Individual Preferences on Trade Liberalization: Evidence from a Japanese Household Survey

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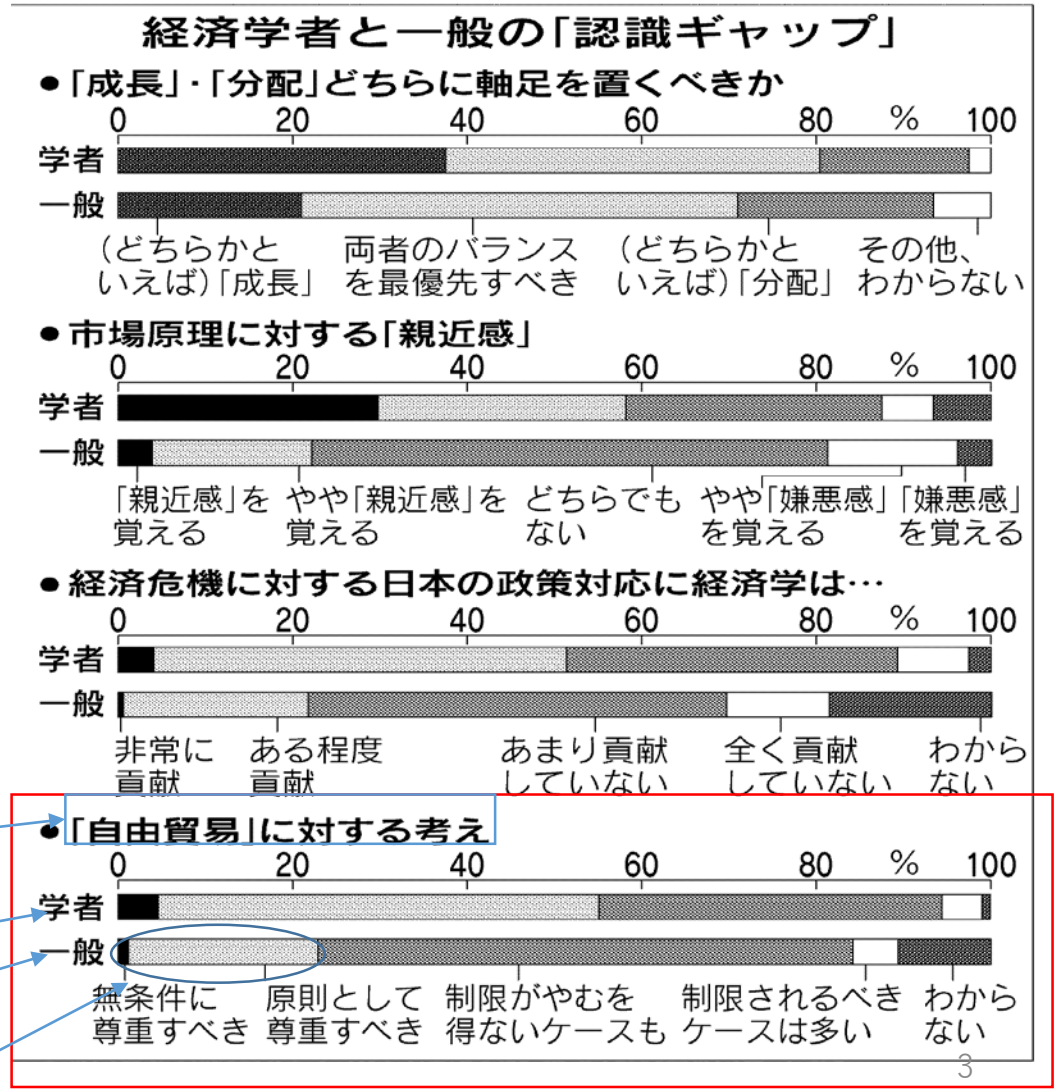
August 2nd 2019, RIETI

Introduction

- Individual attitude toward trade liberalization is a hot issue.
  - Anti-Protectionism (Trump, US-China Trade war)
  - TPP and EU-Japan FTA (Felbermayr et al. 2019)
- Stolper-Samuelson Theorem vs new political economy of trade
  - behavioral effects / non-economic factors: risk attitude, identity, experience, other non-cognitive questions
- This paper
  - Preference to TPP (trade liberalization) in Japan
  - Household panel survey (KHPS)
  - Compensation (WTP)
  - Explain individual vs. region-level estimations

Nikkei Newspaper (October 16th 2009)

- Nikkei survey: 1035 people and 560 economists (Japanese Economic Association)
- **55%** of economists are positive to free trade and **20%** of usual people are positive.
- A big gap between what economics investigated and what usual people think.



