Reform of Homestay Policy on Agritourism: Micro-level Evidence in Japan

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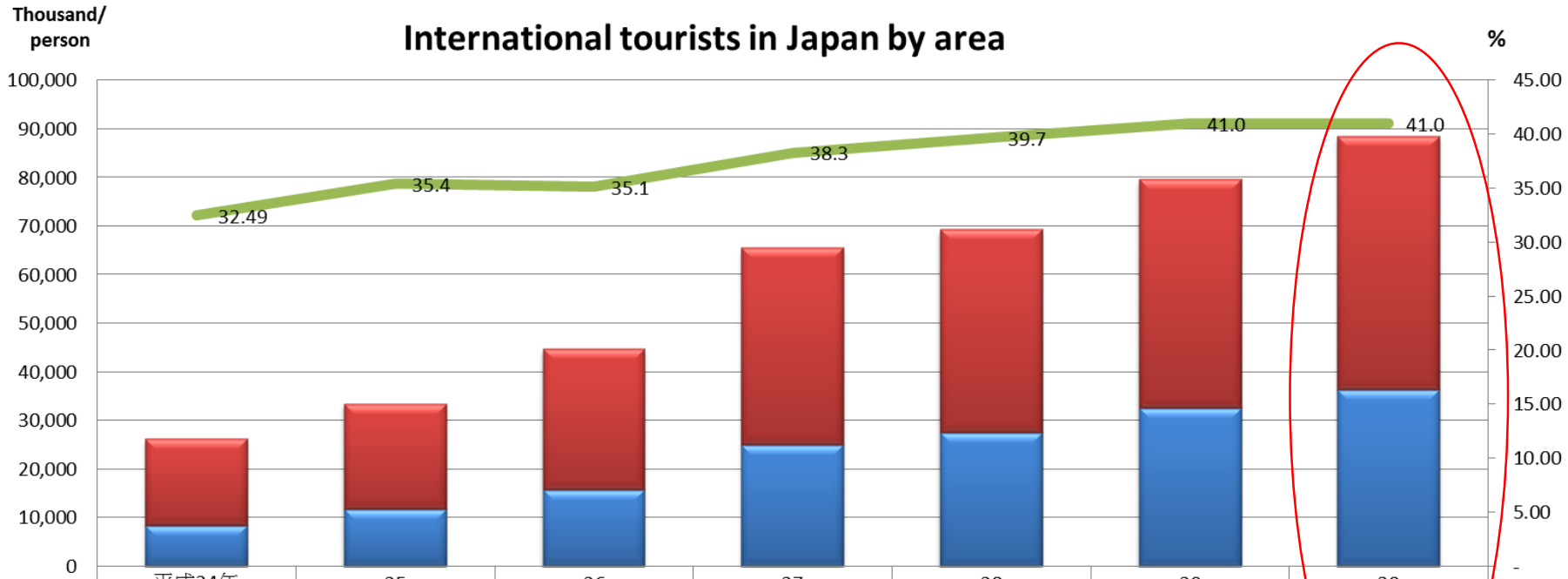
Background

Due to the increasing demand for leisure, agritourism has been recognized as an emerging research topic in agricultural economics and development. Agritourism has been promoted in many countries such as Japan, USA and Taiwan.



	平成24年 (2012)	25 (2013)	26 (2014)	27 (2015)	28 (2016)	29 (2017)	30 (2018)
Urban area	17,764	21,639	29,073	40,475	41,859	47,027	52,230
Rural area	8,550	11,857	15,751	25,140	27,530	32,664	36,359
Rural ratio	32.49	35.4	35.1	38.3	39.7	41.0	41.0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全国の農山漁村をまるっと楽しもう

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<世界農業遺産>

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<日本農業遺産>

<かんがい施設遺産>

食

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体験

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The Case of Taiwan

Literature Review

- A sizable body of literature has focused on agritourism. Most of them are demand-side analysis (e.g.Capriello et al., 2013).

- Studies on agritourism issues from the view of the supply side are limited and outdated. These studies focus on:

-- Who participates in the agritourism business? (e.g.,Evans & Ilbery, 1992; Sharpley & Vass, 2006)

-- Impacts of agritourism adoption on farm household wellbeing. (e.g. Fleischer & Tchetchik, 2005).

Author	Data	Findings
Evans & Ilbery (1992)	A random survey of 212 farms in 3 counties of the UK.	Small farms diversify into accommodation business to survive, whereas large farms initiate accommodation business to expand. Family labour is highly utilized in the operation of accommodation business.
Sharpley & Vass (2006)	150 farms from the national farm- stay of UK in 2005	79% of the farmers were female. A farm-stay was identified as small, located in remote areas and financially instable.
Ollenburg & Buckley (2015)	A random survey of 278 Austrialian farms	Agritourism is dominated by small farms, located in the coast and near the metropolitan areas. The principal operators are marginally old with a long history in farming.

