Summaries

A study on the relationship between household income and expenditure

Shigeru Kawasaki

This paper presents research on the relationship between household income and expenditure based on Family Incomes and Expenditure Statistics and the System of National Accounts Statistics of Japan for 1995 through 2015. From a microeconomic viewpoint, it was found that the aging of the Japanese population has been exerting downward pressure on average household consumption expenditure by -0.3 per cent per annum. It is necessary to take this factor into account when evaluating business trends in recent years. From a macroeconomic viewpoint, while the total value of disposable income has remained quite stable for nearly 20 years, it was found that there is a need to focus on social contributions paid by households and social benefits received by households. These two types of social transfer cancel each other out when disposable income is computed, but they exert separate effects on different household groups—the former impacts workers' households negatively while the latter impacts retirees' households positively. The overall effect of increases in these social transfers is difficult to measure, but it can be assumed that the negative effects of the social contributions overweigh the positive effects of the social benefits. The research findings provide useful suggestions for improving economic analysis for Japan on both national and regional levels, and it is desirable to extend the research to the regional level. This research was undertaken as part of a project funded by the College of Economics, Nihon University.

Challenges for Evidence Based Policy Making (EBPM) in Regional Areas: Potential for Using the Affluence Index

Yasuyuki Komaki

With regard to demographic movements in Japan such as population decline and population aging, from a prefectural perspective there are regional areas such as Akita Prefecture and Kochi Prefecture where the population had already begun to decline naturally nearly 20 years ago and where the aging of society is progressing, while there are also regional areas—including major cities—where the population has continued to increase and the aging rate is low due to an inflow of young people. Moreover, according to the "Population Projections" (National Institute of Population and Social Security Research; 2013), it is anticipated that the trend towards such polarization will clearly progress in the future. For this reason, in regions where the decline and aging of society are advancing, urgent implementation of regional revitalization measures is becoming an important policy issue.

The view has been expressed that Evidence Based Policy Making (EBPM) is necessary for the formulation of such policies. However, while priority has been given to national statistics preparation, preparation of statistics for regional areas has been insufficient. In particular, with regard to the environment for statistics preparation carried out as an independent activity of regions, such as prefectural accounts statistics and business condition indexes, not only are basic statistics insufficient, but also there are confirmable disparities between regions in terms of personnel and budgets assigned by local governments to these efforts.

Taking this situation into consideration, it is thought that there is potential for the "affluence index"—which some governments continuously prepare—to be used as statistical data for enabling the situations of regions to be understood independently. Considering historical processes up until this point, it would be difficult to look at "affluence" using a uniform index for all regions implemented under the direction of the national government. However, such an exercise would surely have ample meaning if the statistical data were prepared by prefecture. Analysis using Okinawa Prefecture's "Residents' Awareness Survey" indicates that the affluence index functions as a proxy variable for income. Furthermore, the affluence index is also related to other changes in demographic movement (declining population, aging population, or increasing population from outside the prefecture), and is regarded as also indicating the region's social

environment. Given that the role of local governments is to implement finely detailed measures for improving residents' welfare while understanding the level of residents' awareness, it is important that local governments consistently understand the level of community residents' happiness, and it is believed that the affluence index could be used as a helpful policy variable in preparing such statistics.

Key Words: Affluence index; Regional statistics
JEL: C81, R10

Disaster Countermeasures in Densely Built-up Wooden Housing Areas

Fukujyu Yamazaki

There are many densely built-up wooden housing areas in Japan, and these can be the source of enormous damage in major earthquakes because such areas are densely populated in large cities. While vulnerable areas are required to be redeveloped as quickly as possible into robust urban areas, large-scale reconstruction is not yet possible. This paper analyzes the reasons why reconstruction cannot be successfully achieved and identifies the problem of coordination failures among landowners regarding the rebuilding of their houses. This failure to coordinate becomes increasingly serious as the number of landowners increases. In other words, there is a free-rider problem with regard to rebuilding each house. Rebuilding of the house next door to a landowner in a vulnerable area can bring benefits to the landowner if he/she does not rebuild his/her own house.

In order to resolve such coordination problems, the government needs to introduce regulations regarding the private property rights of landowners. If the government does this, however, the landowners legally must be compensated by the government for the expropriation of their land. Transferable development rights (TDR) can contribute to the amelioration of conflict between landowners and the government. The government can obtain land in exchange for TDR, which landowners can sell in the open market to acquire the value of the land's redevelopment.

