Tokyo-Taipei-Seoul Macroeconomics Network
1st Workshop

February 1-2, 2024
Faculty of Political Science and Economics, Waseda University

The Tokyo-Taipei-Seoul Macroeconomics Network is an academic workshop in macroeconomics for the universities and research institutes in Tokyo, Taipei, and Seoul (Academia Sinica, Korea University, National Taiwan University, Waseda University, and Yonsei University). Its purpose is to bring together researchers in the region who conduct frontier work on the broader field of macroeconomics to create research ties, encourage research collaborations and exchange feedback on cutting-edge macroeconomic research.

The workshop will take place on February 1-2, 2024 at the Faculty of Political Science and Economics, Waseda University. A limited number of papers will be presented (fourteen papers over two days) to allow maximum time for discussion.

The 1st edition of the workshop is co-organized by Munechika Katayama (Waseda University), Myungkyu Shim (Yonsei University), and Donghoon Yoo (Academia Sinica).

This workshop is supported by the Center for Positive/Empirical Analysis of Political Economy, Waseda University and JSPS KAKENHI Grants (21K01406).

Program

Day 1 (February 1, 2024) @ Room 802, Building 3, Waseda University

Session 1: Han Yang (Academia Sinica), Session Chair

9:30–10:20
Eunbi Ko (National Taiwan University)
“Firm Productivity, Job-to-job Transitions, and the Labor Share”

10:30–11:20
Myungkyu Shim (Yonsei University)
“Is Information and Communication Technology (ICT) Capital Complementary to Both Skilled and Unskilled Workers?”

11:30-12:10
Seoung Hyun Kim (Korea University)
“Falling Stars and Term Premium Dynamics at the Zero Lower Bound?”

12:10–13:40 Lunch Reception (Location: Café Clio)

Session 2: Pedro Franco (Musashi University), Session Chair

13:40–14:30
Soojin Jo (Yonsei University)
“Rethinking the Effects of the Acid Rain Program: Was It Effective in Reducing Emissions in the Long Run?”

14:40–15:30
Koki Oikawa (Waseda University)
“Economic Growth through Basic Research by Firms: A Science Linkage Approach”

Session 3: Tomoaki Kotera (Tohoku University), Session Chair

15:40–16:30
Hsuan-Chih Lin (Academia Sinica)
“Innocent Bystanders in Business Cycle: Asymmetric Transmission of Policy on Inequality”

16:40–17:30
Tomoo Kikuchi (Waseda University)
“Does Foreign Equity Contribute to Economic Growth?”

Program

Day 2 (February 2, 2024) @ Room 802, Building 3, Waseda University

Session 4: Kozo Ueda (Waseda University), Session Chair

9:30–10:20
Junko Koeda (Waseda University)
“Quantifying Forward Guidance and Yield Curve Control”

10:30–11:20
Tsung-Hsien Li (Academia Sinica)
“The Payday Loan Puzzle: A Credit Scoring Explanation”

11:30-12:10
Fei Gao (Waseda University)
“How Do Gamblers React to Wins? Evidence From Gambling in Bank Account Data”

12:10–13:40 Lunch

Session 5: Takayuki Tsuruga (ISER, Osaka University), Session Chair

13:40–14:30
Chun-Che Chi (Academia Sinica)
“Lender Concentration of External Debts and Sudden Stops”

14:40–15:30
Cheolbeom Park (Korea University)
“Liquidity, Exchange Rates and Scapegoat Effect”

Session 6: Donghoon Yoo (Academia Sinica), Session Chair

15:40–16:30
Terry Cheung (Academia Sinica)
“Capital Accumulation, Technology Adoption, and Declining Labor Share”

16:40–17:30
Reona Hagiwara (Waseda University)
“Aging, Healthcare System, and Interest Rates”

List of Abstracts

Thursday, 1 of February, 2024

Firm Productivity, Job-to-job Transitions, and the Labor Share

Terry Cheung[1], *Eunbi Ko*[2]

S1

[1] Institute of Economics, Academia Sinica
[2] Department of Economics, National Taiwan University

We investigate the interplay between the aging workforce and the expansion of firm size in the United States since 1980. During this period, the average age of employees rose, and older workers' share of total earnings has significantly increased. Also, after 2000, firms have become more dispersed in terms of productivity, giving rise to superstar firms. Accompanying these shifts, we observe a decline in labor share. Our hypothesis posits that as workers age, their labor market dynamism diminishes, giving employers increased bargaining power in setting wages. Additionally, the augmented market power of larger firms creates a disconnect between worker productivity and earnings. Consequently, the aging of the workforce amplifies this wage-productivity gap on average, leading to a reduced share of total income being allocated to labor.