Attitude toward Free Trade

Scholar

General

Positive

Literature

- A limited number of empirical studies
  - Blonigen (2011): US survey for 5524 individuals. Only educational background influences trade preference
  - Mayda and Rodrik (2005): 1995 ISSP (The International Social Survey Programme) data including 28,456 people over 23 countries. Only educational background influences trade preference
  - Jakel and Smolka (2013): the 2007 wave of the Pew Global Attitudes Project, finds significant Stolper-Samuelson effects
- Case of Japan
  - Naoi and Urata (2013)
  - Naoi and Kume (2011)
  - Kuno (2012)
  - Tomiura et al.(2016, 2019) and Ito et al. (2019): Survey for 10,000 individuals in Japan (one shot in October 2011). Non-economic factors are important
  - Yamamura and Tsutsui (2019): Impact of non-cognitive skills in the childhood on TPP

KHPS/JHPS

- Panel household survey data conducted by Keio University
- The first wave was conducted in 2004, which covers around 4000 households.
  - Two-stage stratified random representative survey
  - Panel structure: same household over time
- Advantage: panel data (the same households join KHPS every year), many non-economic questions and location of households
- Data:
  - (basics)gender, age, family, income, saving, expense, pension, job status, education, asset, housing, risk, happiness, health
  - (annual)work-life, marriage, asset management, oversea education, foreign language/culture, non-cognitive (moral, trust, liability, social stance),TPP

TPP questions (KHPS 2017)

- Attitude to trade liberalization (agree, slightly agree, neutral, slightly disagree, disagree, not sure)
  - 1. Trade liberalization, TPP
  - 2. Better income (W)
  - 3. More variety and higher quality of life (P)
  - 4. Immigration
- Willingness to pay
  - 5. Compensation (WTP)

Model Specifications (S1, S2 and S3)

- **S1**: age, gender, university degree, num family, retired, non-regular worker, poor dummy, net income, saving rate, financial asset
- **S2**: S1 + fixed effects: Prefecture, Occupation, Firm size

Model Specifications; Non-cognitive factors

- **S3**: S2 + non-economic factors: health, happiness, experience abroad, English skills etc.
  - **S3-1: Happiness**: happiness, health, liberty-equality, donation
  - **S3-2: Social stance/norm**:
    - trustN: we should trust neighborhood
    - trustG: we can trust our government
    - All good: all people are originally good
    - Law break: if law is not appropriate, we can break the law
    - Dirty money: we cannot make money without taking dirty way
    - Efficient L: I can send efficient life
    - Shopping: prefer to shopping at usual shops
    - Spend: spend money now if interest rates are 10% and inflation rates are 20%
    - No interest: The price of government bond should be 10,000 yen if 10,000 yen is returned by government bond one year later.
  - **S3-3 : openness**
    - English
    - No exp: no experience of living or studying abroad
    - Move: dummy for move frim birth place
    - Internet: internet user
  - **S3-4: Purchasing behavior**
    - Food share: expense share of food
    - Eat-out share: expense share of eating-out
    - Clothes share: expense share of clothes

Models

- Ordered logit
- OLS
- Logit

Results S1

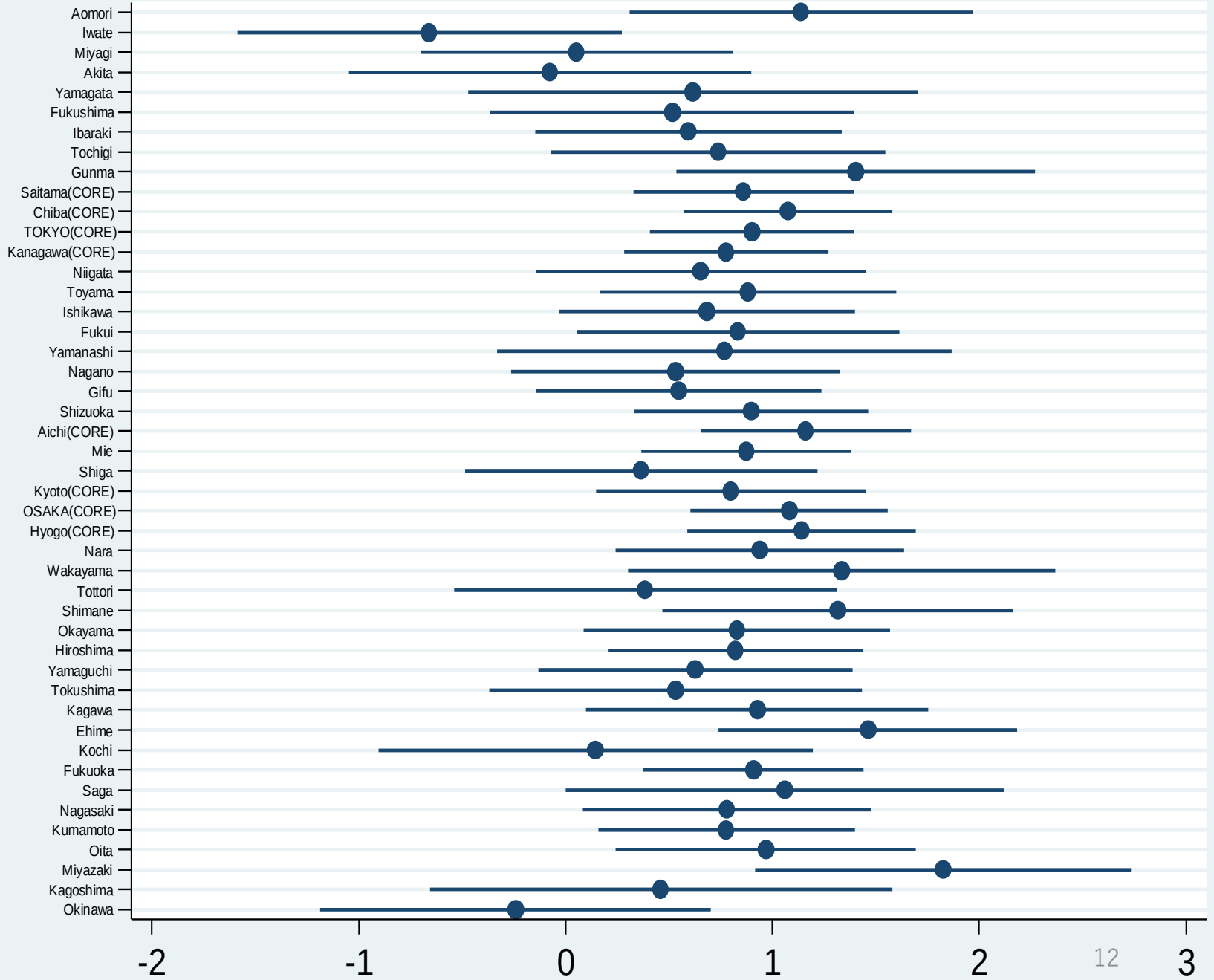
	trade	income	quality
sex_d	0.544***	0.207***	0.469***
	(9.71)	(2.83)	(8.10)
age_30	-0.708**	0.128	-0.44
	(-2.46)	(0.23)	(-0.94)
age_40	-0.676**	0.008	-0.5
	(-2.45)	(0.01)	(-1.11)
age_50	-0.655**	0.136	-0.5
	(-2.38)	(0.24)	(-1.10)
age_60	-0.548*	-0.09	-0.53
	(-1.92)	(-0.16)	(-1.16)
age_over70	-0.16	0.05	-0.32
	(-0.53)	(0.09)	(-0.68)
university	0.182**	0.067	0.073
	(2.29)	(0.70)	(0.95)
num_family	-0.0726***	-0.03	-0.0530*
	(-2.63)	(-0.82)	(-1.74)
retired	-0.279**	-0.269**	-0.05
	(-2.47)	(-2.14)	(-0.48)
non_regular	0.018	-0.02	0.032
	(0.27)	(-0.20)	(0.43)
poor	0.245	-0.2	0.204
	(0.58)	(-0.43)	-0.55
Labor union	-0.15	-0.1	-0.05
	(-1.51)	(-0.77)	(-0.52)
net_income	0.100*	0.016	0.088
	(1.80)	(0.21)	(1.49)
saving_rate	0.153	0.796**	0.236
	(0.52)	(2.02)	(0.80)
ln_finance	0.0674***	0.0303*	0.0519***
	(5.49)	(1.92)	(4.08)

