一橋大学 21世紀COEプログラム
社会科学の統計分析拠点構築
Research Unit for Statistical Analysis in Social Sciences

Hi-Stat Newsletter
No.2 (September 2004)

Contents

Report on the First Research Meeting

Editors

On July 17, 2004, the first research meeting of the Hi-Stat Project was held at Mercury Tower, Hitotsubashi University. Despite the horrible heat attacking the Tokyo area, approximately 50 researchers attended the meeting, including ten from outside the university.

In his opening remark, Prof. Osamu Saito (the project leader) clarified the objectives of the meeting. The first objective was to enhance researchers' understanding of the research aims of each of the teams within the project. Unlike other COE projects in the social sciences to analyze a particular research topic, the Hi-Stat Project does not have an overarching research theme. Instead, the various individual topics making up the Project are linked by a common methodological orientation: to conduct leading-edge research in the social sciences by integrating the compilation of a comprehensive database, statistical theory, and empirical analysis. The meeting thus provided an important opportunity to introduce and discuss the research that has been going on in the three different research teams: (i) that concentrating on micro analysis (leader: Prof. Yukinobu Kitamura); (ii) the macro research team (leader: Prof. Kyoji Fukao); and (iii) the statistics and econometric theory team (leader: Prof. Taku Yamamoto).

Another objective is to publicize research outcome of the Project. Two presentations in the morning served this aim. First, Prof. Mizoguchi presented new estimates of the long-term national accounts of Taiwan. The Long Term Economic Statistics (LTES) database project for Japan was followed by another project at Hitotsubashi University (1995-2000) aiming at compiling economic statistics on modern Asia and making them readily available to the public. This project was called the Asian Historical Statistics (ASHSTAT) Project. The macro team of the current Hi-Stat project has inherited the activities of ASHSTAT. The results of this research will be published by Toyo Keizai Shimposha. Prof. Mizoguchi introduced the contents of the forthcoming Taiwan volume and discussed its main findings. In the second presentation, Prof. Matsui announced that, despite the existing prohibitive laws, micro data collected by the government of Japan are going to be accessible to Hi-Stat researchers in the coming months (see the essay in this newsletter).

In the afternoon, three sessions were held in which each of the leaders of a research team briefly summarized recent activities of his team and then researchers belonging to each team presented preliminary results of their on-going research. Each presentation was followed by comments and questions. After the three sessions, common issues such as the compilation of databases were discussed. The animated

discussion continued when we moved to the top of Mercury Tower where we enjoyed excellent food and a magnificent sunset view of Mt. Fuji. To conclude, the two objectives of the meeting were successfully met.

Program

10:30-11:30 Chair: Osamu Saito (Hitotsubashi University)

"Long Term National Accounts of Taiwan, 1901-2000" by Toshiyuki Mizoguchi (Hiroshima Univ. of Economics).

11:30-12:00 Chair: Osamu Saito (Hitotsubashi University)

"Use of Government Microdata in Japan" by Hiroshi Matsui (Hitotsubashi University).

12:00-13:30 Lunch break

13:30-14:30 Session by the statistics and econometric theory team. Chair: Taku Yamamoto (Hitotsubashi University)

"Forecasting in Large Cointegrated Systems" by Hiroaki Chigira (Ph.D. candidate, Graduate School of Economics, Hitotsubashi University).

"An Autocorrelation Test in Dynamic Panel Random Effects Models" by Hosung Jung (Ph.D. candidate, Graduate School of Economics, Hitotsubashi University).

14:45-16:15 Session by the research team on micro analysis. Chair: Yukinobu Kitamura (Hitotsubashi University)

"Labor Contracts, Incentives, and Food Security in Rural Myanmar" by Takashi Kurosaki (Hitotsubashi University).

"A Life-Cycle Model of Consumption: Structural Estimation of Precautionary and Life-Cycle Motives" by Naohito Abe (Hitotsubashi University) and Tomoaki Yamada (Ph.D. candidate, Graduate School of Economics, Hitotsubashi University).

16:30-17:30 Session by the research team on macro analysis. Chair: Kyoji Fukao (Hitotsubashi University)

"What Should Be the Weights on Three Major Currencies for a Common Currency Basket in East Asia?" by Eiji Ogawa (Hitotsubashi University) and Kentaro Kawasaki (Toyo University).

