays a crucial role in explaining a significant share of HQ relocations. Indeed, an important group of drivers for relocations are cross-border mergers and acquisitions, but also companies that grow internally have a higher probability of relocating. Evidence from the U.S. suggests that assisting growth of local indigenous companies of smaller size may be more beneficial than policies aimed at the recruitment of footloose companies as the degree of headquarters turnover growth that has come from small local companies becoming large was found to be higher than that of HQ migration. The overseas relocation of HQs was found to not only covariate with mergers and acquisitions, but also with increased foreign ownership, increased international activity and an increased share of customers abroad. As companies grow and internationalise further they may have to adopt a global outlook.

(2) A second group of forces that play a crucial role in attracting and keeping HQs are agglomeration forces. Due to the existence of different scale externalities it may be beneficial to companies to separate the HQs from the production plants and to relocate them into larger metropolitan areas. Evidence from the U.S. shows that cities either specialised in management and services or in production (Duranton and Puga 2005). Results underline that local HQs but business services, in particular, are important determinants of HQ location patterns. HQs locate where outsourcing possibilities are enhanced or in other words where they can best serve the company by procuring services inexpensively. But also the geographical proximity to their production facilities matters. Business centres are big and few and manufacturing centres are more numerous and smaller in size. This can be explained by there being greater benefits from proximity for HQs and business services than for manufacturing. However, there is also evidence that the location ties between business services industry and corporate HQs loosened as HQs shifted away from very large metropolitan areas. Lower communication costs and air travel costs enabled HQs in second-tier cities to outsource to first-tier cities. Transport infrastructure and costs of tacit information exchanges between cities were found to be important for the location of HQs of large companies. Evidence from Europe shows that a 10% increase in the supply of intercontinental flights involves a 4% increase of the HQs of large companies located in the corresponding area (Bel and Fageda 2008).

(3) Other drivers of headquarters mobility, such as the tax system and the labour market institutions, underline the importance of the institutional context. Effective average tax rates tend to play an important role in discrete location choices. A higher corporate tax rate discourages merging companies from locating their parent in the high tax country. For indirect tax credit countries an additional tax due in the home country has a significant effect on the relocation decision. This seems not to hold for exemption countries. Parent country taxation is instrumental in shaping the structure of a MNE. Both host country and parent country taxation have a negative impact on the location of new foreign subsidiaries, even though parent country taxation can generally be deferred until income is repatriated. Parent companies tend to be located in countries with a relative low taxation of foreign-source income. The number of foreign subsidiaries of the MNE and the number of foreign countries the MNE considers also affect the tax sensitivities of location choices.

Empirical evidence from France shows that labour market rigidity makes the host country less attractive, and companies tend to be even more sensitive to the design of labour market institutions if the location decision of a subsidiary takes place in a set of OECD countries. This implies that a national reform of the labour markets should mainly focus on convincing investors that plan to locate in OECD countries.

Looking at the company-level effects of HQ relocations delivers evidence for a short-term positive-stock market wealth effect if the relocation is motivated by cost savings and consolidation of operations. In the longer run, though, there is no clear empirical evidence in favour of a better operative company performance after relocating. However, HQ relocations can considerably affect the real economy. Although the aggregate effects of HQ relocations are difficult to measure simple calculations for Sweden show that during the 1999-2001 period HQ relocations involved annually 8,000 lost jobs (Braunerhjelm 2004).

To conclude, the main message for policy makers is that HQs are more difficult to capture as their mobility is increasing. In the first place the aim should be to keep and develop HQs and to attract new ones. The Nokia example in our introduction illustrates that the concept “home of global companies” keeps on changing: one could state that Nokia evolved from being “a building on Finnish land” to being “a ship having its anchor in Finnish waters”. The task of the country is to take care of its port and to encourage the captain to remain at anchor. Based on the recent findings from the empirical literature Finnish policymakers should promote two axes of action:

(1) Pay more attention to HQ relocations and relocation of HQ functions. Collecting the right survey data would enable us to monitor the performance of the country as a home for headquarters functions and would allow for a pro-active policy stance. It is important to map how many HQs relocated and ultimately how many HQs can be expected to relocate. More precisely one should focus on the cross-border mobility HQ functions as the relocation of HQs can follow many patterns. Indeed, for Finnish policymakers it is relevant to know which domestic or foreign owned companies in Finland carry out international headquarters functions. Ideally one should also monitor data on M&A, foreign ownership, increased international activity and increased share of customers abroad. Future research should analyse different kinds of relocation and focus on the relocations of HQs and the business cycle. In addition relocation of HQ functions can be analysed as a form of international outsourcing.