Author	Data	Findings
Fleischer & Tchetchik (2005)	A cross sectional survey of 200 rural operators in Israel in 2000	Farms with on-farm accommodation had the largest output from the same levels of labor and capital relative to firms that are solely engaged in tourism.
Tew & Barbieri (2012)	A random survey of 164 agritourism farms in Missouri, USA	36% of the farm operators admitted that their profits increased after integrating agritourism. 28% of the respondents saw a slight increase in their profits.
Barbieri (2013)	A cross-sectional survey of 873 U.S farms	About 81% of the farm operators that diversified into agritourism operation saw an increase in farm profit compared to other farm operators that diversified into other activities.

Research Questions

We use a case in Japan to address the following general questions:

- Is the policy used to promote agritourism effective?
- Does the policy to welcome non-farm enterprises into home-stay market affect home stay farms? If so, how?
- How do farm-stay enterprises respond to the competition from non-farm entrants?
- What are the effects of home-stay policies on farm restaurants?

The Home-stay Policy in Japan

- 「Act for the Promotion of Infrastructure Development for Leisure Activities in Rural Areas」(農山漁村余暇法**): farm home-stay** is a hotel business that provides agricultural experience activities for staying in mountain and fishing villages.
- Before 2012, **only** farm households could own home-stay business in rural areas.
- Since 2012, non-farm enterprises haven been allowed in home-stay business with restrictions, see Building Standards Act (floor area should >33m^2), Hotel Act, Fire Service Act and Transportation Act.
- In late 2016, a reform was implemented to release the strict restrictions on non-farm enterprises to promote agritourism.

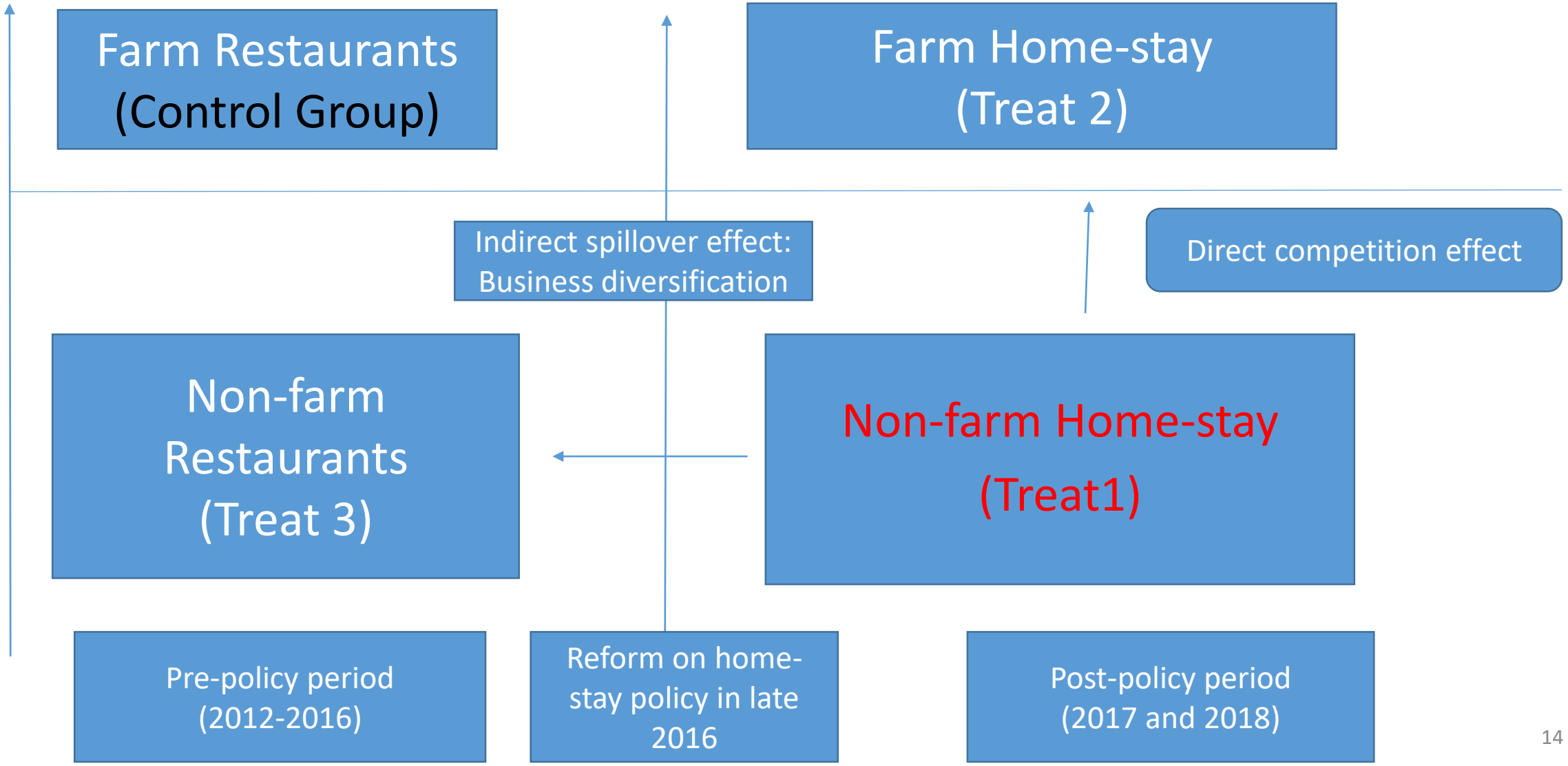
関　係　法	規制緩和・通知など	
旅館業法	市	農家民宿等である場合，玄関帳場の設置要件の特例が適用されています。入浴施設，洗面設備，便所は宿泊者の需要を満たす規模又は数が必要です。宿泊定員数が5人以下の場合は，家庭用との共用を認めますが，衛生管理について徹底していただく必要があります。
食品衛生法	全	既存家屋で農家民宿等を営業する場合の規制について，条例改正や弾力的な運用をするよう厚生労働省から要請が出ています。
	市	旅館業法の特例の適用により開業した場合に限り，条件つきで，調理室と家庭用調理場の兼用や，調理室内の手洗い設備の設置など，施設基準が一部緩和されています。
都市計画法	市	市街化調整区域では，既存の住宅の一部を利用して，客室延床面積33㎡未満の農家民宿等（ただし，家主居住型であり，かつ農家民宿等の開設資格確認書の発行を受けたもの）に用途変更することは，従前と比べて用途が著しく異ならないことから，許可を要する用途変更と取り扱わず，開業することは可能です。 家主非居住型の農家民宿等については，建築物の用途が「住宅」ではなく「旅館」に該当し，市街化調整区域においては「住宅」から「旅館」への用途変更は原則として認められないため，開業はできません。
建築基準法	全	住宅の一部を農家民宿等として利用し，客室延床面積が33㎡未満であり，避難上支障がないと認められた場合は，建築基準法上の「旅館」に該当しないものとして取り扱われます。
消　防　法	全	原則，宿泊施設の基準が適用されますが，建物や客室の規模等により「住宅」となった場合は，消火器，自動火災報知設備等の設置を要しないものとして取り扱われます。
道路運送法	全	農家民宿等が宿泊サービスの一環として行う無料送迎は許可を必要としません。
旅行業法	全	農家民宿等が，宿泊とセットで農林漁業体験サービスを販売・広告する場合は許可を必要としません。

