



Hitotsubashi University
Institute of Innovation Research

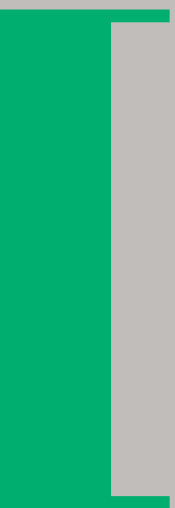
Hitotsubashi University
Institute of Innovation Research



ANNUAL REPORT 2012-2013



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ANNUAL REPORT FY2012 – FY2013

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‘To become a world-class of excellence for research in social processes of innovation’ — The Institute of Innovation Research (IIR) was established at Hitotsubashi University to achieve this aim in April 1997, as the result of the reorganization of the Institute of Business Research, whose main pursuit had been the theoretical and empirical analysis of business, society and management.

It is indispensable for a populous country with poor natural resources like Japan to generate innovation. The importance of innovation has considerably increased since 1990s when growth by catching up with Western competitors was no longer possible. At that time, however, we had only little understanding of how innovation was generated. Innovation was an agenda in the realm of technical development. People did not pay sufficient attention to the long, social process for turning technological invention into industrial development. Innovation is a complex social phenomenon in which economic, political, organizational, historical and legislative factors are correlated with each other. In order to clarify this process, there needed to be places for interdisciplinary, systematic research where people from various fields of social science could work together utilizing the knowledge of natural science. This is how the IIR was established as an interdisciplinary research institute concentrating on the innovation process.

Missions

The first mission of the IIR is to study the innovation generation process systematically and empirically, understanding innovation as something to bring about economic value, and to contribute to the improvement of theoretical and practical knowledge. The role of the IIR also encompasses the clarification of social and economical impacts of innovation.

The second mission is to build a bridge between theory and practice on innovation. Since innovation is “living phenomenon,” one needs to be deeply involved in the front line of practice and understand specific problems happening there. In order to achieve the ultimate objective of facilitating innovation, there should be certain mechanisms for applying theoretical knowledge to the front line of innovation. In this sense, the IIR has to play an important role in linking theory and practice.

The third mission is to be an open research center which serves as a place for knowledge fusions between researchers from different countries. As the importance of innovation is and will be growing in East Asian countries, promoting interactions with researchers from these countries is very important for Japan in contributing to the development of this region. Thus, the IIR's missions also include the accumulation of qualitative and quantitative information on Japanese innovation.

Research Areas

In order to pursue its mission of studying the innovation process systematically and empirically, the activities of IIR have covered the following areas of research since its establishment.

“Research on Technological Innovation” and “Research on Management Innovation” are the areas in which factors facilitating innovation such as technology, organizations and management methods are being studied. “Research on Entrepreneurs” analyzes the personal characteristics of entrepreneurs as innovation initiators in order to go deep into the realities of innovation. “Research on Social Networks” explores how networks of private firms, universities, individuals, and other entities and parties affect innovation.

“Business History Research” and “Technology History Research” look at the above areas of empirical research from a broader perspective, understand their historical contexts, and trace the development processes of innovation over time. “Research on Institutions for Innovation” focuses on clarifying the influences of accounting and legal systems (such as those about intellectual property rights) on innovation.

“Research on Knowledge Management” synthesizes and attempts to understand all these empirical areas of research from a broader, theoretical perspective. Finally, “International Comparative Research” involves comparison, demonstration and analysis on an international scale.

We believe that our research at the IIR offers an important opportunity to foster creativity and innovation in Japan in order to bring about transformation and development in business organizations and the economy. We wish to create a world-class, international research institute where people from all over the world can conduct research together.

I. Research Activities



1. Innovation Research Forum — Apr. 2012 ~ Mar. 2014

The following is the list of lectures given as part of the Innovation Research Forum during 2010-2011 academic year:

- | | |
|---------------|---|
| Jan. 22, 2014 | Roy Nyberg
DPhil Student, Oxford Internet Institute, University of Oxford
“From a Lean to a Rich View of Innovation: Case Evidence from the Emergence of Mobile Health” |
| Nov. 28, 2013 | Mitsuru Igami
Assistant Professor, Yale University, Faculty of Arts & Sciences, Department of Economics
“Patent Statistics as Innovation Indicators? Hard Evidence” |
| Nov. 19, 2013 | Mikolaj Jan Piskorski
Associate Professor of Business Administration, Harvard Business School
“A Social Strategy: How We Profit from Social Media” |
| Sep. 18, 2013 | Israel Drori
Professor, School of Business, College of Management Academic Studies, Israel
“The Evolution of New Industry, a Genealogical Approach” |
| Jun. 26, 2013 | Keun Lee
Professor, Seoul National University, Visiting Professor of IIR
“Comparing the Productivity Impact of Knowledge Spillovers from Network and Arm’s Length Industries” |
| Jun. 26, 2013 | Mark Schankerman
London School of Economics and CEPR, Visiting Professor of IIR
“Patents and Cumulative Innovation: Causal Evidence from the Courts” |
| Jun. 19, 2013 | Taiju Kitano
Associate Professor, IIR, Hitotsubashi University
“Disguised Protectionism? Environmental Policy in the Japanese Car Market” |
| Mar. 13, 2013 | Giuseppe Scellato
Assistant Professor, Politecnico di Torino
“Mover’s Advantage and US Attractiveness for Young Scholars (based on NBER WP 18577)” |
| Mar. 06, 2013 | Keun Lee
Professor, Seoul National University, Visiting Professor of IIR
“Knowledge, Path-creation and Economic Catch-up: Schumpeterian Recipe to Escape the Middle Income Trap” |
| Jan. 29, 2013 | Cornelia Storz
Professor, Goethe University Frankfurt am Main
“Which Labor Market Design Is Better for Innovation?: The Case of Game Software Industry” |
| Jul. 28, 2012 | Hiroko Yamane
Professor, Department of Law, Teikyo University
“Competition Analyses of Licensing Agreements: Japan’s Developmental Perspectives and Micromanagement of Licensee Protection” |

Jun. 20, 2012

Jaehyun Park

PhD Candidate, Weatherhead School of Management, Case Western Reserve University
“The Interaction Paradigms between Designers and Users in the Design Process: Two
Empirical Studies”

2. Joint Research Projects — Apr. 2012 ~ Mar. 2014

At the IIR, we have the advantage of a team of researchers covering many areas of scholarship to carry out joint research into themes that have not previously been touched upon. The following are the joint research projects that researchers engaged in during the 2012-2013 academic year.

(* = Project Leader, or Coordinator)

■ Industry-Academia-Government Collaboration Research Program on the Innovation Processes

The Institute of Innovation Research (IIR) conducted its Industry-Academia-Government Collaboration Research Program on Innovation Processes from FY2008 to FY2012, with support from the central government. The program, which was conducted through industry-academia-government collaboration, is supported by a special subsidy from the central government. Together with IIR faculty members, visiting faculty members and researchers also worked on various projects for this program.

1. Objectives

Innovation holds the key to the future growth of Japan's economy. For both the creation of knowledge and its use, innovation is a highly complex process that entails a social division of labor, and research on the entire process – from the systematic accumulation of objective data to the creation and application of knowledge based on such information – is needed to clarify optimal methods for effectively encouraging innovation. Together with promoting research concerning the innovation process (including knowledge production mechanisms and the optimal means for competing and cooperating in R&D), based on industry-academia-government collaboration, and obtaining research results that set an international standard, the research program seeks to apply the fruits of its research to strengthen the technology management capabilities of government agencies and the industrial sector, and helps shape novel policies and proposals for institutional reforms to promote innovation.

2. Research areas

[1] Measurement of the innovation process

This research seeks to understand the realities of the knowledge production mechanism, including knowledge combinations, through means such as systematic case studies of government-supported research projects, along with questionnaire surveys and corroborative analyses utilizing patents and other statistical data.

Specifically, participants work in cooperation with the Ministry of Education, Culture, Sports, Science and Technology National Institute of Science and Technology Policy (NISTEP) to use the survey research know-how universities has accumulated up to now and NISTEP database information to implement large-scale questionnaire surveys of scientists and understand parameters such as knowledge production processes, research output and research environments and inputs, and conduct empirical research on the knowledge creation processes in sciences and the processes through which innovation is created from scientific knowledge.

Researchers also work in cooperation with the New Energy and Industrial Technology Development Organization (NEDO) to advance development of theoretical research and methodologies concerning procedures for measurement of the innovation process, by using the results of past studies on innovation. In tandem with this activity, researchers elucidate and analyze the actual conditions surrounding such aspects as the mechanisms of knowledge combination and knowledge production and the knowledge

commercialization process, by creating a database of NEDO-supported research projects and researchers and using this data to provide practical verification of theories and research methodologies.

[2] Management of Technology

This research looks at the management of technology “best practices” by which the government or the industrial sector as a whole can effectively link R&D results to innovation. With the cooperation of the Semiconductor Technology Roadmap Committee of Japan at The Japan Electronics and Information Technology Industries Association (JEITA), the Ministry of Economy, Trade and Industry and the industrial sector, including manufacturers of semiconductor fabrication equipment and semiconductor devices, the program has created a research system and is investigating topics such as the mechanism by which the International Technology Roadmap for Semiconductors (ITRS) was created, the historical significance and meaning (including limits) of what the ITRS has accomplished, and the feasibility of ITRS development in the future. The program also is undertaking, with assistance from the Japan Bioindustry Association and the Japan Pharmaceutical Manufacturers Association Office of Pharmaceutical Industry Research, research on the market entry and growth mechanisms of high technology start-up firms in the biotechnology sector and the best methods for cooperation with the pharmaceuticals industry.

[3] Policies and systems

Based on the case studies, statistical databases and international comparative research described above, the program analyzes problems that form barriers in Japan to both the creation of new industries and sustainable innovation at existing industries, and conducts research that will lead to novel proposals.

3. Members

IIR Faculty Members (Project Leaders: Hiroyuki Chuma* and Sadao Nagaoka*)

Akira Endo, Visiting Professor, IIR / Biopharm Research Laboratories, Inc.

Satoru Ito, Professor (Special Appointment), IIR / former Chairman, Renesas Electronics Co., Ltd.

Yoshiyuki Ohsugi, Professor (Special Appointment), IIR / Scientific Director, Chugai Pharmaceutical Co., Ltd., Medical Affairs Division

Gensuke Tokoro, Professor (Special Appointment), IIR / aRigen Pharmaceuticals, Inc.

Masao Nakaya, Professor (Special Appointment), IIR / President & CEO, Semiconductor Technology Academic Research Center

Masaomi Kameyama, Professor (Special Appointment), IIR / Nikon Corporation

Masatsura Igami, Associate Professor (Special Appointment), IIR / NISTEP

Naotoshi Tsukada, Associate Professor, National Graduate Institute for Policy Studies

Yusuke Naito, A Life-laboratory

Yuji Honjo, Chuo University

Tomohiro Ijichi, Seijo University

Kenta Nakamura, Kobe University

Hideo Owan, The University of Tokyo

Katsushige Tsuno, Electron Optics Solutions

Koichiro Onishi, Osaka Institute of Technology

Yoichiro Nishimura, Kanagawa University

4. Results during FY2012

[1] NEDO Project:

(In Japanese)

Nagaoka, Sadao, Manabu Eto, Yaichi Aoshima, Hideo Owan, Kazunari Matsushima, Junichi Nishimura and Naotoshi Tsukada, "Collaborations for Innovations: Insights from the Experiences of NEDO Consortiums," IIR Working Paper WP#12-13, October 2012

[2] Semiconductor Industry Innovation:

(In Japanese)

Kameyama, Masaomi, "Photolithography," IIR Working Paper WP#13-11, March 2013

Higashikawa, Iwao, "Open-Sourcing in Semiconductor R&D System: Learning from the Case of F2," IIR Working Paper WP#13-10, March 2013

Tsuno, Katsushige, "Wien Filter as a Science Innovation," IIR Working Paper WP#13-08, March 2013

Chuma, Hiroyuki, "Hitachi High-Technologies Corporation: CD-SEM Supporting the Miniaturization for World Semiconductor Industry," *Hitotsubashi Business Review*, Vol. 60, No. 3, pp. 142-163, December 2012

Chuma, Hiroyuki, "CD-SEM Supporting the Miniaturization for World Semiconductor Industry: Embodying Originality and Universality a la Hitachi," IIR Case Study CASE#12-11, October 2012

Nakaya, Masao, "Problems of Japanese Semiconductor Industry, —Stagnation of Japanese Semiconductor Industry in the 2000s—," IIR Working Paper WP#12-10, July 2012

[3] Innovation in the Biotechnology Sector:

(In Japanese)

Honjo, Yuji, Sadao Nagaoka, Kenta Nakamura and Shimizu Yumi, "Agenda for the Growth of Bio Startups in Japan with a Focus on Their Science Sources," IIR Working Paper WP#13-03, January 2013

[4] Others:

(In Japanese)

Nobeoka, Kentaro and Masaru Karube, "Difficulties in Creating Value at Japanese Firms Due to Managerial Complexity," *Hitotsubashi Business Review*, Vol. 60, No. 3, December 2012, pp. 84-96

Yonekura, Seiichiro, "Logic behind Open Innovation: Technology, Market and Organization," *Hitotsubashi Business Review*, Vol. 60, No. 2, September 2012, pp. 6-15

■ magicc: Micro Analysis on Green Innovation and Corporate Competitiveness

1. Outline of Research

Former Democratic Party of Japan Prime Minister Hatoyama's declaration at the Copenhagen Summit of Japan's intention to reduce greenhouse gases (GHG) by 25% by 2020 compared with 1990 is still a fresh memory. On the other hand, the Great East Japan Earthquake resulting in the accident at the Fukushima Nuclear Power Station, raised a question for the construction of new nuclear plants, and even for the continued use of existing facilities. Japan currently is confronted with three serious issues, in terms of its "energy problem (stable energy supply)," "environmental problem (reduction of greenhouse gases)" and "industrial problem (long-term economic development)". The situation is like a complex simultaneous equation that at first glance appears to have no solution. Magicc is a research project aimed at solving this complex equation from the micro-perspective of management scholars by conducting in-depth fieldworks.

2. Time Period

FY2011-present

3. Members

Yaichi Aoshima*, Hiroshi Shimizu, Yukiko Fujii, Naohiko Wakutsu, Masatoshi Fujiwara (Graduate School of Commerce and Management, Hitotsubashi University), Yasushi Saito (Seinan Gakuin University), Kazunari Matsushima (The University of Tokushima), Youngjae Koh (Konan University), Tomono Miki (Rikkyo University) and Atsushi Tsumita (Musashino University)

4. Research Activities and Outputs during FY2012-FY2013

A part of our research activities as well as reports of research meetings are disclosed in the following website (in Japanese).

<http://magicc.iir.hit-u.ac.jp>

Articles

- (1) Aoshima, Yaichi, Kazunari Matsushima and Manabu Eto, "Effects of Government Funding on R&D Performance Leading to Commercialization," *International Journal of Environment and Sustainable Development*, Vol. 12, No. 1, January 2013, pp. 22-43
 - (2) Aoshima, Yaichi and Hiroshi Shimizu, "A Pitfall of Environmental Policy: An Analysis of 'Ecopoint Program' in Japan and its Application to the Renewable Energy Policy," *International Journal of Global Business and Competitiveness*, Vol. 7, No. 1, 2012, pp. 1-13
- (In Japanese)
- (3) Fujiwara, Masatoshi and Yaichi Aoshima, "Toyobo Co., Ltd.: Reverse Osmosis Membrane Development and Business Expansion," *Hitotsubashi Business Review*, Vol. 62, No. 1, June 2014, pp. 102-119
 - (4) Aoshima, Yaichi and Osamu Suzuki, "Nippon Steel Corporation: Development and Commercialization of Waste Plastics Recycling Process Using Coke Oven," *Hitotsubashi Business Review*, Vol. 61, No. 3, December 2013, pp. 152-165
 - (5) Shimizu, Hiroshi and Yaichi Aoshima, "Business Management Perspectives in Science, Technology and Innovation Policy," *Kenkyū Gijyutsu Keikaku* (The Journal of Science Policy and Research Management), Vol. 27, No. 3, April 2013, pp. 183-196

- (6) Aoshima, Yaichi, “Importance of Management Perspectives to Solve Energy and Environmental Problems,” *Soshiki Kagaku* (Organizational Science), Vol. 46, No. 3, March 2013, p. 105
- (7) Aoshima, Yaichi, “Vulnerability of the Growth Strategy with a Slogan of ‘Eco’,” *Wedge*, March 2013, pp. 14-16

Working Papers:

- (1) Aoshima, Yaichi and Tomono Miki, “Possibilities of Geothermal Power Generation in Japan: Notes from an Iceland Field Study,” IIR Working Paper WP#12-11, September 2012
- (2) Fujiwara, Masatoshi, Yaichi Aoshima and Tomono Miki, “Development of the Polyamide Composite Reverse Osmosis Membrane and Reverse Osmosis Membrane System: A Case Study of Toray Industries, Inc.,” IIR Case Study CASE#12-08, July 2012

Presentation:

- (1) Aoshima, Yaichi, “Energy and Industrial Development: How Does Promoting Renewable Energies Achieve Stable Energy Supply, Environmental Protection, and Economic Growth?,” I²CNER International Workshop 2014, hosted by International Institute for Carbon-Neutral Energy Research, Kyushu University and HYDOGENIUS, January 31, 2014, Fukuoka
- (2) Aoshima, Yaichi and Kazunari Matsushima, “Commercialization Performance and Spillover Effects of the Government-funded Private R&D,” presented at the 15th Asia-Pacific Researchers in Organisation Studies Conference, February 14-17, 2013, Hitotsubashi University, Tokyo
- (3) Aoshima, Yaichi, “Japan’s Shift to Renewable Energies after the Fukushima Disaster,” presented at the 4th Chinese Renewable Energy Conference & Exhibition, November 1, 2012, Wuxi, China

(In Japanese)

- (4) Aoshima, Yaichi, “A Mechanism for the Competition among Companies in the Photovoltaic Industry,” presented at magicc Symposium 2014: Balancing among Environmental Protection, Energy Supply, and Economic Growth, IIR and Funding Program for Next Generation World-Leading Researchers (NEXT Program), February 7, 2014, Tokyo
- (5) Aoshima, Yaichi, “Potentials of Small-scale Geothermal Power Plant,” presented at magicc Symposium 2014: Balancing among Environmental Protection, Energy Supply, and Economic Growth, IIR and Funding Program for Next Generation World-Leading Researchers (NEXT Program), February 7, 2014, Tokyo
- (6) Aoshima, Yaichi and Hiromi Kubota, “Economy of Small-scale Geothermal Power Plant Using Hot Springs,” presented at the Annual Meeting of the Geothermal Research Society of Japan, November 7, 2013, Chiba

■ Project on Networks and Innovations

1. Outline of Research

Given a growing concern for how networks help mobilize resources more flexibly than traditional hierarchies in today's rapidly changing environments and how social capital can be usefully mobilized to sustain such resource allocation, this research focuses on identifying and analyzing the underlying determinants of successful institutional arrangements of organization and networking at two levels of analysis. First, at the organizational level we examine in some detail the emergent experiments of introducing cross-functional teams to defense systems development in the current context of defense procurement reforms among allies. Second, we investigate the emerging networking patterns of Chinese entrepreneurs from Wenzhou, Zhejiang Province, whose striking economic success has been widely recognized, in comparison with their counterparts from several locales from Fujian Province. In particular, we examine the extent to which Wenzhounese entrepreneurs' rapid rewiring patterns of their links with various transnational locales is related to their success in the light of small-world network theory that accommodates both local cohesiveness (high clustering coefficient) and efficient network information transmission (short path length). As in previous years we will continue to conduct our comparative field research in Japan, China, and Europe and will publish preliminary research results in the forms of working papers and articles in the media.