[1] 本稿の基礎となった研究に対しては，日本大学経済学部経済科学研究所から補助（共同研究（A））を受けている．本稿を作成するうえで，研究会（川崎茂代表）のメンバーから多くの有益な指摘をいただいたことに感謝したい．

Study on Recent Housing Policies of Local Governments

Hideya Ota

For this study, a questionnaire survey was conducted of municipalities throughout Japan and the results were analyzed in order to gain an understanding of the actual situation and issues regarding the development of recent housing policies by local governments. The study's main findings as well as the issues for the development of local government housing policies in the future identified in the study are as follows.

(1) Amongst local government housing policies, administrative emphasis on public housing policies continues to be overwhelmingly high, centered on towns and villages. For housing policies other than public housing policies, promotion of earthquake resistant housing policies are given the second-highest emphasis, while emphasis on vacant housing and settlement promotion policies is increasing.

(2) Although it cannot be said that overall there are a large number of municipalities that are formulating independent policies, local governments are formulating independent policies such as renovation promotion and settlement promotion.

(3) It cannot necessarily be said that local government resources related to housing policies, constrain the development of local government housing policies, such as implementing independent policies.

(4) It was observed that in many cases local governments are following the lead of the national government in initiating formulation of certain housing policies, such as promotion of earthquake- resistant housing policies, vacant housing policies, and elderly housing policies. It is thought that in future it will be effective for the national government to continue constructing frameworks for the necessary legal systems and subsidy systems and promoting local government housing policy efforts.

(5) The housing policy development efforts of individual local government sections were also observed to have distinctive characteristics, and the housing policy issues faced by each local government are thought to differ. Accordingly, it is essential that the autonomous efforts of individual local governments be respected, with the national government providing expertise, advice and other meticulous support that are tailored to each local government's needs.

Key words: Housing Policy, Local Government, Recent

Basic analysis for defining competitive structures of tourism destination brands

Masataka Ban

Competition among regional tourism destination brands has been gradually intensifying in recent years, and this research comprises basic analysis for clarifying the competitive structures of these tourism destination brands from a marketing perspective, identification of issues through this analysis, and outlooks regarding measures for addressing these issues.

First of all, the author researched previous literature on the theme of analyzing competitive structures among regional tourism destination brands, focusing on previous tourism studies research, but the only relevant literature that could be found was research conducted by Pike (2009). In terms of attracting interest to the branding of tourism destination and creating differentiation among one brand and other, it appears that this field has not yet attracted a great deal of interest.

Next, the author conducted an Internet survey of hot springs resorts for analysis, gathering competition data for seven types of regional tourism brands. In structuring the survey question sheet, the author emulated previous research when identifying image factors for regional brand images in particular. In addition, the author conducted market structure analysis using both image factors and similarity data to clarify the competitive structures among hot springs resort brands.

Through the gathering of this competition data and the results of basic analysis, the following issues for conducting competitive structure analysis for regional tourism brands became apparent.

(1) Even using data of a similar nature such as image factors and similarity data, significant discrepancies can occur among the regional tourism brand structures generated from this data.

(2) Accordingly, relying on only one type of competition data can lead to incorrect decision-making.

(3) Multi-level effect-measurement models that take into consideration the decision-making processes of tourists, as well as prediction models, are required.

(4) It is also important to utilize information regarding tourists' motivation for taking a sightseeing trip.

(5) Even though it is difficult to obtain detailed data from low-involvement tourists, such tourists comprise the majority of tourists, and so it is necessary to conduct analysis of the competitive structures of regional tourism brands for such tourists as well.

In order to address these issues, frameworks integrating different data formats are necessary, and this study proposes a model with a multi-level structure created using Bayesian mo

Option Valuation under Fractionally Integrated GARCH Models with Asymmetry Distribution

Hidetoshi Mitsui

When analyzing option evaluations in relation to volatility fluctuations, it is common to use the ARCH (Autoregressive Conditional Heteroskedasticity) model developed by Engle (1982) and the GARCH (Generalized-ARCH) model developed by Bollerslev (1986) and which generalizes the ARCH model. In addition, Nelson (1991) proposed that the EGARCH (Exponential-GARCH) model be used for ascertaining the asymmetry of volatility fluctuations. Furthermore, it is known that volatility has long-term memory, and Baillie et al. (1996) proposed using the FIGARCH (Fractionally Integrated GARCH) model for ascertain long-term memory, while Bollerslev and Mikkelsen (1996) proposed the FIEGARCH (Fractionally Integrated Exponential. GARCH) model for this purpose.

