

BN analysis of industrial structure in Japanese big citiesⁱ

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This research got data of an industrial added value according to the area from "the Economic Census in 2012- activity survey result" and analyzed. And after calculating the Location quotients (the LQs), it was shared with the basic industry and the non-basic industry by a BN analysis subject to the Economic Base Model and industrial structure in big cities are grasped. The LQs of "value-added frame" different from the conventional "number of employees" could understand the special quality of the big cities by the chart shape. Next, the economic base model was checked by data. Firstly, when increasing in added value amount of the basic economic activity, the number of employees of the basic economic activity rises. And when there is a big city in the neighborhood, the number of employees of the basic economic activity decreases. Secondly, when the number of employees of basic economic activity increases, the number of employees of non-basic economic activity rises. And when there is a big city in the neighborhood, the number of employees of non-basic economic activity is increased. The third, when the general number of employees increases, added value amount of non-basic economic activity increases. The above showed that the non-basic economic activity that service industries are included much and employment in the area are affected in growth in the city and the basic economic activity.

Key words: the Economic Census, the Economic Base Model, Location quotient,
Basic-Non-basic Analysis, Regional economic

1. Preface

A population decrease leads to Japan, and a shift to service industries is advancing employment from manufacturing industries. While a flounder of Japanese economy continues, low of the productivity of the industry is pointed out as a problem in a supply side. The productivity of a Japanese service industry is low more than that of manufacturing industry and that of European and American in particular. That has caused a problem of an income disparity and long time's labor. A service industry has the nature as "simultaneous-ness of production and use". There is a feature as the local industry of the labor concentration type for a narrow sense

service industry. When accumulation in the city is suggested, there is a possibility that the productivity of such service industry rises by occurrence of the positive externality.

But there is local rebellion for over concentration to a metropolitan city and competition between the cities is left. Like international trade, it's also useful as the whole country to get comparative advantage by industrial specialization using the feature of each city. So it's modeled by making them integrate into added value data of the Economic Census which became available in recent years with data of the number of employees and specialization in each city and industrial structure are analyzed by this research. By doing such