2. Time Period

FY2004-present

3. Members

Toshihiro Nishiguchi*, Motoko Tsujita (Ryukoku University)

4. The Findings of Our Study

Qualitative and quantitative evidence from our study of Wenzhou's economic success documents (1) the structural effectiveness of expatriates' rewiring of community networks to capture information and wealth from afar, (2) how the abundance of social capital facilitates community members' sharing and exploitation of nonredundant information, (3) how real world "global neighborhoods" established at the community level are consistent with, and operationalize, the tenets of small-world network theory, and (4) how its exclusionary aspect may limit the evolvability of community cohesion.

Our evidence further suggests that prosperity beyond what accrues to one's cognition and resources may lie in the successful operation of small-world networks. We noted earlier that both structure and agency are necessary, but add here that they are not sufficient; how they are connected is crucial as well.

We compared, through the lenses of social capital, trust and norms, the community networks, migration and rewiring patterns, and social cohesion characteristic of expatriate communities from Wenzhou and Fujian province. The similarities we observed in terms of human capital (low educational levels), initial migration patterns (smuggled abroad, often with the aid of organized crime), types of work (menial jobs), resources (loans from family members and relatives), proportion of foreign expatriates to hometown population (upper single-digit percentage point), and timing of emigration (a few decades after the 1978 Reform and Opening-up Policy) belie the striking differences we documented in the development and viability of the enterprises the respective groups established on foreign soil.

We found Wenzhou expatriates, by and large, to be successful and prosperous, continuously expanding their businesses assisted by social networks that facilitate constant search for new opportunities. Expatriates from Fuqin and elsewhere in Fujian province, especially those who emigrated to Japan, operating largely alone, with little prospect for collective activity, often became involved in internecine struggles and not infrequently turned to petty or even violent crime. Underlying these divergent outcomes were markedly contrasting social norms and values. Wenzhou natives exhibited an avid

entrepreneurship, expressed as a desire to be the “head of a chicken rather than the tail of a peacock,” and deep embeddedness in and harmony with their hometown community. Among Fuqin natives and others from Fujian province we observed a hand-to-mouth orientation to life and deeply-ingrained norm of risk avoidance reflected in the life pursuit of erecting in their hometown a three-story “stowaway palace” in which to retire in comfort to the envy of their immediate neighbors.

The mobility patterns of expatriates from Fuqin and proximate locations, consistent with those of their predecessors, some of them successful entrepreneurs in South East Asia, were by and large of the “I-turn” type between their hometown and a particular foreign destination. These contrast with Wenzhou natives’ more recent “zigzagging” itineraries that may land them, for varying lengths of time, in any number of countries. Their seemingly similar transnationality notwithstanding, the mobility patterns of Fuqin and nearby natives are consistent with “regular networks” in which nodal connections and information flows are predictable and overlapping, those of their Wenzhou counterparts more in line with “small worlds” characterized by elements of random, irregular rewirings embedded in regular, predictable node connections among the broader community. Whereas the former focuses on, and is largely circumscribed by, “next-door relations,” even across national borders, the latter mixes an element of “long-distance relations” with the broad, cohesive base of next-door relations to foster dynamism and adaptability to ever-changing environments. A little bridging thus complements a lot of bonding, and vice versa. We have examined, in the light of new network theory, the considerable, and predictable, differences in the collective information-processing and wealth-generating capabilities, and community-wide, informal welfare functions, of these two groups.

The very same social networks that supported and facilitated the development of a vibrant Wenzhou economy, however, were also implicated in the 2011 financial crisis, indicating limits to cohesive bonding with closure that threaten to curb further development of industrial structures. The distinct type and quality of social capital and trust that spawned and spurred Wenzhou’s prosperity continues to exhibit a primitive attribute of social interaction based exclusively on kinship and the cohesiveness of the hometown community that may in the long run be incongruent with further geographical expansion and active engagement in transnational businesses. This exclusionary element of Wenzhou social capital, in forestalling the development of the “universalistic trust” essential to the ability to rely on and work with strangers, including compatriots from other regions and foreigners, threatens to prevent Wenzhou from transcending the classic premodern society, the economy of which, as posited by Karl Polanyi remains embedded in and intertwined with traditional cultural and political aspects. That Wenzhouese products, processes, and businesses, from production of daily commodities to real-estate investments to usury, remain almost exclusively within easily imitable domains strongly suggests that the “Wenzhou model,” especially as propagated in China, could very well run its course and the long-term viability of Wenzhou businesses be more limited than generally believed, particularly in China. Nor do Wenzhou firms’ low level of research and development (R&D) expenditures (0.85% of Wenzhou city’s GDP compared to 1.49% for China and 1.52% for Zhejiang province, on average, in 2007) and low profit rates (1%-3%) of its small- and medium-sized enterprises (SMEs) bode well.

The foregoing observations do not negate, but rather further attest to, the usefulness of analyzing economic activities, behavior, and performance within the frameworks of social capital, trust, social embeddedness, and the latest network theory. They also suggest, however, some important implications of constraining conditions inherent in the objects under study.

■ Economic Growth Analysis of Science, Technology and Innovation Policy

1. Outline of Research

In this project, we develop a framework for analyzing and evaluating the economic impacts of science, technology, and innovation (STI) policies. In addition, this project conducts economic analyses on important issues in particular policy areas such as 1) knowledge production, 2) human resources, 3) R&D investments and 4) international knowledge transfer. Our goal is to present the methods, data, and empirical estimates (results) to policy makers, policy analysts, other stakeholders and general public who are not familiar with economic analysis.

2. Time Period

September 2012 - present

3. Members

Makoto Nirei*, Shinichi Akaike, Masaoki Tamura, Ryuichi Tamura, Akiyuki Tonogi, Megumi Kimura (IIR), Shuhei Aoki (Faculty of Economics, Hitotsubashi University), Koki Oikawa (Waseda University), Kensuke Miyazawa, Tetsushi Murao (Kyusyu University)

4. Research Activities and Outputs during FY2012-FY2013

Working Papers:

- (1) Tonogi, Akiyuki, Mitiyo Kitaoka and Yuko Kobayashi, "Methods for Quarterly and Annual Estimation of R&D Investment in JSNA," IIR Working Paper WP#13-25, March 2014 (in Japanese)
- (2) Aoki, Shuhei and Megumi Kimura, "Allocation of Research Resources and Publication Productivity in Japan: A Growth Accounting Approach," IIR Working Paper #13-24, March 2014
- (3) Akaike, Shinichi, Osamu Kayasono, Kenichi Fujita, Akiyuki Tonogi and Shinichi Hanada, "A Study on the Incorporation of Science and Technology Innovation Policy into the Macroeconomic Policy System," IIR Working Paper #13-19, October 2013 (in Japanese)

Conference Papers:

- (1) Aoki, Shuhei and Megumi Kimura, "Allocation of Research Resources and Publication Productivity in Japan: A Growth Accounting Approach," presented at Workshop on Data and Information Base in NISTEP, MEXT, February 2014 (in Japanese)
- (2) Tonogi, Akiyuki, "Economic Growth Analysis on Japan in Dynamic General Equilibrium Model with R&D and Human Capital," presented at the Fourth Asia Pacific Innovation Conference 2013, December 6, 2013, Taipei, Taiwan
- (3) Akaike, Shinichi and Kenichi Fujita, "New Approaches of Analyzing and Evaluating the Economic Impacts of Science, Technology, and Innovation Policy," presented at the 27th Annual Meeting of the Japan Society for Science Policy and Research Management, October 27, 2012, Tokyo (in Japanese)
- (4) Murayama, Kota, Makoto Nirei and Hiroshi Shimizu, "Management of Science, Serendipity, and Research Performance: Evidence from Scientists' Survey in the US and Japan," presented at the Third Asia Pacific Innovation Conference, October 13-14, 2012, Seoul, Korea
- (5) Oikawa, Koki and Shunsuke Managi, "R&D in Clean Technology: A Project Choice Model with Learning," Society for Environmental Economics and Policy Studies, September 2012
- (6) Oikawa, Koki and Shunsuke Managi, "R&D in Clean Technology: A Project Choice Model with Learning," Japan Economic Association, 2012

■ GCOE Okochi Award Case Study Research Program

1. Outline of Research

This project aimed at building up cases of innovations by Japanese firms and examining the features and challenges of Japanese firms in creating innovations. While previous studies in technology management have paid attention to product development or industry-level analysis, this project focused on individual firms from concept creation, through development and commercialization to subsequent consequences, in order to explore a new stream of innovation research.

In this five-year project, we made individual cases each year selected from those who won the Okochi Awards, which had been given to important technological innovations annually since 1954. We also conducted cross-case analysis to explore features and challenges of Japanese firms to succeed in innovations. Each case was written jointly by faculty members at IIR and the Graduate School of Commerce and Management at Hitotsubashi University and graduate students. This project was financially supported by Global COE "Innovation in the Japanese Corporation" at Hitotsubashi University.

2. Time Period

FY2008-FY2012

3. Members

Yaichi Aoshima*, Hiroyuki Chuma, Manabu Eto, Masaru Karube, Kentaro Nobeoka, Hiroshi Shimizu, Takeishi Akira (University of Kyoto), Junji Miyahara (Tokyo University of Science), Masatoshi Fujiwara (Kyoto Sangyo University), Youngjae Koh (Konan University), Tomono Miki (Rikkyo University)

4. Research Activities and Outputs during FY2012

Case Studies:

(In Japanese)

- (1) Chuma, Hiroyuki, "Hitachi High-Technologies Corporation: CD-SEM Supporting the Miniaturization for World Semiconductor Industry," *Hitotsubashi Business Review*, Vol. 60, No. 3, December 2012, pp. 142-163
- (2) Fujiwara, Masatoshi, "SINTOKOGIO, LTD.: Development of Aeration Sand Filling," IIR Case Study, CASE#12-12, November 2012
- (3) Chuma, Hiroyuki, "CD-SEM Supporting the Miniaturization for World Semiconductor Industry: Embodying Originality and Universality a la Hitachi," IIR Case Study, CASE#12-11, October 2012
- (4) Seigo Ito, "Denso Corporation / Toyota Boshoku Corporation: Development of 3D-formed Oil Filter," IIR Case Study, CASE#12-10, October 2012
- (5) Koh Youngjae, Tomono Miki, "JX Nippon Oil & Energy Corporation: The Development and Commercialization of Sulfur-free Fuels," IIR Case Study, CASE#12-05, July 2012
- (6) Choi, Eugene, "Shima Seiki Mfg. Ltd.: A History of Technology Management in the Case of Development of the State-of-the-Art Knitwear Manufacturing System: From Semi-Automatic Glove Knitting Machine (1960) to Mach 2 Series (2010)," IIR Case Study, CASE#12-04, August 2012

Conference Presentations:

- (1) Karube, Masaru, “Reasons for Innovation: Creating Legitimacy for Resource Mobilization,” presented at the regular meeting of the Japanese Academic Association for Organizational Science, September 28, 2012, Tokyo
- (2) Aoshima, Yaichi, “Reasons for Innovation: Creating Legitimacy of Resource Mobilization,” presented at the Drucker Forum (70th), September 3, 2012, Nanjing, China

■ Open Innovation

1. Outline of Research

This project aimed to explore the Open Innovation management in Japanese firms. We launched the Open Innovation research consortium in association with DSM. The research consortium discussed competitive strategy, organizational structure, and knowledge management in new product development. The research consortium was launched in 2014 again to explore business opportunities in the Open Innovation strategy in association with Nine Sigma Japan.

2. Time Period

FY2011-FY2012

3. Members

Seiichiro Yonekura*, Hiroshi Shimizu (IIR), Yusuke Hoshino (Musashino University), Kazuhisa Kawai (Okayama Shoka University), Takeshi Hirao (Tokyo University of Science, Suwa), Kunio Miyazaki (University of Shizuoka), Shiao Jia Eyo (Hosei University), Kenji Inayama, Meiji Gakuin University

Participant Companies:

Ajinomoto Co., Inc., Amano Enzyme Inc., Astellas Pharma Inc., Booz and Company, Bridgestone Corporation, The Chemical Daily Co., Ltd., Nikkan Jidosha Shimbun, Nikkan Kogyo Shimbun, Ltd., Development Bank of Japan, DSP Gokyo Food & Chemical Co., Ltd., Sumi-Eagle Corporation, Food Chemicals Newspaper Inc., Fujifilm Corporation, Goldman Sachs Japan, TBWA HAKUHODO, Innovation Network Corporation of Japan, Iseki Industry Co., Ltd., Nippon Formula Feed Mfg Co., Ltd., JSR, JX Nippon Oil & Energy Corporation, Kao Corporation, Kemin Industries Inc., Kirin Kyowa Foods Company, Ltd., Kongo Yakuhin Co., Ltd., KURODA ELECTRIC Co., Ltd., Kyoto Institute of Technology, Kyowa Hakko Kirin Co., Ltd., Marubeni Corporation, MEGMILK SNOW BRAND Co., Ltd., Meiji Gakuin University, Mitsubishi Chemical Holdings Corporation, Mitsubishi Corporation, National Syouji Co., Ltd., NEC Corporation, Netherlands Press in Japan, Embassy of the Kingdom of the Netherlands, NICHIA CORPORATION, Nichirei Foods Inc., NineSigma Japan, Inc., NISSUI, Nippon Zenyaku Kogyo Co.,Ltd., Nissan Motor Co., Ltd., Nisshin Seifun Group Inc., Okayama Shoka University, Oriental Yeast Co., Ltd., Osaka Gas Co., Ltd., Lonza Group Ltd., San-Ei Gen F. F. I., Inc., Shiseido Co., Ltd., University of Shizuoka, Taiyo Chemical Industry Co., Ltd. Teijin Limited, The University of Tokyo, Tokyo University of Science, Suwa, Toray Industries Inc., Toyobo Co., Ltd., Toyota Motor Corporation, Unitec Foods Co., Ltd., Unitika Ltd., Yakuruto Honsha Co., Ltd., Fancel Corporation, General Electric Company, PHILIPS Electronics Japan, National Institute for Materials Science, 360ip, UBM Media, Health Business Magazine, Weber Shandwick Worldwide Inc., Hirofumi Suzuki's Office, DSM Japan, DSM Japan Engineering Plastics K. K., DSM Nutrition Japan K. K.

4. Research Outputs in FY2012

- (1) Yonekura, Seiichiro, "Logic behind Open Innovation: Technology, Market and Organization," *Hitotsubashi Business Review*, Vol. 60, No. 2, September 2012, pp. 6-15
- (2) Shimizu, Hiroshi and Yusuke Hoshino, "Open Innovation Management: Exploration for New Combination and Knowledge Management," *Hitotsubashi Business Review*, Vol. 60, No. 2, September 2012, pp. 28-41

- (3) Kawai, Kazuhisa, "Salaried Entrepreneurs and the Internationalization of Technology Market: A Case Study on Open Innovation by Osaka Gas," *Hitotsubashi Business Review*, Vol. 60, No. 2, September 2012, pp. 56-71
- (4) Hoshino, Yusuke, "Development and Industrialization through Collaboration: Case of Dyneema," *Hitotsubashi Business Review*, Vol. 60, No. 2, September 2012, pp. 72-85

■ Industry-Academia-Government Collaboration Project on CO2 Reduction and Innovation

1. Outline of Research

How to reduce GHG (Green House Gas) without sacrificing the industry competitiveness is one of the most urgent and important issues. This research project is to scrutinize how to create technological innovation that enables both the industry competitiveness and the global environmental responsibility. Research meetings entitled “CO2 reducing innovation research meeting” with guest speakers and regular participants from universities, industries and government institutions were periodically held to discuss this issue.

2. Time Period

FY2009-present

3. Members

Seiichiro Yonekura*, Yaichi Aoshima, Hiroshi Shimizu

■ Collaboration in New Product Development

1. Objective

(1) Case Study and Survey Analysis of Science Sources of Innovation

We will conduct interviews/surveys with regard to innovators/inventors in (mainly) the pharmaceutical/biotechnology fields about the scientific sources of new drug discovery and inventions, and construct a comprehensive dataset for analyzing the mechanism of scientific contributions to the innovation process.

2) Knowledge Flow Analysis

Using the above dataset, we will develop a method to grasp knowledge flows from scientific discoveries to innovations from bibliographic information (backward/forward citations and co-authors) of scientific papers and patents.

3) Economic Impact Analysis

We will evaluate the economic impact of innovations based on scientific discoveries. Finally, we aim to make policy recommendations for improving the measurement of economic contributions of science-based innovations and for enhancing the contribution of science to innovation performance.

2. Time Period

FY2011-FY2014

3. Members

Sadao Nagaoka*, Akira Endo, Yasushi Hara, Yusuke Naito, Yoshiyuki Ohsugi (IIR), Kenta Nakamura (Kobe University), Junichi Nishimura (Gakushuin University), Naotoshi Tsukada (National Graduate Institute for Policy Studies), Akira Nagumo (Office of Pharmaceutical Industry Research), Koichi Genda (Office of Pharmaceutical Industry Research), Yuji Honjo (Chuo University), Eiko Shimizu (Japan Bioindustry Association), Hideo Kawabe (Japan Bioindustry Association), and Yumi Shimizu (Japan Bioindustry Association)

4. Outline

Our research project consists of the following three components: (A) Case Study and Survey Analysis of the Science Sources of Innovation, (B) Knowledge Flow Analysis, and (C) Economic Impact Analysis.

In (A) Case Study & Survey Analysis of the Science Sources of Innovation, we aim at conducting (1) detailed case studies of scientific sources for “blockbuster” drugs which have been invented and developed in Japan, (2) questionnaire surveys on the science sources for drugs in the pharmaceutical industry and of bio startups in Japan, in collaboration with Japan Pharmaceutical Manufacturers Association and Japan Bioindustry Association, and (3) a follow-up Inventor Survey in collaboration with RIETI, which examines the scientific sources of inventions in all technology fields.

In (B) Knowledge Flow Analysis, using the results of the above case studies and questionnaire surveys as a benchmark, we evaluate how bibliographic data (backward/forward citations, co-authors and co-inventors) of patents/scientific papers predict actual knowledge flow for innovation. Then, we propose to develop a method to enhance the correlation between bibliographic data and the actual knowledge flow.

Finally in (C) Economic Impact Analysis, we assess the contribution of science to the economic impacts

of the innovations. We classify the drugs based on the degree of scientific contribution and assess the economic impact of science by using different indicators of outcomes, such as drug efficacy, wide therapeutic applications, pharmaceutical prices and quantities in international comparison. We also examine the degree of firms' and/or inventors' absorptive capacity for scientific sources in order to obtain managerial implications for innovation. Eventually, our research project aims to propose policy recommendations that will empower science-based innovations.

