Curriculum Vitae of Chiaki Hara

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Degrees:

1987	B.A. in Economics, Hitotsubashi University (Tokyo, Japan)
1989	M.A. in Economics, Hitotsubashi University (Tokyo, Japan)
1991	M.A. in Economics, Harvard University (Massachusetts, USA)
1993	Ph.D. in Economics, Harvard University (Massachusetts, USA)
2004	M.A., University of Cambridge (Cambridge, UK)

Professional Career:

1993 - 1994	Lecturer, Department of Economics, University College London (UK)
1994 - 1995	Research Associate, Center for Operations Research and Econometrics, Universite Catholique de Louvain (Belgium)
1995 - 2004	University Lecturer in Microeconomics, Faculty of Economics and Politics, University of Cambridge (UK)
1995 - 2004	College Lecturer and Fellow, Churchill College, Cambridge
1998 - 1999	Associate Professor, Research Institute for Economics and Business Administration, Kobe University (Kobe, Japan)
1999 - 2004	Director of Studies in Economics, Churchill College, Cambridge
2002 - 2003	Associate Professor, Institute for Economic Research, Hitotsubashi University (Tokyo, Japan)
2004 - 2007	Associate Professor, Institute for Economic Research, Kyoto University (Kyoto, Japan)
2007 -	Professor, Institute for Economic Research, Kyoto University (Kyoto, Japan)

Written Works:

(a) Books:

[1] *Solution Manual to Mas-Colell, Whinston, and Green's 'Microeconomic Theory,'* Oxford University Press, 1997, coauthored with Steve Tadelis and Ilya Segal.
[2] *Introduction to Microeconomics*, Diamond Inc, 2005 (in Japanese), coauthored with Shin-Ichi Takekuma, Koichi Kaneko, Tadanobu Tanno, Hiroshi Ogawa, and Shinji Yamashige.
[3] *Dictionary in Economics*, edited by Takamitsu Sawa, Nihon Keizai Shimbun Inc, 2006 (in Japanese). Contributed to some entries on microeconomics.
[4] *Recent Advances in Financial Engineering 2009*, World Scientific, Singapore, 2010, coedited with Masaaki Kijima, Keiichi Tanaka, and Yukio Muromachi.
[5] *Recent Advances in Financial Engineering 2010*, World Scientific, Singapore, 2011, coedited with Masaaki Kijima, Yukio Muromachi, Hidetaka Nakaoka, and Katsumasa Nishide.

[6] *Trends in Modern Economics 2017*, Toyo Keizai Shimpo Sha, Tokyo, 2017 (in Japanese), coedited with Masako Ii, Kaoru Hosono, and Hitoshi Matsushima.

[7] *Trends in Modern Economics 2018*, Toyo Keizai Shimpo Sha, Tokyo, 2018 (in Japanese), coedited with Hiroshi Ohashi, Kaoru Hosono, and Hitoshi Matsushima.

[8] *Trends in Modern Economics 2019*, Toyo Keizai Shimpo Sha, Tokyo, forthcoming (in Japanese), coedited with Takashi Ui, Takashi Kano, and Toshiaki Watanabe.

(b) Published Papers in Refereed Journals:

[1] "Commission-revenue maximization in a general equilibrium model of asset creation," *Journal of Economic Theory*, vol. 65, No. 1 (February 1995), pp. 258-298.

[2] "Welfare analysis of the coordinating role of a redundant security," *Economics Letters*, vol. 56, no. 3 (November, 1997), pp. 299-303.

[3] "Transaction costs and a redundant security: Divergence of individual and social relevance," *Journal of Mathematical Economic*s, vol. 30, no. 4 (May 2000), pp. 497-530.

[4] "The anonymous core of an exchange economy," *Journal of Mathematical Economic*s, vol. 38, no. 4 (September 2002), pp. 91-116.

[5] "Existence of equilibria in economies with bads," *Econometrica*, vol. 73, no. 2 (March 2005), pp. 647-658.

[6] "Bargaining set and anonymous core without the monotonicity assumption," *Journal of Mathematical Economics*, vol. 41, no. 4-5 (August 2005), pp. 545-556.

