

Local Buzz and the Culture of Heterogeneity – Urbanization vs. Localization Economies in Patent Inventor Networks

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In the recent theory on agglomerations it is commonly argued that the spatial concentration of economic activity is a result of some kind of externalities. Externalities refer to special economic forces which cause advantages (or even disadvantages) according to a given economic transaction for agents who are not involved in that particular transaction. In the case of agglomerations this means that firms benefit from locating to a specific area simply because they are close to other firms. However, the literature on this issue is debating on the specific sources of these externalities. The main difference lies between studies which argue that locating near to similar firms is the most beneficial and those which state that the closeness of heterogeneous firms have more advantage. In the first case similar knowledge bases, efficient communication and even competition is mentioned as a reason for finding the presence of similar firms advantageous. In the second case it is argued that creative associations based on dissimilar knowledge bases and the possibly resulting radical innovations contain those advantages which cause different firms to locate together. While in the first case the specialization of different regions can be observed, the second reasoning hypothesizes that large heterogeneous economic centers emerge. The literature refers to the first group of arguments as localization economies and to the second group as urbanization economies. However, the latter one also emphasizes that the emergence of large, prospering heterogeneous economic centers requires a special kind of ‘urban culture’ sometimes referred to as ‘local buzz’ which involves the tolerance for dissimilarity as well as the capabilities to exploit the possible synergies hidden in heterogeneity. In this study we try to trace out the presence of these two kinds of agglomeration forces with the help of a newly built database which contains patent co-inventorship data in the high-tech sector. The data are on the NUTS2 level of 3 European countries (Germany, France and the United Kingdom) and covers more than 25 years. From this data we built up patent co-inventorship networks across regions and use these networks to examine the effect of localization and urbanization economies. Our main finding is that both agglomeration forces can be detected in these networks but with a different perspective. It is found that there are large centers with heterogeneous focus giving home for many subsectors of the high-tech industry, but only a few such centers can be detected. Other agglomerations on the other hand are quite specialized with hosting only one or two subsectors. In addition, heterogeneous agglomerations coincide with historically important metropolitan centers: Ile-de-France in France, Munich and Frankfurt in Germany and London in the UK. These findings lead to the conclusion

that large urban areas (especially capitals) really involve the special cultural aspects required for maintaining heterogeneity and contributing to urbanization economies based on this heterogeneity. On the other hand it is clearly shown that in more peripheral areas localization economies, i.e. specialization is the main force behind economic agglomeration.