5. Research Activities and Outputs during FY2012-2013

Book:

(In Japanese)

Ohsugi, Yoshiyuki, *R&D of A New Anti-Rheumatic Drug "Actemra": The First Antibody Drug Originated in Japan*, Tokyo: Iwanami Shoten, March 2013, Page 128

Articles:

(In Japanese)

Hara, Yasushi and Yoshiyuki Ohsugi, "Actemra and Remicade: Key Factors to Determine First Mover Advantage in R&D Process of Both Antibody Drugs," *Hitotsubashi Business Review*, Vol. 61, No. 3, December 2013, pp. 22-36

Ohsugi, Yoshiyuki, "R&D of the First Antibody Drug in Japan: Tocilizuma," *Sangakukan Renkei Journal* (Journal of Industry-academia-government Collaboration), Japan Science and Technology Agency, Vol. 9, No. 4, April 2013, pp. 11-16

Working Papers:

(In Japanese)

Honjo, Yuji, Sadao Nagaoka, Kenta Nakamura and Yumi Shimizu, "Science Sources of Bio-startup Firms in Japan and Their Growth Agenda: Findings from the 2012 Statistical Survey on Bio-startups in Japan," IIR Working Paper WP#13-22, February 2014

Honjo, Yuji, Sadao Nagaoka, Kenta Nakamura and Shimizu Yumi, "Agenda for the Growth of Bio Startups in Japan with a Focus on Their Science Sources," IIR Working Paper WP#13-03, January 2013

Conference and Presentation:

Yamauchi, Isamu and Sadao Nagaoka, "Science Sources of Corporate Inventions in Japan: Evidence from Inventor Survey," presented at International Workshop on Science Sources of Innovation, March 17, 2014, Tokyo

Nishimura, Junichi and Sadao Nagaoka, "Science Intensity of Drugs Launched in Japan and Their Performance," presented at International Workshop on Science Sources of Innovation, March 17, 2014, Tokyo

Hara, Yasushi, "Policy Change Impact to R&D Process: Case Study Analysis of Innovative Drug Invented in Japan and US," presented at 10th ASIALICS Conference, Tokyo, September 20-21, 2013

Nishimura, Junichi, "Sources of the Performance Difference between the Listed Bio Startups of the US and Japan: Capital Constraints vs. Seeds," presented at The 12th Annual Interdisciplinary European Conference on Entrepreneurship Research IECER, March 14, 2013, Brescia, Italy

Hara, Yasushi, "How Star Scientist Makes High Performance?," presented at DRUID ACADEMY 2013, Aalborg, Denmark, January 15, 2013

Hara, Yasushi, “Knowledge Flow Analysis for Pharmaceutical Innovation,” presented at Asia Pacific Innovation Conference, October 14, 2012

(In Japanese)

Nagaoka, Sadao, “Scientific Sources of Innovations and Economic Impacts of Science,” presented at RISTEX R&D Program “Science of Science, Technology and Innovation Policy” Annual General Meeting, Tokyo, March 1, 2014, Tokyo

Hara, Yasushi, “Distance between Science and Innovation: Quantitative Analysis Based on Science Linkage Database,” presented at the 28th Annual Meeting of the Japan Society for Science Policy and Research Management, November 2-3, 2013, Tokyo

Nagaoka, Sadao and Junichi Nishimura, “Science Sources and Market Performance of the Drugs Launched in Japan,” presented at the Incentives and Knowledge for Pharmaceutical Innovation: Industry-University-Government Collaborative Workshop, September 26, 2013, Tokyo

3. Conferences — Apr. 2012 ~ Mar. 2014

■ International Workshop on Science Sources of Innovation

March 17, 2014 at National Institute of Science and Technology Policy (NISTEP), Tokyo

Jointly Organized by

IIR,

NISTEP (National Institute of Science and Technology Policy) and

RIETI (Research Institute of Economy, Trade and Industry)

Objective

This research workshop focused on the process of science based innovation as well as policies for promoting the synergy between the two. It invited a leading scholar on Innovation Economics, Professor Adam Jaffe, who is also the head of the Motu Economic and Public Policy Research to deliver a keynote speech on the “Capitalizing on Science for Innovations: Policy Issues and Research Agenda” in the morning session. In the afternoon, there were two sessions presenting the outcomes of three ongoing collaborative research projects on innovation process at Hitotsubashi University, NISTEP and RIETI: (1) Science sources of industrial innovations: evidence from corporate inventions and drugs launched in Japan, (2) Bridging science to innovations (evidence from science projects, and university and industry co-inventions). The presentations will be followed by discussions by academic scholars and policy makers, for identifying the potential policy lessons and the remaining research agenda.

Program:

Opening remark: Atsushi Nakajima, Chairman, RIETI

Chair: Yuko Harayama, Council for Science and Technology Policy

Keynote Speech: “Capitalizing on Science for Innovations: Policy Issues and Research Agenda”

Adam Jaffe, Director of the Motu Economic and Public Policy Research, Professor of Brandeis University and NBER Research Associate

Comments: Reiko Aoki, Hitotsubashi University and RIETI

Session 1: Science Sources of Industrial Innovations

Chair: Jun Suzuki, National Graduate Institute for Policy Studies

(1) “Science Sources of Corporate Inventions in Japan: Evidence from Inventor Survey”

Isamu Yamauchi, RIETI

(2) “ Science Intensity of Drugs Launched in Japan and Their Performance”

Junichi Nishimura, Gakushuin University

Session 2: Bridging Science to Innovations

Chair: Adam Jaffe, Director of the Motu Economic and Public Policy Research, Professor of Brandeis University and NBER Research Associate

(1) “Sources and Impacts of the Research at Pasture Quadrant”

Masatsura Igami, NISTEP

(2) “Making University and Industry Collaboration: Sources of Seeds, Needs and Their Matching Process”

Sadao Nagaoka, IIR/RIETI/NISTEP

(3) “Funding and Commercialization Mechanism of Joint Research ”

Shinichi Akaike, IIR

Mitsuaki Hosono, NISTEP

Closing remark: Yuji Sakakibara, Director General, NISTEP

■ International Research Workshop on Science-based Innovation

October 1st, 2013 at National Institute of Science and Technology Policy (NISTEP), Tokyo

Jointly Organized by

IIR and

NISTEP (National Institute of Science and Technology Policy)

Objective:

This research workshop focused on the process of science-based innovation as well as policies for promoting the synergy between the two. It invited Prof. Massimo G. Colombo, Full Professor of Economics of Innovation of Politecnico di Milano to deliver keynote speech, focusing on the role of universities in fostering the birth and growth of new companies. This research workshop also presented the progress of ongoing research from the research project on “knowledge creation process in science” as well as that on university and industry collaborative research. These researches have been supported from the Japan Society for the Promotion of Science (JSPS): Grant-in-Aid for Scientific Research (S) (No. 20223002) and Grant-in-Aid for Scientific Research (A) (No. 21243020)

Program:

Opening remarks: Yuji Sakakibara, Director General, National Institute of Science and Technology Policy (NISTEP), Ministry of Education, Culture, Sports, Science and Technology

Keynote Speech: “Science and Radical Innovation: The Role of Universities in Local Entrepreneurial Systems”

Chair: Yuko Harayama (Council for Science and Technology Policy, Cabinet Office of Japan)

Massimo G. Colombo, Full Professor of Economics of Innovation,
School of Management Deputy Director for Research, Politecnico di Milano
Department of Management, Economics and Industrial Engineering

Knowledge Creation Process in Science: Evidence from Scientists Surveys

Chair: René A. Belderbos, Professor of Managerial Economics and Strategy Department of Managerial Economics, Strategy and Innovation (MSI), University of Leuven

(1) “Contributions of Young Scholars in Team-based Scientific Research,”

Masatsura Igami, National Institute of Science and Technology Policy (NISTEP)

(2) “International Collaborations in Science, Why and How: Evidence from Scientists’ Survey in the US and Japan”

Sadao Nagaoka, IIR

University and Industry Collaborations: Evidence from the Research Projects Generating Co-inventions

Chair: Saito Naoki, Deputy Director General, National Institute of Science and Technology Policy (NISTEP)

(1) “Research Outcome and Impact of Industry and University Collaborations,”

Mitsuaki Hosono, National Institute of Science and Technology Policy (NISTEP)

(2) “Funding mechanism of joint research,”

Shinichi Akaike, IIR

Closing: Sadao Nagaoka, IIR

■ Incentives and Knowledge for Pharmaceutical Innovation: Industry-University-Government Collaborative Workshop

September 26, 2013 at Hitotsubashi University, Liaison Laboratory, Tokyo

Jointly Organized by

IIR,

Japan Pharmaceutical Manufacturers Association, and Japan Bioindustry Association

Supported by

Research Institute of Science and Technology for Society (RISTEX),

Japan Science and Technology Agency (JST)

Objective:

This workshop focused how incentives and knowledge matter for introducing innovative drugs in market. It invited Prof. Mark Schankerman of LSE to present key findings from his ongoing research on “Global Diffusion of New Drugs: Patent Policy, Price Controls and Institutions”. It also presented preliminary findings from ongoing collaborative research on “Scientific Sources of Innovations and Economic Impacts of Science”, organized by Institute of Innovation Research, Hitotsubashi University and supported by Japan Science and Technology Agency (JST). This research workshop aimed to draw implications for future directions of policy and research for promoting pharmaceutical innovation.

(1) The Launch of Innovative Pharmaceuticals and the Role of the Patent

Protection: Lessons from the Cases of 11 Innovative Pharmaceuticals Discovered in Japan

Chair: Sadao NAGAOKA (Professor, IIR)

Presenter: Hideo KAWABE (Director, Japan Bioindustry Association)

Discussant: Setsuko ASAMI (Professor, Tokyo University of Science)

(2) Keynote Speech

Global Diffusion of New Drugs: Patent Policy, Price Controls and Institutions

Chair: Toshiaki IIZUKA (Professor, University of Tokyo)

Speaker: Mark SCHANKERMAN (Professor, London School of Economics and CEPR)

Discussant: Hiroshi NAKAMURA (Professor, Keio University)

(3) The Launch of Innovative Pharmaceuticals, Clinical Trials Infrastructure and Regulations: Lessons from the Cases of 11 Innovative Pharmaceuticals

Chair: Sadao NAGAOKA (Professor, IIR)

Presenter: Koichi GENDA (Researcher, Office of Pharmaceutical Industry Research, Japan Pharmaceutical Manufacturers Association)

Discussant: Noriatsu KONO (Director, Office of Clinical Trial Promotion, Research and Development Division, Health Policy Bureau, Ministry of Health, Labor and Welfare)

(4) Science Intensity, Launch Timing and Market Performance of New Drugs in Japan: Evidence from the US-Japan Matched Data

Chair: Yuji HONJO (Professor, Chuo University)

Presenter: Sadao NAGAOKA (Professor, IIR)

Junichi NISHIMURA (Associate Professor, Gakushuin University)

Discussant: Toshiaki IIZUKA (Professor, University of Tokyo)

Overall Comments

Chair: Yuji HONJO (Professor, Chuo University)

Yoshiyuki OHSUGI (Specially Appointed Professor, IIR)

Mark SCHANKERMAN (Professor, London School of Economics and CEPR)

■ 2013 International Workshop on Innovations and IPRs

June 29, 2013 at IIR

Co-Organized by

IIR

SSK program in Economics (Inha University), Korea

Keynote: “Identifying Technology Spillovers and Product Market Rivalry,”

Mark Schankerman (LSE)

Chair: Reiko Aoki (Hitotsubashi University)

1. Inventor Session (Chair: Hideo Owan, University of Tokyo)

- (1) “Labor Mobility and Productivity of Korean Inventors,”
Jinyoung Kim (Korea University)
Discussant: Hideo Owan (University of Tokyo)
- (2) “Life-cycle Productivity of Industrial Inventors: How PhDs Matter?,”
Koichiro Onishi (Osaka Institute of Technology)
and Sadao Nagaoka (IIR)
Discussant: Jinyoung Kim (Korea University)

2. Patent Examinations Session (Chair: Mark Schankerman, LSE)

- (3) “Uncertainty, Competition and Applicant’s Decision on the Patent Examination Request,”
Junbyoung Oh (Inha University)
Discussant: Jun Suzuki (GRIPS)
- (4) “Effects of Early Initiation of Patent Examination on the Examination Quality,”
Sadao Nagaoka (IIR) and Isamu Yamauchi (RIETI)
Discussant: Patarapong Intarakumnerd (GRIPS)

3. Innovations and Knowledge Session 1 (Chair: Sadao Nagaoka, IIR)

- (5) “Comparing the Productivity Impacts of Knowledge Spillovers
from Network and Arm’s Length Industries: Findings from Business Groups in Korea,”
Kineung Choo (Korea Naval Academy) with Keun Lee (Seoul National University)
and Minho Yoon (Kyung-book National University)
Discussant: Hiroyuki Okamuro (Hitotsubashi University)
- (6) “Diverse Entry and Catch-up Strategies of Firms under Different Demand Conditions: Evolutionary
Economics Simulations,”
Keun Lee (Seoul National University) and Minho Yoon(Kyung-book National University),
Discussant: Kazuyuki Motohashi (University of Tokyo)

4 Innovations and Knowledge Session 2 (Chair: Keun Lee, Seoul National University)

- (7) “Get Pennies from Many or Get a Dollar from One? Multiple Contracting in Markets for
Technology,”
by Dang Janwei and Kazuyuki Motohashi (University of Tokyo)
Discussant: Reiko Aoki (Hitotsubashi University)
- (8) “Knowledge and Rent Spillovers through Government-sponsored R&D Consortia”
Hiroyuki Okamuro (Hitotsubashi University) and
Junichi Nishimura (Gakushuin University)
Discussant: Hisam Kim (Korea Development Institute)

■ Research Workshop on Innovation Process

March 18, 2013 at Hitotsubashi University, East Campus

Organized by
IIR,

This research workshop on innovation process invited the researchers who had participated in the program of “University-industry-government collaborative research on innovation process” to present their findings from completed or ongoing research projects. The research projects cover the research on knowledge production in science, the research on NEDO consortiums, and the research on university and industry collaborative research. The researches have been supported from the Japan Society for the Promotion of Science (JSPS): Grant-in-Aid for Scientific Research (S) (No. 20223002) and Grant-in-Aid for Scientific Research (A) (No. 21243020)

Session 1: Organizational Choice for Innovation

Chair: Hiroyuki Chuma, IIR

“Differentiation, Interface Technology, and the Economies of Scope as the Determinants of Product Outsourcing,” Hideo Owan, Institute of Social Science, University of Tokyo

Session 2: Knowledge Discovery Process in Science

Chair: Hideo Owan, University of Tokyo

(1) “Commercializing Academic Science in a Changing Policy Environment: A Natural Experiment,” John Walsh, Georgia Institute of Technology

(2) “Contributions of Young Scholars in Team-based Scientific Research,” Masatsura Igami, National Institute of Science and Technology Policy (NISTEP)

(3) “International Collaborations in Science, Why and How: Evidence from Scientists’ Survey in the US and Japan,” Sadao Nagaoka, IIR

(4) Comments and Discussions

Comments Tomohiro Ijichi, Seijo University

Session 3: Spillovers and Collaborations in Research: Evidence from NEDO Consortium

Chair: Yosuke Okada, School of Economics, Hitotsubashi University

(1) “Commercialization Performance and Spillover Effects of the Government-funded R&D,” Yaichi Aoshima, IIR and Kazunari Matsushima, the University of Tokushima

(2) “Organizational Structure of NEDO Consortium and Its Performance,” Junichi Nishimura, IIR

(3) “Assessing Spillovers and Strategic Complementarities from NEDO Projects,” Naotoshi Tsukada, RIETI

(4) Comments and Discussions

Comments Akira Yamazaki, Chiba Technology University

Session 4: Industry and University Collaborations: Evidence from the Research Projects Generating Co-inventions

Chair: Tomohiro Ijichi, Seijo University

(1) “Sources of Industry and University Collaborations: Seeds vs. Needs,” Sadao Nagaoka, IIR

(2) “Research Process in Industry and University Collaborations,”

Junichi Nishimura, IIR

(3) “Research Funding,”

Shinichi Akaike, IIR

(4) “Research Outcome and Impact of Industry and University Collaborations,” Mitsuaki Hosono,
National Institute of Science and Technology Policy (NISTEP)

(5) Comments & Responses John Walsh, Georgia Institute of Technology

■Symposium of university-industry-government collaborative research on innovation process

March 15, 2013 at Conference M+ “Success”, Tokyo

Organized by

IIR

Joint hosted by

National Institute of Science and Technology Policy (NISTEP),

Japan Science and Technology Agency (JST),

Japan Pharmaceutical Manufacturers Association (JPMA),

Japan Bioindustry Association (JBA)

Sponsorship

New Energy and Industrial Technology Development Organization (NEDO)

This symposium aimed at discussing the management and policy design to enhance the innovation capability in Japan, based on the findings from the program of University-industry-government collaborative research on innovation process, especially focusing on the semiconductor and bio/pharmaceutical industries. The researches have been supported from the Japan Society for the Promotion of Science (JSPS): Grant-in-Aid for Scientific Research (S) (No. 20223002) and Grant-in-Aid for Scientific Research (A) (No. 21243020), and from the Japan Science and Technology Agency (JST): Science of Science, Technology and Innovation Policy.

Program

Opening remarks: Kentaro Nobeoka (Director, IIR)

Session 1: Rapid Globalization of R&D System in Semiconductor Industry and Innovations

Chair: Masaomi Kameyama (Researcher, IIR / Semiconductor Equipment Association of Japan)

Keynote speech (1): “The Increasing Role of Globalized R&D Consortia in the Semiconductor Industry: The Role of International Sematech”

Dr. Jammy, Raj (Vice President of Materials and Emerging Technologies, International Sematech)

“The Changing Potentiality of Japanese Semiconductor R&D System: Social Network Analysis of High-h/Metal Gate R&D Activities”

Hiroyuki Chuma (Professor, IIR)

Comments and Discussions: Tsunetoshi Arikado (Fellow, Tokyo Electron Limited)

Session 2: Globalizing Scientists

Chair: Reiko Aoki (Professor, Institute of Economic Research, Hitotsubashi University / Council for Science and Technology Policy)

Keynote speech (2): “Mobile Scientists and International Network: Findings from Global Science Project”

Giuseppe Scellato (Assistant Professor, Politecnico di Torino)

Comments and Discussions: Masatsura Igami (National Institute of Science and Technology Policy, NISTEP)

Session 3: Findings from Breakthrough / Innovative Drugs from Japan and Science Sources of Bio Startups

Chair: Sadao Nagaoka (Professor, IIR)

Keynote speech (3): “How Actemra was Invented and Developed?: The First Antibody Drug from Japan”

Yoshiyuki Ohsugi (Specially Appointed Professor, IIR)

“Sources of Breakthrough/Innovative Drugs from Japan: Initial Findings from 10 Case Studies “

Chair: Shinichi Akaike (Professor, IIR)

1) “Features of Research and Development of Breakthrough/Innovative Drugs”

Akira Nagumo (Office of Pharmaceutical Industry Research)

Koichi Genda (Office of Pharmaceutical Industry Research)

2) “Science Sources of Breakthrough/Innovative Drugs”

Sadao Nagaoka (Professor, IIR)

3) “Intellectual Property Rights and Patent Competition of Breakthrough/Innovative Drugs”

Hideo Kawabe (Japan Bioindustry Association)

Comments and Discussions: Kenta Nakamura (Associate Professor, Graduate School of Economics, Kobe University)

“Scientific Sources of Japanese Bio Startups”

Chair: Tomohiro Ijichi (Professor, Faculty on Innovation Studies, Seijo University)

Yuji Honjo (Professor, Faculty of Commerce, Chuo University)

Comments and Discussions: Ikkei Matsuda (Founder, Science and Research for Reconstruction, LLC)

■ **Research workshop on “IPRs and standard for innovation: Institutional design”**

October 16, 2012 at Hitotsubashi University, Tokyo

Organized by

“Science of Science, Technology and Innovation Policy Program”
(IIR)

Research Institute for Policies on Pension
(Institute of Economic Research) and
Aging and Research Project on Evolution of Standards

Program

1st Session on Standard and Collaboration

Chair: Sadao Nagaoka, Professor, IIR

“Entrepreneurship, Intellectual Property, and Platform Technologies”,
Stuart Graham, Chief Economist of the USPTO

“Patent Law Design in the ‘Open Innovation’ Era”
Yoshiyuki Tamura, Professor, Hokkaido University

“Coalition Formation through a Patent Pool for Standard”,
Reiko Aoki, Professor, Hitotsubashi University

2nd Session on Patent System

Chair: Stuart Graham, Chief Economist of the USPTO

“Continuing Applications and Quality of Inventions”
Naotoshi Tsukada, Researcher, RIETI

“Third Party Participations in Patent Examination”
Sadao Nagaoka, Professor, IIR

II. Researchers



1. Full-time Researchers

Profiles & List of Research Achievements — FY 2012 ~ FY 2013



Shinichi Akaike

■ Education

- 2008 Ph.D. (Industrial Technology and Management), Tokyo Institute of Technology
- 2000 Master of Science (Science and Technology Policy), University of Sussex
- 1992 Master of Arts and Sciences, University of Tokyo
- 1990 Bachelor of Agriculture, University of Tokyo

