

## Essays on the process of economic development: Middle-income trap and economic convergences

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### 論 文 内 容 の 要 旨

The thesis analyzes the economic development and growth process of a set of countries and Japan from a different perspective. First, from a country perspective, we will look into a phenomenon known as the “Middle-Income Trap”, i.e., the problems that middle-income countries face in their development path toward being a high-income country. Second, we will analyze the development process inside a country through the convergence analysis among Japanese prefectures. In this respect, we will not make a standard analysis of the convergence based on absolute and relative convergences’ concepts; on the contrary, we will analyze the convergence process from two modern perspectives, the possibility to have clubs of convergence and the effect of the space into the convergence process.

In order to attain an accurate estimation, the thesis uses econometric procedures developed in recent years. In this sense, for the Middle-Income Trap analysis, we use a Logit Panel Data model. For the clubs of convergence analysis, we use a time series analysis and a clustering method developed by Phillips and Sul (2007). Finally, for the spatial effects into the convergence process, we use Spatial Panel Data models with a modification of the algorithm to identify the neighbors and the case of island-type prefectures.

In the first analysis, the Middle-Income Trap, we find as main evidence that external variables that are independent of policymakers are also fundamental to explain the probability to fall into the trap. Additionally, the relationship that middle-income countries have with their neighboring countries also affects their chances to fall into the Middle-Income Trap.

For the second analysis, the clubs of convergence, we do not find evidence of absolute or conditional convergence, but we do for clubs of convergence, i.e., Japanese prefectures do not converge toward a unique development path or to their own particular development path; instead, those prefectures convergence in groups toward a unique steady-state. Specifically, we find evidence of two clubs of convergence constituted by 40 and 5 prefectures, respectively. Additionally, we show that Tokyo and Nara are prefectures that seem to be disconnected from the rest of the economy with particular patterns of development.

In the third analysis, the spatial convergence process, we find evidence that there is spatial behavior that might affect the process of development across regions. In the results, we show

that there is a trade-off between the spatial interaction of the prefectures and individual characteristics in each prefecture. Additionally, we find evidence of spatial convergence, and the speed of convergence was overestimated under non-spatial models. The results also support the idea that spatial interaction finds its source in the covariates rather than the spatial effects of the prefectural GDP per capita.

The thesis allows us to establish certain policies considerations in each chapter. For the Middle-Income Trap, the vulnerability to external factors and the globalization process constitute a set of development challenges and risks that countries need to face by implementing domestic policies to reduce the negative impact of external shocks over the probability to upgrade their income status. For the clubs of convergence analysis for the Japanese prefectures, the results suggest that prefectures do not converge toward unique steady-state, but they do in groups with similar structural conditions. This fact indicates a group of prefectures, which shares the steady-state, needs a certain kind of economic policies, while other groups of prefectures require a differentiated set of economic policies. Therefore, policymakers need to consider that the development strategies and their corresponding policies vary by prefectures. Lastly, for the spatial economic convergence analysis, the thesis suggests that policymakers need to consider the presence of spatial interaction among prefectures and each policy proposed at a national or local level will require a careful analysis of the possible spillovers might cause over their neighbors. For negative spillovers, policymakers will need to create palliatives or compensation policies; on the contrary, for the case of positive spillover, they will be able to identify and promote them properly.