

Geographical Variation and Convergence of Japanese Medical Cost

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Summary

[Background] This study investigates the pattern and the sources of geographical variance and convergence of medical cost in Japan. Over the past half century, Japan has adopted a nationwide universal health insurance plan, which helps people to achieve high health outcome in longevity across regions. Japan, however, has exhibited wide geographical variances in medical resources (numbers of physicians, nurses, beds etc.) as well as medical cost (C/N) across regions. In response, based on “suppliers induced demand theory”, the government has introduced regulations limiting new entries of hospitals and reducing the number of excess patient beds to contain medical expenditure. The government has also established the “long-term care insurance plan” in 2000, which might shift the care for the aged from hospitalization to long-term care services. Although there are many empirical researches on geographical variance as surveyed in IHEP (2007), there are common shortcomings. First, they mostly rely mostly on cross-section data or with data of short time-periods. Second, most studies investigate the effects of explanatory variables in ad hoc manner without theoretical framework. As a result, they fail to identify the sources of geographical variance and pattern and speed of convergence.

[Method and Data] This study uses medical cost data of the “Municipal Health Insurance Plan” and health related data of 47 prefectures in 1981-2005 by pooling time-series and 47 cross-section data. We distinguish three types of medical services “hospitalization”, “outpatient”, and “dental” services for the “general” and the “aged” population. This study adopts a method to identify the source of convergence of geographical variance of income as in Asrdubali, Sorensen, and Yosha (1996) and Nakakugi and Fujiki (2005). Using a decomposition of “Cost per capita (C/N)” as the product of “cost per day (C/D)”, “days per event (D/E)” and “events per population (E/N)”, we analyze the pattern and sources of variance and convergence. Also we estimate speed of convergence in an absolute and conditional convergence sense as in Barro and Sala-i-Martin (1992).

[Results] There was large scale variance of “cost per capita (C/N)” for the “aged hospitalization” in the early 1980s, which has decreased rapidly through the period. This is caused by the reduced variance of “events per population (E/N)” which in turn is related to “beds per population. (Beds/N)”. The “suppliers induced demand holds (SID)” holds for the aged hospitalization. Introduction of the long-term care insurance plan in 2000 had induced convergence of C/N for the aged hospitalization. We also find fairly large speed of convergence for the aged hospitalization.

[Conclusions] Although geographical variance was a serious policy concern in the 1980s, what really matters was the variance of the aged hospitalization, which had decreased over the periods. It was made possible by convergence of health capital as well as the introduction of the long term care.

Key words: medical, health, geography, convergence JEL: J14, J18, O49