[7] "Risk-free Bond prices in incomplete markets with recursive multiple-prior utilities", joint paper with Atsushi Kajii, *International Journal of Economic Theory*, vol. 2, no. 2 (June 2006), pp. 135-157.

[8] "Heterogeneous risk attitudes in a continuous-time model", *Japanese Economic Review*, vol. 57, no. 3 (September 2006), pp. 377-405. (The Japanese version appeared as Chapter 4 of *Trends in Modern Economics 2006*, edited by Yasushi Iwamoto, Makoto Ohta, Koichi Futagami, and Akihiko Matsui, Toyo Keizai Shimpo Sha, 2006.)

[9] "An equilibrium existence theorem for atomless economies without the monotonicity assumption," *Economics Bulletin*, vol. 4 (2006), no. 34, pp. 1-5.

[10] "Representative consumer's risk aversion and efficient risk-sharing rules," joint paper with James Huang and Christoph Kuzmics, *Journal of Economic Theory*, vol.137 (2007) pp. 652-672.

[11] "Core convergence in economies with bads," *Advances in Mathematical Economics*, vol. 11 (2008) pp. 45-76.

[12] "Continuity and egalitarianism in the evaluation of infinite utility streams," joint paper with Tomoichi Shinotsuka, Kotaro Suzumura, and Yongsheng Xu, *Social Choice and Welfare*, vol. 31 (2008) pp. 179-191.

[13] "Complete monotonicity of the representative consumer's discount factor," *Journal of Mathematical Economics*, vol. 44 (2008) pp. 1321-1331.

[14] "Heterogeneous impatience in a continuous-time model," *Mathematics and Financial Economics*, vol. 2 (2009) pp. 129-149.

[15] "Effects of background risks on cautiousness with an application to a portfolio choice problem," joint paper with James Huang and Christoph Kuzmics, *Journal of Economic Theory*, vol. 146 (2011) pp. 346-358.

[16] "Pareto improvement and agenda control of sequential financial innovations", *Journal of Mathematical Economics*, vol. 47 (2011) pp. 336-345.

(c) Published Papers in Non-Refereed Journals

[1] "Relationship among the notions of efficiency for security market structures", *Annals of Economics and Business*, published by Research Institute of Economics and Business Administration of Kobe University, vol. 49 (March 2000), pp. 243-261 (in Japanese).

[2] "Unlinked allocations in an exchange economy with one good and one bad", *Kokyuroku* (Workshop Proceeding) no. 1337 (August 2003), pp. 70-80, Research Institute for Mathematical Sciences, Kyoto University, Kyoto, Japan.

[3] "Theory of corporate debt issues under asymmetric information: Informativeness of Security Prices of Linear Rational Expectations Prices in Incomplete Markets," *Yucho Shikin Kenkyu* (Postal Saving Research), vol. 12 (September 2003), pp. 1-31 (in Japanese).

[4] "Report on Economic Theory of Desirable Futures Contracts", *Sakimono Torihiki Kenkyu* (Futures Trading Research), vol. 10, no. 1-14 (December 2006), pp. 119-131 (in Japanese).

[5] "Internationalization of Asset Markets and Investors' Portfolio Choice Behavior," *Annual Report of the Murata Science Foundation,* no 22 (2008) pp. 44-52 (in Japanese).

[6] "Black-Scholes and Ito's Formulas: What you should know before discussing the pros and cons of financial engineering," *Keizai Seminar* (Economics Seminar) no. 650 (October-November 2009) pp. 60-69 (in Japanese).

[7] "Separating hyperplane theorem and its applications," *Keizai Seminar* (Economics Seminar) no. 662 (October-November 2011) pp. 57-66 (in Japanese).

[8] "Empirical Study on Complementarity Between Pension Schemes and Life Insurances Under Uncertainty, " *Summary of the Reports on Life Insurance*, no. 27 (March 2017), (published by Kampo Foundation) .