(2) Pay more attention to the competitive position of Finland in attracting HQs. It is therefore important to follow up strengths and weaknesses. Finland has the advantage that it is optimally connected. The Finnair hub plays a strong role in connecting Finnish cities to other main cities in the world. In addition Finland has a well educated workforce. The weaknesses of Finland when it comes to attracting HQs, is that it is situated on the periphery of Europe and has a difficult language and a harsh climate. This does not fuel agglomeration effects. Findings from the literature show that small countries with an open economy. in particular, are vulnerable to relocation and that companies settled in Northern Europe have higher chances of relocation compared to companies from Southern Europe. A final drawback for Finland is its high income tax.

7 References

Aarland, K., J. Davis, et al. (2007). "Spatial Organization of Firms: The Decision to Split Production and Administration." *Rand Journal of Economics* 38(2): 481-495.

Ali-Yrkkö, J. and P. Ylä-Anttila (2002). "Location of Headquarters, Internationalisation of Business and Taxation (In Finnish)." *ETLA Discussion Paper Series* 831.

Alli, K. L., G. G. Ramiréz, et al. (1991). "Corporate Headquarters Relocation: Evidence from the Capital Markets." *Real Estate Economics* 19(4): 583-600.

Arthur Little (2003). *Headquarters are on the move*. Research report.

Baaij, M., F. Van Den Bosch, et al. (2004). "The International Relocation of Corporate Centres: Are Corporate Centres Sticky?". *European Management Journal* 22(2): 141-149.

Baldwin, R. (2006). *Globalisation: the great unbundling(s)*. Prime Minister's Office, Economic Council of Finland.

Barner-Rasmussen, W., R. Piekkari, et al. (2007). "Mobility of headquarters in multinational corporations." *European J. International Management* 1(3): 260-274.

Barrios, S., H. Huizinga, et al. (2008). "International Taxation and multinational firm location decisions." *CEPR Discussion Papers* 7047: 1-45.

Bel, G. and X. Fageda (2008). "Getting there fast: globalization, intercontinental flights and location of headquarters." *Journal of Economic Geography* 8(4): 471-495.

Belderbos, R. (1997). "Antidumping and Tariff Jumping: Japanese Firms' DFI in the European Union and the United States." *Weltwirtschaftliches Archiv* 133: 419-457.

Birkinshaw, J., P. Braunerhjelm, et al. (2006). "Why do some multinational corporations relocate their headquarters overseas?" *Strategic Management Journal* 27: 681-700.

Boston Consulting Group (2008). *Hoofdkantoren een hoofdzaak – Tijd voor industriepolitiek nieuwe stijl*.

Braunerhjelm, P. (2004). “Heading for Headquarters? Why and how the location of headquarters matter among the EU countries”, in Europe. P. Ghauri and L. Oxelheim (eds.), *European Union and The Race for Foreign Direct Investment*. Amsterdam/Boston, Elsevier.

Brouwer, A. E., I. Mariotti, et al. (2004). "The firm relocation decision: an empirical investigation." *The Annals of Regional Science* 38(335-347.).

Burns, L. S. (1977). "The location of headquarters of industrial companies: A comment." *Urban Studies* 14: 211-214.

Chan, S. H., G. W. Gau, et al. (1995). "Stock Market Reaction to Capital Investment Decisions: Evindece from Business Relocations." *Journal of Financial and Quantitative Analysis* 30: 81-100.

Chandler, A.D. (1991). “The Functions of the HQ Unit in the Multibusiness Firm.” *Strategic Management Journal* 12: 31-50.

Collis, D., M. Goold, et al. (2007). "The Size, structure, and performance of corporate headquarters." *Strategic Management Journal* 28: 383-405.