Main results (S1)

- 1. Sex dummy is positive. **Male** is more likely to be positive to trade liberalization.
- 2. Age is hump-shaped. Age 20 (reference) and older age (e.g. age over 70) are more positive than age 30, 40 and 50.
- 3. Larger size of family is negative. **Smaller family size (single people)** is positive
- 4. **University degree** is positive.
- 5. Non-regular workers are negative and weakly significant.
- 6. Labor union is negative.
- 7. **Financial asset** is significantly positive.

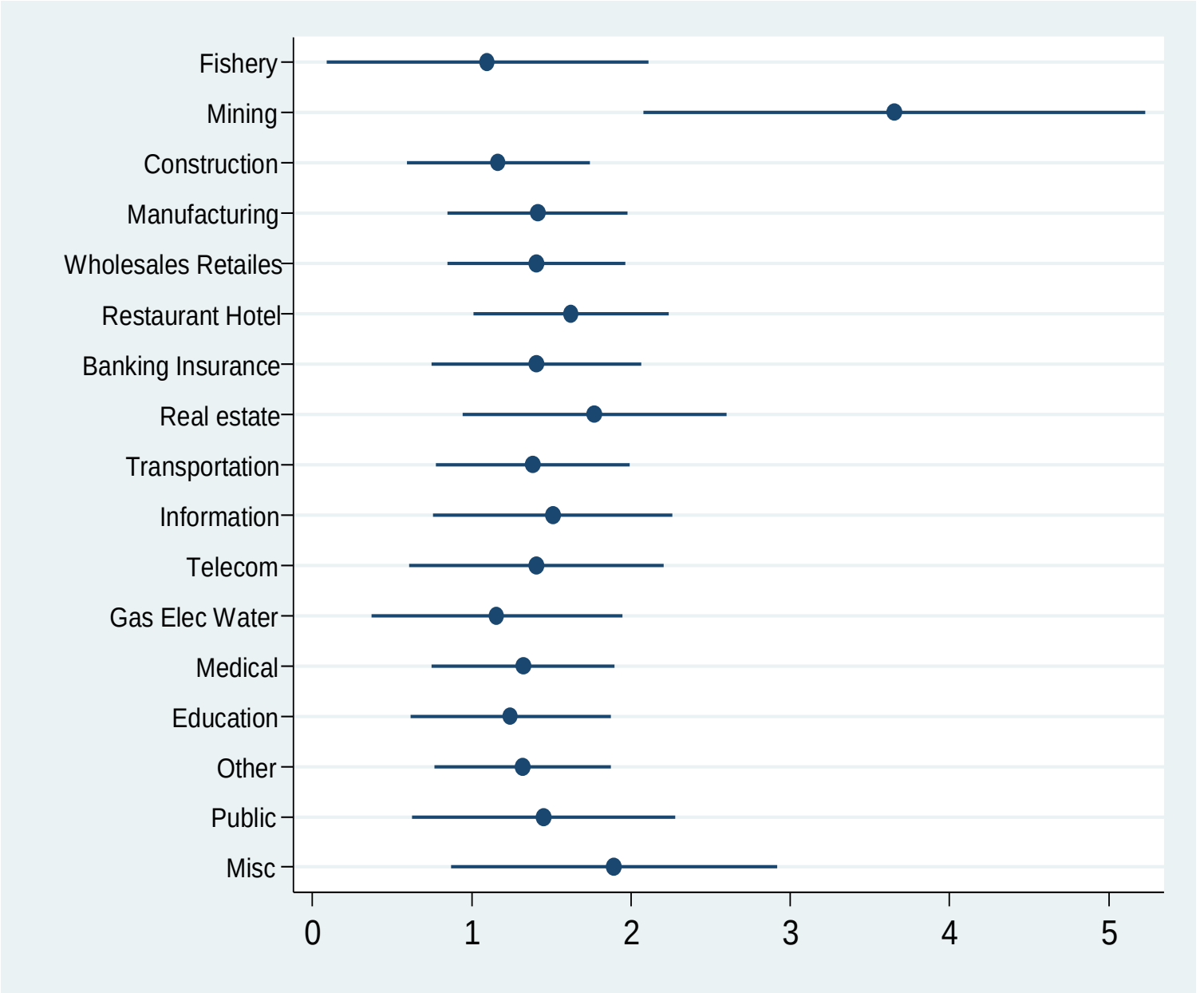
Result S2

- Prefecture dummy
- Reference Hokkaido



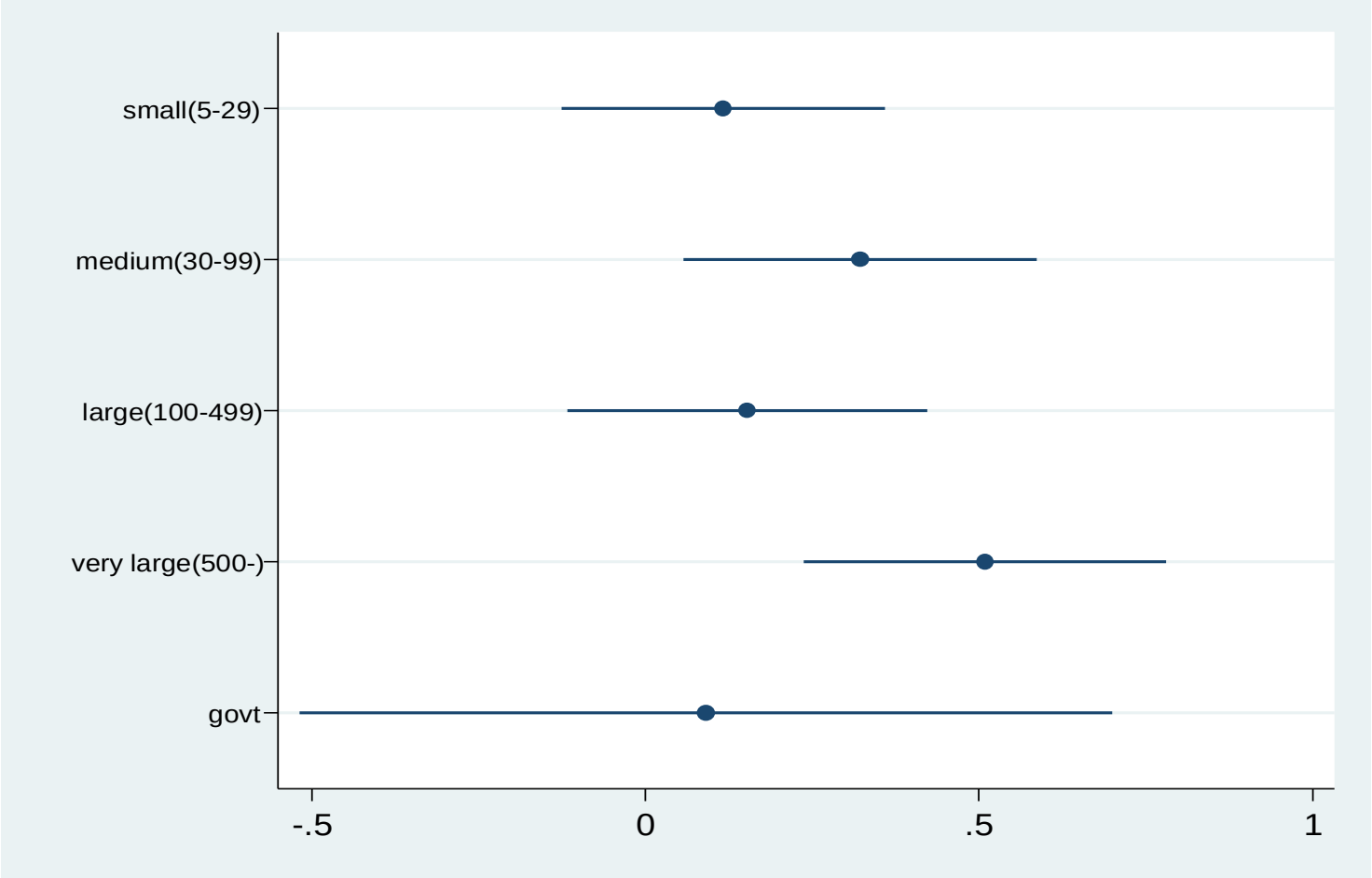
Result S2

- Occupation dummies
- Reference Agriculture



Result S2

- Firm size
- Reference smallest (emp 1-4)



Main results (S2)

- 1. Occupation dummies (reference: agriculture): **Agriculture (reference) is strongly negative** to trade liberalization. Service sectors and public sectors are overall positive and high.
- 2. Size of firms (reference: the smallest firm, 1-4 employees): **very large firms are very positive.** Smaller firms are negative.
- 3. Region (prefectures)(reference: Hokkaido):
  - **core** prefectures are relatively high (positive) but not so large values.
  - A few rural regions are very positive and high values (e.g. Miyazaki, Ehime, Gunma, Aomori, Shimane, Wakayama). We note that most of them are agricultural but not big rice producers.
  - Very negative regions are Iwate, Miyagi, Akita, Kochi and Okinawa.