■ Professional Positions

- 2014 Senior Analyst, Science and Technology Policy Bureau, Ministry of Education, Culture, Sports, Science and Technology
- 2011 Professor, Institute of Innovation Research, Hitotsubashi University (~March 2014)
- 2009 Assistant to Deputy Director-General and Fellow, Center for Research and Development Strategy, Japan Science and Technology Agency
- 2008 Deputy Director for International Exchange Promotion, Science and Technology International Affairs Division, Science and Technology Policy Bureau, Ministry of Education, Culture, Sports, Science and Technology (MEXT)
- 2007 Childcare Leave
- 2006 Deputy-Director, Personnel Division, Minister's Secretariat, MEXT
- 2005 Deputy-Director, Atomic Energy Division, Science and Technology Policy Bureau, Cabinet Office
- 2002 First Secretary (Science Attache), Embassy of Japan in Sweden
- 2001 Deputy Director, International Science and Technology Affairs Division, Science and Technology Policy Bureau, MEXT

■ Research Achievements

1. Publications

1.1 Articles and Chapters in Books

(In Japanese)

Shichijo, Naohiro, Junichi Murata, Shinichi Akaike and Atsushi Ogasawara, "Absorptive Company: Sources of R&D Capability in Hamamatsu Photonics K.K.," *Hitotsubashi Business Review*, Vol. 61, No. 3, December 2013, pp. 38-51

Akaike, Shinichi and Mitsuaki Hosono, "Process of Industry-University Co-inventions: Findings from a Large Scale Questionnaire Survey on Industry-University Collaboration in Japan," *Hitotsubashi Business Review*, Vol. 61, No. 3, December 2013, pp. 86-101

Akaike, Shinichi, "Next Steps for Collaboration between Policy Formation and Policy Studies," *Kenkyū Gijyutsu Keikaku* (The Journal of Science Policy and Research Management), Vol. 28, No. 1, September 2013, pp. 81-88

2. Unpublished Work

2.1. Working Papers

Akaike, Shinichi, Osamu Kayasono, Kenichi Fujita, Akiyuki Tonogi and Shinichi Hanada, “A Study on the Incorporation of Science and Technology Innovation Policy into the Macroeconomic Policy System,” IIR Working Paper WP#13-19, October 2013

Nagaoka, Sadao, Mitsuaki Hosono, Shinichi Akaike and Jyunichi Nishimura, “Knowledge Creations and Innovations through Industry and Academic Collaborations: Basic Findings from a Large Scale Survey over University and Industry Co-inventors,” IIR Working Paper WP#13-14, June 2013

2.2. Research Reports

(In Japanese)

Akaike, Shinichi, Yaichi Aoshima and Makoto Nirei, “Innovation Research and Policy Formation,” Trial Researches for the “Science for RE-designing Science, Technology and Innovation Policy” Program, National Graduate Institute for Policy Studies, March 2014, pp. 275-291

Akaike, Shinichi, “A Range of Initiatives Viewed from a Historic Perspective,” Trial Researches for the “Science for RE-designing Science, Technology and Innovation Policy” Program, National Graduate Institute for Policy Studies, March 2014, pp. 467-472

Hosono, Mitsuaki, Shinichi Akaike and Ryuji Shimoda, “Database of Measures in Science, Technology and Innovation Policy,” NISTEP NOTE NO. 8, National Institute of Science and Technology Policy (NISTEP), November 2013

Akaike, Shinichi and Mitsuaki Hosono, “Database of Budget Allocation in Science, Technology and Innovation Policy,” NISTEP NOTE NO. 9, National Institute of Science and Technology Policy (NISTEP), November 2013

Akaike, Shinichi, Kenichi Fujita, Akiyuki Tonogi and Shinichi Hanada, “A Study on the Incorporation of Science and Technology Innovation Policy into the Macroeconomic Policy System,” Research Material-226, National Institute of Science and Technology Policy (NISTEP), October 2013

Nagaoka, Sadao, Mitsuaki Hosono, Shinichi Akaike and Jyunichi Nishimura, “Knowledge Creation and Innovation by University-Industry Collaboration: Basic Findings from the Large-scale Survey of Academic and Corporate Researchers,” Research Material-221, National Institute of Science and Technology Policy (NISTEP), June 2013

Nirei, Makoto (Principal Investigator), Koki Oikawa, Shuhei Aoki, Tetsushi Murao, Shinichi Akaike and Kensuke Miyazawa, “An Investigation on Macroeconomic Evaluation Systems for Science, Technology, and Innovation Policies,” project report submitted to Japan Science and Technology Agency, October 2012

3. Conference Papers, Presentations

Akaike, Shinichi, “Funding Mechanism of Joint Research,” presented at International Research Workshop on Science-based Innovation, IIR and NISTEP, October 1, 2013, Tokyo

Akaike, Shinichi, “Research Funding,” presented at Research Workshop on Innovation Process, IIR, March 18, 2013, Hitotsubashi University

(In Japanese)

Akaike, Shinichi and Mitsuaki Hosono, “Innovation Process through Industry-University Collaboration,” presented at IIR Workshop: Assessment of Industry-University Collaboration in Japan: Toward New Combinations, August 28, 2013, Tokyo

Akaike, Shinichi, “Analysis on Input and Output of Industry-University Joint Research Projects,” presented at Research Workshop on Knowledge Creation and Innovation by Industry-University Collaboration: Basic Findings from the Large-scale Survey of Academic and Corporate Researchers, National Institute of Science and Technology Policy (NISTEP), February 7, 2013, Tokyo

Akaike, Shinichi, Mitsuaki Hosono, Sadao Nagaoka and Jyunichi Nishimura, “Large Scale Survey on Industry-University Collaborations,” presented at the 27th Annual Meeting of the Japan Society for Science Policy and Research Management, October 28, 2012, Tokyo

Akaike, Shinichi and Kenichi Fujita, “New Approaches of Analyzing and Evaluating the Economic Impacts of Science, Technology, and Innovation Policy,” presented at the 27th Annual Meeting of the Japan Society for Science Policy and Research Management, October 27, 2012, Tokyo



Yaichi Aoshima

■ Education

- 1996 Ph.D. (Management), Sloan School of Management, Massachusetts Institute of Technology
- 1989 M.C. (Business Administration), Hitotsubashi University
- 1987 B.C. (Commerce), Hitotsubashi University

■ Professional Positions

- 2012~ Professor, Institute of Innovation Research, Hitotsubashi University
- 1999 Associate Professor, Institute of Innovation Research, Hitotsubashi University
- 1997 Assistant Professor, Institute of Innovation Research, Hitotsubashi University
- 1996 Assistant Professor, Institute of Business Research, Hitotsubashi University

■ Research Achievements

1. Publications

1.1. Articles and Chapters in Books

Aoshima, Yaichi, Kazunari Matsushima and Manabu Eto, “Effects of Government Funding on R&D Performance Leading to Commercialization,” *International Journal of Environment and Sustainable Development*, Vol. 12, No. 1, January 2013, pp. 22-43

Takeda, Yoko, Yaichi Aoshima and Kentaro Nobeoka, “The Importance of Technology Integration Capabilities: Evaluating the Impact on 3D Technologies on Product Development Performance in Japan and China,” *International Journal of Product Development*, Vol. 16, No. 1, 2012, pp. 26-44

Aoshima, Yaichi and Hiroshi Shimizu, “A Pitfall of Environmental Policy: An Analysis of ‘Eco-point Program’ in Japan and its Application to the Renewable Energy Policy,” *International Journal of Global Business and Competitiveness*, Vol. 7, No. 1, 2012, pp. 1-13

(In Japanese)

Aoshima, Yaichi and Kiyonori Sakakibara, “Reasons for Learning Management Theories,” *Hitotsubashi Business Review*, Vol. 62, No. 1, June 2014, pp. 136-144

Fujiwara, Masatoshi and Yaichi Aoshima, “Business Case / Toyobo Co., Ltd.: Reverse Osmosis Membrane Development and Business Expansion,” *Hitotsubashi Business Review*, Vol. 62, No. 1, June 2014, pp. 102-119

Aoshima, Yaichi and Osamu Suzuki, “Business Case / Nippon Steel Corporation: Development and Commercialization of Waste Plastics Recycling Process Using Coke Oven,” *Hitotsubashi Business Review*, Vol. 61, No. 3, December 2013, pp. 152-165

Shimizu, Hiroshi and Yaichi Aoshima, “Business Management Perspectives in Science, Technology and Innovation Policy,” *Kenkyū Gijyutsu Keikaku (The Journal of Science Policy and Research Management)*, Vol. 27, No. 3, April 2013, pp. 183-196

Sakurai, Koichi and Yaichi Aoshima, "Business Case / FeliCa Networks, Inc.: Development of Mobile Solution Business," *Hitotsubashi Business Review*, Vol. 60, No. 4, March 2013, pp. 148-161

1.2. Others

(In Japanese)

Aoshima, Yaichi, "Vulnerability of the Growth Strategy with a Slogan of 'Eco'," *Wedge*, March 2013, pp. 14-16

Aoshima, Yaichi, "Importance of Management Perspectives to Solve Energy and Environmental Problems," *Soshiki Kagaku* (Organizational Science), Vol. 46, No. 3, March 2013, p. 105

2. Unpublished Work

2.1. Working Papers

Aoshima, Yaichi and Tomono Miki, "Possibilities of Geothermal Power Generation in Japan: Notes from an Iceland Field Study," IIR Working Paper WP#12-11, September 2012

Fujiwara, Masatoshi, Yaichi Aoshima and Tomono Miki, "Development of the Polyamide Composite Reverse Osmosis Membrane and Reverse Osmosis Membrane System: A Case Study of Toray Industries, Inc.," IIR Case Study CASE#12-08, July 2012

Aoshima, Yaichi and Makoto Kitamura, "Seiko Epson Corporation: Development of an Inkjet Printer that Produces High-Resolution Text and Images," IIR Case Study CASE#12-07, July 2012

(In Japanese)

Fujiwara, Masatoshi and Yaichi Aoshima, "Toyobo Co., Ltd.: Reverse Osmosis Membrane Development and Business Expansion," IIR Case Study CASE#14-01, January 2014

Aoshima, Yaichi and Osamu Suzuki, "Nippon Steel Corporation: Development and Commercialization of Waste Plastics Recycling Process Using Coke Oven," IIR Case Study CASE#13-03, August 2013

Kubota, Tatsuya, Yaichi Aoshima and Youngjae Koh, "Fujitsu: Development of New Resist Materials for ArF Excimer Laser Lithography That Realized the Most Advanced LSI," IIR Case Study CASE#13-02, May 2013

Nagaoka, Sadao, Manabu Eto, Yaichi Aoshima, Hideo Owan, Kazunari Matsushima, Jyunichi Nishimura and Naotoshi Tsukada, "Cooperation toward Innovation: Findings from NEDO Consortium Survey," IIR Working Paper WP#12-13, October 2012

2.2. Research Reports

Akaike, Shinichi, Yaichi Aoshima and Makoto Nirei, “Innovation Research and Policy Formation,” Trial Researches for the “Science for RE-designing Science, Technology and Innovation Policy” Program, National Graduate Institute for Policy Studies, March 2014, pp. 275-291

3. Conference Papers, Presentations

Aoshima, Yaichi, “Energy and Industrial Development: How Does Promoting Renewable Energies Achieve Stable Energy Supply, Environmental Protection and Economic Growth?,” presented at PCNER International Workshop 2014, International Institute for Carbon-Neutral Energy Research, Kyushu University and HYDOGENIUS, January 31, 2014, Fukuoka

Aoshima, Yaichi and Kazunari Matsushima, “Commercialization Performance and Spillover Effects of the Government-funded R&D,” presented at Research Workshop on Innovation Process, IIR, March 18, 2013, Tokyo

Aoshima, Yaichi and Kazunari Matsushima, “Commercialization Performance and Spillover Effects of the Government-funded Private R&D,” presented at the 15th Asia-Pacific Researchers in Organisation Studies Conference, February 14-17, 2013, Tokyo

Aoshima, Yaichi, “Japan’s Shift to Renewable Energies after the Fukushima Disaster,” presented at the 4th Chinese Renewable Energy Conference & Exhibition, November 1, 2012, Wuxi, China

Aoshima, Yaichi, “Reasons for Innovation: Creating Legitimacy of Resource Mobilization,” presented at the 70th Drucker Forum, September 3, 2012, Nanjing, China

(In Japanese)

Aoshima, Yaichi, “A Mechanism of Competition in the Chinese Photovoltaic Industry,” presented at magicc Symposium 2014: Balancing among Environmental Protection, Energy Supply, and Economic Growth, IIR and Funding Program for Next Generation World-Leading Researchers (NEXT Program), February 7, 2014, Tokyo

Aoshima, Yaichi, “Potentials of Small-scale Geothermal Power Plant,” presented at magicc Symposium 2014: Balancing among Environmental Protection, Energy Supply, and Economic Growth, IIR and Funding Program for Next Generation World-Leading Researchers (NEXT Program), February 7, 2014, Tokyo

Aoshima, Yaichi and Hiromi Kubota, “Economy of Small-scale Geothermal Power Plant Using Hot Springs,” presented at the Annual Meeting of the Geothermal Research Society of Japan, November 7, 2013, Chiba

Aoshima, Yaichi, “Promoting Renewable Energies by Considering Industry Competitiveness: Possibilities of Geothermal Energy Development in Japan,” Nagasaki University Extension Course, Faculty of Environmental Studies, Nagasaki University, December 6, 2012, Nagasaki

Aoshima, Yaichi, “Balancing among Energy Supply, GHG Reduction, and Industry Competitiveness,” Innovation Policy Research Center Institute of Engineering Innovation, School of Engineering, the University of Tokyo, July 3, 2012, Tokyo



Hiroyuki Chuma

■ Education

- 1984 Ph.D. (Economics), State University of New York at Buffalo
- 1975 B.A. (Economics), Hitotsubashi University

■ Professional Positions

- 2014~ Professor, Faculty of Social Innovation, Seijo University
- 2009 Committee Member, Expert Panel on Evaluation, Council for Science and Technology Policy (CSTP, ~2012)
- 2009 Committee Member, Expert Panel on Basic Policy Promotion, Council for Science and Technology Policy (CSTP, ~March 2011)
- 2004 Affiliated Senior Fellow, National Institute of Science and Technology Policy, Ministry of Education, Culture, Sports, Science and Technology (~March 2007)
- 2000 Faculty Fellow, Research Institute of Economy, Trade and Industry (~March 2014)
- 2000 Visiting Professor, Department of Economics, Yale University (~2001)
- 1999 Professor, Institute of Innovation Research, Hitotsubashi University (~April 2014)
- 1993 Professor, Faculty of Economics, Hitotsubashi University
- 1992 Associate Professor, Faculty of Economics, Hitotsubashi University
- 1986 Visiting Research Fellow, Department of Economics, Yale University (~1987)
- 1985 Associate Professor, Faculty of Economics, Tokyo Metropolitan University
- 1984 Assistant Professor, Department of Economics, Southern Illinois University at Carbondale

■ Research Achievements

1. Publications

1.1. Articles and Chapters in Books

(In Japanese)

Chuma, Hiroyuki, “Business Case: Hitachi High-Technologies Corporation: CD-SEM Supporting the Miniaturization for World Semiconductor Industry,” *Hitotsubashi Business Review*, Vol. 60, No. 3, pp. 142-163, December 2012

2. Unpublished Work

2.1. Working Papers

(In Japanese)

Chuma, Hiroyuki, “Searching for the Declining Causes and Effects of Japanese Semiconductor Industry: In View of Innovation Design,” IIR Working Paper WP#14-02, June 2014

Chuma, Hiroyuki, “CD-SEM Supporting the Miniaturization for World Semiconductor Industry: Embodying Originality and Universality a la Hitachi,” IIR Case Study CASE#12-11, October 2012

3. Conference Papers, Presentations

Chuma, Hiroyuki, “The Changing Potentiality of Japanese Semiconductor R&D System: Social Network Analysis of High-k/Metal Gate R&D Activities,” presented at Symposium of University-industry-government Collaborative Research on Innovation Process: Findings from the Semiconductor and Bio/pharmaceutical Industries, March 15, 2013, Tokyo

Chuma, Hiroyuki, “Social Network Analysis of the World Semiconductor R&D System: Case of High-k/Metal Gate Technologies,” presented at Tokyo University Science Knowledge Integration Laboratory, October 19, 2012, Tokyo (Invited Speech)

(In Japanese)

Chuma, Hiroyuki, “Visualization Management in the Age of Digital Convergence: The Necessity of Meta-cognition Layers,” presented at Cadence Executive Forum, November 8, 2013, Kanagawa (Invited Speech)

The 49th STARC Advanced Seminar: The Application of ICT to Medical and Health Care (2), Panel Discussion, September 3, 2013, Kanagawa

The First Minimal-Fub Symposium (the National Institute of Advanced Industrial Science and Technology), Panel Discussion, July 3, 2013, Tokyo

Chuma, Hiroyuki, “Searching for the Strength of Hitachi CD-SEM,” presented at Tokyo Electron-Hitotsubashi University Joint Research Presentation Meeting 3/3, August 20, 2012, Tokyo

Chuma, Hiroyuki, “Social Network Analysis to Strengthen R&D Strategies: Case of High-k/Metal Gate,” presented at Tokyo Electron-Hitotsubashi University Joint Research Presentation Meeting 2/3, July 6, 2012, Tokyo

Chuma, Hiroyuki, “Weakening Competitiveness in Semiconductor Lithography Industry: Learning from ASML’s Advancement and Nikon’s Predicament,” presented at Tokyo Electron-Hitotsubashi University Joint Research Presentation Meeting 1/3, April 20, 2012, Tokyo



Manabu Eto

■ Education

- 2008 Ph.D. (Engineering), Tohoku University
- 1985 M.E. (Engineering Science), Osaka University
- 1983 B.E. (Engineering Science), Osaka University

■ Professional Positions

- 2013~ Adjunct Professor, Institute of Innovation Research, Hitotsubashi University
- 2011 Director General, JETRO Geneva (~July 2013)
- 2008 Professor, Institute of Innovation Research, Hitotsubashi University (~March 2011)
- 2006~ Consulting Fellow, Research Institute of Economy, Trade and Industry (RIETI)
- 2006 Director, Conformity Assessment Division, Industry Science and Technology Policy and Environment Bureau, Ministry of Economy, Trade and Industry (METI) (~2008)
- 2004 National Institute of Advanced Industrial Science and Technology (~2005)
- 2000 Delegation of Japan to the OECD (~2004)
- 1995 Assistant Professor, University of Tsukuba (~1997)
- 1994 Visiting Scholar, University of New Mexico (~1995)
- 1989 Science and Technology Agency (~1990)
- 1985 Ministry of International Trade and Industry (MITI)

■ Research Achievements

1. Publications

1.1. Others

(In Japanese)

Eto, Manabu, “IPR and Standardization Strategy for New Market and Globalization,” *Gekkan Keidanren* (Keidanren Monthly Journal), Vol. 62, No. 1, January 2014, pp. 42-43

Eto, Manabu and Nathalie Cornier, “Area Report, Switzerland, World’s Largest Organic Food Consuming Country,” *JETRO Sensor*, Vol. 63, No. 753, August 2013, pp. 60-61

Eto, Manabu, “Standardization and Conformity Assessment for the Heat Pump and Cogeneration Technologies,” *JETRO Sensor*, Vol. 63, No. 753, August 2013, p. 21

Eto, Manabu, “Business and Standardization of European Companies (Standardization and IPR Management 24),” *Tokkyo News* (Patent News), No.13526, July 30, 2013, pp. 1-10

2. Conference Papers, Presentations

(In Japanese)

Eto, Manabu, “Standardization Strategy of European Companies,” presented at the 28th Annual Meeting of the Japan Society for Science Policy and Research Management, November 3, 2013, Tokyo

Eto, Manabu, “Cause of Swiss Innovation Power,” presented at the 28th Annual Meeting of the Japan Society for Science Policy and Research Management, November 2, 2013, Tokyo



Masaru Karube

■ Education

- 1998 Doctor of Commerce, Hitotsubashi University
- 1995 Master of Commerce, Hitotsubashi University
- 1993 B.A. (Commerce), Hitotsubashi University

■ Professional Positions

- 2006 Fulbright Visiting Scholar, Bryn Mawr College / The Wharton School of the University of Pennsylvania (~2007)
- 2002~ Associate Professor, Institute of Innovation Research, Hitotsubashi University
- 1998 Lecturer, Faculty of Business Administration, Tokyo Keizai University