Cox, R. and J. Schultz (2007). "The initial US stock market effect on firms that announce corporate headquarters relocation." *International Journal of Commerce and Management* 17(3): 255-263.

Davis, C. J. and J. V. Henderson (2008). "The agglomeration of Headquarters." *Regional Science and Urban Economics* 38(5): 445-460.

Delbecque, V., I. Méjean, et al. (2008). "Social Competition and Firms’ Location Choices." *Centre D’études prospectives et d’informations internationales (CEPII) Working Paper* 12.

Desai, M. and J. Hines (2002). "Expectations and expatriations: Tracing the causes and consequences of corporate inversions." *National Tax Journal* 55(3): 409-440.

Desai, M. A. (2009). "The Decentering of the Global Firm." The World Economy 32(9):1271-1290.

Devereux, M. P. and G. Maffini (2006). "The Impact of Taxation on the Location of Capital, Firms and Profit." *Oxford University Centre for Business Taxation Working Paper* 07(02).

Duranton, G. and D. Puga (2002). "From sectoral to urban specialization." *NBER Working Papers* 9112.

Duranton, G. and D. Puga (2005). "From sectoral to functional urban specialisation." *Journal of Urban Economics* 57: 343-370.

Economist (2008). Centres of attention. *Economist*. November 15th 2008.

Egger, P. (2009). "Europe Special issue - Taxation and the Globalisation Process." *The World Economy* 32(9).

Ernst & Young (2005). *European Headquarters: Location Decisions and Establishing Sequential Company Activities*.

European Commission (2005). "Directive 2005/56/EC of the European Parliament and of the Council of 26 October 2005 on cross-border mergers of limited companies." *Official Journal of the European Union* L310.

European Commission (2007). "Impact Assessment on the Directive on the cross-border transfer of registered office." *Commission Staff Working Document* 1707.

Forsgren, M., U. Holm, et al. (1995). "Division headquarters go abroad – a step in the internationalization of the multinational corporation." *Journal of Management Studies* 32(4): 475-491.

Ghosh, C., M. Rodriguez, et al. (1995). "Gains from Corporate Headquarters Relocations: Evidence from the Stock Market". *Journal of Urban Economics* 38(3): 291-311.

Goold, M., A. Campbell, et al. (1994). *Corporate Level Strategy: Creating Value in the Multibusiness Company*. New York, Johan Wiley.

Gregory, R., J. R. Lombard, et al. (2005). "Impact of Headquarters Relocation on the Operating Performance of the Firm." *Economic Development Quarterly* 19(3): 260-270.

Grossman, G. M. and E. Rossi-Hansberg (2008). "Trading Tasks: a Simple Theory of Offshoring." *American Economic Review* 98(5): 1978-1997.

Head, K. and T. Mayer (2004). "Market Potential and the Location of Japanese Investment in the European Union." *The Review of Economics and Statistics* 86: 959-972.

Henderson, J. H. and Y. Ono (2008). "Where do manufacturing firms locate their headquarters?" *Journal of Urban Economics* 63(2): 431-450.

Huizinga, H. and J. Voget (2009). "International taxation and the direction and volume of cross-border M&As." Journal of Finance, 64(3): 1217-1249.

Klier, T. H. and W. Testa (2002). " Location Trends of large company headquarters during the 1990s." Federal Reserve Bank of Chicago, *Economic Perspectives* 26(2): 12-25.

Mooij, R. A. and S. Ederveen (2001). "Taxation and foreign direct investment: a synthesis of empirical research." *International Tax and Public Finance* 10: 673-693.

Moon, K. and J. P. Le Sage (2008). "Revisiting the Question - Does Corporate Headquarters Location Matter for Stock Returns?" *Working Paper Series Texas State University*.

Mucchielli, J. L. and P. Saucier (1997). “European Industrial relocations in low-wage countries: policy and theory debates”. In P. J. Buckley and J. L. Mucchielli (eds.), *Multinational Firms and International Relocation*. London, Edwar Elgar.

Nilsson Hakkala, K., F. Heyman, et al. (2008). "Multinational Firms and Job Tasks." *IFN Working Paper* 781.

O'Mara, M. A. (1999). "Strategic drivers of location decisions for information-age companies." *Journal of Real Estate Research* 17(3): 365-386.