Result S3 (Non-cog)

	trade_c	trade_c
happy_3	0.0423*	
	(1.86)	
Health	0.0494	
	(1.03)	
libeq	0.188***	
	(3.50)	
ln_donation	0.00605	
	(0.58)	
trust_N		-0.0259
		(-0.50)
trust_G		0.380***
		(7.62)
all_good_P		0.038
		(0.97)
law_break		0.026
		(0.58)
dirty_money		-0.0828*
		(-1.84)
efficient_L		0.0443
		(0.89)
hard_effic~t		-0.0555
		(-0.88)
shopping		-0.0168
		(-0.38)
spend		0.0359
		(0.58)
no_interest		-0.0646

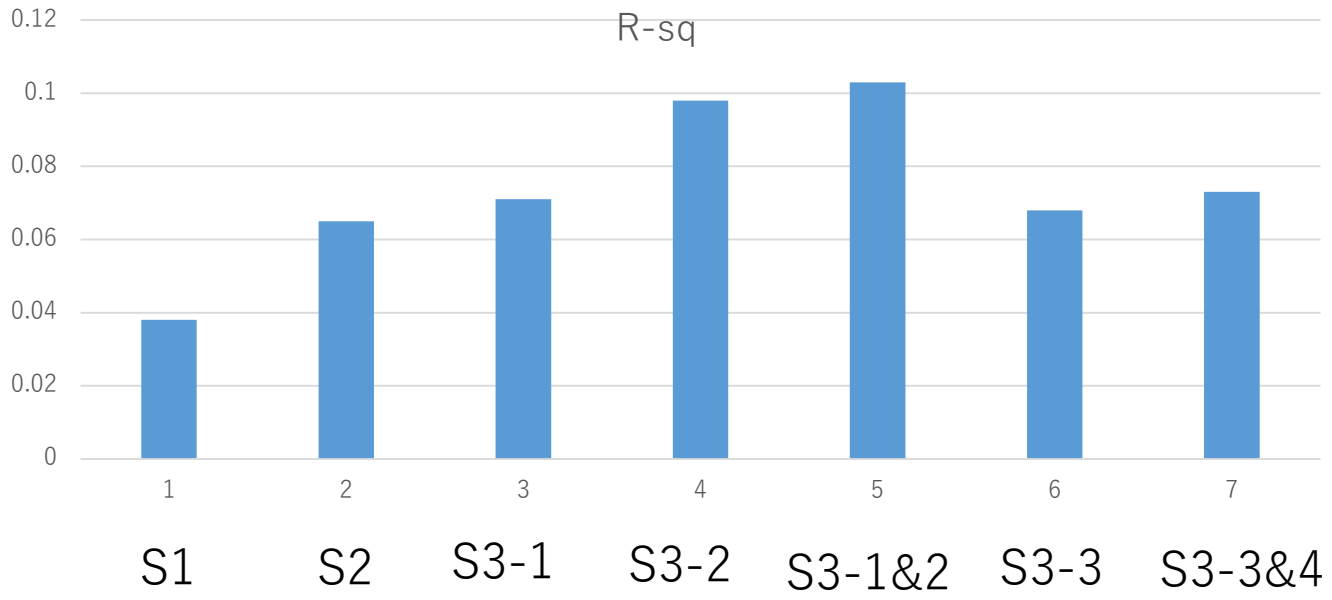
	trade_c	trade_c
English	0.176***	0.146**
	(2.61)	(2.13)
no_exp	0.0516	0.115
	(0.31)	(0.67)
birth_pref	0.199*	0.214*
	(1.77)	(1.89)
move	0.135	0.145
	(1.54)	(1.63)
internet	-0.136	-0.173
	(-1.07)	(-1.34)
food_share		-0.00906
		(-0.67)
eat_out_sh~e		0.00104
		(0.19)
clothes_sh~e		0.00335
		(0.83)

Main results (S3)

- S3-1
  - 1. Happiness is slightly significant and positive.
  - 2. Libeq is significantly positive. **People who prefer to liberty** tends to be positive
- S3-2
  - 1. trust_G is significantly positive. **Those who trust government** are positive
- S3-3
  - 1. **English** is significantly positive.
  - 2. **birth_place_foreign** is significantly positive.

Model comparison

- R-2



- S3-1 & 2 is better. Happiness and Social stance/norm are important factors

Income, Quality of Life and Immigration

Income (expect to increase income)

- S1
  - Overall, household/individual characteristic variables do not work.
- S3-1 Non-cognitive works well
  - **Happiness** is significantly positive
  - Lib_eq is significantly positive. **People who prefer liberty** think trade liberalization increases income.
  - **Donation** is significantly negative
- S3-2 social stance works
  - trust_G is significantly positive
  - dirty money is significantly negative

S3-3

- Internet use and food share are weakly signicantly negative.

