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## Why and where do headquarters move?

Vanessa Strauss-Kahn a,b, Xavier Vives c,d,\*

- a ESCP-EAP. France
- <sup>b</sup> INSEAD, France
- <sup>c</sup> IESE Business School, Spain
- d UPF, Spain

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#### ABSTRACT

This paper analyzes decisions regarding the location of headquarters in the U.S. for the period 1996–2001. Using a unique firm-level database of about 30,000 U.S. headquarters, we study the firm- and location-specific characteristics of headquarters that relocated over that period. Headquarters are concentrated, increasingly so in medium-sized service-oriented metropolitan areas, and the rate of relocation is significant (5% a year). Larger (in terms of sales) and younger headquarters tend to relocate more often, as well as larger (in terms of the number of headquarters) and foreign firms, and firms that are the outcome of a merger. Headquarters relocate to metropolitan areas with good airport facilities—with a dramatic impact, low corporate taxes, low average wages, high level of business services, same industry specialization, and agglomeration of headquarters in the same sector of activity—with all agglomeration variables having an important and significant impact.

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#### 1. Introduction

Headquarters tend to be concentrated geographically (the top 20 urban centers accumulate 75% of the headquarters weighted by sales in the continental U.S.) and their rate of movement is significant (about 5% in our sample between 1996 and 2001). This paper studies the determinants of headquarters' moves.

Cities and regions worry about attracting, or not losing, head-quarters. This concern has grown more acute with the changes introduced by globalization. The reasons of the concern are the perceived external effects associated to headquarters as attractors of business services, a highly qualified pool of labor, as well as other headquarters. When headquarters move, municipalities and regional governments worry about the possible negative externalities in terms of direct and indirect employment losses, decrease in market thickness and in the quality of the labor market. Indeed, an outflow of large corporate headquarters may cause an important loss of qualified business service jobs. In this respect, Shilton and Stanley (1999) provide evidence that metropolitan areas with a higher number of and more diversified headquarters have higher per-capita income. To the contribution of headquarters to external effects we

E-mail address: xvives@iese.edu (X. Vives).

may add a more diffuse benefit of having business decision centers contributing to the image or trademark of a city and as partial insurance protection against delocations threats in downturns. The concern of local governments materialized when the Bank of America moved its headquarters from San Francisco to Charlotte, or Banc One from Columbus to Chicago (the latter subsequently lost for Chicago), both because of merger; when Boeing decided to move from Seattle to Chicago; or Volkswagen North American from Auburn Hills, Michigan, to the Northern Virginia suburbs.

The analysis of headquarter location is also relevant to other business activities like R&D, where informal or "soft" information exchange is crucial. Sales offices and other white-collar information-intensive activities provide further examples (Holmes and Stevens 2004, Holmes 2005). This is to be contrasted with codified or "hard" information exchange for which geographic proximity is not as essential (Glaeser 1999, Cremer, Garicano, and Prat 2005). Our findings on the determinants of the location of headquarters may be in consequence of wider applicability to those activities where face-to-face information exchange is crucial.

<sup>\*</sup> Corresponding author. IESE Business School, Av. Pearson, 21, 08034 Barcelona, Spain. Tel.: +34 932534200.

<sup>&</sup>lt;sup>1</sup> Jaffe et al. (1993) provide patent citation evidence of knowledge spillovers.

<sup>&</sup>lt;sup>2</sup> The distinction between hard and soft information is also important in the incentive literature, providing a further explanation for the separation of management and production. Namely, separation may be a commitment device to monitor less intensively the agent and this way incentivate his initiative (Aghion and Tirole 1997).

The policy interest of the exercise should be evident. The first step in finding out what local governments can do to keep and attract headquarters is understanding the determinants of their location. While agglomeration externalities may justify subsidies (Garcia-Milà and McGuire 2002), our results are a first step to cook up a recipe for success in attracting headquarters.<sup>3</sup>

This paper studies the determinants of the location of headquarters according to the variables new economic geography model (available in the web Appendix to the paper) indicates that should matter:

- agglomeration variables: other headquarters;
- input cost: business services;
- corporate taxes;
- · congestion;
- cost of transmitting headquarters' services; and
- firm-specific factors such as merger activity, size, and age of the headquarters.

Congestion is proxied by high wages, and the cost of transmitting headquarters' services by, among other factors, transportation facilities. We also control for the level of human capital and recreational amenities in metropolitan areas.

We use a unique database of more than 25,000 headquarters in the continental U.S., of which about 1500 moved between 1996 and 2001. Headquarters are defined as a management (administration and marketing) center of a firm; the average number of headquarters per firm in our sample is 15. We find that headquarters cluster in a small number of metropolitan areas and that they are more agglomerated than economic activity. In contrast to the results for the 1980s (Holloway and Wheeler 1991), we find a tendency towards greater concentration. New York is a declining dominant center, but, excluding New York, top centers show gains (sales-weighted). The tendency is that middle-sized service-oriented "sun belt" agglomerations gain at the expense of "rust belt" industrial centers.