Ono, Y. (2003). "Outsourcing Business services and the role of central administrative offices." *Journal of Urban Economics* 53(3): 377-395.

Pennings, E. and L. Sleuwaegen (2000). "International relocation: firm and industry determinants." *Economics Letters* 67(2): 179-186.

Pirinsky, C. and Q. Wang (2006). "Does Corporate Headquarters Location Matter for Stock Returns?" *The Journal of Finance* 61(4): 1991-2015.

Porter, M. (1990). *The Competitive Advantage of Nations*. London, Mac-Millan Press.

Puga, D. and A. Venables (1996). "The spread of industry: spatial agglomeration in economic development." *Journal of the Japanese and International Economies* 10(4): 440-464.

Ringe, W. G. (2007). "The European Company Statute in the Context of Freedom of Establishment." *Journal of Corporate Law Studies* 7(2): 185-212.

Sieber, S. (2008). *Österreichs Attraktivität für ausländische Direktinvestitionen sowie als Standort für Headquarters-Funktionen*. Österreichisches Institut für Wirtschaftsforschung, FIW Research Reports 21.

Sleuwaegen, L. and E. Pennings (2006). "International Relocation of Production: Where do firms go?" *Scottish Journal of Political Economy* 53(4): 430-446.

Strandell, A. C. (2008). "The international Location of Headquarters of Multinationals." Swedish Institute for Growth Policy Studies, *ITPS Working Paper* 1.

Strauss-Kahn, V. and X. Vives (2009). "Why and where do headquarters move?" *Regional Science and Urban Economics* 39(2): 168-186.

Voget, J. (2008). "Headquarter Relocation and International Relocation." Centre for Business Taxation, Oxford University.

Young, D., Goold, M., Blanc, G., Bühner, R., Collis, D., Eppink, J., Kagono, T., Jiménez Seminario, G. (2000). *Corporate headquarters: an international analysis of their roles and staffing*. London, Prentice-Hall.