Quality of life (expect to increase QoL)

- (S1)
  - Sex dummy is significantly positive. **Male** thinks quality upgrading
  - Age, university degree do not work ・ num_family is negative. **Smaller families** are positive. ・ ln_**finance** is significantly positive.
- (S3-1) health and libeq are significantly positive.
- (S3-2)
  - trust_G and all_good_P are significantly positive while dirty money is negatively significant..
  - English skill is significantly positive.
  - Share of clothes is significantly positive.

Immigration

- (S1) Household characteristics and individual characteristics do not affect at all.
- (S3) Sharp contrast outcome with trade liberalization
  - Happiness is positive significant
  - libeq is negative significant. This result is a sharp contrast with trade liberalization. People who prefer **equality** agree to immigration.
  - Donation is positive significant. This result is a sharp contrast with trade liberalization. Those who did **donation** agree to immigration.
    (c.f. less donation is positive in trade lib)
  - **Trust neighborhood** (trust_N) and All_good_P are positive significant.
    (c.f. Trust Govt is positive in trade lib)
  - "Dirty money" is negative significant.
  - English is significantly positive.

Compensation

Compensation scheme

- Government ratifies TPP.
  - Do not mind pay more per-month tax if s/he is positive to TPP
  - Want to receive govt transfer (reduce per-month tax) if s/he is negative to TPP
  - Reference: your tax per-month payment is **40,000 yen**
- Sample
  - Drop missing and unknown
  - Drop neutral
- 774 out of 1149 is positive to trade
  - compensation= **6,490 yen** on average
- 375 out of 1149 is negative to trade
  - compensation= **-21,430 yen** on average
- Grand average compensation is equal to **-2,620 yen**
- Insight: Voting would produce a majority in favor of TPP, but the losers lose much more than the winners.
- Corrective action of anti-TPP might be influential: Asymmetry

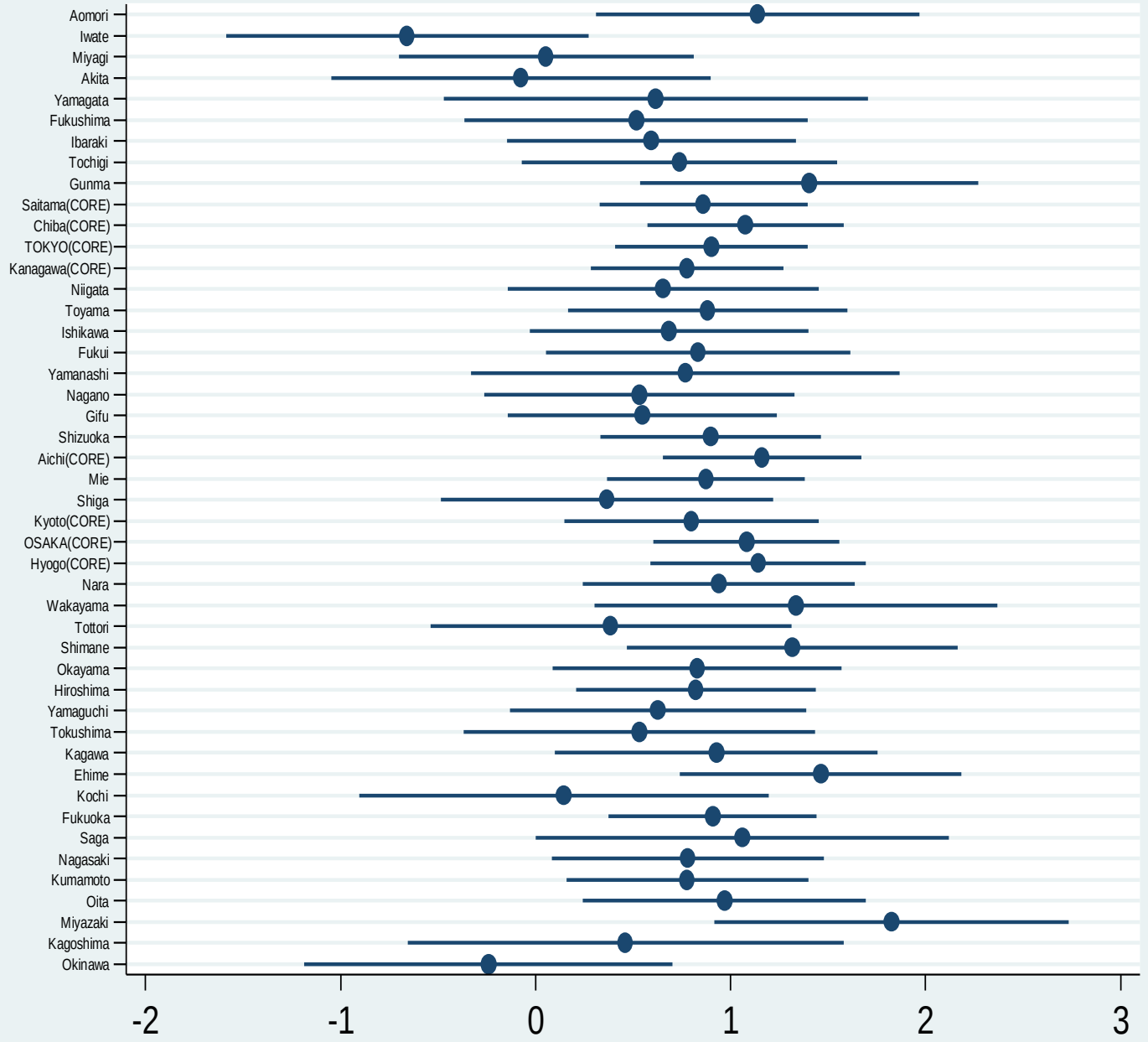
Compensation estimations (S1-S3)