■ Research Achievements

1. Publications

1.1. Articles and Chapters in Books

Numagami, Tsuyoshi, Masaru Karube, Toshihiko Kato and Masato Sasaki, “Vertical Strategic Information Flow & Market Orientation,” *Hitotsubashi Journal of Commerce and Management*, Vol. 46, No. 1, October 2012, pp. 17-40

Karube, Masaru, Toshihiko Kato, and Tsuyoshi Numagami, “Organizational Characteristics of Middle Managers’ Deterioration as Sources of Organizational Decline,” in Dariusz Jemielniak & Abigail Marks, eds., *Managing Dynamic Technology-Oriented Businesses*, Pennsylvania: IGI Global, June 2012, pp. 209-227

(In Japanese)

Karube, Masaru, “Strategic Orientation and Strategic Planning Process in the Business Units among Japanese Firms,” *Hitotsubashi Business Review*, Vol. 62, No. 1, June 2014, pp. 38-57

Karube, Masaru and Kentaro Nobeoka, “Scale and Complexity: Barriers to Value Creation,” in Center for Japanese Business Studies, Hitotsubashi University, ed., *Frontier of Japanese Business Studies 9*, Tokyo: Yuhikaku, March 2013, pp. 14-26

Nobeoka, Kentaro and Masaru Karube, “Difficulties in Creating Value at Japanese Firms Due to Managerial Complexity,” *Hitotsubashi Business Review*, Vol. 60, No. 3, December 2012, pp. 84-96

2. Unpublished Work

2.1. Working Paper

Karube, Masaru and Hironori Fukukawa, "Integrating Personal Expertise: A History of Japanese Audit Firms, 1965–2010," IIR Working Paper WP#13-07, March 2013

Fukukawa, Hironori and Masaru Karube, "Personal Knowledge of Audit Partners and Organizational Knowledge of Audit Firms and the Impact on Audit Fees," IIR Working Paper WP#13-06, March 2013

Fukukawa, Hironori and Masaru Karube, "Audit Firm Switch and Engagement Partner Continuance," IIR Working Paper WP#13-05, March 2013

3. Conference Papers, Presentations

Fukukawa, Hironori and Masaru Karube, "Personal Knowledge of Audit Partners and Organizational Knowledge of Audit Firms and the Impact on Audit Fees," presented at the 19th Annual International Symposium on Audit Research, June 27, 2013, Sydney, Australia

Karube, Masaru and Hironori Fukukawa, "Integrating Personal Expertise: A History of Japanese Audit Firms, 1965-2010," presented at the European Accounting Association Annual Congress 2013, May 8, 2013, Paris, France

Fukukawa, Hironori and Masaru Karube, "Audit Partner's Personal Knowledge and Audit Firm's Organizational Knowledge," presented at the European Accounting Association Annual Congress 2013, May 7, 2013, Paris, France

Karube, Masaru and Hironori Fukukawa, "Integrating Personal Expertise: A History of Japanese Audit Firms, 1965-2010," presented at the European Business History Conference 2012, August 31, 2012, Paris, France

Kato, Toshihiko and Masaru Karube, "Why are Japanese Firms Still in Trouble? An Explanation from the Middle Management Perspective," presented at the Academy of Management Annual Meeting 2012, August 7, 2012, Massachusetts, USA

(In Japanese)

Karube, Masaru, "Reasons for Innovation: Creating Legitimacy for Resource Mobilization," presented at the regular meeting of the Japanese Academic Association for Organizational Science, September 28, 2012, Tokyo



Taiju Kitano

■ Education

- 2011 Ph.D. (Economics), Graduate School of Economics, University of Tokyo
- 2004 M.A., Graduate School of Economics, University of Tokyo
- 2002 B.A., Department of Economics, Sophia University

■ Professional Positions

- 2013~ Adjunct Associate Professor, Institute of Innovation Research, Hitotsubashi University
- 2009 Assistant Professor, National Graduate Institute for Policy Studies
- 2009 Lecturer, National Graduate Institute for Policy Studies

■ Research Achievements

1. Unpublished Work

1.1. Working Papers

Kitano, Taiju, “Disguised Protectionism? Environmental Policy in the Japanese Car Market,” RIETI Discussion Paper Series 13-E-059, June 2013

2. Conference Papers, Presentations

Kitano, Taiju, “Disguised Protectionism? Environmental Policy in the Japanese Car Market,” presented at OEIO Tokyo Conference, Spring 2014, March 6, 2014, Tokyo

Kitano, Taiju, “Disguised Protectionism? Environmental Policy in the Japanese Car Market,” presented at Asian Meeting of the Econometric Society 2013, August 4, 2013, Singapore

Kitano, Taiju, “Disguised Protectionism? Environmental Policy in the Japanese Car Market,” presented at the Japan Society of International Economics 2013 Spring Meeting, June 8, 2013, Fukuoka

(In Japanese)

Kitano, Taiju, “Demand Estimation in Automobile Market,” presented at Policy Research Institute, Ministry of Finance, May 17, 2013, Tokyo



Sadao Nagaoka

■ Education

- 1990 Ph.D. (Economics), Massachusetts Institute of Technology
- 1980 M.S. (Management), Massachusetts Institute of Technology
- 1975 B.E. (Engineering), The University of Tokyo

■ Professional Positions

- 2004 Director, Institute of Innovation Research, Hitotsubashi University (~2008)
- 1997~ Professor, Institute of Innovation Research, Hitotsubashi University
- 1996 Professor, Institute of Business Research, Hitotsubashi University
- 1992 Professor, Faculty of Economics, Seikei University
- 1990 Director of the Office for Russia and Eastern Europe, the Ministry of International Trade and Industry of Japan
- 1986 Economist, the World Bank (~1990)
- 1975 The Ministry of International Trade and Industry of Japan (~1992)

■ Research Achievements

1. Publications

1.1. Book

(In Japanese)

Nagaoka, Sadao and Yukiko Hirao, *Economics of Industrial Organization: Fundamentals and Applications*, Tokyo: Nippon Hyoron Sha, 2013, 312 pages

1.2. Articles and Chapters in Books

Igami, Masatsura, Sadao Nagaoka and John Walsh, "Living on the Cutting Edge: The Prevalence of Postdoctoral Researchers in Radical Science," *Journal of Technology Transfer*, forthcoming 2014

(In Japanese)

Igami, Masatsura and Sadao Nagaoka, "Exploring the Impacts of Motivations, Management and Team Compositions on the Performance of Science Research Projects: Empirical Evidence from Large-scale Surveys on the US and the Japanese Scientists," *Nihon Chizai Gakkaishi* (Journal of Intellectual Property Association of Japan), Vol. 10, No. 3, March 2014, pp. 33-45

Onishi, Koichiro and Sadao Nagaoka, "Intrinsic Motivations and Monetary Incentive: Survey of Prior Research and the Findings from Trilateral Inventor Surveys," *Nihon Chizai Gakkaishi* (Journal of Intellectual Property Association of Japan), Vol. 10, No. 3, March 2014, pp. 4-13

Nagaoka, Sadao and Koichiro Onishi, "Life-cycle Inventive Productivity of Corporate Inventors," *RIETI Highlight*, Vol. 42, 2013, pp. 30-33

Nagaoka, Sadao, "Why Early Clarification of the Validity of Patents Is Important?," *Nihon Chizai Gakkaishi* (Journal of Intellectual Property Association of Japan), Vol. 9, No. 1, September 2012, pp. 24-31

Nagaoka, Sadao, “Reasons for Patenting and Usefulness of Patent Disclosure: Some Evidence from Inventor Surveys in Japan and the US,” *Chiteki Zaisanhō Seisakugaku Kenkyū* (Intellectual Property Law and Policy Journal), Research Institute for Information Law & Policy, Hokkaido University, Hokkaido University GCOE New Global Law and Policy for Multi-agential Governance, Vol. 39, September 2012, pp. 1-16

Kim, Young Gak and Sadao Nagaoka, “Construction of Corporate Data on Firm Group Basis: Initial Findings,” *Keizai Tōkei Kenkyū* (Journal of the Economy, Trade and Industry Statistics Association), Vol. 40, No. 2, September 2012, pp. 1-15

Nagaoka, Sadao, “When Injunctions Should Be Used against Unauthorized Use of Standard Essential Patents?,” *Chizaiken Forum*, Institute of Intellectual Property, Vol. 90, August 2012, pp. 54-60

2. Unpublished Work

2.1. Working Papers

Nagaoka, Sadao and Yoichiro Nishimura, “Complementarity, Fragmentation, and the Effects of Patent Thickets,” RIETI Discussion Paper Series 14-E-001, January 2014

Yamauchi, Isamu and Sadao Nagaoka, “Does the Outsourcing of Prior Art Search Increase the Efficiency of Patent Examination?,” IIR Working Paper WP#13-12, May 2013

Igami, Masatsura, Sadao Nagaoka and John P. Walsh, “Contributions of Young Scholars in Team-based Scientific Research,” IIR Working Paper WP#13-02, January 2013

Onishi, Koichiro and Sadao Nagaoka, “Life-cycle Productivity of Industrial Inventors: Education and Other Determinants,” RIETI Discussion Paper 12-E-059, September 2012

(In Japanese)

Honjo, Yuji, Sadao Nagaoka, Kenta Nakamura and Yumi Shimizu, “Science Sources of Bio-Startup Firms in Japan and Their Growth Agenda: Findings from the 2012 Statistical Survey on Bio-startups in Japan,” IIR Working Paper WP#13-22, February 2014

Nagaoka, Sadao, Mitsuaki Hosono, Shinichi Akaike and Jyunichi Nishimura, “Knowledge Creations and Innovations through Industry and Academic Collaborations: Basic Findings from a Large Scale Survey over University and Industry Co-inventors,” IIR Working Paper WP#13-14, June 2013

Honjo, Yuji, Sadao Nagaoka, Kenta Nakamura and Shimizu Yumi, “Agenda for the Growth of Bio Startups in Japan with a Focus on Their Science Sources,” IIR Working Paper WP#13-03, January 2013

Maeda, Takahiro and Sadao Nagaoka, “Sources of Technical Progress of Note PCs: Analysis by Hedonic Pricing Based on Commercial Price Comparison Data,” IIR Working Paper WP#13-01, January 2013

Nagaoka, Sadao, Manabu Eto, Yaichi Aoshima, Hideo Owan, Kazunari Matsushima, Junichi Nishimura and Naotoshi Tsukada, “Collaborations for Innovations: Insights from the Experiences of NEDO Consortiums,” IIR Working Paper WP#12-13, October 2012

Nagaoka, Sadao, Naotoshi Tsukada, Koichiro Onishi and Yoichiro Nishimura, “Innovation Process in Japan in the Early 2000s as Seen from Inventors: Agenda for Strengthening Innovative Capability,” RIETI Discussion Paper 12-J-033, Research Institute of Economy, Trade and Industry, September 2012

Nagaoka, Sadao and Young Gak Kim, “Governance Structure within a Business Group and Its Performance: New Data Construction and Basic Findings,” TCER Working Paper J-9, July 2012

Nagaoka, Sadao, “Entry through Diversification and Exit through De-diversification: Panel Data Analysis,” TCER Working Paper J-8, June 2012

Kato, Masatoshi and Sadao Nagaoka, “Organizational Restructuring and Performance in the Japanese Petroleum Industry: The Effects of Import Liberalization on Competitive Conditions,” TCER Working Paper J-6, June 2012

2.2. Research Reports

(In Japanese)

Nagaoka, Sadao, Mitsuaki Hosono, Shinichi Akaike and Junichi Nishimura, “Knowledge Creations and Innovations through Industry and Academic Collaborations: Basic Findings from a Large Scale Survey over University and Industry Co-inventors,” NISTEP Research Report-221, June 2013

“A Second Study on the Enforcement of Patent Protections for Standard Essential Patents,” Institute of Intellectual Property (Chairman: Sadao Nagaoka), Introduction, March 2013

“Study for a Patent System Design for Stable Patent Rights,” Institute of Intellectual Property (Chairman: Sadao Nagaoka), February 2013

“A Study on a Mechanism of the Accumulation of Pending Patent Examinations and Determinants of the Efficiency of Examinations,” *A 2011 Study on Industrial Property Rights toward New Economic Growth*, Institute of Intellectual Property (Chairman: Sadao Nagaoka), Chap. 5, April 2012

“A 2011 Study on Industrial Property Rights toward New Economic Growth,” Institute of Intellectual Property (Chairman: Sadao Nagaoka), Introduction, April 2012

3. Conference Papers, Presentations

Nagaoka, Sadao, Junichiro Nishimura, Shinichi Akaike and Mitsuaki Hosono, “Making University and Industry Collaboration: Sources of Seeds, Needs and Their Matching,” presented at the International Workshop on Science Sources of Innovation, jointly organized by IIR, NISTEP (National Institute of Science and Technology Policy) and RIETI (Research Institute of Economy, Trade and Industry), March 17, 2014, Tokyo

- Nagaoka, Sadao and Isamu Yamauchi, “Effects of Early Initiation of Patent Examination on the Examination Quality,” presented at the Fourth Asia Pacific Innovation Conference, December 6, 2013, Taipei, Taiwan
- Onishi, Koichiro and Sadao Nagaoka, “Life-cycle Productivity of Industrial Inventors: How PhDs Matter?,” presented at the Fourth Asia Pacific Innovation Conference, December 6, 2013, Taipei, Taiwan
- Nagaoka, Sadao and Kenta Nakamura, “Third Party Contribution to Early Clarification of Patent Rights: An Economic Assessment,” presented at the Fourth Asia Pacific Innovation Conference, December 6, 2013, Taipei, Taiwan (Invited Speech)
- Nagaoka, Sadao and Yoichiro Nishimura, “Complementarity, Fragmentation and the Effects of Patent Thicket,” presented at the Patent Statistics for Decision Makers, organized by OECD, EPO, WIPO, INPI, BR, urostat, JPO, KIPO, NST and USTPO, November 11, 2013, Rio de Janeiro, Brazil (Invited Speech)
- Nagaoka, Sadao, “Author Recognitions in Scientific Research: Evidence from Scientists Survey in the US and Japan,” presented at the 13th Annual REER, “Economics of Knowledge Contribution and Distribution”, November 8, 2013, Atlanta, U.S.
- Nagaoka, Sadao, “International Collaborations in Science, Why and How: Evidence from Scientists’ Survey in the US and Japan,” presented at the International Research Workshop on Science-based Innovation, jointly organized by IIR and NISTEP, October 1, 2013, Tokyo
- Nagaoka, Sadao and Isamu Yamauchi, “Effects of Early Initiation of Patent Examination on the Examination Quality,” presented at the 2013 International Workshop on Innovations and IPRs, June 29, 2013, Tokyo
- Onishi, Koichiro and Sadao Nagaoka, “Life-cycle Productivity of Industrial Inventors: How PhDs Matter?,” presented at the 2013 International Workshop on Innovations and IPRs, June 29, 2013, Tokyo
- Nagaoka, Sadao, “International Collaborations in Science, Why and How: Evidence from Scientists’ Survey in the US and Japan,” presented at the Research Workshop on Innovation Process, March 18, 2013, Tokyo
- Nagaoka, Sadao, “Third Party Participations in Patent Examination,” presented at the Research Workshop on IPRs and Standard for Innovation: Institutional Design, October 16, 2012, Hitotsubashi University
- Nagaoka, Sadao, “Discovery Process in Science: Findings from the US and Japan Scientists Survey,” presented at the Third Asia Pacific Innovation Conference, October 13 and 14, 2012, Seoul, Korea (Keynote Speech)
- Nagaoka, Sadao, “International Collaborations in Science, Why and How: Evidence from Scientists’ Survey in the US and Japan,” presented at the EUSPRI (European Forum for Studies of Policies for Research and Innovation) Early Career Research Conference on “Path - breaking Innovation. Understanding, Managing and Providing Support for Continuous Radical Change in Science and Innovation, June 28, 2012, Milano, Italy (Invited Speech)

Nagaoka, Sadao, "Ownership Structure of Vertical Research Collaboration: Empirical Analysis from an Incomplete Contract Perspective," presented at the Fifth Annual Conference on Entrepreneurship and Innovation: U.S. Patent and Trademark Office-Ewing Marion Kauffman Foundation Conference on Intellectual Property and Innovation, June 14 and 15, 2012, Illinois, U.S.

(In Japanese)

Nagaoka, Sadao and Junichi Nishimura, "Science Sources and Market Performance of the Drugs Launched in Japan," presented at the Incentives and Knowledge for Pharmaceutical Innovation: Industry-University-Government Collaborative Workshop, September 26, 2013, Tokyo

Nagaoka, Sadao, "Economic Impact of Standards on Innovation," presented at the Institute of Electronics, Information and Communication Engineers, March 21, 2013, Gifu (Keynote Speech)

Nagaoka, Sadao, "Science Sources of Breakthrough/Innovative Drugs," presented at the Symposium of University-industry-government Collaborative Research on Innovation Process: Findings from the Semiconductor and Bio/pharmaceutical Industries, March 15, 2013, Tokyo

Nagaoka, Sadao, "Sources of Seeds and Needs and Their Matching for University and Industry Collaborations," presented at Annual General Meeting of Zenkoku Coordinate Katsudō Network, Ministry of Education, Culture, Sports, Science and Technology, the Japan Industrial Location Center, March 14, 2013, Tokyo

Nagaoka, Sadao, "Understanding Innovation Process: Implications for Policy," presented at the SciREX International Symposium 2012 "Past, Present and Future of Science, Technology and Innovation Policy Research," December 14, 2012, Tokyo

Nagaoka, Sadao, "Does the Current Employee Invention Rule Promote Innovation?," presented at Cross Industry Forum on Employee Invention Rule, Keidanren, Japan Intellectual Property Association, Japan Electronics and Information Technology Industries Association and Japan Pharmaceutical Manufacturers Association, December 11, 2012, Tokyo (Keynote Speech)

Nagaoka, Sadao, "Lessons from Break-through Drugs in Japan," presented at First Sentan Shakai Symposium, Riken, October 3, 2012, Tokyo

Nagaoka, Sadao, "Enforcing Patent Protections for Standard Essential Patents," presented at a Symposium on the Enforcement of Standard Essential Patent Rights, Institute of Intellectual Property, August 2, 2012, Tokyo

Nagaoka, Sadao, "Discovery Process in Science: Findings from US-Japan Scientists Survey," presented at the 2012 Spring Meeting of Japan Association for Applied Economics, June 9, 2012, Fukuoka (Invited Speech)



Makoto Nirei

■ Education

- 2002 Ph.D. (Economics), University of Chicago
- 1996 M.A. (Economics), The University of Tokyo
- 1994 B.A. (Economics), The University of Tokyo

■ Professional Positions

- 2008~ Associate Professor, Institute of Innovation Research, Hitotsubashi University
- 2006 Assistant Professor, Department of Economics, Carleton University (~2008)
- 2004 Assistant Professor, Department of Economics, Utah State University (~2006)
- 2001 Postdoctoral Fellow, Santa Fe Institute (~2004)

■ Research Achievements

1. Publications

1.1. Articles and Chapters in Books

Nirei, Makoto, “An Interaction-based Foundation of Aggregate Investment Fluctuations,” *Theoretical Economics*, forthcoming

Mizuno, Takayuki, Makoto Nirei and Tsutomu Watanabe, “A Stochastic Model for Order Book Dynamics in Online Product Markets,” *Evolutionary and Institutional Economic Review*, Vol. 10, No. 1, September 2013, pp. 93-105

(In Japanese)

Nirei, Makoto, “SciSIP and Economic Theory: A Survey,” *Kenkyū Gijutsu Keikaku* (The Journal of Science Policy and Research Management), Vol. 27, No. 3, April 2013, pp. 156-170

1.2. Others

(In Japanese)

Nirei, Makoto, “On the Concentration of Wealth and Economic Growth,” *Economist* (Mainichi Weekly Economist), No. 12/23, December 2013, pp. 29-31

Nirei, Makoto, “Beauty Contests and Fat Tails,” *Nikkei Business Online*, May 1, 2012

2. Unpublished Work

2.1. Working Papers

Nirei, Makoto and Shuhei Aoki, “Pareto Distribution of Income in Neoclassical Growth Models,” Social Science Research Network (SSRN) Working Paper, <http://ssrn.com/abstract=2436858>, May 2014

Aoki, Shuhei and Makoto Nirei, “Zipf’s Law, Pareto’s Law, and the Evolution of Top Incomes in the U.S.,” Tokyo Center for Economic Research Working Paper No. E-74, April 2014

Nirei, Makoto, Sanjib Sarker and Kazufumi Yamana, "Time-Varying Employment Risks, Consumption Composition, and Fiscal Policy," SSRN Working Paper, <http://ssrn.com/abstract=2340367>, July 2013

Nirei, Makoto, "Beauty Contests and Fat Tails in Financial Markets," SSRN Working Paper, <http://ssrn.com/abstract=2362341>, June 2013

Murayama, Kota, Makoto Nirei and Hiroshi Shimizu, "Management of Science, Serendipity, and Research Performance: Evidence from Scientists' Survey," IIR Working Paper WP#13-13, May 2013

(In Japanese)

Mizuno, Takayuki, Makoto Nirei and Tsutomu Watanabe, "An Agent-based Model of Online Markets for Goods," Institute of Statistical Mathematics, Collaboration Report 292, 2013, pp. 48-57

2.2. Research Reports

(In Japanese)

Akaike, Shinichi, Yaichi Aoshima and Makoto Nirei "Innovation Research and Policy Formation," Trial Researches for the "Science for RE-designing Science, Technology and Innovation Policy" Program, National Graduate Institute for Policy Studies, March 2014, pp. 275-291

Nirei, Makoto (Principal Investigator), Koki Oikawa, Shuhei Aoki, Tetsushi Murao, Shinichi Akaike and Kensuke Miyazawa, "An Investigation on Macroeconomic Evaluation Systems for Science, Technology, and Innovation Policies," project report submitted to Japan Science and Technology Agency, October 2012

3. Conference Papers, Presentations

Nirei, Makoto, "Interaction-based Foundation of Aggregate Investment Fluctuations," presented at the Macroeconomics Workshop, March 17, 2014, Osaka

Nirei, Makoto, "Interaction-based Foundation of Aggregate Investment Fluctuations," presented at the National Graduate Institute for Policy Studies, January 29, 2014, Tokyo

Nirei, Makoto, "Interaction-based Foundation of Aggregate Investment Fluctuations," presented at Research Institute for Mathematical Sciences, Kyoto University, January 23, 2014, Kyoto

Carvalho, Vasco M., Makoto Nirei and Yukiko Umeno Saito, "Supply Chain Disruptions: Evidence from Great East Japan Earthquake," presented at the American Economic Association Annual Meetings, January 5, 2014, Philadelphia, U.S.