Appendix 1: Summary of the empirical findings on the mobility of HQs

Table A.1 Overview of general empirical literature on headquarters relocations

Empirical study	Definition of headquarter	Topic of interest	Novelty	Dependent variable	Independent variables	Model	Data / Sample	Main results
Pennings & Sleuwaegen (2000)	focuses on partial firm relocation, mainly on plants, possibly on HQs	Firm international relocation decision	First empirical study to focus on determinants of international firm relocation	Dummy: relocated part of the PRODUCTION abroad in the period 1990-1996 (excludes full relocation)	Firm and industry specific variables: capital labour intensity, firm size, multinational dummy, uncertainty dummy, innovation dummy profitability	Logit model	Cross-section (with retrospective questions), Sample of firms that reported a collective lay-off in the period 1990-1996 (firms with at least 20 employees and laying off at least 10% of its workforce), 372 firms that are active in Belgium	Relocation: labour intensity (+), access to global network (+), rate of innovatiopn (+), uncertainty (-)
Sleuwaegen & Pennings (2006)	focuses on partial relocation of production, mainly on plants, possibly on HQs	Firm international relocation decision	Looks at the role of public support in relocation	First stage: relocation dummy Second stage: location strategy (2 sets of locations: 4 nearby locations, 2 remote locations) Categorical variable: public aid is (1) most important reason, (2) motive, (3) no impact for/on relocation	Relocation choice, regional choice, Importance public support (decisive, important, not important)	Nested logit model Ordered probit Multinomial logit	Cross-section (with retrospective questions), Sample of firms that reported a collective lay-off in the period 1990-1999 (firms with at least 20 employees and laying off at least 10% of its workforce), 659 firms that are active in Belgium	Wages and market potential are important determinants for the location choice, Large firms: higher probability to relocate to remote countries; Public aid only plays decisive role for relocations to neighbouring countries
Birkinshaw et al. (2006)	HQs have a top management group and a series of HQ functions; The focus is not on legal domicile and tax issues	Decision of MNE to relocate HQ overseas	Distinction between relocation of business units and corporate HQs	Degree of HQ relocation overseas; Corporate HQ: Location HQ based on location of top managemnt teams, Variable 1: dummy: HQ overseas or not, Variable 2: percentage of HQ functions overseas; Business unit HQ: Variable 1: dummy: HQ overseas or not, Variable 2: percentage of HQ functions overseas	Percent business unit activities overseas, Perceived attractiveness of business climate for business unit HQ location, Influence of international shareholders, influence of international customers and competitors, interdependence between business unit and corporate HQs	OLS, Logit	Cross-section (1999) of survey data from 35 largest Swedish MNE representing 35 corporate HQ and 125 business unit HQs; Additional data from annual reports, analyst reports, Hoover's directory	1. Strategy of business unit HQs and corporate HQs differs; 2. Drivers of relocation of business unit HQs: changes in internal configuration of unit and demand of their product markets; 3. Drivers of relocation of corporate HQs are: demand of external stakeholders (global financial markets and shareholders)
Baaij et al. (2004)	Physical corporate centre	Difference between US and Europe when it comes to relocations; Cross-border mobility of corportae centres versus functions	Conceptual framework of the determinants of corporate centre location	Relocation of the physical corporate centre	n.a.	Descriptive	Fortune US 500 (1994-2002); 19 out of 500 relocated, only 1 cross-nationally	Relocations across national borders are rare; Stickiness of corporate centres of European based corporations will diminish
Brouwer et al. (2004)	Focus is more general: complete and partial relocation of firms; bigger firms	Firm relocation decision	Focuses also on external growth: mergers and acquisitions	Dummy: relocation of the firm in the last three years (1997-1999)	Location factors: market; Internal factors: firm size, firm age; External factors: firm growth; Control variables: sector, region, type of firm	Logit	Cross-section; 1999 Cranet Survey; firms with more than 200 employees; 21 countries, 5568 observations	Internal growth factors induce firm location; Firms that serve larger markets relocate more often; External growth factors induce firm relocation, Firms from Northern Europe have higher chances to relocate than the ones from Southerm Europe
Klier & Testa (2002)	HQs of large publicly traded companies	Location of HQs in metropolitan area's in the US	Makes a distinction between HQ relocation and HQ growth	Percentage change of the number of HQs in a metropolitan area	Level and change of population, Manufacturing and business services share, Regional dummy	OLS	Compustat data of publicly traded companies, HQs of large companies (total worldwide employment is at least 2500), 1397 metropolitan-area based HQs in 1990, 1805 metropolitan-area based HQs in 2000, U.S. large company HQs	Major shifts: Largest urban area's continue to be highly preferred as HQ locations; Very largest metropolitan area's loose HQs to second-tier metropolitain area's; South U.S. gains HQs: next to market growth also maturing of key urban area's counts; Company HQs do not migrate so much as they grow and decline

Note: HQs stands for headquarters and MNE stands for multinational enterprise.

Table A.2 Overview of specific empirical literature on agglomeration forces driving headquarters relocations