Is Information and Communication Technology (ICT) Capital Complementary to Both Skilled and Unskilled Workers?

Sangheon Ahn[1], *Soojin Jo*[1], *Myungkyu Shim*[1]

S1

[1] School of Economics, Yonsei University

Yes, but to a different degree. We construct hours series for skilled and unskilled workers using the monthly outgoing rotation group Current Population Survey for the period from 1994 to 2022. Using these series in a vector-autoregressive model, we find that a positive ICT shock leads to a significantly larger increase in skilled hours than unskilled hours, while the latter still positively respond. This is contradictory to the conventional view in the macro-labor literature that ICT capital is complementary to skilled workers while it substitutes unskilled workers. Moreover, we show that our empirical findings cannot be explained by a dynamic stochastic general equilibrium model with a production function where unskilled workers are assumed to be substitutable for ICT capital. Rather, a production function where ICT capital is complementary to both types of labor (but a stronger complement to the skilled) is in line with our findings.

Falling Stars and Term Premium Dynamics at the Zero Lower Bound?

Kyu Ho Kang[1], *Seoung Hyun Kim*[1], S1

[1] Department of Economics, Korea University

Recent studies have shown that incorporating macroeconomic trends (falling stars) into Gaussian affine term structure models produces more reliable term premium estimates. Given that the dynamics of short term yields change drastically during zero lower bound (ZLB) periods, term premium dynamics are highly likely to be subject to regime shifts. To investigate this, we propose and estimate a new arbitrage-free affine term structure model with falling stars and regime shifts between ZLB and non-ZLB states. According to our model comparison, the proposed model outperforms the model with falling stars only. More importantly, we find that the model with only falling stars fails to capture temporary but substantial rises and falls in term premia during ZLB periods. This is because, if the compression of yields during the ZLB periods is unaccounted for, the effect of the factors representing the yield spread is underestimated. Therefore, falling stars and the ZLB are both key features of the U.S. yield curve that must be incorporated for term premium estimation.

Rethinking the Effects of the Acid Rain Program: Was It Effective in Reducing Emissions in the Long Run?

Jaerim Choi[1], *Soojin Jo*[1], *Brian Hyunjo Shin*[1] S2

[1] School of Economics, Yonsei University

The Acid Rain Program (ARP) of the U.S. in the 1990s has long been referenced as a successful case in reducing sulfur-dioxide (SO2) emissions through the introduction of an emissions trading system (ETS). To comply with regulatory requirements, a coal-burning power plant could either source low-sulfur coal from the Powder River Basin (PRB), install a scrubber, switch to less-polluting sources, or shut down. We exploit fuel-sourcing transactions, generation by fuel source, and equipment installation records data at the individual power plant level to examine whether plants' decisions under the ETS policy were indeed socially optimal for reducing emissions in the long run. Using a plant's distance from the PRB as an instrument for sourcing cost of low-sulfur coal, we find that plants closer to the PRB are more likely to use the PRB coal. We then estimate the impact of the ARP on SO2 reductions, and further investigate jointly whether other factors, such as lower transportation costs, technological innovation, or adopting new fuel sources, better explain the observed reductions in SO2 emissions than the cap-and-trade policies of the ARP. Such findings have far-reaching implications for the efficacy of cap-and-trade policies and may hold generalizable lessons for environmental regulations at large.

Economic Growth through Basic Research by Firms: A Science Linkage Approach

Makoto Nirei[1], ***Koki Oikawa***[2], ***Masahiro Oroku***[3]

S2

[1] University of Tokyo
[2] School of Social Sciences, Waseda University
[3] Recruit Co.,Ltd.