(d) Chapter in Book:

[1] "Intensive course in asset pricing" Chapter 2 of *Lecture Notes on Asset Pricing, Risk Control, and Agency Theory*, edited by Hyeng Keun Koo and Gyoocheol Shim, Graduate Department of Financial Engineering, Ajou University (Korea) (ISBN: 978-89-5899-018-5 93320).

(e) Unpublished Research Papers:

[1] "Existence of equilibria in nonconvex economies without ordered preferences", *Bonn Workshop Discussion Paper Series* A-352, University of Bonn, October 1991.

[2] "A characterization and generic inefficiency of transaction-volume-maximizing contracts", manuscript, Department of Economics, Harvard University, August 1992.

[3] "Security demands with bid-ask spreads," CORE, Universite Catholique de Louvain, May 1995.

[4] "Marginal rates of substitution for uninsurable risks with constrained-efficient asset structures," *CORE Discussion Paper Series* 9529, Universite Catholique de Louvain, May 1995.

[5] "Necessary and sufficient conditions for the efficient risk-sharing rules and the representative consumer's utility function," manuscript, Institute of Economic Research, Kyoto University, August 2006. (An earlier version was included as the *Project on Intergenerational Equity Discussion Paper Series* 322, published by the Institute of Economic Research, Hitotsubashi University (Tokyo, Japan).)

[6] "Effectively complete asset markets with multiple goods and over multiple periods" *KIER Discussion Paper Series* 685, published by the Institute of Economic Research, Kyoto University (Kyoto, Japan), November 2009.

[7] "Heterogeneous beliefs in a continuous-time model" *KIER Discussion Paper Series* 701, published by the Institute of Economic Research, Kyoto University (Kyoto, Japan), March 2010.

[8] "Asset prices, trading volumes, and investor welfare in markets with transaction costs" *Center for Intergenerational Studies, at the Institute of Economic Research of Hitotsubashi University, Discussion Paper Serie*s No. 556, July 2012.

[9] "Dynamic Inconsistency in Pension Fund Management" with Kenjiro Hirata, *KIER Discussion Paper Series 916*, March 2015.

[10] "Implied Ambiguity, Mean-Variance Efficiency, and Pricing Errors," with Toshiki Honda, *KIER Discussion Paper Series 1004*, October 2018. (An earlier version was circulated as "Asset Demand and Ambiguity Aversion" *KIER Discussion Paper Series 911*, December 2014 and *Hitotsubashi ICS-FS Working Paper Series FS- 2014-E-003,* December 2014.)

[11] "Equilibrium Prices of the Market Portfolio in the CAPM with Incomplete Financial Markets," *KIER Discussion Paper Series 1005*, May 2019.

[12] "Heterogeneous Impatience of Individual Consumers and Decreasing Impatience of the Representative Consumer," *KIER Discussion Paper Series 1009*, May 2019. (An earlier version was circulated as “Heterogeneous Impatience and Dynamic Inconsistency,” *Center for ntergenerational Studies, at the Institute of Economic Research of Hitotsubashi University, Discussion Paper Series* No. 557, July 2012.)

(f) Book Reviews:

[1] Stephen F. LeRoy and Jan Werner, *Principles of Financial Economics*, Cambridge University Press, Book Notes of *Economic Journal* (October, 2002).

[2] William Thompson, *A Guide for the Young Economist*, MIT Press, *Economic Review* (*Keizai Kenkyu*) vol. 56, no. 3 (2005), pp. 281-283.

[3] Yoichiro Takahashi, eds, *Mathematics of Kiyosi Ito*, Nippon Hyoronsha, *Keizai Seminar* (Economic Seminar), no. 661 (August-September 2011), p. 117.

(g) Essays and Columns:

[1] "Kinyuu Kakushin no Kinkou Riron (Equilibrium Theory of Financial Innovations)", in a series of six columns "Yasashii Keizaigaku (Easy Economics)", *Nikkei*, 18-24 September 1996 (in Japanese).

[2] "Informed Consent from an Economist's Viewpoint", *Churchill Review*, vol. 38 (2001), pp. 58-59.

[3] "Cambridge Dayori (News from Cambridge)", *Kagaku* (Science Journal), from vol. 72, no. 11 (November 2002) to vol. 74, no. 12 (December 2004) (in Japanese).