17:30-18:00 General discussion. Chair: Kyoji Fukao

18:00-20:00 Reception

Introduction to Databases, No. 2

Compilation of the ESRI-HISTAT JIP Database by the Macroeconomic-Analysis Division of the Hi-Stat Project: Status Report and Ongoing Revisions

Kyoji Fukao (Hitotsubashi University)

The Macroeconomic-Analysis Unit of the Hi-Stat Project has been compiling the JIP database (Japan Industrial Productivity Database) in coordination with ESRI (the Economic and Social Research Institute, Cabinet Office) and RIETI (Research Institute of Economy, Industry and Trade) in order to study the determinants of Japan's TFP growth at the macro level and at the 3-digit industry level. In this report I provide information on the major characteristics of the JIP database and on our ongoing revision work. I also explain how the database was developed and from where the present database and documents relating to it can be downloaded.

A Brief Introduction to the JIP Database

The database contains annual information on 84 sectors, including 49 non-manufacturing sectors, from 1970 to 1998. These sectors cover the whole Japanese economy. The database includes detailed information on factor inputs, annual nominal and real input-output tables, and some additional statistics, such as R&D stocks, capacity utilization rates, Japan's international trade statistics by trade partner, inward and outward FDI, etc., at the detailed sectoral level.

The JIP Database was originally compiled by Kyoji Fukao (Hitotsubashi University), Tsutomu Miyagawa (Gakushuin University), Hiroki Kawai (Keio University), Tomohiko Inui (Nippon University), several economists at ESRI, and graduate students from Keio, Hitotsubashi, Tsukuba and other universities as part of the ESRI research project "Japan's Potential Growth." The original version of the JIP database, which was finished in July 2003, is called the "ESRI-HISTAT JIP Database" and available at ESRI's website. This original version covers 1970-1998. In order to examine the database and to investigate the possibility of future international comparisons, the Hi-Stat project hosted an international workshop to which we invited Prof. Pyo of Seoul National University and young scholars from Korea and the Netherlands. At the conference, participants agreed to continue coordinating their work in order to launch a project of international productivity comparisons. A total factor productivity analysis based on the JIP database was also presented at an international conference held by ESRI.

On-Going Revision

In July 2004, the Macroeconomic-Analysis Unit of the Hi-Stat Project started to revise the JIP database in coordination with RIETI. In our revision, we mainly focus on the following tasks.

(1) the extension of the period covered from 1970-98 to 1970-2002;
(2) the revision from 1968 SNA basis to 1993 SNA basis;
(3) the revision of output statistics, which at present are based on Japan's I-O statistics and not fully identical with SNA statistics,

and

(4) the revision of labor input data.

The new database will become available in 2005. In the RIETI project, we are also compiling a database of firm-level statistics for productivity analysis, which covers the whole economy. Using this micro-data, we will try to explain the slowdown of Japan's total factor productivity at the macro-level as a result of micro-level changes, such as changes in the entry and exit of firms, the reallocation of production factors between firms, and R&D activities.

Documentation

A detailed explanation of the database is provided in:

1. Fukao, K., T. Inui, H. Kawai, and T. Miyagawa, "Sectoral Productivity and Economic Growth in Japan, 1970-98: An Empirical Analysis Based on the JIP Database," in Takatoshi, Ito and Andrew Rose (eds.), *Growth and Productivity in East Asia: East Asian Seminar on Economics Volume 13*, The University of Chicago Press, 2004.
2. *Sangyo Betsu Seisansei to Keizai Seicho: 1970-98* (Sectoral Productivity and Economic Growth: 1970-98), (in Japanese), *Keizai Bunseki* (Economic Analysis), No. 170, ESRI, 2003.

More recent information on the database is available at the web site of the HI-STAT project:
http://hi-stat.ier.hit-u.ac.jp/english/index.html
The database itself is downloadable at
http://www.esri.go.jp/jp/archive/bun/bun170/bun170.html
and
http://hi-stat.ier.hit-u.ac.jp/research/database/index.html

Essay, No. 2

Use of Government Microdata and the Statistics Law in Japan

Hiroshi Matsui (Hitotsubashi University)

Empirical research in the social sciences worldwide has become more dependent on microdata in recent years. In Japan, however, the Statistics Law has limited the use of government microdata. This seems to have hindered the development of empirical research on the Japanese economy.