Patents applied by private firms occasionally cite scientific papers. We regard these citations as a signal that the research project of the applying firms involves basic research, and examine the relationship between basic research and firm performance. Firms conducting basic research are more likely to earn higher profit margins, while no monotonic relationship is observed between basic research and sales size. We construct an endogenous growth model incorporating the basic research investment by heterogeneous firms. Firms' decisions regarding basic research depend on firm size, the necessity for basic research for developing their products, and the degree of knowledge spillover from external basic research results. Simulations using this model reveals how basic research spillover effects impact economic growth, and how declining R&D efficiency leads to lower growth. Furthermore, we compare public basic research investment with basic research subsidies and demonstrate that the latter is more efficient.

Innocent Bystanders in Business Cycle: Asymmetric Transmission of Policy on Inequality

Chih-Han Hsueh[1], ***Hsuan-Chih Lin***[2], ***C.C. Yang***[2,3,4]

S3

[1] University of New South Wales
[2] Institute of Economics, Academia Sinica
[3] National Chengchi University
[4] Fengchia University

In this study, we examine the impact of fiscal and monetary policy on inequality in the business cycle. Our empirical work shows that a recession will amplify the policy impact on inequality. To explain this asymmetry, we build our analysis on a simple tractable HANK model. In this model, we introduce heterogeneity in loss aversion: the high-income agent is more loss-averse than the low-income one. We show that the recession amplifies the policy impact via idiosyncratic saving behavior and the idiosyncratic consumption response to the wage change. The high-income group is more loss-averse, leading them to save more to hedge against future shocks. Consequently, their consumption changes less with wage fluctuations. Thus, policy measures have a relatively reduced impact on the high-income group's consumption during a recession. These two mechanisms help us interpret the empirical evidence we observe.

Does Foreign Equity Contribute to Economic Growth?

Tomoo Kikuchi

S3

Graduate School of Asia-Pacific Studies, Waseda University

We construct a panel dataset covering 56 countries from 1985 to 2017 and find a positive relationship between foreign equity and GDP growth with private investment being a mediator. Foreign equity increases GDP growth through private investment growth in the whole sample and private investment and R&D investment growth in OECD countries. The impact of foreign equity investment on private investment peaks in two-three years before it fades out.

Friday, 2 of February, 2024

Quantifying Forward Guidance and Yield Curve Control

Junko Koeda[1], *Bin Wei*[2]

S4

[1] Faculty of Political Science and Economics, Waseda University
[2] Federal Reserve Bank of Atlanta

This paper evaluates the effectiveness of Japanese unconventional monetary policies over the past quarter century within a unified term structure framework. It specifically examines the impact of the Bank of Japan's outcome-based forward guidance and yield curve control (YCC), while also incorporating other policy types into the framework. The findings highlight that both the BOJ's forward guidance and YCC have had a significant influence on the shadow rate. Forward guidance accounted for most of the policy impact in the early stages of unconventional monetary policies and remained influential throughout. YCC, since its introduction in 2016 until March 2022, contributed to over a third of the policy impact. Furthermore, these policies have been effective in raising output and inflation.

The Payday Loan Puzzle: A Credit Scoring Explanation

Tsung-Hsien Li[1], *Jan Sun*[2]

S4

[1] Institute of Economics, Academia Sinica
[2] Oxford Economics

Many credit cardholders in the U.S. turn to expensive payday loans, even though they have not yet exhausted their credit lines. This results in significant monetary costs and has been coined the "Payday Loan Puzzle." We propose the novel explanation that households use payday loans to protect their credit scores since payday lenders do not report to credit bureaus. To quantitatively examine this hypothesis, we build a two-asset Huggett-type model with two default options as well as hidden information and actions. Using our calibrated model, we can account for 40% of the empirically identified payday loan borrowers with liquidity left on their credit cards. We can also match the magnitude of monetary costs due to this seeming pecuniary mistake. To inform the policy debate over payday lending, we assess the welfare implications of several policy counterfactuals. We find that either banning payday loans or increasing their default costs results in aggregate welfare losses.