[4] "Teaching Evaluation no Kozai (Pros and Cons of Teaching Evaluation)", *Kagaku* (Science Journal), vol. 77, no. 5 (May 2007) (in Japanese).

[5] "Modeling economic phenomena: Ins and outs", *Kagaku* (Science Journal), vol. 80, no. 12 (December 2010) (in Japanese).

Conference and Workshop Presentations since 2002 (starred * when invited):

[1] "Efficiency, equilibrium, and core of an exchange economy with bads and infinitely many consumers" at the European Workshop on General Equilibrium Theory, Athens, Greece, on May 2002.

[2] "Efficiency, equilibrium, and core of an exchange economy with bads and infinitely many consumers" at the Conference of Association of Public Economic Theory, Paris, France, on July 2002.

[3] "Efficiency, equilibrium, and core of an exchange economy with bads and infinitely many consumers" at the Workshop of the Research Center of Mathematical Economics Kyoto, Japan, on December 2002.

[4*] "Representative consumer's risk aversion and efficient risk-sharing rules" at an invited session of the spring meeting of Japanese Economic Association, Oita, Japan, on June 2003.

[5] "Representative consumer's risk aversion and efficient risk-sharing rules" at the Conference of Association for Promotion of Economic Theory, Rhodes Island, Greece, on July 2003.

[6] "Bargaining set and anonymous core in an exchange economy without the monotonicity assumption" at the European Workshop on General Equilibrium Theory, Venice, Italy, on June 2004.

[7] "Pareto improvement and agenda control of sequential financial innovations" at the Third International Conference on Mathematical Analysis in Economic Theory, Tokyo, Japan, on December 2004.

[8] "Efficient risk-sharing rules with heterogeneous risk attitudes and background risks" at the Conference of the Society for Advancement of Economic Theory, Vigo, Spain, on July 2005.

[9] "Efficient risk-sharing rules with heterogeneous risk attitudes and background risks" at the World Congress of the Econometric Society, London, U.K., on August 2005.

[10*] "Heterogeneity in financial markets" at an invited lecture of the fall meeting of the Japanese Economic Association, Tokyo, Japan, on September 2005.

[11] "Efficient risk-sharing rules with heterogeneous risk attitudes and background risks" at the NSF Mathematical Economics Conference, Berkeley, U.S., on October 2005.

[12] "Heterogeneous risk attitudes in a continuous-time model" at the HEC Economic Workshop, Jouy en Josas, France, on November 2005.

[13] "Heterogeneous risk attitudes in a continuous-time model" at the Keio 21COE Symposium on Market Quality, Tokyo, Japan, on December 2005.

[14] "Necessary and sufficient conditions for the efficient risk-sharing rules" at the Third Asian Workshop on General Equilibrium Theory, Taipei, Taiwan, on July 2006.

[15] "Necessary and sufficient conditions for the efficient risk-sharing rules" at the Seventh Conference of the Association of Public Economic Theory, Hanoi, Vietnam, on July 2006.

[16] "Necessary and sufficient conditions for the efficient risk-sharing rules and the representative consumer's utility function" at the RIMS Workshop on Mathematics for Economic Analysis, Kyoto, on December 2006.

[17] " Efficient risk-sharing rules in the cases of identical risk attitudes and of multiple goods" at the SAET Conference, Kos, Greece, on June 2007.

[18] "Heterogeneous impatience in a continuous-time model," at the Fourth Asian Workshop on General Equilibrium Theory, National University of Singapore, Singapore, on August 2007.

[19] "Heterogeneous impatience in a continuous-time model," at the Workshop by the Research Center of Mathematical Economics, Keio University (Tokyo, Japan), on October 2007.

[20] "Heterogeneous impatience in a continuous-time model," at the Workshop on Risk: Individual and Collective Decision Making, Paris, France, on December 2007.

[21] "Heterogeneous impatience in a continuous-time model," at the Ajou-KAIST-POSTECH International Conference in Finance and Mathematics, POSTECH University (Pohang, South Korea), on January 2008.

