Chapter 6

EXTENSIONS REGARDING MOBILITY

Local resource constraints and industrial mobility are important determinants of industrial activity across locations. To focus on some main questions concerning public policy in view of these issues, the analysis in the preceding chapters relied on a strict distinction between locally scarce resources and locally abundant resources and on another strict distinction between mobile industries and immobile industries. However, these two strict distinctions are somewhat drastic: Evidently, many resources are in an intermediate position between a presence of strict local resource constraints and a complete absence of local resource constraints. And many industries are in an intermediate position between extreme mobility and extreme immobility. In this chapter, it will be discussed how policy implications may be affected when "weak" local resource constraints or "weakly" mobile industries are considered instead of strict local resource constraints or strictly mobile industries. The first section focuses on imperfect intra-industry substitution in the mobile industry. And the second section looks at mobility of local resources. The analysis is another check for the robustness of the conclusions which have been proposed in the preceding chapters.

6.1 Imperfect intra-industry substitution

Immobile industries may be thought of as single-plant industries which cannot shift production between locations. And mobile industries may be regarded as multi-plant industries which can shift production between locations. However, mobile industries may differ with respect to the degree of their mobility.

So far, the analysis concentrated on mobile industries which are perfectly mobile in the following sense: It was assumed that the output produced by some mobile industry at one of its locations is from consumers' point of view entirely equivalent.
to the output produced by the mobile industry at its other locations. In other words, the local varieties of the output of a mobile industry were assumed to be perfect substitutes. Such perfect intra-industry substitution in a mobile industry means that the mobile industry will sell its output at a uniform world-market price. Moreover, it implies (in a world of linear technologies) that the mobile industry will only produce at locations where its unit costs of production are minimal. In view of local resource constraints, this introduces a tendency towards cost equalization across locations and multi-plant production of mobile industries.

However, there are several reasons why consumers may consider the local varieties of the output of a mobile industry as distinct products. For example, a consumer may face different trade barriers with regard to the different local varieties of the mobile industry's output. Such imperfect intra-industry substitution in the mobile industry means that a mobile industry may sell the local varieties of its output at different prices and that the unit costs of production may vary across locations. Multi-plant production of mobile industries does then no longer imply explicit cost equalization across locations. However, some implicit cost equalization remains present as long as the local varieties are substitutes.

In the model, some changes have to be made in order to allow an analysis of the policy implications of an imperfect mobility of the mobile industry in the sense of an imperfect intra-industry substitution in the mobile industry: $p_{0j}$ is introduced to denote the price of that variety of the output of the mobile industry which is produced at location $j$. Separate demand functions are considered for the two local varieties. These two demand functions are linked by cross-price effects. However, as in the basic model, there is no inter-industry substitution. Hence, assumption (4) of the basic model (in section 3.2) is replaced as follows:

$$ (4') \quad x_{0j} = \max\{0, (\beta/2) - (\beta/2\alpha)p_0 - (\lambda\beta/2\alpha)(p_{0j} - p_0)\}, \text{ for all } j \in \{1,2\}. $$

In these demand functions, $p_0$ is the average price of the two local varieties of the output of the mobile industry:

$$ p_0 = (p_{01} + p_{02}) / 2. $$