How Do Gamblers React to Wins? Evidence From Gambling in Bank Account Data

Fei Gao S4

Faculty of Political Science and Economics, Waseda University

This paper utilizes account-level data to investigate how gamblers react to gambling wins. We obtain consumption, betting, and gambling wins from weekly personal banking. Marginal propensity to consume (MPC) and marginal propensity to gamble (MPG) are estimated through a 4-year-long weekly panel. These estimates are especially controlled by winning expectations. Our findings indicate that both MPC and MPG peak immediately after the impact of the winning (averaging MPC, 22%; averaging MPG 58%) and revert within two months. Gambling wins stimulus players in the income effect of resting shorter and bets larger. We show how betting impacts consumption across three factors that affect MPC: gambling proportion in observed bankings, net win, and gambling preference. MPCs are identical unless gambling proportion displaces non-gambling spending. Net win serves as a temporary indicator of whether gamblers profit in a short time, resulting in a significantly high MPC for winners. Identified gambling preferences are derived from observed betting activities. Cross-examining MPC between gamblers and non-gamblers reveals significant differences, especially from non-gamblers to heavy gamblers. This effect persists even among activities controlled heavy players. In the systematical correlation between MPC with observed characteristics, we particularly find high order shock size term matters, resulting (positive or negative) shock size effect depends on the shock size itself.

Lender Concentration of External Debts and Sudden Stops

Chun-Che Chi S5

Institute of Economics, Academia Sinica

This paper studies how the lender structure of external debts affects open economies' credit conditions via a model with heterogeneous lenders of various sizes. While atomic lenders take the collateral price as given, large lenders internalize the pecuniary externality whereby selling foreclosed collateral injects supply and reduces its price. Thus, concentrating external debt in a few large lenders alleviates sudden stops and supports a high collateral price, making borrowers demand less precautionary saving and overborrow more. I document that emerging countries borrow from significantly fewer US banks than advanced countries, implying that emerging countries tend to overborrow. This new mechanism complements the existing view that overborrowing results from the pecuniary externality of the borrowers. Under plausible parameterization, the size of the pecuniary externality internalized by lenders is one-third of that internalized by borrowers. Finally, allowing lender countries to optimally choose lender structure increases lender concentration, raises debt, and lowers borrowers' consumption.

Liquidity, Exchange Rates and Scapegoat Effect

Cheolbeom Park

S5

Department of Economics, Korea University

Recent studies such as Engel and Wu (2023) and Bianchi et al. (2022) show that the liquidity premium is an important factor in understanding the movements of exchange rates. Engel and Wu (2023) have shown empirically that the liquidity premium has significant explanatory power on exchange rate fluctuations, and that the inclusion of the liquidity premium makes other customary variables such as interest rate differentials and real exchange rates have the correct sign in the regression. However, this paper provides evidence that the Engel and Wu (2023) model underwent instability. Furthermore, this paper examines whether the scapegoat theory proposed by Bacchetta and van Wincoop (2013) can explain the unstable relationship between exchange rates and fundamentals in the Engel and Wu (2023) model. More specifically, this paper tests the following implications by the scapegoat theory: (1) the scapegoat theory implies a time-varying relation between fundamentals and exchange rates as the weights assigned to scapegoat variables vary over time, (2) the scapegoat theory states that when unobservable fundamentals drive a large change in exchange rate, an observable fundamental variable becomes a scapegoat if it has a large deviation from its equilibrium at the same time and theoretically consistent with the observed direction of change in the exchange rate, and (3) an economic agent assigns a larger weight to observable fundamentals when they satisfy the qualifications of the scapegoat, which results in changes in the relationship between exchange rates and the observable fundamentals. This paper finds that the explanatory power of fundamental variables in the Engel and Wu (2023) model improves greatly when time-varying coefficient regressions of exchange rates is run, and that there exist fundamental variables in the Engel and Wu (2023) model satisfying implications (2) and (3). These pieces of evidence indicate that the instability of parameters in the Engel and Wu (2023) model might arise from the scapegoat theory in some countries.

Capital Accumulation, Technology Adoption, and Declining Labor Share

Terry Cheung

S6

Institute of Economics, Academia Sinica

We investigate the extent to which technological advancements in capital production contribute to the global decling in labor share of income, thereby challenging the prevailing automation discourse. First, empirical estimations of the elasticity of substitution (EOS) between capital and labor predominantly hover below unity, implying that a decrease in capital's price or increase in capital per worker does not precipitate a commensurate decline in the labor income share. Second, notwithstanding technological enhancements, the relative price of capital to output has remained largely constant, while the utilization of capital per worker has escalated globally. This observation contradicts the hypothesis that more affordable capital directly supplants labor. We propose an alternative mechanism wherein the augmentation of the capital stock incentivizes the adoption of more capital-intensive technologies, thereby diminishing labor income share. This mechanism operates even when individual technologies exhibit an EOS below unity, but the aggregate shift towards more capital-intensive technologies and the altered distribution of technology usage culminates in an economy-wide EOS exceeding one.

