Economies of Density and Productivity in Service Industries: An Analysis of Personal Service Industries based on Establishment-Level Data

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Access to the data

The Survey of Selected Service Industries, conducted by the Ministry of Economy, Trade and Industry (METI), is a Fundamental Statistics under the Statistics Act 2007. The anonymous micro data of the Fundamental Statistics can be obtained for academic and research purposes under the permission of the government statistical agencies. Some paperwork is required to make application form. In order to have access to the data, contact Service Industry Statistics Office, Research and Statistics Department, METI. The address is 1-3-1 Kasumigaseki, Chiyoda-ku, Tokyo 100-8901. Contact phone number is +81-3-3501-1511.

Data used in the analysis

As described in my paper, I used data of the Survey for movie theaters, golf courses, tennis courts, bowling alleys, fitness clubs, golf driving ranges, culture centers, theaters (including rental halls), wedding ceremony halls, and esthetic salons. The survey years ranges from 2001 to 2005.

The survey items used are as follows; prefecture number, city number, establishment type (single establishment or multiple establishments), total number of regular employees, total sales (ten thousands yen), sales from the main service (ten thousands yen), physical capital stock measures (shown in the TABLE 2of my paper), total wages (ten thousands yen), rents for land and buildings (ten thousands yen) and rents for equipment (ten thousands yen), total operation costs (ten thousands yen), and proxies for physical output measures (e.g. annual number of users). Value-added is calculated as the sum of gross margin (total sales minus total operation costs) plus total wages and total rents.

The data on the population and land area (square kilometers) of cities are taken from the Census of Population. Population density of cities (number of people per square kilometers) is simply calculated as dividing the population by the land area.

The establishment-level data and the population data are merged by using the prefecture number and the city number.

Program Files

Files included

movie theater.do
golf course.do
tennis court.do
bowling alley.do
fitness club.do
golf driving range.do
culture center.do
theater (hall).do
wedding ceremony hall.do
esthetic salon.do

These files are all Stata 10 do-files.

The programs include 1) Cobb-Douglas production function estimations using value-added as dependent variable, 2) Cobb-Douglas production function estimations using physical output measures as dependent variable, 3) Translog production function estimations using value-added as dependent variable, 4) Translog production function estimations using physical output measures as dependent variable, and 5) calculations of the distribution of TFP.

Notation of the variables

va: value-added
emp: number of regular employees
sale: total sales
ssale: sales from the main service (e.g. sales from movie ticket)
multidum: a dummy if the establishment is part of a firm that has more than two establishments in the same industry

floor: the total floor space (movie theaters, fitness clubs, culture centers, wedding ceremony halls)
hole: number of holes (golf courses)
court: number courts (tennis courts)
lane: number of lanes (bowling alleys)
box: number of boxes (golf driving ranges)
seat: number of seats (theaters)
bed: number of beds (esthetic salons)
popdens: population density of cities
ppopdens population density of prefectures
number: statistical number assigned to each establishment
user: annual number of users
game: annual number of games played (bowling alleys)
userterm: annual number of participants multiplied by the terms of the classes (culture centers)

_14: year 2002 (Heisei 14)
_16: year 2004 (Heisei 16)
_17: year 2005 (Heisei 17)