論文題目　　LIST PRICE STRATEGY AND VACANCY RATE IN HOUSING MARKET: THEORETICAL MODEL AND ITS APPLICATION TO 23 WARDS AREA IN TOKYO
（住宅市場における表示価格戦略と空き家率：理論モデルとその東京23区への適用）

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Vacant residential house means the residential house without households living in, including the houses for rent, houses for sale and the others like deserted houses. The vacancy rate in Japan that has been soaring and reached 13.5% in 2010 have been a hot topic for the sustainable development of Japan. However, there is lacking pre-condition to discuss the problems of vacant houses, which is what the proper amount of vacant houses is and what the extra is. A certain amount of vacant houses is indispensable for the well-functioning of the housing market and laying the foundation for local vitality. On the other hand, excessive vacant houses including excessive houses from renting or selling market, abandoned houses, etc., would gradually accumulate in amount and degrade in quality to impose significant externalities to form a vicious cycle to deteriorate the neighborhood economically by causing inefficiency in allocation of resources and disinvestment in the neighborhood, socially by reducing the local life quality, and environmentally by causing potentially dangers, occupying the land to waste resources, degrading the street view and causing poor maintenance in the neighborhood. It is neither economically, socially, and environmentally sustainable to have shortage of vacancies, nor excessive vacancies.

Economists argue that there is the existence of the natural vacancy rate, at which the housing market is in equilibrium. However the widely researched rent-adjustment theory for the natural vacancy has neither explained the formation of the natural vacancy, nor given a satisfying benchmark for the issue of vacant houses in Japan due to inseparability of the structural vacancies in the theory and the lack of the applicability to housing sale market as well.

Some hints for the formation of natural vacancy can be found in the search theory. The value of vacancy rate in the market equilibrium can exceed zero due to the imperfect information in the housing market. The landlords/home-sellers are in face

of the uncertainties in the housing market including heterogeneity of houses, idiosyncratic preferences of tenants/home-buyers, etc. The time cost in the process that the landlords/home-sellers search for tenants/home-buyers would form the natural vacancies in the housing market. Strategies in search process will influence the duration of search, and the natural vacancy rate as well. Advertisements are widely used for search nowadays. The list prices on the advertisements, which can be viewed as the acceptable prices for the landlords/home-sellers, and as the market probe from the landlords/home-sellers to explore the market with the feedbacks from tenants/home-buyers as well, play the fundamental roles in the search process. Empirical evidences show that the process of list prices and prices revisions highly influences the final sale prices and the durations on the market for the housing market. With the uncertainty and complexity of the housing market, the list prices become difficult and critical decisions for the landlords/ home-sellers. Until now, very limited search-theory based theoretical models with the process price revisions in the literatures haven't fully explained the roles of the list price in the housing market, especially the role that list price as the market from the landlord/home-seller to explore the market.

The objectives of the research are: (1) to develop a theoretical model which directly tackles the list price change decisions with an information learning process in housing market; (2) to give the benchmark vacancy rate by the application of the theoretical model to Tokyo for housing market and the management of vacant houses and to establish foundation for determining what is wasteful vacant houses.

For the research results, the research has developed a theoretical model which directly tackles the process of list price revisions incorporating with an information learning process. The model explains the process of list price change in the housing market including the optimal decisions for timings, frequencies for the list price revision as well as the values of the sequence of the list prices. The model gives a natural vacancy rate with the optimal list price strategy as well. The original theoretical model enriches the aspect of the search theory concerning the list-price search strategies and the natural vacancy. Empirically, the research provides a brand new angle to view the issue of vacant houses to support the management of the housing market and vacant houses by producing an ideal vacancy rate for the housing market. With the application of the theoretical model to the housing market in Tokyo, the natural vacancy rate for the housing sale market is 0.73%, while for the housing rental market is 1.33%. Comparing to actual market situation, there are many excessive vacancies in the housing market, especially in housing rental

market. There is 2.56 billion social cost per month in sale market, while 38.56 billion social cost per month in rental market in Tokyo caused by the excessive vacancies, which is against sustainability and responding management policies are in need as well. The natural vacancy rate varies according to variances in the economic situations, behaviors of the seller/landlord as well as the behaviors of the buyer/tenants. The model can be re-applied for the new situations. Policies that increase the cost of list rent revision and improve the information in the housing market will shorten the search process of the landlords to improve the social efficiency. In the short-term, with the consideration of the population peak in 2020 and Olympic Games in Tokyo, the natural vacancy rate may increase due to the increase in volatility and the expectation of the landlords/home-sellers. In the long-term, the natural vacancy rate is expected to decrease.