Aging, Healthcare System, and Interest Rates

Reona Hagiwara

S6

Faculty of Political Science and Economics, Waseda University

Over the past few decades, the Japanese economy has experienced the widening gap between returns on liquid bonds and illiquid capital (i.e., the liquidity premium) due to a secular decline in the real interest rate and a slight increase in the capital return. This paper explores the role of the health or medical expenditure risk in the increase in the premium, using a general equilibrium overlapping generations model with heterogeneous agents that differ in health status and medical costs. They can hold both bonds and capital, but their capital holdings involve adjustment costs. I find that both of structural changes in demographics and medical systems could have caused the past changes in the bond return, capital return, and thus, liquidity premium. While the aging population has pushed down both asset returns, the rise in medical costs has led to higher capital return and lower bond return by shifting the asset portfolio of older households from illiquid to liquid. The results suggest that these structural changes going forward will continue to contribute to a further increase in the premium in the future, even after accounting for the larger supply of government bonds.

List of Participants

Terry Cheung^{p}	Institute of Economics, Academia Sinica
Chun-Che Chi^{p}	Institute of Economics, Academia Sinica
Pedro Franco^{c}	Musashi University
Fei Gao^{p}	Waseda University
Soojin Jo^{p}	Yonsei University
Munechika Katayama	Waseda University
Tomoo Kikuchi^{p}	Waseda University
Seoung Hyun Kim^{p}	Korea University
Eunbi Ko^{p}	National Taiwan University
Junko Koeda^{p}	Waseda University
Tomoaki Kotera^{c}	Tohoku University
Jaewon Lee	Korea University
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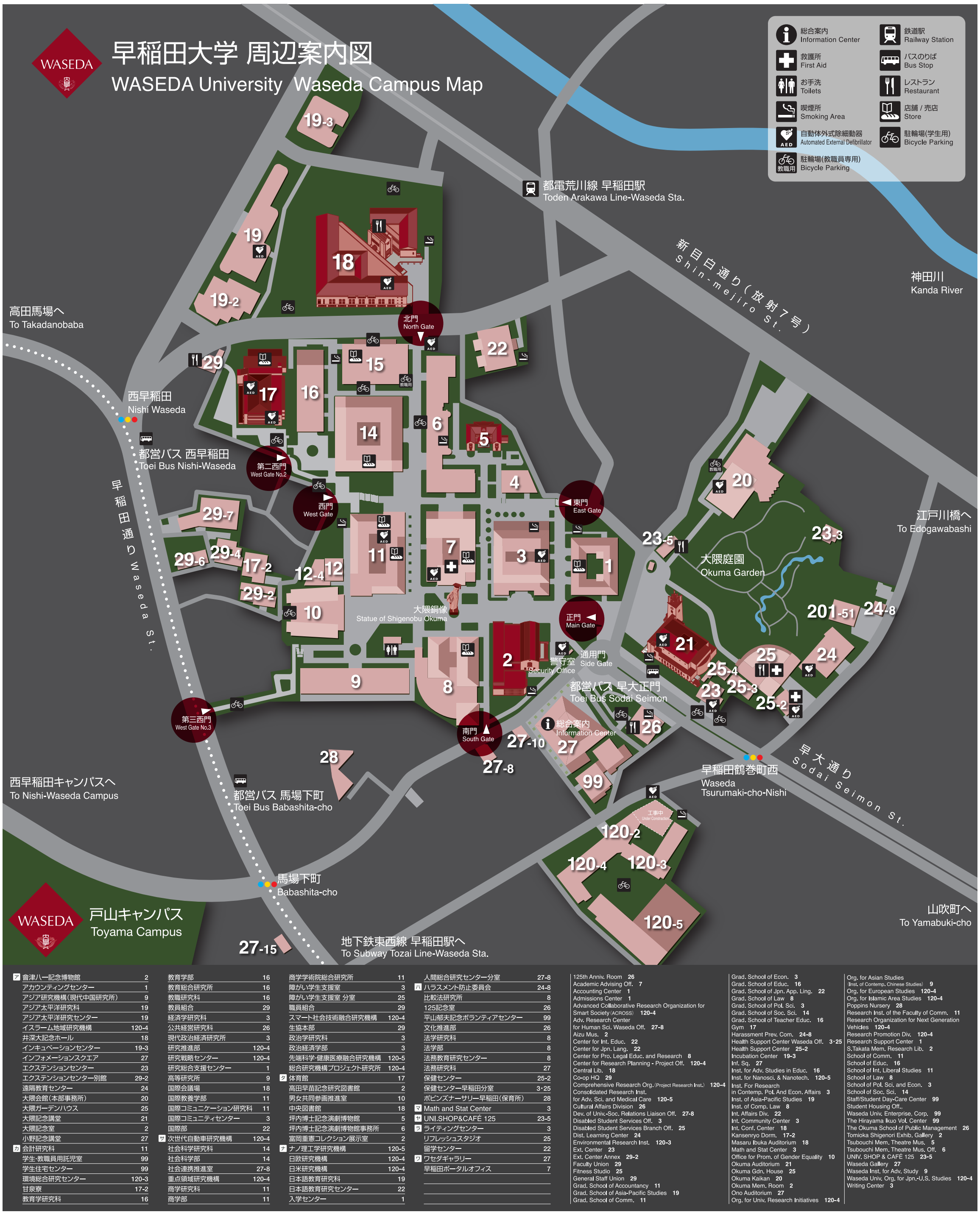
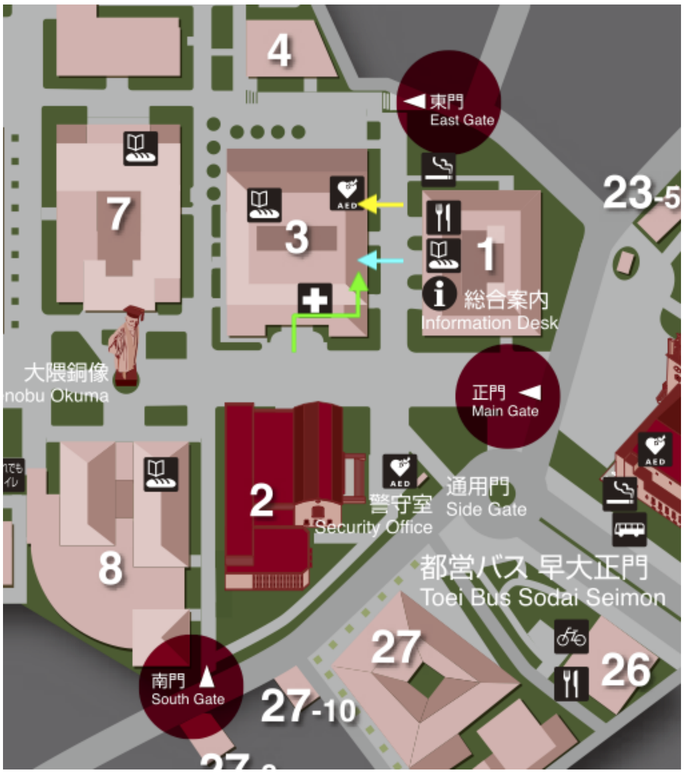
Han Yang^{c}	Institute of Economics, Academia Sinica
Donghoon Yoo^{c}	Institute of Economics, Academia Sinica

^{p} : presenter; ^{c} : chair

Logistics

The workshop will be held on the 8th floor (Room 802) of Building 3 on Waseda Campus. Light refreshments will be available at Room 805.





Access to Elevators at Building 3

- Green route: Enter Building 3 from the entrance facing Building 2 (Aizu Museum). Upon entering the building, turn right immediately. Around the corner, there are three elevators.

  If you do not turn right immediately and pass through automatic sliding glass doors, you will see the escalator coming from the 2nd floor. If that is the case, you have gone too far.

- Blue route: You can also use the entrance with the door nob that is facing Building 1.

  Just in case you cannot find the elevator hall, please visit the security guards' room, indicated by the yellow arrow above.

Presentations: For regular sessions, 50 minutes will be allocated to each paper. Student sessions will last for 40 minutes.