Nirei, Makoto, Julián Caballero, and Vladyslav Sushko, "Shock Propagation via Banks' Syndicated Interconnectedness," presented at the Fourth Asia Pacific Innovation Conference, December 6, 2013, Taipei, Taiwan

Nirei, Makoto, “Interaction-based Foundation of Aggregate Investment Fluctuations,” presented at Department of Economics, National University of Singapore, September 26, 2013, Singapore

Nirei, Makoto, “Interaction-based Foundation of Aggregate Investment Shocks,” presented at the 2013 Annual Meeting of the Society for Economic Dynamics, June 29, 2013, Seoul, Korea

Nirei, Makoto, Julián Caballero and Vladyslav Sushko, “Syndicated Lending and the Propagation of Financial Shocks,” presented at the Workshop on Network Approaches to Interbank Markets, hosted by the University Jaume I of Castellon, the University of Kiel, and the Kiel Institute for the World Economy, May 30, 2013, Castellon, Spain

Nirei, Makoto, “Banks’ Syndicated Interconnectedness and Global Shock Propagation,” presented at the Bank for International Settlements, April 2, 2013, Basel, Switzerland

Nirei, Makoto, “Interaction-based Foundation of Aggregate Investment Shocks,” presented at the CREI (Centre de Recerca en Economia Internacional), March 25, 2013, Barcelona, Spain

Nirei, Makoto, “Stochastic Herding in Financial Markets: Evidence from Institutional Investor Equity Portfolios,” presented at Japan Society of Monetary Economics, Kanto regional meeting, February 2, 2013, Tokyo

Nirei, Makoto, “Interaction-based Foundation of Aggregate Investment Shocks,” presented at the 14th Macroeconomics Conference, December 9, 2012, Osaka

Nirei, Makoto, “Stochastic Herding by Institutional Investment Managers,” presented at the Spring Meeting of the Japanese Economic Association, June 23, 2012, Hokkaido

Nirei, Makoto, “Autonomous Fluctuations of Investment and Business Cycles,” presented at the Macroeconomics Workshop, June 21, 2012, Tokyo



Toshihiro Nishiguchi

■ Education

- 1990 D.Phil. (Sociology), University of Oxford
- 1981 M.Sc., Imperial College, University of London
- 1977 B.A., Waseda University

■ Professional Positions

- 2012 Fulbright Visiting Scholar, the Massachusetts Institute of Technology, the Sloan School of Management (~2013)
- 2008~ Senior Research Fellow, Policy Research Institute, Ministry of Finance
- 2007 Part-time Director, Defense Procurement Structure Improvement Foundation (~2012)
- 2004 Fall; 2005 Summer
Visiting Scholar, Center for International Studies, Massachusetts Institute of Technology
- 2002 Summer; 2003 Summer
Visiting Senior Research Scholar, School of Public Affairs, Center for Public Policy and Private Enterprise, University of Maryland
- 2001 Summer
Academic Visitor, The Judge Institute of Management, University of Cambridge
- 1997~ Professor, Institute of Innovation Research, Hitotsubashi University
- 1994 Associate Professor, Institute of Business Research, Hitotsubashi University
- 1991 Assistant Professor, The Wharton School, University of Pennsylvania
- 1990~ Post-Doctoral Fellow, INSEAD (European Institute of Business Administration)
- 1986 Research Fellow, International Motor Vehicle Program, Massachusetts Institute of Technology (~1989)

■ Research Achievements

1. Publications

1.1. Others

(In Japanese)

Nishiguchi, Toshihiro, “Wenzhou Entrepreneurs’ Way to Success: Making the Most of Their Networks and Social Capital,” *Sekai Keizai Hyōron* (World Economic Review), Association for World Economic Studies, Vol. 58, No. 2, March 2014, pp. 17-21

Nishiguchi, Toshihiro, “How to Make Your Organization Fresher,” *Kakehashi*, Industrial Employment Stabilization Center of Japan, May 2012, pp. 4-8

2. Unpublished Work

2.1. Working Papers

Nishiguchi, Toshihiro and Motoko Tsujita, "Making Global Neighborhoods Work: The Analysis of China's Wenzhou Entrepreneurial Community," IIR Working Paper WP#13-26, March 2014

(In Japanese)

Nishiguchi, Toshihiro and Motoko Tsujita, "Wenzhou Entrepreneurs' Community: Their Networks and Social Capital," IIR Working Paper WP#13-28, March 2014

Jiang, Hong Xiang, Toshihiro Nishiguchi and Motoko Tsujita, "A Study of Wenzhou Financial Reforms after the Credit Crunch: Towards the Legalization of Informal Lending," IIR Working Paper WP#13-27, March 2014

Nishiguchi, Toshihiro and Motoko Tsujita, "Wenzhounese Entrepreneurs' Network Strategy and Community," IIR Working Paper WP#13-09, March 2012

3. Conference Papers, Presentations

Nishiguchi, Toshihiro, "Making Global Neighborhoods Work: The Analysis of China's Wenzhou Entrepreneurial Community," The TIES (Technological Innovation, Entrepreneurship and Strategic Management) Seminar, April 22, 2013, Massachusetts Institute of Technology Sloan School of Management, U.S.

(In Japanese)

Nishiguchi, Toshihiro, "The Analysis of the Transnational Networks of China's Wenzhou Businesspeople: How to Connect the Region and the World and Prosper," presented at the 2014 Annual Meeting of the Academic Association for Organizational Science, November 9, 2013, Hiroshima (Invited Speech)

Nishiguchi, Toshihiro, "Global Prosperity from Local Networks: The Advancement and Limitations of China's Wenzhou Entrepreneurs," presented at the 20th Annual Conference of JAIBS (the Japan Academy of International Business Studies), October 27, 2013, Osaka



Kentaro Nobeoka

■ Education

- 2001 Ph.D. (Business Administration), Kobe University
- 1993 Ph.D. (Business Administration), Sloan School of Management, Massachusetts Institute of Technology
- 1988 M.B.A., Sloan School of Management, Massachusetts Institute of Technology
- 1981 B.S. (Engineering), Osaka University

■ Professional Positions

- 2012~ Director, Institute of Innovation Research, Hitotsubashi University
- 2008~ Professor, Institute of Innovation Research, Hitotsubashi University
- 1999 Professor, Research Institute for Economics & Business Administration, Kobe University (~2008)
- 1994 Associate Professor, Research Institute for Economics & Business Administration, Kobe University (~1999)
- 1981 Mazda Motor Corporation (~1989)

■ Research Achievements

1. Publications

1.1. Articles and Chapters in Books

Takeda, Yoko, Yaichi Aoshima and Kentaro Nobeoka, "The Importance of Technology Integration Capabilities: Evaluating the Impact on 3D Technologies on Product Development Performance in Japan and China," *International Journal of Product Development*, Vol. 16, No. 1, August 2012, pp. 26-44

(In Japanese)

Nobeoka, Kentaro and Yasunari Takasugi, "Authentic Customer Value of Industrial Products: Management of Solution Value Creation," *Hitotsubashi Business Review*, Vol. 61, No. 4, March 2014, pp. 16-29

Nobeoka, Kentaro, Kei Kuriki and Fujii Makoto, "Business Case / Sysmex Corporation: Global Leadership through Customer Value Orientation," *Hitotsubashi Business Review*, Vol. 6, No. 4, March 2014, pp. 106-121

Nobeoka, Kentaro, "Reorganization toward Multi-Project Management in New Product Development," in Herstatt, Cornelius, Christoph Stockstorm, Hugo Tschirky, and Akio Nagahira, eds., *Management of Technology and Innovation in Japan*, Tokyo: Dōyūkan, June 2013, pp. 235-270

Karube, Masaru and Kentaro Nobeoka, "Scale and Complexity: Barriers to Value Creation," *Frontier of Japanese Business Studies 9*, Center of Japanese Business Studies, Hitotsubashi University, ed., Tokyo: Yuhikaku, March 2013, pp.14-26

Okamura, Yuta and Kentaro Nobeoka, "Business Case / KURARAY CO., LTD.: Creation of Customer Value through Organizational Integration," *Hitotsubashi Business Review*, Vol. 60, No. 4, March 2013, pp. 134-147

Nobeoka, Kentaro and Masaru Karube, “Difficulties in Creating Value at Japanese Firms Due to Managerial Complexity,” *Hitotsubashi Business Review*, Vol. 60, No. 3, December 2012, pp. 84-96

Nobeoka, Kentaro, “Strategies of Japanese Manufacturing Firms and Required Human Resources,” *Hinshitsu*, Nihon Hinshitsu Gakkai (The Japanese Society for Quality Control), Vol. 42, No. 2, April 2012, pp. 212-218

1.2. Others

(In Japanese)

Nobeoka, Kentaro, “Value Creation through Product and Technology Development,” *Sanseiken Forum*, the Institute for Industrial Relation and Labor Policy, Chubu, No. 98, pp. 12-17, 2013

Nobeoka, Kentaro, “Theory of Value Creation Management,” *Management Trend*, Vol. 17, No. 2, September 2012, pp. 2-15

Nobeoka, Kentaro, “Value Creation for Customer Satisfaction,” Keizai Kyōshitsu: Revitalization of Manufacturing Industry (1), *Nihon Keizai Shimbun*, May 28, 2012, p. 17

Nobeoka, Kentaro, “Human Resources for Revitalization of Japanese Manufacturing Firms,” *Hinshitsu*, Nihon Hinshitsu Kanri Gakkai (The Japanese Society for Quality Control), Vol. 42, No. 2, April 2012, pp. 212-218

2. Unpublished Work

2.1. Research Report

Nobeoka, Kentaro, “Presentation Note: Problems in Value Creation in Japanese Manufacturing Firms,” Report for “Seminar for Structural Changes in Trade Balance and Japanese Economy”, Policy Research Institute of the Ministry of Finance, June 2013

3. Conference Papers, Presentations

(In Japanese)

Nobeoka, Kentaro, “Value Creation in Electronics Industries,” presented at LSI Systems Workshop, the IEICE Electronics Society Technical Committee on Integrated Circuits and Devices, 13 May, 2013, Fukuoka



Joel Malen

■ Education

- 2013 Ph.D. (Business Administration), University of Minnesota-Carlson School of Management
- 2006 M.A. (International Relations), Johns Hopkins University
- 1999 B.A. (Economics), University of Rochester

■ Professional Positions

- 2013~ Assistant Professor, Institute of Innovation Research, Hitotsubashi University
- 2006 Business and Policy Research Associate, Itochu International Inc., Washington, DC (~2008)

■ Research Achievements

1. Publications

1.1. Articles and Chapters in Books

Marcus, Alfred, Joel Malen and Shmuel Ellis, “The Promise and Pitfalls of Venture Capital as an Asset Class for Clean Energy Investment: Research Questions for Organization and Natural Environment Scholars,” *Organization and Environment*, (referee reading), Vol. 26, No. 1, March 2013, pp. 31-60

2. Conference Papers, Presentations

Malen, Joel, “Country- and Firm-Level Determinants of Legal Internationalization by Emerging-Market Firms,” presented at the Mitsubishi UFJ Foundation International Conference, August 30, 2014, Kanagawa

Malen, Joel, “Organizational Slack, National Corporate Governance Institutions and Firm Innovation Efforts around the World,” presented at Academy of Management Annual Meeting, August 5, 2014, Philadelphia, USA

Malen, Joel, “Organizational Slack, National Corporate Governance Institutions and Firm Innovation Efforts around the World,” presented at Society for Advancement of Socio-Economics Annual Conference, July 10, 2014, Chicago, USA

Malen, Joel, “Multinational Firms in a World of Multi-national Renewable Energy Policy: Effects on Clean Energy Technology Development,” presented at IIR Summer School 2013, August 26, 2013, Tokyo



Hiroshi Shimizu

■ Education

- 2007 Ph.D. (Economic History), London School of Economics and Political Science, University of London
- 2002 M.A. (History), Northwestern University
- 1999 M.A. (Commerce), Hitotsubashi University
- 1997 B.A. (Commerce), Chuo University

■ Professional Positions

- 2011~ Associate Professor, Institute of Innovation Research, Hitotsubashi University
- 2008 Assistant Professor, Institute of Innovation Research, Hitotsubashi University
- 2007 Postdoctoral Fellow, Department of Technology Management, Eindhoven University of Technology

■ Research Achievements

1. Publications

1.1. Articles and Chapters in Books

- Fontana, Roberto, Alessandro Nuvolari, Hiroshi Shimizu and Andrea Vezzulli, "Reassessing Patent Propensity: Evidence from a Dataset of R&D Awards, 1977-2004," *Research Policy*, Vol. 42, No. 10, December 2013, pp. 1780-1792
- Nicholas, Tom and Hiroshi Shimizu, "Intermediary Functions and the Market for Innovation in Meiji and Taisho Japan," *Business History Review*, Vol. 87 (Spring), May 2013, pp. 121-149
- Fontana, Roberto, Alessandro Nuvolari, Hiroshi Shimizu and Andrea Vezzulli, "Schumpeterian Patterns of Innovation and the Sources of Breakthrough Inventions: Evidence from a Data-set of R&D Awards," *Journal of Evolutionary Economics*, Vol. 22, No. 4, September 2012, pp. 785-810
- Yaichi Aoshima and Hiroshi Shimizu, "A Pitfall of Environmental Policy: An Analysis of 'Eco-point Program' in Japan and its Application to the Renewable Energy Policy," *International Journal of Global Business and Competitiveness*, Vol. 7, No. 1, 2012, pp. 1-13
- (In Japanese)
- Maruyama, Yasuaki and Hiroshi Shimizu, "Business Case / Sumitomo Electric Industries, Ltd. GaN Substrate for Violet Laser Diodes," *Hitotsubashi Business Review*, Vol. 61, No. 2, September 2013, pp. 116-128
- Shimizu, Hiroshi, "Business History," in *Beginner's Guide to Management Studies*, Tokyo: Toyo Keizai, May 2013, pp. 174-191
- Shimizu, Hiroshi and Yaichi Aoshima, "Business Management Perspectives in Science, Technology and Innovation Policy," *Kenkyū Gijyutsu Keikaku (The Journal of Science Policy and Research Management)*, Vol. 27, No. 3/4, April 2013, pp. 183-196

Shimizu, Hiroshi and Yusuke Hoshino, "Open Innovation Management: Exploration for New Combination and Knowledge Management," *Hitotsubashi Business Review*, Vol. 60, No. 2, September 2012, pp. 28-41

1.2. Others

(In Japanese)

Yonekura, Seiichiro and Hiroshi Shimizu, "Innovation Management in Global Competition (1)~(16)," *Keizaikai*, October 2012~March 2014

Shimizu, Hiroshi, "What is Innovation," *Economist* (Mainichi Weekly Economist), Vol. 92, No. 14, March 2014, pp. 42-43

Shimizu, Hiroshi, "History of Innovation," *Gekkan Kansayaku*, Japan Audit & Supervisory Board Members Association, Vol. 2, No. 624, February 2014, pp. 26-37

2. Unpublished Work

2.1. Working Papers

Shimizu, Hiroshi and Naohiko Wakutsu, "Entrepreneurial Spin-Outs and Vanishing Technological Trajectory: Laser Diodes in the U.S. and Japan," IIR Working Paper WP#13-21, January 2014

Murayama, Kota, Makoto Nirei and Hiroshi Shimizu, "Management of Science, Serendipity, and Research Performance: Evidence from Scientists' Survey," IIR Working Paper WP#13-13, May 2013

(In Japanese)

Hoshino, Yusuke and Hiroshi Shimizu, "Dyneema: DSM-Toyobo Collaboration," IIR Case Study CASE#12-02, June 2012

3. Conference Papers, Presentations

Shimizu, Hiroshi, "Exploration Needs Stable Shareholders? Ownership Structure and R&D Strategy: The Case of the Electronics, Steel and Iron, and Pharmaceutical Industries in Japan," presented at Business History Conference Annual Meeting, March 13-15, 2014, Frankfurt, Germany

Shimizu, Hiroshi and Yasushi Hara, "Do Doctoral Degree and Prior Publication Matter? How Do They Vary across Countries? Science-Linkage and Technological Development in Laser Diodes," presented at the Fourth Asia Pacific Innovation Conference, December 7, 2013, Taipei, Taiwan

Shimizu, Hiroshi and Yusuke Hoshino, "Does Collaboration Accelerate R&D? Evidence from a Data Set of the Okochi Prizes," presented at the Third Asia Pacific Innovation Conference, October 13 and 14, 2012, Seoul, Korea

Murayama, Kota, Makoto Nirei and Hiroshi Shimizu, "Management of Science, Serendipity, and Research Performance: Evidence from Scientists' Survey in the US and Japan," presented at the Third Asia Pacific Innovation Conference, October 13 and 14, 2012, Seoul, Korea

Murayama, Kota, Makoto Nirei and Hiroshi Shimizu, “Management of Science, Serendipity, and Research Performance: Evidence from Scientists’ Survey in the US and Japan,” presented at the 13th International Schumpeter Society Conference, July 4, 2012, Brisbane, Australia