Use of Raw Data for "Non-Statistical" Purposes under the Statistics Law

The use of raw data collected by the government of Japan is governed by Article 15 of the Statistics Law, which states that

> (a) No person shall use filled-in questionnaires of the designated statistics[1] for non-statistical purposes.
>
> (b) However, the questionnaires may be used for purposes approved by the Minister of Internal Affairs and Communications. In such a case, the purpose needs to be publicized by the Minister.

Since the purpose of using filled-in questionnaires includes the production of statistics, this article does not seem to limit the use of such questionnaires. However, Article 7 of the Statistics Law stipulates that before conducting a survey for compiling the designated statistics, it is necessary to obtain the approval of the Minister of Internal Affairs and Communications regarding the coverage of the survey and the form of processed results. Therefore, any use of filled-in questionnaires for a purpose not listed in the initial approval by the Minister is, from a legal viewpoint, regarded as a "non-statistical" purpose.

This provision regarding the use of filled-in questionnaires is more than just a legal formality. Rather, it serves to assure respondents to a survey that the questionnaires will be used only for the purposes initially intended, which helps to secure the truthfulness of the statistics (Article 1 prescribes that securing the truthfulness of statistics is among the objectives of the Statistics Law). Thus, the use of filled-in questionnaires for "non-statistical" purposes is allowed by the Minister only when this is beneficial to the public. Similar provisions exist in the Statistics Law regarding statistics other than the designated statistics.

The point is that the use of filled-in questionnaires for "non-statistical" purposes depends on the approval by the Minister of Internal Affairs and Communications. This is very difficult to obtain since the use of filled-in

questionnaires for "non-statistical" purposes should be restricted in order to maintain the confidentiality of information collected. Therefore, any potential user of raw microdata has to prove that the use is of definite benefit to the public in order to obtain the approval. At the time of application, the applicant needs to show clear evidence that the study is beneficial to the public and provide his/her career details as well as a number of complementary materials. Precise statements on which information is to be processed and which form is used to present the results are also required at the time of application, which means that academic research based on trial-and-error is impossible. Further, the applicant is required to complete unfamiliar official documents full of jargon used only in government offices. An illustrative example from my own experience is that when completing a form I had to replace "the Hitotsubashi University president" with "the president of Hitotsubashi University."

Thus, it is a very time-consuming process to go through all the formalities necessary to obtain the approval by the Minister. Moreover, researchers at private universities or institutions are less likely to obtain approval than those working in public universities or institutions who are legally bound to confidentiality.

Historical Significance of the Statistics Law

The Statistics Law was enacted shortly after the war in 1947. During the war, statistical affairs were thought of as unessential matters and statistical organizations were undervalued. Even the results obtained from statistical surveys were kept secret from the public. The Law was thus established under the impression of this secrecy and unaccountability of the government that allowed it to pursue its disastrous war policies and, moreover, reflecting the growing need for reliable statistics in the reconstruction of Japan after the war. This was the historical background why the Statistics Law was enacted, under which the statistical system of the government was constructed in the following years.

The first article of the Statistics Law provides that the objectives of the Law are to secure the truthfulness of statistics, eliminate the duplication of statistical surveys, consolidate the statistical system, and to improve the framework of statistics. Based on these objectives, the Law makes several provisions for surveys intended for the compilation of designated statistics, such as the approval by the Minister for the implementation of surveys and methods thereof and the obligation to publish the results of surveys. The Law thus established the framework of the Japanese statistical system from which reliable statistics – independent of the prevailing political situation and insulated from surrounding ministries and government agencies – are produced. It is in this historical context of the need to improve the reliability of statistics that the restriction on the use of filled-in questionnaires for "non-statistical" purposes needs to be understood.

While the Statistics Law does not fully satisfy present demands of users of statistics, it unquestionably played a fundamental role in reconstructing statistics and the statistical system in postwar Japan, which in turn has subsequently supported the social and economic development of the country. I believe that the role played by the Statistics Law needs to be viewed objectively against this background.

Trial Access to Government Microdata through the COE Project

Times are changing very fast. The present demand for using raw microdata for empirical research by individual researchers using personal computers was not imaginable when the Statistics Law was enacted. Such research has been supported by theoretical and methodological advances and econometrics in recent years. This means that in order to keep up with the need for advanced research, old ways need to be changed in order to pursue new directions in the use of microdata.