Takeuchi-Nogimori and Watanabe (2008) are conducting empirical research on Nikkei 225 options that takes into account the long-term memory of volatility fluctuations. Satoyoshi and Mitsui (2013) are analyzing Nikkei 225 options using normal mixture distributions, the normal mixture EGARCH model in which mixture t-distributions and the EGARCH model are combined, and a mixture t-EGARCH model in order to ascertain the fat tails and left-right asymmetry of return distributions. This paper therefore presents a method for evaluating options that takes into consideration the long-term memory of volatility fluctuations, and fat tails and left-right asymmetry of return distributions. If long-term memory of volatility fluctuations exists, it becomes possible to price options with long-term delivery periods more accurately. The FIGARCH model proposed by Baillie et al. (1996) and the FIEGARCH model proposed by Bollerslev and Mikkelsen (1996) are used to ascertain long-term memory. Normalized skewed-Student t distribution is used as the distribution for ascertaining the asymmetry of the rate of return.

Intraday Data Analysis of Negative Relations between the Nikkei Stock Average and Nikkei Volatility Index

Mai Shibata

This paper statistically analyzed the relationship between volatility and stock price returns for the Nikkei Volatility Index (Nikkei VI) and the Nikkei Stock Average using numeric values and prices observed during intraday trading hours for a period of one year (2016). Specifically, the paper first of all examined intraday fluctuations in the Nikkei VI, on which there is little existing research. This examination found that Nikkei VI fluctuations are characterized by a "U" shape, with slightly high prices assigned immediately after the commencement of trading, followed by prices lowering during the day and then rising slightly just before the end of trading. Next, the paper conducted unit root tests to confirm the use of change rates in analyzing the Nikkei VI. Following this basic analysis, the Nikkei VI change rate was used as an explained variable to estimate a regression model using the variability rate lag value and Nikkei Stock Average returns as explanation variables in order to examine the negative relations between returns and the volatility change rate. The frequency of observation of returns was changed from 5 minutes to 10 minutes and then 15 minutes, with the model estimates for each of these time periods, and negative relations were confirmed in each case. In addition, maximum likelihood estimation with the Kalman Filter was used to estimate a parameter change model similarly using variables. When the estimated parameter values were analyzed, the results clearly showed that, in addition to the negative relations mentioned above, when the Nikkei VI change rate is used as the explained variable, the coefficient for the Nikkei Stock Average returns at that same moment is dependent on the intraday time period and the relationship changes, with the coefficient for the morning market session deviating significantly from zero and the coefficient for the evening session drawing slightly close to zero. These changes were clearer for the shorter 5-minute periods for which returns were observed than for the longer the 10-minute and 15-minute periods.

An Analysis of Bull and Bear Phases in TOPIX Using EGARCH Models

Kiyotaka Satoyoshi

In financial markets such as stock markets and foreign exchange markets, market prices may move in a certain direction over the medium-to-long term. When market prices are rising continuously during a certain period, the situation is called a “bull market”. Conversely, when market prices are falling continuously during a certain period, the situation (phase) is called a “bear market”. The terms “bull” and “bear” are widely used as words to straightforwardly describe the market price situation. However, at certain points the decision as to whether market prices are in a “bull” phase or a “bear” phase becomes arbitrary, and there is no general agreement on the definitions of “bull” and “bear”. Nevertheless, for those involved with stock markets, the decision as to whether market prices are in a “bull” phase or a “bear” phase at a certain point in time is extremely important for predicting future market trends. For this reason, thorough consideration needs to be given to the kinds of characteristics that can be observed in time-series changes in asset prices in “bull” and “bear” phases respectively, as well as to how fluctuation patterns differ between the two phases.

Much of the previous research on “bull” and “bear” markets utilizes long-term monthly data. However, because short-term trends are important for investors, it is also necessary to conduct analysis using daily data. In addition, volatility formularization is insufficient, and models require further refinement in order to be able to clarify the characteristics of “bull” and “bear” market prices.

For this research, daily TOPIX data was analyzed in order to investigate how asset prices in short-term time series differ in “bull” and “bear” phases. To identify “bull” and “bear” phases, the method developed by Bry and Boschan was used. Three patterns—one week, two weeks, and approx. one month—were set for minimum trend durations, and the EGARCH model was used as the model for ascertaining fluctuations in volatility. For the density distribution for the error term, normal distribution, t-distribution, skewed t-distribution, and skewed normal distribution were used. Incorporating dummy variables representing “bull” and “bear” phases into the EGARCH model, analysis was carried out to determine whether TOPIX fluctuation patterns are different between “bull” and “bear” phases, and which density distribution is the best match.

Empirical analysis results showed that, regardless of the length of the minimum duration for a trend, TOPIX volatility is larger during a “bear” phase. The results also confirmed that t-distribution and skewed t-distribution are the most appropriate distribution for the error term.

Furthermore, in cases where the minimum duration for a trend was short, asymmetric volatility was stronger in the “bear” phase, while the skewedness of distribution for the error term differed between “bull” and “bear” phases, with analysis results showing that distribution for the error term is a left-skewed distribution during “bear” phases” and a symmetric distribution during “bull” phases.