Seiichiro Yonekura

■ Education

- 1990 Ph.D. (History), Harvard Graduate School of Arts and Sciences
- 1981 M.A. (Japanese Business History), Graduate School of Social Sciences, Hitotsubashi University
- 1979 B.A. (Japanese Economic History), Faculty of Economics, Hitotsubashi University
- 1977 B.A. (Japanese History), Faculty of Social Sciences, Hitotsubashi University

■ Professional Positions

- 2012~ Academic Director, Center for Japanese Studies, Gordon Institute of Business Science, University of Pretoria (South Africa)
- 2008 Director, Institute of Innovation Research, Hitotsubashi University (~March 2012)
- 2004 Spring
Visiting Professor, Institute du Management Bouygues, HEC (France)
- 2003 Co-president, Institute of Strategy, Sony Corporation (~2004)
- 2003 Spring
Visiting Professor, Institute du Management Bouygues, HEC (France)
- 2001 Fall
J.A. Valentine Visiting Professor, Department of Marketing, University of Otago (New Zealand)
- 1999 Director, Institute of Innovation Research, Hitotsubashi University (~2001)
- 1997~ Professor, Institute of Innovation Research, Hitotsubashi University
- 1995 Professor, Institute of Business Research, Hitotsubashi University
- 1992 Core Faculty of Global Leadership Program at the University of Michigan (An Executive Program for Action Learning) (~1995)
- 1988 Associate Professor, Institute of Business Research, Hitotsubashi University
- 1984 Assistant Professor, Institute of Business Research, Hitotsubashi University
- 1982 Senior Research Assistant, Institute of Business Research, Hitotsubashi University

■ Research Achievements

1. Publications

1.1. Articles and Chapters in Books

(In Japanese)

Yonekura, Seiichiro, “Entrepreneurship in Business Community: Banjo Otsuka and the Postwar Japanese Management Perspective,” in Matao Miyamoto, Tadao Kagono and Kigyoka Foramu eds., *Kigyōkagaku no Susume* (Studies in Entrepreneurship: Theories and Cases), Tokyo: Yuhikaku, July 2014, pp. 304-325

Yonekura, Seiichiro and Kim Seongmi, “Business Case / Coca Cola, Japan Peak-shift Vending Machine: The Energy Crisis after 3.11 and Coca Cola, Japan,” *Hitotsubashi Business Review*, Vol. 61, No. 4, March 2014, pp. 122-134

Yonekura, Seiichiro, “The Dynamics of Japanese Government and Firms: A Soft Aspect of Industrial Policies: An Empirical Study on the Impacts of Kishinhō (The Temporary Measures for the Promotion of the Machinery and Machine Tool Industries),” in Odaka, Konosuke and Shigeru Matsushima, eds.,

Maboroshi no Seisaku Kishinho, Chapter 5, Tokyo: Nihon Keizai Shimbun, October 2013, pp. 127-160

Yonekura, Seiichiro, “Business-Labor Perspective of Keizai Doyukai and Post-war Reconstruction,” *Kigyoka Kenkyū* (Entrepreneurial Studies), Forum for Entrepreneurial Studies, No. 10, September 2013, pp. 38-44

Yonekura, Seiichiro, “Logic behind Open Innovation: Technology, Market and Organization,” *Hitotsubashi Business Review*, Vol. 60, No. 2, September 2012, pp. 6-15

Yonekura, Seiichiro, “Innovation after 3.11: Nuclear Withdrawal and Energy Conservation Technology,” *Doboku Gijyutsu* (Civil Engineering), Vol. 67, No. 7, July 2012, pp. 10-14

1.2. Others

Yonekura, Seiichiro, “Social Business and Japan’s Future,” *Itochu Monthly*, September 2013, p. 10

(In Japanese)

Yonekura, Seiichiro, “Elon Musk,” *Britannica International Yearbook 2014*, April 2014, pp. 82-83

Yonekura, Seiichiro, “Izumo, Mitsuru,” *Britannica International Yearbook 2014*, April 2014, pp. 58-59

Yonekura, Seiichiro and Hiroshi Shimizu, “Innovation Management in Global Competition (1) ~ (16),” *Keizaikai*, October 2012-March 2014

Yonekura, Seiichiro, “Christophe Weber,” *Nikkei Business*, January 6, 2014, p. 98

(Book Review)

Anchordoguy, Marie, *Reprogramming Japan: The High-tech Crisis under Communitarian Capitalism / Shūkan Dokushojin*, July 6, 2012, p. 4

2. Unpublished Work

2.1. Working Paper

Yonekura, Seiichiro, “The Samurai Company: Double Creative Response in Meiji Japan -The Case of Onoda Cement,” IIR Working Paper WP#12-08, May 2012

3. Conference Papers, Presentations

Yonekura, Seiichiro, “Innovation in Japan,” presented at Kumamoto University, November 22, 2013, Kumamoto

Yonekura, Seiichiro, “Green and Medical Tourism as Innovation,” presented at FACP (Federation for Asian Cultural Promotion) 31st Annual Conference, November 17, 2013, Chiang Mai, Thailand

Yonekura, Seiichiro, “A New Trend of Incubating Startups in Japan,” presented at Comparative Models for Fostering Entrepreneurship and Innovation Conference, hosted by Academy for Global Leadership, Tokyo Institute of Technology and ICS Hitotsubashi University, March 29, 2013, Tokyo

Reinmoeller, Patrick and Seiichiro Yonekura, “Navigating Institutions in South Africa: The Lessons Japanese Firms Learned,” presented at the Academy of Management Africa Conference, January 10, 2013, Pretoria, South Africa

Yonekura, Seiichiro, “Toward a Strategic Business Partnership between Japan & South Africa,” presented at JETRO & CJS (GIBS), November 5, 2012, Pretoria, South Africa

Yonekura, Seiichiro, “Innovation in Japan,” presented at the 2nd Asian Research Policy Symposium ‘Asian Model of Innovation: Past, Present & Future’, August 30, 2012, Seoul, Korea

Yonekura, Seiichiro, “Entrepreneurship in Japan,” presented at HPAIR (Harvard Project for Asian and International Relations) Asia Conference 2012, August 24-28, 2012, Taiwan (Keynote Speech)

(In Japanese)

Yonekura, Seiichiro, “Innovation and Entrepreneurship,” presented at the 5th Entrepreneurship Symposium, Chiba University, March 7, 2014, Chiba

Yonekura, Seiichiro, “Emergent Destruction,” Nikkei BP Seminar, September 27, 2013, Tokyo

Yonekura, Seiichiro, “Emergent Destruction: Innovation and Paradigm Change,” presented at JEITA 2013 Gijyutsu Seminar, organized by Japan Electronics and Information Technology Industries Association, September 13, 2013, Osaka

Yonekura, Seiichiro, “Innovation in Japan,” presented at the 2nd Asian Research Policy Symposium ‘Asian Model of Innovation: Past, Present & Future’, August 30, 2013, Seoul, Korea

Yonekura, Seiichiro, “Emergent Destruction: Innovation and Paradigm Change,” presented at LSI Systems Workshop, the IEICE Electronics Society Technical Committee on Integrated Circuits and Devices, May 13, 2013, Fukuoka

Reinmoeller, Patrick and Seiichiro Yonekura, “Navigating Institutions in South Africa: The Lessons Japanese Firms Learned,” presented at Academy of Management Africa Conference, January 10, 2013, Johannesburg, South Africa

Yonekura, Seiichiro, “Emergent Destruction: A Vision for the Recovery from the 3.11 Earthquake and Innovation,” IT Coordinators Association, August 23, 2013, Tokyo

Yonekura, Seiichiro, “Innovation to Revitalize Japan,” presented at magicc Symposium, IIR and Funding Program for Next Generation World-Leading Researchers (NEXT Program), March 14 & 15, 2013, Tokyo

Yonekura, Seiichiro, “Toward a Strategic Business Partnership between Japan & South Africa,” presented at JETRO & CJS (GIBS) Conference, November 5, 2012, Johannesburg, South Africa

Yonekura, Seiiciro, “Enhancing Japan’s Competitiveness: From the Perspective of Management and History,” the 27th Annual Meeting of the Japan Society for Science Policy and Research Management, October 27, 2012, Hitotsubashi University

Yonekura, Seiichiro, “Japanese Business Development: Past and Future,” Aramco Asia Business Cultural Program, September 29, 2012, Tokyo

Yonekura, Seiichiro, “Entrepreneurship in Japan,” HPAIR (Harvard Project for Asian and International Relations) Asia Conference 2012, August 24-28, 2012, Tainan, Taiwan

3. International Visiting Researchers — Apr. 2012~ Mar. 2014

Israel Drori

Professor, School of Business, College of Management Academic Studies, Israel
September 2, 2013 - November 30, 2013

Mark Schankerman

Professor, London School of Economics
June 21, 2013 - September 28, 2013

Keun Lee

Professor, Seoul National University
March 1, 2013 - June 28, 2013

Dai Xiaofu

Associate Professor, Fudan University Center for Japanese Studies
September 10, 2012 - March 8, 2013

III. Education



1. Courses Given by the IIR Faculty Members — Apr. 2012 ~ Mar. 2014

	Fiscal Year	
	2012	2013
Graduate School of Commerce and Management		
Master's and Doctoral Program		
<i>[Courses provided by the Innovation kozas]</i>		
Advanced Innovation Management	Aoshima	Karube
Innovation, Strategy and Organization	Nobeoka	Nobeoka
Interorganizational Relations	Nishiguchi	
Network Organization		Nishiguchi
Innovation, Policy and Institution	Akaike	Akaike
Economic Analysis of Innovation	Nagaoka	Nagaoka
Innovation and Human Resource Development	Chuma	Chuma
Special Lecture: International Comparison of Innovation 1		Nagaoka/Lee/ Schankerman
Special Lecture: International Comparison of Innovation 2	Yonekura/Aoshima	Yonekura/Aoshima
<i>[Courses provided by the Business Economics kozas]</i>		
Advanced Industrial Economics	Nirei	
Advanced Organizational Economics		Nirei
History of Technology and Entrepreneurship		Malen
MBA Program		
Business Economics (Competition and Strategy)	Nagaoka	Nagaoka
Entrepreneurship	Yonekura	Yonekura
Corporate Organization	Aoshima	Aoshima
Technology Strategy	Nobeoka	Nobeoka
Strategic Analysis	Karube	Karube
Seminar: Readings in Business Classics	Shimizu	
Special Lecture: Innovation and Modularity	Chuma	
Special Lecture: Innovation & Design		Chuma
Workshop: Management B (Industry and Technology)	Nagaoka	
Workshop: Innovation		Nobeoka/Aoshima
Senior Executive Program		
	Karube/Nobeoka	Nobeoka/Aoshima
Undergraduate Program in the Faculty of Commerce and Management		
Innovation Management	Chuma/Nishiguchi	Chuma/Akaike/ Yonekura
Interactive Course on Business Basics (Management)		Malen
Special Topics in Commerce and Management 1		Malen
Production and Operation Management	Karube	Karube
Proseminar (Intensive Readings)	Nirei/Shimizu	Nirei/Shimizu/ Karube
Special Lecture: Firm and Market in EU	Shimizu	Shimizu
Undergraduate Introductory Seminar I	Aoshima/Nishiguchi/Shimizu	Karube/Nirei/ Shimizu
Undergraduate Introductory Seminar II	Chuma/Yonekura	Chuma/Yonekura/ Aoshima/Nishiguchi/Nirei

Graduate School of Economics		
Master's and Doctoral Program		
Workshop: Industry and Labor	Chuma/ Nagaoka*	Chuma/ Nagaoka*

Note: * indicates a joint lecture with other faculty member(s) than those in the IIR.

IV. Research Results / Publications



1. Hitotsubashi Business Review — Apr. 2012 ~ Mar. 2014

To publish the findings of its research activities, the IIR issues a quarterly journal, called the *Hitotsubashi Business Review* (in Japanese). The rationale in editing the journal is to promote the theoretical and empirical study of innovation in a social and economic context. The editorial board comprises professors from several universities and company advisors, as well as IIR professors.

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Title of Special Issues

Vol.61 No.4	“Rethinking Customer Orientation: New Challenges in Practice to Create Customers”
Vol.61 No.3	“Assessment of Industry-University Collaboration in Japan: Toward New Combinations”
Vol.61 No.2	“The Future Creation Management from the Community”
Vol.61 No.1	“Frontiers of Business Economics”
Vol.60 No.4	“Cross-Border M&A”
Vol.60 No.3	“Uncovering the Real Potential of Japanese Manufacturing Industry”
Vol.60 No.2	“Impact of Open Innovation”
Vol.60 No.1	“Where Will Accounting in Japan Head for?”

Featured Papers

Issue	Vol. / No.	Title	Author(s)
Mar. 2014	Vol.61 No.4	“Three Strategies for Leveraging Customer Value”	Tadao Kagono (Special Visiting Professor, Konan University)
		“Authentic Customer Value of Industrial Products: Management of Solution Value Creation”	Kentaro Nobeoka / Yasunari Takasugi (Professor, IIR ; President and Director, CONCEPT SYNERGY Co., LTD.)
		“Contemporary Perspectives in Consumer Research: New Directions and Critical Issues”	Yukihiro Aoki (Professor, Faculty of Economics, Gakushuin University)
		“Dilemmas of Customer Orientation in Practice”	Kei Kuriki (Professor, Graduate School of Business Administration, Kobe University)
		“Smart Excellence: Customer Management through Focalization and Value Co-creation with Customer”	Joji Ono (Professor, School of Business, Department of Marketing, Aoyama Gakuin University)
		“Market Cultivation: A Case Study of TREE OF LIFE Co., Ltd. Co-Creating the Herb & Aromatherapy Market in Japan”	Mari Yoshida (Associate Professor, College of Business Administration, Ritsumeikan University)
Dec. 2013	Vol.61 No.3	“Challenge of Pasteur Scientists for Innovation: A Case of Photocatalyst?”	Yasunori Baba / Naohiro Shichijo / Masaru Yarime (Professor, Research Center for Advanced Science and Technology, The University of Tokyo; Science and Technology Foresight Center, National Institute of Science and Technology Policy; Adjunct Associate Professor, The University of Tokyo)

Featured Papers (continued)

Issue	Vol. / No.	Title	Author(s)
Dec. 2013	Vol.61 No.3	“Actemra and Remicade : Key Factors to Determine First Mover Advantage in R&D Process of Both Antibody Drugs”	Yasushi Hara / Yoshiyuki Ohsugi (Postdoctoral Fellow, IIR ; Adjunct Professor, IIR)
		“Absorptive Company: Sources of R&D Capability in Hamamatsu Photonics K.K.”	Naohiro Shichijo / Junichi Murata / Shinichi Akaike / Atsushi Ogasawara (Senior Research Fellow, Science and Technology Foresight Center, National Institute of Science and Technology Policy ; Research Fellow, Science and Technology Foresight Center, National Institute of Science and Technology Policy ; Professor, IIR ; Director, Science and Technology Foresight Center, National Institute of Science and Technology Policy)
		“Cross-Bounding Knowledge: Learning from America’s Experience of Industry - University Collaboration and the Change in Academic Values”	Takahiro Ueyama (Professor, Faculty of Policy Management, Keio University)
		“A Consortium - Based Approach for Open Innovation: Exploring a Unique and Optimal Model for Japan and Stem Cell Technology”	Shintaro Sengoku (Associate Professor, Institute for Integrated Cell-Material Sciences, Kyoto University)
		“Process of Industry - University Co - Inventions: Findings from a Large Scale Questionnaire Survey on Industry - University Collaboration in Japan”	Shinichi Akaike / Mitsuaki Hosono (Professor, IIR ; Senior Research Fellow, Science and Technology Foresight Center, National Institute of Science and Technology Policy)
		“Building a Next Generation Creative Urban Workforce for the Digital Economy: A Case Study of Urban Apps & Maps Studios Program”	Yoo Youngjin(Professor, Fox Business School, Temple University)
		“Management by Knowledge Maneuverability: Synthesizing Knowledge Creation and Maneuver Warfare”	Ikujiro Nonaka / Ayano Hirose / Yoshihide Ishii(Victor Stone) (Emeritus Professor, Hitotsubashi University ; Adjunct Assistant Professor, Graduate School of International Corporate Strategy, Hitotsubashi University ; Lieutenant Commander, United States Navy)
Sep. 2013	Vol.61 No.2	“The Creation Management from the Community and University Education”	Hiroki Hayashi (Professor, Graduate School of Social Sciences, Hitotsubashi University)
		“Diversity: A Key for Creating Active Local Communities”	Megumi Yuki (Professor, University Education Center, Gunma University)
		“The Turmoil in Human Resource Development: Why the Gap between the Businesses and Universities Happen”	Yayoi Tanaka / Shigeru Asano (Professor, National Institute for Academic Degrees and University Evaluation ; Associate Professor, Kobe University)
		“The Logic for Making Economy and Society in ‘Machi-Zukuri’ ”	Kimihiko Ishikawa (Assistant Professor, School of Business Administration, Meiji University)
		“On Management of the Civic Associations that Support Regional Culture Creation: Two Cases of Civic Music Festivals in Japan”	Michi Fukushima (Professor, Graduate School of Economics and Management, Tohoku University)
Jun. 2013	Vol.61 No.1	“Market Design in Business, Theory and Practice”	Yosuke Yasuda(Associate Professor, National Graduate Institute for Policy Studies)
		“Intermediation and Search Markets: Looking into the Black Box, Reasons for Why Intermediation Can Be a Profitable Business”	Makoto Watanabe (Research Fellow, Tinbergen Institute)

Featured Papers (continued)

Issue	Vol. / No.	Title	Author(s)
Jun. 2013	Vol.61 No.1	“Bundling”	Makoto Hanazono (Associate Professor, Graduate School of Economics, Nagoya University)
		“Behavioral Economics and Industrial Organization: Naive Consumers and Markets”	Daisuke Nakajima (Associate Professor, Department of Commerce, Otaru University of Commerce)
		“Economics of Human Resource Management: The Role of Promotion in Organizations”	Junichiro Ishida (Professor, Institute of Social and Economic Research, Osaka University)
		“Incentive Effects of Heterogeneity in Organizations”	Hideshi Itoh / Kimiyuki Morita (Professor, Graduate School of Commerce and Management, Hitotsubashi University; Ph. D. Student, Graduate School of Commerce and Management, Hitotsubashi University)
		“Theory on Innovation is a Pragmatic ‘Way of Life’: Including the New Wave of Philosophy into the Knowledge-Creating Theory”	Ikujiro Nonaka (Emeritus Professor, Hitotsubashi University)
Mar. 2013	Vol.60 No.4	“Current Outlook of Japanese Cross-Border M&A”	Isao Okubo / Nobuo Sayama (Executive Director, GCA Savvian Corporation; Managing Director, GCA Savvian Corporation/Representative Director & Partner, Integral Corporation/Professor, Graduate School of International Corporate Strategy, Hitotsubashi University)
		“Cross-Border M&A and Management Strategy”	Tomonori Ito (Professor, Graduate School of International Corporate Strategy, Hitotsubashi University)
		“Sequential M&A Achieving Sustainable Profitable Growth”	Yuji Nishimura (Managing Director, Accenture Japan Ltd)
		“Practical Considerations for Cross-Border M&A”	Masahiko Chino / Kenichi Takashima / Hikaru Okada (President&COO, KPMG FAS Co.,Ltd.; Partner, KPMG Tax Corporation ; Corporate officer, KPMG FAS Co.,Ltd.)
		“Cross-Border M&A - Laws, Regulations and Practical Considerations”	Hajime Tanahashi / Takayuki Kihira / Hideaki Umetsu (Partner, Mori Hamada & Matsumoto)
		“Are Japanese Firms Really Not Good at Cross-Border Acquisitions?: An Empirical Study”	Kotaro Inoue / Saori Nara / Takashi Yamasaki (Professor, Graduate School of Decision Science and Technology, Tokyo Institute of Technology; Assistant Professor, Graduate School of Decision Science and Technology, Tokyo Institute of Technology; Associate Professor, Graduate School of Business Administration, Kobe University)
Dec. 2012	Vol.60 No.3	“Japan’s Manufacturing Sites (Monozukuri Genba): The Darkest Hour before the Dawn?”	Takahiro Fujimoto (Professor, Graduate School of Economics, The University of Tokyo)
		“Import of Industrial Goods and Real Local Procurement in Overseas Production of Japanese Companies”	Junjiro Shintaku / Kiyohiro Oki (Professor, Graduate School of Economics, The University of Tokyo; Research Associate, Faculty of Commerce, Kansai University)
		“Does the Natural Selection Mechanism Still Work in Severe Recessions? : Lessons from the Japanese Economy in the 1990s”	Kiyohiko Nishimura / Takanobu Nakajima / Kozo Kiyota (Deputy Governor, Bank of Japan ; Professor, Faculty of Business and Commerce, Keio University; Associate Professor, Graduate School of International Social Sciences, YOKOHAMA National University /Faculty Fellow, Research Institute of Economy, Trade & Industry, IAA)