As stated above, the Statistics Law in principle prohibits the use of raw microdata for "non-statistical" purposes. But the rationale for this prohibition is to maintain the integrity of the information collected.

Therefore, the use of microdata for academic purposes with full confidentiality is unlikely to be disapproved by the public. No respondent to the 2000 Population Census will interpret the explanation "This questionnaire is to be used for statistical purposes only. Hence, please fill in this form as honestly as possible" as banning any future use of the information for academic purposes. This is a time to relax the conditions for the use of government microdata for academic purposes.

Access to government microdata has already been discussed in government offices.[2] The Statistical Survey Department in the Statistics Bureau under the Ministry of Internal Affairs and Communications has examined this issue and proposed a trial access scheme for academic use. To find out problems related to the academic use of microdata, the government has chosen the Hi-Stat COE Project at the Institute of Economic Research (IER), Hitotsubashi University, as the counterpart to start the trial access. The Hi-Stat Project was chosen since it has inherited the output of the earlier "Micro Data Analysis" research project headed by Prof. Yoshiro Matsuda of the IER, Hitotsubashi University (he is currently at Tokyo International University), funded by Grants-in-Aid for Scientific Research of the Japanese government.

The trial access to the microdata under the Hi-Stat Project will maintain the confidentiality of the data and hence safeguard the privacy of survey respondents. The use of government microdata will be restricted to academic purposes only. The initial trial will include the past three rounds of three surveys: the National Survey of Family Income and Expenditure, the Employment Status Survey, and the Survey on Time Use and Leisure Activities.

As seen in recent news, some private companies in Japan failed to protect the privacy of their customers. It is therefore of utmost importance to protect the confidentiality of the microdata in order to gain public support for its academic use. Without such a guarantee, the public will not support researchers in their attempt to use microdata. For these reasons, this trial is subject to some restrictions on the eligibility and methods for use.

For Further Advancement

The person in charge of devising the Statistics Law was Mr. Shiro Yamanaka. Having been atom-bombed in Hiroshima, he died of leukemia, aged 38, the year following the enactment of the Law. Suffering from his radiation-related illness, it seems that Mr. Yamanaka exerted himself to complete the Law. Addressing his deceased wife, Hisako, a day before the Law was enacted he wrote in his diary:

> "The statistical committee, about which I had talked to you before, finally introduced the Statistics Bill to the House of Peers on the 28th of last month. The Bill will be submitted to the House of Representatives tomorrow to be passed there. If only I could let you see the Bill that I painstakingly managed to complete without formal training in law. If only I could proudly talk to you abut it and hear your flattering words. Such wishes never come true, even if I put the Bill on your Buddhist altar and recite a sutra. I feel so sad that I cannot enjoy the moment of achieving my lifetime's work that is also an historical landmark for Japan. Some things in my life are more important than work."

As well as his affection for his dead wife, this passage vividly conveys his passion for and pride in the Statistics Law.

Many people, including Mr. Yamanaka, made a great effort to improve the quality of statistics under the difficult circumstances of that time, aiding in the development of the statistical system and the expansion of the use of statistics in present Japan. Although trial access to government microdata through the Hi-Stat Project is only a small step, it is surely an important step toward the further development of empirical research on the Japanese economy. Building on the spirit on the pioneers, we intend to advance this project steadily.

References (in Japanese)

Kawai, Saburo. 1997, "Yamanaka San no Koto," *Tokei Joho* Vol.46, Zenkoku Tokei Kyokai Rengokai.

Okuno, Sadamichi, eds. 1977, *Yamanaka Shiro Ikoshu*, Yamanaka Shiro Ikoshu Kankokai.

Sakamoto, Kitsuzo. 1991, *Wagakuni no Tokeiseido*, Zenkoku Tokei Kyokai Rengokai.

Yamanaka, Shiro, and Saburo Kawai. 1950, *Tokeiho to Tokeiseido*, Tokei no Tomo Sha.

Notes

1 "Designated statistics" is the term used in the Statistics Law to refer to a category of statistics designated by the Minister of Internal Affairs and Communications.

2 For details of governmental discussions on statistics and the statistical system, see "New Directions in the Development of Government Statistical Services" at http://www.stat.go.jp/english/index/tenkai/10.htm

Hi-Stat Discussion Papers (April - September 2004)

No.25 (April 2004) Masahiro Abe and Isao Ohashi, "Inter-Industry and Firm Size Effects on Wage Differentials and Efficiency Wages in Japan."