[22] "Aggregation of state-dependent utilities," at the Conference of the Ninth Association of Public Economic Theory, Hangyang University, Seoul, South Korea, on July 2008.

[23] "Pareto improvement and agenda control of sequential financial innovations," at the Fifth Asian Workshop on General Equilibrium Theory, Xiamen University, Xiamen, China, on August 2008.

[24] "Aggregation of state-dependent utilities," at the Summer Workshop on Economic Theory, Hokkaido University, Sapporo, Japan, on August 2008.

[25] "Heterogeneous impatience in a continuous-time model," at the International Symposium on Choice, Rationality and Intergenerational Equity, Waseda University, Tokyo, Japan, on September 2008.

[26] "Aggregation of state-dependent utilities," at the Workshop on "Finance and Related Mathematical and Statistical Issues", Kyoto Research Park, Kyoto, Japan, on September 2008.

[27*] "Stochastic calculus in economic theory," at the Meeting in Honour of Professor Kiyosi Ito's Cultural Medal, Research Institute of Mathematical Sciences, Kyoto University, on December 2008.

[28] "Aggregation of state-dependent utilities" at the Sixth Asian Workshop on General Equilibrium Theory, Waseda University , Tokyo, Japan, on July 2009.

[29*] "Heterogeneous beliefs and representative consumer" an invited lecture at KIER-TMU Finance Workshop, Otemachi Sankei Hall, Tokyo, Japan, on August 2009.

[30] "Effectively complete asset markets" at the RIMS Workshop on Mathematical Economics, Keio University, Tokyo, Japan, on November 2009.

[31] "Heterogeneous beliefs in a continuous-time model" at the Workshop on Osaka University GCOE, Kitabiwako Hotel GRAZIE, Nagahama, Japan, on February 2010.

[32] "Measures of dynamic inconsistency" at the Seminar on Hitotsubashi University Specially Promoted Research and Waseda University GCOE, Waseda University, Tokyo, Japan, on March 2010.

[33] "Heterogeneous beliefs and mispricing of derivative assets" at Ajou Conference on Control Theory, Financial Mathematics and Financial Engineering in honour of Alain Bensoussan, Ajou University, Suwon, Korea, on July 2010.

[34] "Heterogeneous beliefs and mispricing of derivative assets" at the Tenth SAET Conference on Current Trends in Economics, Singapore, Singapore, on August 2010.

[35] "Heterogeneous beliefs in a continuous-time model" at the Tenth World Congress of the Econometric Society, Shanghai, China, on August 2010.

[36] "Heterogeneous beliefs and mispricing of derivative assets" at the Seventh Asian Workshop on General Equilibrium Theory, Institute of Mathematics, Hanoi, Vietnam, on August 2010.

[37] "Heterogeneous beliefs and mispricing of derivative assets" at the Workshop on "Finance and Related Mathematical and Statistical Issues", Kyoto Research Park, Kyoto, Japan, on September 2010.

[39*] "Intensive course on asset pricing," Ajou University, Korea, April 29 to May 5, 2011.

[40*] "Agents heterogeneity in equilibrium analysis," Young Scholars Seminar, Japanese Society for the History of Economic Thought, Ryukoku University, November 3, 2011.

[41] "Heterogeneous Impatience and Dynamic Inconsistency" at the Twelveth SAET Conference on Current Trends in Economics, University of Queensland, Australia on July 2, 2012.

[42] "Heterogeneous Impatience and Dynamic Inconsistency" at 2012 Ajou International Workshop on Financial Economics and Mathematics, Ajou University, Suwon, Korea, on July 13, 2012.

[43*] "Heterogeneous Impatience and Dynamic Inconsistency" at The First Asian Quantitative Finance Conference, National University of Singapore, on January 10, 2013.

[44*] "Heterogeneous Impatience and Dynamic Inconsistency" at Mathematical Economics and Finance: a workshop in honor of Rose-Anne Dana, National University of Singapore, on February 18, 2013.

[45] "Asset Demand and Ambiguity Aversion" at the Asian Meeting of the Econometric Society, National University of Singapore, on August 3, 2013.