- Sex dummy is significantly positive. **Male** does not mind paying more tax if government ratifies TPP.
- Net income and financial asset are significantly positive. **Rich people** do not mind paying more tax.
- trust_G and English skill are significantly positive. As people trust government policies, they do not mind pay tax. Likewise, they have high English skill, they tend to agree with TPP and pay tax.

Prefectural Analysis

Prefectural analysis

- Back to trade lib and specification “S2”
- Pick up prefectural fixed effects



Prefectural analysis

- Use the coefficients of prefectural dummies
- 47 prefectures.
- (1) Economic factors: GDP, MP, GDP per capita
- (2) Food consumption: expense on meat, fish, diary, rice (MAFF)
- (3) Food production: agricultural field share, self sufficiency rate, GDP
- (4) Openness: tour people, foreign residence(MIA), export share export premium (Okubo and Tomiura, 2019)
- (5) US culture and history: early port, dead and injured people in WWII, military base share (MoD)

Results

	trade	income	quality
ln_GDP	0.0613***	0.0195*	0.0384*
	(4.15)	(1.91)	(1.87)
ln_MP	0.0488**	0.0484***	0.0232
	(2.09)	(2.76)	(0.63)
ln_GDP_cap	-0.0951**	-0.0242	-0.0701
	(-2.28)	(-0.68)	(-0.92)
manu_share	0.00867	0.00674	0.0489
	(0.30)	(0.30)	(1.05)
agri_share	-0.834	1.549	0.149
	(-0.59)	(1.28)	(0.06)

Economic Factor

	trade	income	quality
ln_meat	0.167**	0.0942*	0.196**
	(2.05)	(1.89)	(2.23)
ln_fish	-0.137	-0.119	-0.234*
	(-1.12)	(-1.33)	(-1.82)
ln_dairy	0.105	0.0349	0.0175
	(0.89)	(0.52)	(0.16)
ln_rice	-0.0602	0.00803	0.000531
	(-0.76)	(0.14)	(0.01)

Food

	trade	income	quality
ricefield	-0.00018	-7.6E-05	0.00186
	(-0.20)	(-0.12)	(1.37)
food_self	0.0211	0.0334*	0.0317
	(0.81)	(1.70)	(0.84)
ln_GDP	0.0965***	0.0499***	0.0685***
	(5.72)	(5.28)	(3.70)
ln_food production	-0.0526**	-0.0374**	-0.0556*
	(-2.15)	(-2.42)	(-1.89)

Agriculture

Results

	trade	income	quality
ln_tour	0.0168*	0.0102**	0.0112
	(2.00)	(2.14)	(1.08)
ln_foreign	0.0749***	0.0275*	0.0601**
	(3.55)	(1.74)	(2.11)
Exp_sh	0.0178	0.0859	-0.308
	-0.04	-0.35	(-0.79)
Exp_prem	-0.0949	0.0182	0.00797
	(-1.37)	(0.40)	(0.10)
early_port	-0.0122	-0.0258	-0.0246
	(-0.31)	(-1.16)	(-0.50)

Openness

	trade	income	quality
US_force_share	-0.000883**	-0.000668**	0.000175
	(-2.29)	(-2.17)	-0.31
ln_dead_in~S	-0.0016	-0.00240*	-0.00422
	(-0.82)	(-1.68)	(-1.28)
early_port	-0.018	-0.0233*	-0.031
	(-0.67)	(-1.80)	(-0.76)
ln_fastfood	0.0245	0.00685	0.0247
	(1.16)	(0.43)	(0.79)
core	0.173***	0.0863***	0.108***
	(6.12)	(5.44)	(3.42)

US history and culture

Prefectural analysis

- Economic factor: only GDP matters
- Some non-economic factors matter
  - Meat consumption rather than fish tends to be positive
  - Less agricultural production is positive
- Non-cognitive factors and hysteresis
  - High openness (tourists and foreign residence)
  - Less US military base and less US military attack