Empirical study	Definition of headquarter	Topic of interest	Novelty	Dependent variable	Independent variables	Model	Data / Sample	Main results
Strauss-Kahn & Vives (2008)	Management center: Centre of a firm's operations, administration and marketing activity (encompasses regional managerial centers and may include sales offices); Broader definition	Location of HQs across mainland U.S. metropolitan area's Data set of HQs moves	Focuses on moves of HQs	Relocation of the HQs to location t for a firm in industry i	Where to locate equation: wage, corporate tax rate, airport hub dummies, population, distance, # total HQ, HQs same SIC, employment shares; Whether to locate equation: sales, # HQs in the firm; age, merger and foreign dummy + most of the variables of the where to locate equation	Model of locational choice Nested logit model: Decision where to locate (lower and medium nest level); Decision whether to locate (upper nest level)	US; HQ-level data from Dun and Bradstreet years 1996 and 2000; largest firms (sales-wise) existing in US mainland metropolitan area's in both years; 26,195 HQs in 276 U.S. metropolitan area's	Rate of relocation is 5% a year Relocated firms: Sales (+), firm age (-), # HQ (+), foreign (+), merger (+) Firms relocate to metropolitan area's with: good airport facilities, dramatic impact, low corporate taxes, low average wages, high level of business services, same industry specialisation, agglomeration of HQs in the same sector of activity
Davis & Henderson (2008)	Central administrative units: produce services for operating units and plants of their firms; Broader definition	Quantification of scale effects that lead to agglomeration; Distinction between industry and diversity scale externalities	Empirically distinguishes and quantifies two types of scale effects for HQs activity that lead economic activity to agglomerate in cities: own industry- versus diversity- scale externalities; Also looks at service activity Based on quantified externalities the appropriate extent of subsidies can be determined	Dummy: Birth of HQs from t to t+1	ln(number of HQs) Diversity index services Wage index	Ordinary Poisson; Fixed effects Poisson; GMM	U.S; Census Bureau's Economic Census data set on Central Administrative Office and Auxiliary Establishments covering period 1977-1997 in five year intervals	Firms benefit from HQ agglomeration in two ways: (1) business service input diversity providers improve HQ prodictivity (a 10% increase in number of sevice providers increases the expected HQ births with 3.6%) (2) HQ localization economies (HQ own industry scale elasticity found to be 0.17; this effect is initially very strong but subs. tails off)
Henderson & Ono (2008)	Central administrative units: produce services for operating units and plants of their firms; Broader definition	Effect of plant location on HQ location decision	Adding plant location to explain choice of county for HQ location; Analyses trade-off between proximity to production facilities and better access to information and intermediate services suppliers	County of HQ location	Geographic characteristics of plants; County attributes	Multinomial logit	US; Cross-section; Census Bureau's data: Auxiliary Establishments Surveys and Standard Statistical Establishments Lists, covering the years 1992 and 1997; Sample of 429 manufacturing firms who relocated their HQs with a focus on 133 firms establishing a single stand-alone HQ for the first time	For the location of stand alone HQs not only the (1) business service input diversity and the (2) HQ localization economies matter but also (3) the geographical proximity to production facilities. Once firms send their HQs away firms focus on outsourcing possibilities
Ono (2007)	Central administrative offices (administrative centre); Broader definition	Role of HQs on the efficiency of firms	First empirical evidence that the location of HQs influences the efficiency of remote plants	Plant outsources service	market scale of the plant; market scale of HQs	Logit	US; Cross-section; Annual Survey of manufacture data of 1992 on 45,144 plants in continentel U.S. States. Auxiliary Establishments Survey of 1992	The greater the scale of the local market surrounding a HQ , the higher the plant's probability to rely on the HQ for outsourcing advertising, bookkeeping and accounting and legal services
Aarland et al. (2007)	Central administrative offices (administrative centre); Broader definition	Document stylized facts on the decision to split production and administration	Offers baseline for future research on the spatial organisation of the firm	Firm has stand-alone CAO Firm has non-collocated CAO	firm characteristics	Probit	US; Cross-section; Auxiliary Establishments Survey of 1997; Statistical Establishments Lists of 1997 (U.S. Census Bureau)	Firms that construct "stand alone HQs" are bigger, more industrially diversified, more geographically dispersed and have their main production facilities more often in smaller cities, Most HQ are located near production facilities. HQs are created to support manufacturing and reatil and wholesale businesses of firms. Rates of opening and closing HQs are high and sizes are large, possibibly due to low fixed set-up costs. Opening and closing HQs is an experimentation process.
Bel & Fageda (2008)	HQs of 1000 biggest **European** firms	Identification of causal relationship between the location of the HQs of large firms and the supply of intercontinental flights across European urban area's	Focus is on testing the relevance of costs of transmitting tacit information when choosing locations	Equation system explaining: 1. Intercontinental flights (weekly frequency of intercontinental flights at the airports of the urban area); 2. HQs (number of HQs of the largest 1000 European firms in the urban area)	Intercontinental flight variable, Wages, Fiscal pressure, Industrial employment, Services employment, Population capital dummy, Weight of urban area in GDP	OLS; 2 Step GMM	Europe; Collected data on 87 urban area's in the EU-25 and in Switzerland and Norway; Different sources	Supply of direct intercontinental flights is a major determinant in the location choices of large firms' HQs (a 10% increase in the number of flights involves a 4% increase in the number of HQs in the corresponding urban area. Effect is stronger for knowledge intensive sectors

Note: HQs stands for headquarters and CAOs stands for Central administrative offices.