[46] "Asset Demand and Ambiguity Aversion" at the Swiss-Kyoto Symposium, University of Zurich, on November 21, 2013.

[47*] "Asset Demand and Ambiguity Aversion" at the Winter Workshop on Finance, Hokkaido University, on February 17, 2014.

[48*] "Asset Demand and Ambiguity Aversion" at YNU Economics Workshop, Yokohama National University, on March 4, 2014.

[49*] "Asset Demand and Ambiguity Aversion," at The 2014 Annual Meeting of the Korean Association of Financial Engineering, Busan, Korea, on Augst 23, 2014.

[50*] "Dynamic Inconsistency in Pension Fund Management," at The 6th Conference of Mathematical Analysis in Economic Theory, Keio University, Tokyo, Japan, on January 28, 2015.

[51*] "Captial Markets and Economic Growth: An Economics Fundamentalist's View," at OECD-ADBI Roundtable on Capital Market and Financial Reform in Asia, Asian Development Bank Institute, Tokyo, Japan, on March 12, 2015.

[52*] "Asset Demand and Ambiguity Aversion" at the ZiF Research Group Workshop on Knightian Uncertainty in Strategic Interactions and Markets, at the University of Bielefeld, June 11, 2015.

[53*] "Implied Ambiguity and Ambiguity Aversion" at the Winter Workshop on Operations Research, Finance and Mathematics, At Sahoro Resort, February 16, 2016.

[54*] "Implied Ambiguity and Ambiguity Aversion" at the Fourth Asian Quantitative Finance Conference, at Osaka University, February 23, 2016.

[55] "Implied Ambiguity and Ambiguity Aversion" at the Asian Economic Institute Meeting, at Peking University, April 28, 2016.

[56] "Ambiguiy, Sharpe Ratio, and Alphas: Some decision-theoretic issues," at the Sookmyung Math Finance Conference, at Sookmyung Women's University, August 4, 2018.

[57*] "Ambiguiy, Sharpe Ratio, and Alphas," at the International Conference on Mathematical Finance, at the National Institute of Mathematical Sciences (Daejeon, Korea), August 7, 2018.

Professional Services:

(a) Referee, Reviewer, Examiner

[1] *Advances in Mathematical Economics*; *American Economic Review*; *Annals ofFinance*, *Asia-Pacific Financial Markets*; *Bulletin of the Japan Society for Industrial and Applied Mathematics*; *Computational Economics*; *Econometrica*; *Economic Journal*; *Economic Theory*; *Economica*; *Economics Bulletin*; *Economics Letters*; *Finance and Stochastics*; *Games and Economic Behavior*; *Geneva Risk and Insurance Review* (*Geneva Papers on Risk and Insurance*); *Hitotsubashi Journal of Economics*; *International Journal of Economic Theory*; *Japanese Economic Review*; *Journal of Economic Theory*; *Journal*

of Finance; *Journal of Mathematical Economics*; *Journal of Money, Credit, and Banking*; *Journal of Political Economy*; *Journal of Public Economic Theory*; *Management Science*; *Mathematical Finance*; *Mathematical Social Sciences*; *Mathematics and Financial Economics*; *Operations Research*; *Physica D*; *Quantitative Finance*; *Research in Economics*; *Review of Economic Studies*; *Review of Finance*; *Stochastic Analysis and Applications*.

[2] *Recent Advances in Financial Engineering 2009*; *Recent Advances in Financial Engineering 2010*, World Scientific, Singapore.

[3] British Academy; Economic and Social Research Council of the United Kingdom; Social Sciences and Humanities Research Council of Canada; Turku Institute for Advanced Studies; National Research Foundation of Korea.

[4] Moriguchi Prize of the Institute of Social and Economic Research at Osaka University.

[5] External Examiner for the Ph.D. in Economics of Mr Jong-Gu Kang at the University of Essex (UK).

[6] Reviewer of *Mathematical Reviews*.

[7] Reviewer of the Japan Society for the Promotion of Science.

[8] Examiner for the National Personnel Authority of Japan.

(b) Editor

[1] Associate Editor of *Journal of Mathematical Economics*, since 2009.