No.26 (April 2004) Masayuki Nakakuki,Akira Otani and Shigenori Shiratsuka, "Distortions in Factor Markets and Structural Adjustments in the Economy."

No.27 (April 2004) Shigeru Ishiwata, "Estimating Gross Value Added in Indonesian Manufacturing Industries, 1917-1940."

No.28 (April 2004) Yoko Takahashi and Tatsuji Makino, "Labor Input Data of the JIP Database."

No.29 (April 2004) Tsutomu Miyagawa, Hideki Toya & Tatsuji Makino, "Asia syokoku no kinkou kawase rate" [in Japanese].

No.30 (April 2004) Jian Wang & Yukihiko Kiyokawa, "Senzen Chugoku no Toukei kikou to Seifu toukei" [in Japanese].

No.31 (April 2004) Ralph Paprzycki, "What Caused the Recent Surge of FDI into Japan?"

No.32 (May 2004) Reiko Aoki & Sadao Nagaoka, "The Consortium Standard and Patent Pools."

No.33 (May 2004) Kyoji Fukao and Hyeog Ug Kwon, "Japan's Productivity and Economic Growth :an Empirical Analysis Based on Industry-Level and Firm-Level Data" [in Japanese].

No.34 (June 2004) Akira Uegaki, "Kyuu Soren no Boueki Toukei no SITC Rev.3 eno Tenkan" [in Japanese].

No.35 (July 2004) Takeo Hoshi & Anil K Kashyap, "Solutions to the Japanese Banking Crisis: What Might Work and What Definitely Will Fail."

No.36 (August 2004) Hyeog Ug Kwon, "International R&D Spillovers between Korean and Japanese Manufacturing Industries."

No.37 (August 2004) Naohito Abe & Tomoaki Yamada, "Life-Cycle Model and Consumption: Structural Estimation of Precautionary and Life-Cycle Motives."

No.38 (August 2004) Naohito Abe & Taehun Jung, "Cross-Shareholdings, Outside Directors, and Managerial Turnover: The Case of Japan."

No.39 (August 2004) Ralph Paprzycki & Kyoji Fukao, "Overcoming Economic Stagnation in Japan: The Importance of Total Factor Productivity and the Potential Contribution of Foreign Direct Investment."

No.40 (September 2004) Isao Ohashi, "Wages, Hours of Work and Job Satisfaction of the Elderly."

Seminars and Meetings (April - September 2004)

Hi-Stat Lecture Series

3rd (April 16 - May 21, 2004) D. Kawaguchi (University of Tsukuba) “Empirical Analysis of Panel Data.”

Hi-Stat Research Seminars

(Only those seminars with English papers/handouts are listed here. There were fourteen research seminars held during April - September 2004.)

17th (April 9, 2004) H. Tsurumi (Rutgers University), “Convergence Tests for MCMC Draws with an Application.”

18th (May 13, 2004) Joint Research Meeting of CGP Project of the University of Michigan and Hi-Stat Project of Hitotsubashi University, “Macro/Financial Issues and International Economic Relations: Policy Options for Japan and the United States.”

19th (May 14-15, 2004) Joint Conference of CGP Project of the University of Michigan and Hi-Stat Project of Hitotsubashi University, “International Economic Relations and Structural Change: Issues and Policy Options for Japan and the United States.”

20th (June 18, 2004) Anil Kashyap (The University of Chicago, Graduate School of Business), “Zombie Lending and Depressed Restructuring in Japan.”

21st (May 12, 2004) Robert Cassen (LSE), “21st-Century India.”

22nd (May 31, 2004) Alan Kirman (EHESS, France), “The Economy as a Complex System: Individual and Collective Rationality.”

24th (June 10, 2004) John Brown (Clark University), “On the Search for Empirical Regularities of the Strong Laws of Comparative Advantage.”

28th (July 17, 2004) General Meeting of Hi-Stat Project (see the top article of this newsletter).

29th (August 16, 2004) Hidehiko Ichimura (University College, University of London), “Program Evaluation Using Collateralized Loan Obligation Data.”

30th (September 27, 2004) Jean-Pascal Bassino (Hitotsubashi University), “Regional Inequality in Japan, 1892-1941.”

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