Table A.3 Overview of specific empirical literature on the company-level effects of headquarters relocations

Empirical study	Definition of headquarter	Topic of interest	Novelty	Dependent variable	Independent variables	Model	Data / sample	Main results
Alli, Ramirez et al. (1991)	Corporate HQ relocation announcements in newspapers	Short term stock market reaction to relocation announcements; Motivation for corporate HQs relocations	Focuses not only on the rationale for relocation but on the market reaction to the relocation announcement	Observed abnormal returns; Relocation dummy;	firm specific and geographic variables	Linear regression; Logit model; Standard event study; (abnormal returns, market model)	Relocation announcements from major newspapers 1980-1988 and financial data from compustat; 112 firms that are listed on the NYSE/AMEX or NASDAQ and that announced a relocation in the 1980-1988 period	Abnormal returns: availability of labour (+), cost of living (-), change in firm employment (-); Relocation: size (+), rental expenses/sales ratio (+); Relocation to a Fortune ranked city: firm size (+), employment/asset ratio (+), listing in NYSE/AMEX(+); Relocation to a Fortune ranked city has a higher level of insider ownership (+); Wealth effect: On average the relocation announcement increases stock prices with 1.29% (in the two days period after the announcement)
Ghosh, Rodriguez et al. (1995)	HQ relocation announcements in newspapers	Empirical evidence on investor's perceptions of the relative advantages and costs of spatial afgglomeration; Short term stock price reaction to relocation announcements	Controls for motivation of relocation: cost savings, self-interest managers, growth	Cumulative abnormal returns	5 "motive of relocation" dummies: growth, decline real estate sale, managerial self-interest (agency), cost saving and consolidation of operations	Linear regression model; Standard event study; (abnormal returns, market model)	Relocation announcements from major newspapers 1966-1992 and financial data from compustat; 160 firms in the US announcing a relocation in the 1966-1992 period	Abnormal returns: cost savings (+); Market response: cost savings (+), managerial self interest and desire for luxurious offices(-)
Gregory, Lombard et al. (2005)	Corporate HQ relocation announcements	Longer term effect of HQ relocation on operating performance of the firm	Uses a 6 years time frame surrounding the relocation; Looks at several measures of corporate performance; Controls for distance	Cumulative difference in performance (ROA, ROE, Total return on common stock) between sample of firms that relocated HQ and a matched firm sample	5 motivation dummies (expansion, cost savings, capacity reduction, facilities consolidation, other) 2 distance dummies (< 5 miles, > 5 miles), average debt	Matched pairs sample using industry, size and market to book ratio's as matching criteria; OLS; Bootstrapping technique (Kothari & Warner, 1997)	Relocation announcements from major databases for the period 1993-1998; Financial data from Standard & Poor´s Research Insight; 167 relocating firms in the 1993-1998 period in the US	Little evidence of improved operating performance after HQ relocation; The distance relocated has no significant impact
Pirinsky & Wang (2006)	Corporate HQ relocation	Effect of a HQ relocation (for non-merger related reasons) on the local co-movement of its stock	Uses HQ relocation to shed light on the role of geography for an efficient diversification	Estimated effect of monthly return of the stocks metropolitan area index on the monthly return of the particular stock	size, leverage, dividend yield, market to book, ROA, advertising, number of shareholders, institutional ownership	(pooled) cross-sectional OLS	NYSE; Compustat; Compact Disclosure; Sub sample of 118 listed firms that relocated to another metropolitan area in the US during 1992-1997	Relocation of HQs leads to a decrease of co-movement with the stocks from the old location and to an increase of co-movement with the stocks from the new location; Price formation in equity markets have a significant geographic component
Cox & Schultz (2007)	HQ relocation announcements	Explain the differential short term stock market reaction of a HQ relocation by the motivation behind the management decision to relocate the HQ	None	n.a.	n.a.	Standard event study (abnormal returns, market model of the capital asset pricing model)	LexisNexis Academic for the period December 1994 to April 2005; Final sample of 37 listed firms moving HQs within the US	No statistically significant results

Note: HQs stands for headquarters.