[2] Review Editor of Frontiers in *Applied Mathematics and Statistics: Mathematical Finance*, since 2015.

[3] Guest Editor for the Special Issue of the Conferences at Berkeley, New Haven, Tokyo, and Zurich, *Journal of Mathematical Economics* vol. 42, no. 4-5 (August 2006), coedited with John Geanakoplos, Chris Shannon, and Thorsten Hens.

[4] Co-editor of the monograph series on mathematical economics published from Chisen Shokan.

(c) Conference Organization:

[1] Member of the Program Committee of the European Meeting of the Econometric Society, August 2001.

[2] Chair of the Program Committee of the First Asian Workshop on General Equilibrium Theory, June 2004.

[3] Member of the Program Committee of the Second Asian Workshop on General Equilibrium Theory, June 2005.

[4] Member of the Program Committee of the Eleventh Decentralization Conference in Japan, September 2005.

[5] Member of the Program Committee of the Third Asian Workshop on General Equilibrium Theory, June 2006.

[6] Member of the Program Committee of the Spring Meeting of the Japanese Economic Association, 2007.

[7] Member of the Program Committee of the Daiwa Lecture Series and International Workshop on Financial Engineering, July-August 2007.

[8] Member of the Program Committee of the Fourth Asian Workshop on General Equilibrium Theory, August 2007.

[9] Member of the Program Committee of the Fifth Asian Workshop on General Equilibrium Theory, August 2008.

[10] Member of the Program Committee of the Workshop on "Finance and Related Mathematical and Statistical Issues", September 2008.

[11] Member of the Program Committee of the International Symposium on Choice, Rationality and Intergenerational Equity, September 2008.
[12] Member of the Program Committee of Hitotsubashi Game Theory Workshop, March 2009.
[13] Member of the Program Committee of the Sixth Asian Workshop on General Equilibrium Theory, July 2009.
[14] Member of the Program Committee of the KIER-TMU International Workshop on Financial Engineering, August 2009.
[15] Member of the Program Committee of the Workshop on Osaka University GCOE, February 2010.
[16] Member of the Program Committee of Hitotsubashi Game Theory Workshop, March 2010.
[17] Member of the Program Committee of the KIER-TMU International Workshop on Financial Engineering, August 2010.
[18] Session Organizer of the Tenth SAET Conference on Current Trends in Economics, August 2010.
[19] Member of the Program Committee of the Sixth Asian Workshop on General Equilibrium Theory, August 2010.
[20] Member of the Program Committee of Hitotsubashi Game Theory Workshop, March 2011.
[21] Member of the Program Committee of the 2011 Spring Meeting on Japanese Economic Association, May 2011.
[22] Session Organizer of the Asian Meeting of the Econometric Society, National University of Singapore, on August 3, 2013.
[23] Chair of the Program Committee of the International Conference on Portfolio Selection and Asset Pricing, Kyoto University, on March 28-29, 2014.
[24] Member of the Program Committee of the 2014 Spring Meeting on Japanese Economic Association, June 14-15, 2014.
[25] Member of the Program Committee of the 2016 Asian Meeting of the Econometric Society, August 11-13, 2016.
[26] Member of the Program Committee of the International Conference on Financial Risks and their Management 2016, Kyoto University, on March 8-9, 2016.
[27] Member of the Program Committee of the International Conference on Financial Risks and their Uncertainties 2017, Ohama Memorial Hall (Ishigaki, Okinawa, Japan), on June 17-18, 2017.
[28] Member of the Program Committee of the Workshop on Financial Risks and their Management, Ryukoku University, on February 19-20, 2019.

(d) Symposium Organization:

[1] Financial Sytemic Risk: Its Current Status and Issues, Kyoto University, December 6, 2014.
[2] Stress Test: Its Current Status and Issues, UDX Conference, January 23, 2016.
[3] Financial Regulation and Banks' Synthetic Risk Management, Hitotsubashi Memorial Hall, February 15, 2017.
[4] Fintech: Its Trend and Impact, Nihonbashi Satellite Office of the Office of Society Academic Collaboration for Innovation of Kyoto University, January 26, 2018.
[5] Artificial Intelligence and Big Data:Its Implications on Financial Markets and Prospect, Nihonbashi Satellite Office of the Office of Society Academic Collaboration for Innovation of Kyoto University, March 15, 2019.