We estimate the probability of relocation of headquarters to a metropolitan area with a three-level nested logit structure. A firm first considers whether to relocate the headquarters, classifies the potential locations by characteristics (geographic or by size class in our case) and chooses a nest, and finally chooses a location within the nest. This procedure is not at odds with usual practice. For example, when Boeing decided to move its headquarters from Seattle, it announced the characteristics of the potential locations of where to move.<sup>4</sup>

The main results are as follows.

- Headquarters relocate to metropolitan areas with good airport facilities—with a dramatic impact, low corporate taxes, low average wages, high levels of business services, same industry specialization, and agglomeration of headquarters in the same sector of activity. The effect of the agglomeration variables is important and significant. The level of human capital, as proxied by the percent of the labor force with a bachelor's degree, turns out to be highly correlated with the level of business services, and it is not significant. The effect of amenities such as recreational services is significant and the impact of having a large airport hub is robust to their introduction in the estimation.
- Headquarters that are larger (in terms of sales) and younger tend to relocate more often (corporate history matters), as do firms that are larger (in terms of the number of headquarters), are foreign, or are the outcome of a merger.

 Headquarters in locations with good airport facilities, low corporate taxes, and with agglomeration of headquarters in the same sector of activity tend to stay put.

When Boeing decided to move its main headquarters from Seattle it induced competition among Chicago, Dallas, and Denver as potential locations. Chicago offered by far the most generous package with incentives for more than U.S. \$50 million. According to our analysis, the negative aspects of Chicago are: highest wage, high tax (Dallas and Seattle are very low while Denver taxes are slightly higher than Chicago), largest population (congestion costs), and less specialization in transport equipment (i.e. Boeing SIC2 activity) than Denver or Dallas. The positive aspects of Chicago are: highest levels of total headquarters and transport equipment headquarters (i.e. headquarters of same SIC2), and higher specialization on finance and business services (except for Denver, which is more specialized in business services). In conclusion, Chicago may have subsidized in order to counterbalance the negative aspects of the city and the headquarters' agglomeration effects may have loomed large in the decision.

The results we obtain are in line with recent economic geography models (Ekholm and Forslid 2001; Duranton and Puga 2005; Fujita and Thisse, 2006). A basic story is that headquarters are located in areas with business services and other headquarters. The first factor arises because of economies of scale in the provision of business services, and the second factor arises because of externalities among headquarters due to face-to-face interaction. Headquarters benefit from diversified business services inputs and from the informal information exchange that close geographical proximity entails. But the provision of the provision of the provision of the informal information exchange that close geographical proximity entails.

The results are also consistent with a story according to which the decrease in communication costs facilitates the location of headquarters in areas where they can be more productive liberating the larger headquarters, at least, from the servitude of being close to production facilities. This may imply that cities specialize in management or production activities. (Fujita and Ota 1993; Duranton and Puga 2005; Fujita and Thisse, 2006).9 When Boeing decided to move its main headquarters, it explicitly stated that it wanted to distance management from its traditional manufacturing base and look for a central location that could better accommodate a global and diversified aerospace company. Being close to a plant is however still important in so far a headquarter wants to locate in a metropolitan region specialized in its sector of activity. There is therefore a tension between (i) being close to a plant in order to save information costs, and (ii) being away from plants in order to give more autonomy to plant managers and profit from business services and headquarters externalities in a business center. This tension is being resolved due to major leaps in communication technology in favor of (ii) as the Boeing case shows. However, keeping other things constant, a firm

<sup>&</sup>lt;sup>3</sup> Greenstone and Moretti (2004) concluded that local governments have incentives to provide subsidies to attract productive plants. See Glaeser (2001) for a survey of location-based incentives.

<sup>&</sup>lt;sup>4</sup> See Garcia-Milà and McGuire (2002) for a study of the relocation of Boeing's main headquarters from Seattle to Chicago.

<sup>&</sup>lt;sup>5</sup> See Garcia-Milà and McGuire (2002).

<sup>&</sup>lt;sup>6</sup> However, Phil Condit, the chairman and CEO of Boeing in 2001, stated explicitly that he wanted to move the headquarters from Seattle so as not to be close to the existing operations: "As we've grown, we have determined that our headquarters needs to be in a location central to all our operating units, customers and the financial community—but separate from our existing operations". This turned a potential negative aspect of Chicago into a positive one.

<sup>&</sup>lt;sup>7</sup> Evidence on the concentration and localization economies of business services in Japan and the U.S. is provided by Kolko (1999), Dekle and Eaton (1999) and Adserà (2000). See also Ciccone and Hall (1996).

<sup>&</sup>lt;sup>8</sup> The results are also in line with Lovely et al. (2005) findings that the agglomeration of headquarters of U.S. exporters is driven by the need to acquire specialized knowledge of foreign markets. That is, that the need to acquire information fosters agglomeration by exporters much as headquarters in general agglomerate to exchange information.

<sup>&</sup>lt;sup>9</sup> Fujita and Ota (1993) show in a location model of multi-unit firms that "the advancement of intrafirm communication technology will eventually lead to a dichomoty of firm activities, where the front-unit activity (specialized in extrafirm communications) will concentrate in the city center, while the back-unit activity will locate in the far suburbs." (p. 697).

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