

Spatial Meritocracy Revisited: Efficiency Wages and Oligopoly Reaction Functions with House Price Fluctuations

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Abstract

In this paper, the author demonstrates a model with New Keynesian microfoundations based on a dynamic *spatial* class of general equilibrium. The author outlines a notation for the intuition of the efficiency wage, nominal house prices, with oligopoly reaction functions. The paper then concludes by identifying new areas for further research that may be feasible with longitudinal or census data, stamp duty data, data on average hourly earnings, and data on the retail price index.

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Introduction

What is spatial econometrics and what purpose does it have in the DSGE discussion?

- Spatial econometrics is a relatively new field of economic design and modelling which allows for macroeconomists to add and propose model features with geographical precision. However, having only explored these settings with simple panel data (as opposed to time series or cross-sectional) in the context of the efficiency wage (Mayaki, 2023) that can be estimated around the interest rate, I will only explore the hypothetical annotations of such a model.

Explain the concept of a dynamic *spatial* general equilibrium?

- The interest rate is, of course, derived at the spatial steady state across variables, for all regions within the model. Building a panel model with microfoundations may be a uphill challenge because of lack of access to longitudinal data, hence it may imply certain things are necessary for the general equilibrium to hold in a spatial model, for example, agent preferences and firm wage costs.

What distinguishes spatial and stochastic models of this form, i.e. dynamic and *spatial*?

- The dynamic *spatial* class of models (Kleinman *et. al.*, 2023) are distinct from their dynamic and *stochastic* siblings in that the onus is on spatial equilibrium at steady state rather than equilibrium across all markets (for instance, as in an RBC or New Keynesian economy) with optimal New Keynesian microfoundations (Mehrling, 2009).

What problems does the *spatial* DSGE attempt to explain?

- Significant skills mismatches (Sun, *et.al.*, 2023) - DSGE with skill and firm heterogeneity which according to this paper, mentions the observation that mismatches in skill do not lead to *significant* income disparities.

What type of microfoundations are usually estimated in spatial DSGE models?

- This is early abundance of work that has yet to establish its microfoundations in the literature, but as mentioned previously, some of the most recent papers have included wages and prices and critical components of spatial models.

Efficiency Wages

What variables are important to a DSGE model?

- If we consider a simple dynamic spatial general equilibrium model where there are N heterogeneous agents, and g oligopoly firms, each agent N earns an optimal wage w , based on preferences over leisure and such that a budget constraint on consumption determines consumption of permanent income. The worker efficiency wage w^* is expressed as a function of the oligopoly firm's profit function, we derive the following expression:

$$f(\pi) = m + \delta(g, N, p, q) - w + \varepsilon \text{ s.t. } p \geq 1 \text{ and } r = \bar{x}$$

- Where m is an intercept term representing initial wealth, changes in the medium-term stability p are determined by exogenous factors such as inflation r . Spatial dependence is given by the state variable δ , spatially autocorrelated residuals are given by ε and firm output decisions q in a specific city location, at any point in time t are a function of the following equation:

House Prices

$$f(\pi) =$$

- Where house prices are given by h , under the following identity:

Justice and Meritocracy

What perspective do dynamic *spatial* models bring to the discussion on spatial justice and meritocracy?

- Much of the literature on spatial models (Brakman, et. al., 2004) are not DSGE but we nevertheless encounter issues such as disparate wage outcomes (Combes, et. al., 2008) where the literature acknowledges that a polarised distribution exists where clustering of poverty (Ross and Znou, 2008) and unemployment are demonstrable empirically in most metropolitan cities in the US and Europe (Dorn and Zweimüller, 2021) and also most other Emerging Economies (Jeguirim, 2021). These cities are characterised by a concentration of unskilled labour

supply and low wages in specific regions of their central cities and inner ring suburbs (Ross and Zenou, 2008).

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