Inter-industrial relations and regional employment development in Germany

Topic: Regional input-output modeling 3
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Large disparities in employment growth rates across regions within the same country have stimulated a variety of studies trying to find the factors behind economic and employment growth at the regional level. In addition to location specifics, such as infrastructure, the general qualification structure of the workforce, or the disadvantages of boundary regions, the industrial structure was found to be highly relevant. Thereby, the theoretical and empirical literature attaches great importance to the economic environment in which an industry or a firm is located. Building Alfred Marshall's idea about localization advantages of single industries, Porter developed the concept of clusters defined as "geographic concentrations of interconnected companies, specialized suppliers, service providers, firms in related industries, and associated institutions in a particular field that compete but also cooperate" (Porter 2000: 15). Thus, economies of agglomeration arise because of the co-location of inter-connected industries and institutions rather than the concentration of a single industry. However, the concept of clusters is very vague in terms of its spatial dimension and the associated socio-economic interactions. Furthermore, measuring cooperation between proximate firms is very difficult when it goes

beyond the trade of intermediate goods. Therefore, it is not surprising that a lot of different cluster identification techniques have been developed over time and empirical studies about their impact on regional economic development is rather scarce. Although empirical evidence on the source of agglomeration advantage is ambiguous, the cluster concept has become a standard tool for policy-makers to promote regional competitiveness and growth. This paper aims to counter to this lack of evidence by supporting the creation of adequate instruments for regional development. It evaluates the reasons for differences in the employment growth of industries within Germany – and the regions they are located in – and the role of inter-industrial connections in this development. Thus, agglomeration advantages which result from regional clusters for constituent industries are analysed.

The analysis is divided into two steps. Firstly, input-output tables for each of the 97 labour market regions in Germany are estimated. Therefore, the regionalization technique developed by Flegg and Webber (1997) (Flegg's location quotient) is applied. Thus, the regional input coefficients are estimated by accounting for the size of the selling industries, the size of the supplying industries as well as the size of the region. The resulting input-output tables build the basis for the development of industry-specific indicators measuring the co-location of suppliers and buyers of intermediate goods in each region. In the second step, the input-output indicators are implemented in a shift-share regression approach with yearly employment growth rates being the dependent variable. Thus, the importance of input-output linkages for the employment development in individual industries between 1998 and 2007 is analysed.

The findings support the hypothesis of Porter to some extent that agglomeration advantages have shifted from narrow industries to the cluster level. They indicate that cluster structures tend to have a positive effect on employment growth in service sectors and some non-service sectors, such as agriculture and construction. In contrast, employment significantly decreased in some manufacturing industries when they were located in an environment with a high share of up and downstream industries. The example of Hamburg shows that these industries might benefit from an increase in productivity rather than employment growth. However, for the majority of industries agglomeration advantages on the cluster level cannot be identified.

Literature
Flegg A.T., C.D. Webber (1997), On the appropriate use of location quotients in generating regional input-output tables: Reply. Regional Studies 31: 795-805.

Porter, M. (2000), Location, competition and economic development: local clusters in a global economy. Economic Development Quaterly 14 (1): 15-34.