(e) Doctoral Dissertation Committee:

Member of the dissertation commitees for Katsumasa Nishide, Yuan Tian, Ryosuke Ishi, Yujiro Kawasaki, Tadao Oryu, Yuki Shigeta, Seiji Takanashi, Masaru Wakiya, Yasushi Ishikawa, Takaomi Notsu, and Hiroyuki Tanaka at Kyoto University.

Research Grants:

[1] *Economic Theory of Financial Innovation*, Economic and Social Research Council of the United Kingdom, 13,838GBP, February 1998.

[2] *Efficient Security Structures in Dynamic Economic Models*, Zengin Foundation for Studies on Economics and Finance of Japan, 900,000 yen, December 1998. Joint project with Atsushi Kajii.

[3] *Theory of Corporate Debt Issues under Asymmetric Information*, Foundation for Research in Postal Savings of Japan, 960,000 yen, November 1999. Joint project with Kazuhiko Ohashi.

[4] *Economic Theory of Desirable Futures Contracts*, Japan Commodity Futures Industry Association, 570,000 yen, December 1999.

[5] *Representative Consumer's Risk Tolerance in Incomplete Financial Markets*, Japan Center of Economic Research, 500,000 yen, March 2004.

[6] *Internationalization of Asset Markets and Investors' Portfolio Choice Behavior,* Murata Science Foundation, 600,000 yen, July 2005.

[7] *Microeconomic Foundations of the Term Structure of Interest Rates*, Ishii Memorial Foundation for Promotion of Research in Securities, 575,000 yen, November 2005.

[8] *Economic Analysis on Intergenerational Problems,* Grant in Aid for Specially Promoted Research, Japan Society for the Promotion of Sciences, led by Noriyuki Takayama, April 2006 to March 2010. Share of the grant 9,100,000 yen in total.

[9] *Efficient Risk-Sharing: An Application of Finance Theory to Development Economics*, Inamori Foundation, 1,000,000 yen, April 2007.

[10] *Development of the Collective Risk Management in Large Scale Portfolios*, Grant in Aid for Scientific Research (B), Japan Society for the Promotion of Sciences, led by Masaaki Kijima, April 2007 to March 2008. Share of the grant 1,000,000 yen in total.

[11] *Frontiers in Game Theory: Theory and Practice*, Grant in Aid for Scientific Research (S), Japan Society for the Promotion of Sciences, led by Akira Okada, June 2007 to March 2012. Share of the grant 8,400,000 yen in total.

[12] *Equilibrium Analysis on Financial Markets with Transaction Costs,* Grant-in-Aid for Scientific Research (A) (grant number 25245046), Japan Society for the Promotion of Sciences, principal investigator, April 2013 to March 2019. 23,000,000 yen.

[13] *Empirical Studies on the Complementarity of Pension Schemes and Life Insurance*, Kampo Foundation, from July 2015 to June 2016, 540,000 yen.

[14] *Constructing an Asset Pricing Model with Ambiguity-Averse Investors*, Nomura Foundation, from April 1, 2015 to March 31, 2018, 1,000,000 yen.

[15] *Exploration into the Impact of the 2006 Change in the Trust Act on the Efficaciencyu of the Beneficiaries' Decision Making*, Trust Companies Association of Japan, from April 2017 to March 2020, 600,000 yen.

[16] *Collective Decision Making in Dynamic Models: Towards the Construction of Dynamic Stochastic Cooperative Game Theory*, Grant-in-Aid for Challenging Research (Exploratory) (grant number 17K18561), Japan Society for the Promotion of Sciences, principal investigator, April 2017 to March 2020. 4,900,000 yen.

[17] Medical Care under Uncertainty: Inquiry into Information and Rational Decision Making, Grant-in-Aid for Scientific Research (B) (grant number 18H00845), Japan Society for the Promotion of Sciences, led by Masko Ii, April 2018 to March 2021. Share of the grant: 110,000 yen.