Trump Effect

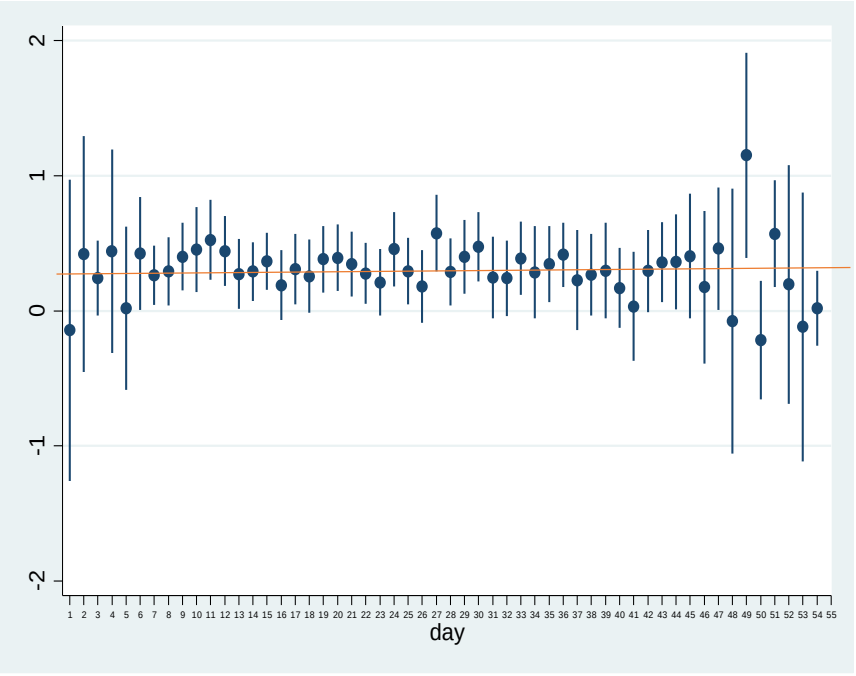
Trump effect

- 1) US stepped down from TPP negotiation on Jan 26th 2017
- 2) KHPS started correction of questionnaires from 4th Feb 2017.
  - US withdrawal makes bias of KHPS sample?
- KHPS includes information on when the survey answer was corrected by investigator.
- Estimation using dummy for “day” of correction (all other dummies).
  - Feb 4th is day 0

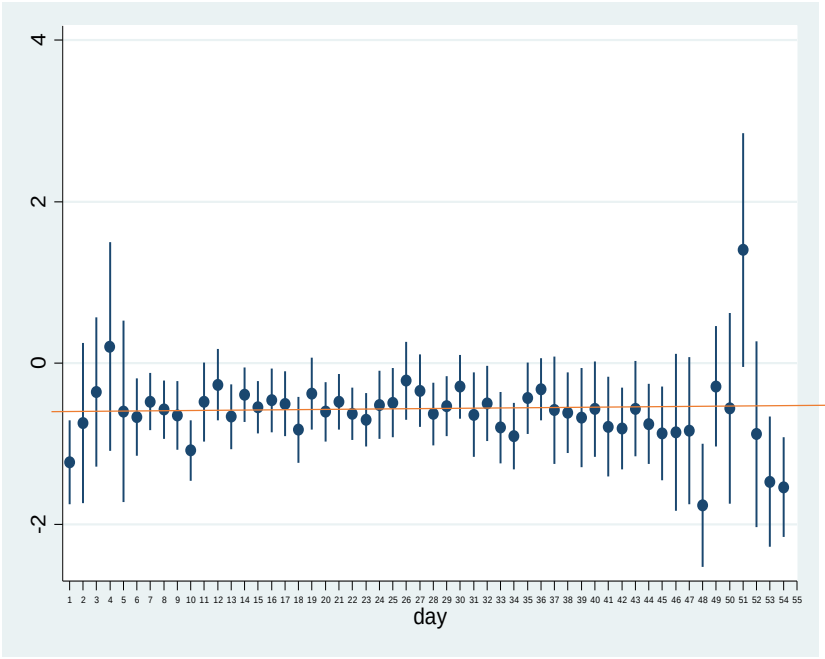
No bias and trend

- No clear trend after US withdrawal

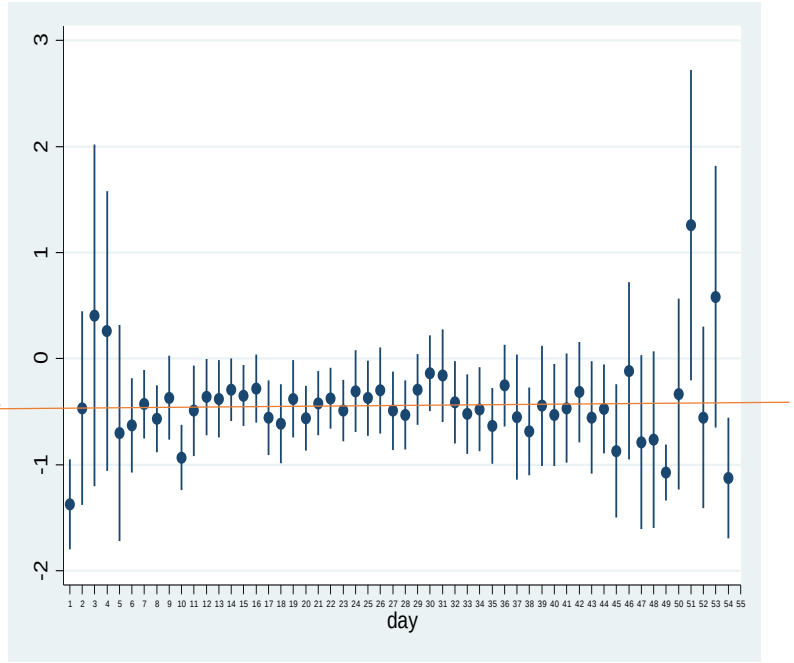
Trade



Quality



Income



Conclusions

- Investigate individual preference to trade liberalization
  - trade liberalization, income, quality, immigration, compensation
- Non-cognitive factors matter rather than economic factors
  - Social stance and happiness are strong factors
- Prefectural analysis (regional factors)
  - Large GDP and less agricultural production
  - Social factors: openness matters. US culture weakly influences.
- No clear impact of US step-down on JPN household