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Dec. 2012	Vol.60 No.3	“Process Investigation Tracing Upstream in Kanebo after the Russo-Japanese War: Inter-Process “Flow” Concept of Sanji Muto”	Tetsuya Kuwahara / Hisamichi Ashida (Professor, Faculty of Economics, Fukuyama University; Manufacturing Management Research Center, The University of Tokyo)
		“Growing SME Manufacturers’ Common Perception in East Asia”	Takao Nakazawa(President, Specially-appointed Professor, Research Institute for Regional Economics, Fukui Prefectural University)
		“Difficulties in Creating Value at Japanese Firms Due to Managerial Complexity”	Kentaro Nobeoka / Masaru Karube (Director, Professor, IIR ; Associate Professor, IIR)
		“Dynamic Fractal Organizations for Promoting Knowledge-based Transformation”	Ikujiro Nonaka / Mitsuru Kodama / Ayano Hirose (Emeritus Professor, Hitotsubashi University; Professor, College of Commerce, Nihon University; Adjunct Assistant Professor, Graduate School of International Corporate Strategy, Hitotsubashi University)
Sep. 2012	Vol.60 No.2	“Logic behind Open Innovation: Technology, Market and Organization”	Seiichiro Yonekura (Professor, IIR)
		“Open Innovation: Mechanisms and Challenges for Success”	Akira Takeishi (Professor, Graduate School of Economics Kyoto University)
		“Open Innovation Management: Exploration for New Combination and Knowledge Management”	Hiroshi Shimizu / Yusuke Hoshino (Associate Professor, IIR ; Assistant Professor, Faculty of Political Science and Economics, Musashino University)
		“Using Open Innovation to Leverage Japan’s Strengths”	Glenn Hoetker (Associate Professor, W.P. Carey School of Business, Arizona State University)
		“Salaried Entrepreneurs and the Internalization of Technology Market: A Case Study on Open Innovation by Osaka Gas”	Kazuhisa Kawai (Assistant Professor, Faculty of Business Administration, Okayama Shoka University)
		“Development and Industrialization through Collaboration: Case of Dyneema”	Yusuke Hoshino(Assistant Professor, Faculty of Political Science and Economics, Musashino University)
Jun. 2012	Vol.60 No.1	“New Challenges to Accounting Revolution: Beyond the Relevance Lost”	Kunio Ito / Tetsuyuki Kagaya / Tomohiro Suzuki (Professor, Graduate School of Commerce and Management, Hitotsubashi University; Associate Professor, Graduate School of Commerce and Management, Hitotsubashi University; Lecturer, Faculty of Business Administration, Asia University)
		“Crisis and Challenges of Corporate Governance in Japan”	Kazuhiko Toyama (Representative Director and CEO, The Industrial Growth Platform, Inc.)
		“Has the Convergence to the IFRS Affected Investment Behavior?: International Evidences”	Tetsuyuki Kagaya (Associate Professor, Graduate School of Commerce and Management, Hitotsubashi University)
		“The Sustainable Value Creation Based on the Integrated Reporting”	Hajime Yasui / Yoshiyuki Kure (Arata Institute, PricewaterhouseCoopers Aarata) (Senior Manager, Risk Control Solution Division, PricewaterhouseCoopers Aarata)
		“Mandatory CSR Reporting by Companies: Probable Choice for the Future”	Kozuma Yoshinao (Professor, Faculty of Economics, Sophia University)

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Mar. 2014	Vol.61 No.4	Sysmex Corporation: Global Leadership through Customer Value Orientation	Kentaro Nobeoka / Ken kuriki /Makoto Fujii (Professor, IIR; Professor, Graduate School of Business Administration, Kobe University; Ph.D. Student, Graduate School of Business Administration, Kobe University)
		COCA-COLA (JAPAN) COMPANY, LIMITED: Peak-shift Vending Machine: The energy Crisis after 3.11 and Coca Cola, Japan	Seiichiro Yonekura / Seongmi Kim (Professor, IIR; Ph.D. Student, Graduate School of Commerce and Management, Hitotsubashi University)
Dec. 2013	Vol.61 No.3	Shiseido Co.,Ltd.: Shiseido's Globalization Strategy: Use of 'Omotenashi' Service in China	Satoko Suzuki / Midori Harada (Lecturer, Graduate School of Management, Kyoto University; Graduate School of Management, Kyoto University)
		NIPPON STEEL CORPORATION: Development and Commercialization of Waste Plastic Recycle Process Using Coke Ovens	Yaichi Aoshima / Osamu Suzuki (Professor, IIR; Associate Professor, Institute of Business and Accounting, Professional Graduate School, Kwansai Gakuin University)
Sep. 2013	Vol.61 No.2	Brother Industries, LTD.: The Development of Global Management and the Role of Human Resources Department: How Headquarters Can Assist Overseas Subsidiaries Being Autonomous?	Koichi Nakano / Ikutaro Enatsu / Yasuyuki Hatsumi / Motohiro Morisawa (Ph.D. Student, Graduate School of Commerce and Management, Hitotsubashi University; Associate Professor, Nagoya University Graduate School of Economics; Ph.D. Student, Graduate School of Commerce and Management, Hitotsubashi University; Professor, Graduate School of Commerce and Management, Hitotsubashi University)
		Sumitomo Electric Industries: Shift in R&D and Business Strategies. Case of GaN Substrates for Blue-Violet Lasers.	Yasuaki Maruyama / Hiroshi Shimizu (Graduate School of Commerce and Management, Hitotsubashi University; Associate Professor,IIR)
Jun. 2013	Vol.61 No.1	Ryohin Keikaku Co., Ltd.	Tomoyuki Shimanuki (Associate Professor, Graduate School of Commerce and Management, Hitotsubashi University)
		The Sugamo Shinkin Bank	Emiko Tsuyuki (Professor, Chuo Graduate School of Strategic Management)
Mar. 2012	Vol.60 No.4	KURARAY CO., LTD.: Creation of Customer Value through Organizational Integration	Yuta Okamura / Kentaro Nobeoka (Master's Student, Graduate School of Commerce and Management, Hitotsubashi University; Professor, IIR)
		FeliCa Networks, Inc.	Koichi Sakurai / Yaichi Aoshima (Master's Student, Graduate School of Commerce and Management, Hitotsubashi University; Professor, IIR)
Dec. 2012	Vol.60 No.3	S&B Foods Inc.	Takeshi Matsui (Associate Professor, Graduate School of Commerce and Management, Hitotsubashi University)
		Hitachi High-Technologies: CD-SEM Supporting Critical Dimension for World Semiconductor Chipmakers	Hiroyuki Chuma (Professor, IIR)
Sep. 2012	Vol.60 No.2	AJINOMOTO: The Entry into a BOP Market Targeting for Nutrition Improvement	Takashi Hirao / Yusuke Hoshino (Associate Professor, Tokyo University of Science, Suwa; Assistant Professor, Musashino University)
		A Case Study on the Commercialization of User Innovation: Kamoi Kakoshi	Satoshi Horiguchi (Ph.D. Student, Graduate School of Business Administration, Kobe University)

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		Human Resources Management by a Japanese Company: Case Study of PT Komatsu Indonesia	Yasuyuki Hatsumi / Seo Jeong-min (Ph.D. Student, Graduate School of Commerce and Management, Hitotsubashi University; Graduate School of Commerce and Management, Hitotsubashi University;)

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Mar. 2013- Dec. 2013	Vol.60 No.4- Vol.61 No.3	Innovation in Japanese Management Research (1)-(4)	Susumu Ogawa (Professor, Graduate School of Business Administration, Kobe University)
Mar. 2014	Vol.61 No.4	The Management is Stranger than the Theoretical	Hideki Yoshihara (Emeritus Professor, Kobe University)

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Mar. 2014	Vol.61 No.4	Ikuo Maeda (General Manager, Mazda Design Division)	Kentaro Nobeoka Yaichi Aoshima
Sep. 2013	Vol.61 No.2	Tsuyoshi Nishiwaki (Director and Fellow, ASICS Institute of Sport Science)	Kentaro Nobeoka Yaichi Aoshima
Jun. 2013	Vol.61 No.1	Takafumi Nishijima (President, ARM K. K.)	Kentaro Nobeoka Hiroyuki Chuma Yaichi Aoshima
Dec. 2012	Vol.60 No.3	Seiichiro Watanabe (CEO and Producer, Livingimage Ltd.)	Kentaro Nobeoka Yaichi Aoshima
Sep. 2012	Vol.60 No.2	Atsuyoshi Koike (Senior Vice President, SanDisk Corporation)	Kentaro Nobeoka Yaichi Aoshima

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Mar. 2013 Mar. 2014	Vol.60 No.4 Vol.61 No.4	Porter Prize 2012 Porter Prize 2013	Emi Osono / Seiko Yamazaki (Professor, ICS, Hitotsubashi University; Visiting Fellow, ICS, Hitotsubashi University)

Commentaries on Key Words

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Mar. 2014	Vol.61 No.4	Corporate Turnaround	Michiko Ashizawa (Associate Professor, International College of Arts and Sciences, Division of Economics and Business Administration, Yokohama City University)
Dec. 2013	Vol.61 No.3	Social Marketing	Kosuke Mizukoshi (Associate Professor, Department of Business Administration, Tokyo Metropolitan University)
Sep. 2013	Vol.61 No.2	Global Convergence of Accounting Standard for Retirement Benefits	Shigeaki Sawada (Associate Professor, Faculty of Law, Economics and Humanities, Kagoshima University)
Jun. 2013	Vol.61 No.1	Brand Relationships	Yukihiko Kubota (Professor, Faculty of Economics, Aoyama Gakuin University)
Mar. 2013	Vol.60 No.4	Digitalization and Business Custom in the Japanese Publishing Industry	Takahiro Endo (Research Associate, Cardiff University)
Dec. 2012	Vol.60 No.3	Formula Retail Restriction in US	Bi-Matsui Taotao (Professor, Faculty of Economics, Keiai University)
Sep. 2012	Vol.60 No.2	The Exhausted Support Line	Koichi Nakagawa (Associate Professor, Graduate School of Economics, Osaka University)
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Dec. 2013	Vol.61 No.3	Tadamitsu Kishimoto (Professor, Immunology Frontier Research Center, Osaka University)	Sadao Nagaoka Shinichi Akaike
Sep. 2013	Vol.61 No.2	Kentaro Ohyama (President, Iris Ohyama Inc.)	Seiichiro Yonekura
Jun. 2013	Vol.61 No.1	Roderick Lappin (Executive Chairman, NEC Lenovo Japan)	Seiichiro Yonekura
Mar. 2013	Vol.60 No.4	Hiroo Unoura (President & CEO, Nippon Telegraph and Telephone Corporation)	Tomonori Ito
Dec. 2012	Vol.60 No.3	Sir James Dyson (Dyson Limited)	Seiichiro Yonekura
Sep. 2012	Vol.60 No.2	Rob van Leen (Chief Innovation Officer, Royal DSM N. V.)	Seiichiro Yonekura
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Sep. 2013	Vol.61 No.2	“Supply Chain Management for Private Brands: The Case Study of Seven Premium”	Takuya Akikawa/Yumiko Toda (Assistant Professor, College of Commerce, Nihon University; Assistant Professor, College of Commerce, Nihon University)
Jun. 2013	Vol.61 No.1	“Diffusion of Innovations and Legitimization: The Case of ‘Jibun e no Gohoubi’ [Self-Reward] Consumption”	Satoko Suzuki (Senior Lecturer, Graduate School of Management, Kyoto University)

Special Interview

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Mar. 2013	Vol.60 No.4	Hiroshi Kimura (Chairman of the Board, Japan Tobacco Inc.)	Nobuo Sayama
Mar. 2013	Vol.60 No.4	Noriyuki Inoue (Chairman of the Board & CEO, DAIKIN INDUSTRIES, Ltd.)	Nobuo Sayama

2. Working Papers — Apr. 2012 ~ Mar. 2014

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WP#13-28	Mar. 2014	“Wenzhou Entrepreneurs’ Community: Their Networks and Social Capital” (in Japanese)	Toshihiro Nishiguchi / Motoko Tsujita
WP#13-27	Mar. 2014	“A Study of Wenzhou Financial Reforms after the Credit Crunch: Towards the Legalization of Informal Lending” (in Japanese)	Jiang Hong Xiang / Toshihiro Nishiguchi / Motoko Tsujita
WP#13-26	Mar. 2014	“MAKING GLOBAL NEIGHBORHOODS WORK: THE ANALYSIS OF CHINA’S WENZHOU ENTREPRENEURIAL COMMUNITY”	Toshihiro Nishiguchi / Motoko Tsujita
WP#13-25	Mar. 2014	“Methods for Quarterly and Annual Estimation of R&D Investment in JSNA” (in Japanese)	Akiyuki Tonogi / Michiyo Kitaoka / Hiroko Kobayashi
WP#13-24	Mar. 2014	“Allocation of Research Resources and Publication Productivity in Japan: A Growth Accounting Approach”	Shuhei Aoki / Megumi Kimura
WP#13-23	Feb. 2014	“Author ordering in scientific research: evidence from scientists survey in the US and Japan”	Sadao Nagaoka / Hideo Owan
WP#13-22	Jan. 2014	“Methods for Quarterly and Annual Estimation of R&D Investment in JSNA” (in Japanese)	Yuji Honjo / Sadao Nagaoka / Kenta Nakamura / Yumi Shimizu
WP#13-21	Jan. 2014	“Entrepreneurial Spin-Outs and Vanishing Technological Trajectory: Laser Diodes in the U.S. and Japan”	Hiroshi Shimizu / Naohiko Wakutsu
WP#13-20	Jan. 2014	“Turning points of postwar Advertising history in Japan Reasons for stagnation and crisis” (in Japanese)	Megumi Kimura
WP#13-19	Oct. 2013	“A Study on the Incorporation of Science and Technology Innovation Policy into the Macroeconomic Policy System” (in Japanese)	Shinichi Akaike / Osamu Kayasono / Kenichi Fujita / Akiyuki Tonogi / Shinichi Hanada
WP#13-18	Oct. 2013	“Profitability of Worldwide Semiconductor Companies, -Types of Foundation, Concentration Ratio of Product Groups, and Concentration Ratio of Application-” (in Japanese)	Masao Nakaya
WP#13-16	Sep. 2013	“Patents and Cumulative Innovation: Causal Evidence from the Courts”	Alberto Galasso / Mark Schankerman
WP#13-15	Aug. 2013	“Comparing the Productivity Impacts of Knowledge Spillovers from Network and Arm’s Length Industries: Findings from Business Groups in Korea”	Keun LEE / Kineung CHOO / Minho Yoon
WP#13-14 13-14-02	Jun. 2013	“Knowledge Creation and Innovation by University-Industry Collaboration: Basic findings from the large-scale survey of academic and corporate researchers” (in Japanese)	Sadao Nagaoka / Mitsuaki Hosono / Shinichi Akaike / Junichi Nishimura
WP#13-13	May 2013	“Management of Science, Serendipity, and Research Performance: Evidence from Scientists’ Survey”	Kota Murayama / Makoto Nirei / Hiroshi Shimizu
WP#13-12	May 2013	“Does the outsourcing of prior art search increase the efficiency of patent examination?”	Isamu Yamauchi / Sadao Nagaoka

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WP#13-10	Mar. 2013	“Open-Sourcing in Semiconductor R&D System: Learning from the Case of F2” (in Japanese)	Iwao Higashikawa
WP#13-09	Mar. 2013	“Wenzhou Entrepreneurs’ Network Strategy and Community: Their Typology by Cluster Analysis” (in Japanese)	Toshihiro Nishiguchi / Motoko Tsujita
WP#13-08	Mar. 2013	“Wien filter as a science innovation” (in Japanese)	Katsushige Tsuno
WP#13-07	Mar. 2013	“Integrating Personal Expertise: A History of Japanese Audit Firms, 1965-2010”	Masaru Karube / Hironori Fukukawa
WP#13-06	Mar. 2013	“Personal Knowledge of Audit Partners and Organizational Knowledge of Audit Firms and the Impact on Audit Fees”	Hironori Fukukawa / Masaru Karube
WP#13-05	Mar. 2013	“Audit Firm Switch and Engagement Partner Continuance”	Hironori Fukukawa / Masaru Karube
WP#13-04	Mar. 2013	“Interaction-based Foundation of Aggregate Investment Shocks”	Makoto Nirei
WP#13-03	Jan. 2013	“Agenda for the Growth of Bio Startups in Japan with a Focus on Their Science Sources” (in Japanese)	Yuji Honjo / Sadao Nagaoka / Kenta Nakamura / Yumi Shimizu
WP#13-02	Jan. 2013	“Contributions of Young Scholars in Team-based Scientific Research”	Masatsura Igami / Sadao Nagaoka / John P. Walsh
WP#13-01	Jan. 2013	“Sources of Technical Progress of Note PCs: Analysis by Hedonic Pricing Based on Commercial Price Comparison Data,” (in Japanese)	Takahiro Maeda / Sadao Nagaoka
WP#12-13	Oct. 2012	“Collaborations for Innovations: Insights from the Experiences of NEDO Consortiums” (in Japanese)	Sadao Nagaoka / Manabu Eto / Yaichi Aoshima / Hideo Owan / Kazunari Matsushima / Junichi Nishimura / Naotoshi Tsukada
WP#12-12	Sep. 2012	“A Pitfall of Environmental Policy: An analysis of “Eco-point Program” in Japan and its application to the renewable energy policy”	Yaichi Aoshima / Hiroshi Shimizu
WP#12-11	Sep. 2012	“Possibilities of Geothermal Power Generation in Japan: Notes from an Iceland Field Study”	Yaichi Aoshima / Tomono Miki
WP#12-10	Jul. 2012	“Problems of Japanese Semiconductor Industry, - Stagnation of Japanese Semiconductor Industry in the 2000s -” (in Japanese)	Masao Nakaya
WP#12-09	Jul. 2012	“Study of the Management for Successful R&D Projects Supported by Public Funds”	Akira Yamazaki / Kazunari Matsushima / Kenichiro Mizuno
WP#12-08	May 2012	“The Samurai Company: Double Creative Response in Meiji Japan The Case Of Onoda Cement”	Seiichiro Yonekura

3. Case Studies — Apr. 2012 ~ Mar. 2014

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CASE#13-03	Aug. 2013	“Nippon Steel Corporation: Development and Commercialization of Waste Plastics Recycling Process Using Coke Oven” (in Japanese)	Yaichi Aoshima / Osamu Suzuki
CASE#13-02	May. 2013	“Fujitsu: Development of New Resist Materials for ArF Excimer Laser Lithography That Realized the Most Advanced LSI” (in Japanese)	Tatsuya Kubota / Yaichi Aoshima / Koh Youngjae
CASE#13-01	Apr. 2013	“The Tokyo Electric Power Company, Inc. and NGK Insulators, Ltd. Inside Cooperative Innovation: Development and Commercialization of Sodium-Sulfur Batteries for Power Storage”	Eishi Fukushima
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CASE#12-02	Jun. 2012	“Dyneema : DSM-Toyobo Collaboration”(in Japanese)	Yusuke Hoshino / Hiroshi Shimizu

‘The new combinations appear discontinuously, then the phenomenon characterising development emerges.’

Joseph A. Schumpeter
The Theory of Economic Development

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