Homestay and Farm Restaurants

- Farm home-stays need to receive special permits to operate farm restaurants.
- No specific regulation is found for non-farm home-stay to engage in restaurants.
- Thus, home-stay businesses can compete with restaurant businesses for non-farm enterprises.

	区　分		旅館・ホテル	一般食堂	農家民宿（特例）
施設設備	調理室	広さ	9.9㎡	6.6㎡	6.6㎡（兼用可）
		構造・設備	耐水材料・換気、防虫、流し台、食器棚など共通の基準		
		手洗い設備	専用	専用	兼用
	配膳室	手洗い設備	食数に応じ必要	不要	不要
	客　席		客用が必要（場合によっては、トイレ用との兼用可）		
	トイレ		必要（共通）		
利用制限	客室での食事		可	不可	可
	一般利用客（立ち寄り）		可	可	不可（宿泊客のみ）
	食数		制限無し	制限無し	概ね10食以下

Our Core Idea / Empirical Strategy



Data

- **Individual-level agribusiness farm data**

-- Survey of Agricultural Industrialization in Japan, conducted by the Ministry of Agriculture, Forestry, and Fisheries (MAFF) in Japan.

-- Repeated cross sectional survey in 2012-2018.

- **County-level aggregated data**

- Population
- Unemployment rate
- Number of hotels

Econometrics Model

The generalized version of the Difference-in-Differences (DiD) model

$$y_{ijt} = \alpha + \gamma_1 \times Post + \sum_{k=1}^{3} \gamma_k \times Treat_k + \sum_{k=1}^{3} \theta_k \times (Treat_k \times Post) + \beta' X_{ijt} + \beta_1' H_{jt} + \varepsilon_{ijt}$$

i: farm; *j*: county; *t*: year

Post: if 2017 or 2018 (post-policy period)

Treat1: Non-farm home-stay; *Treat2*: Farm home-stay; *Treat3*: non-farm rest.

X: time variant farm specific factors

H: county-year variables

Preliminary Results

Sale values over time by groups

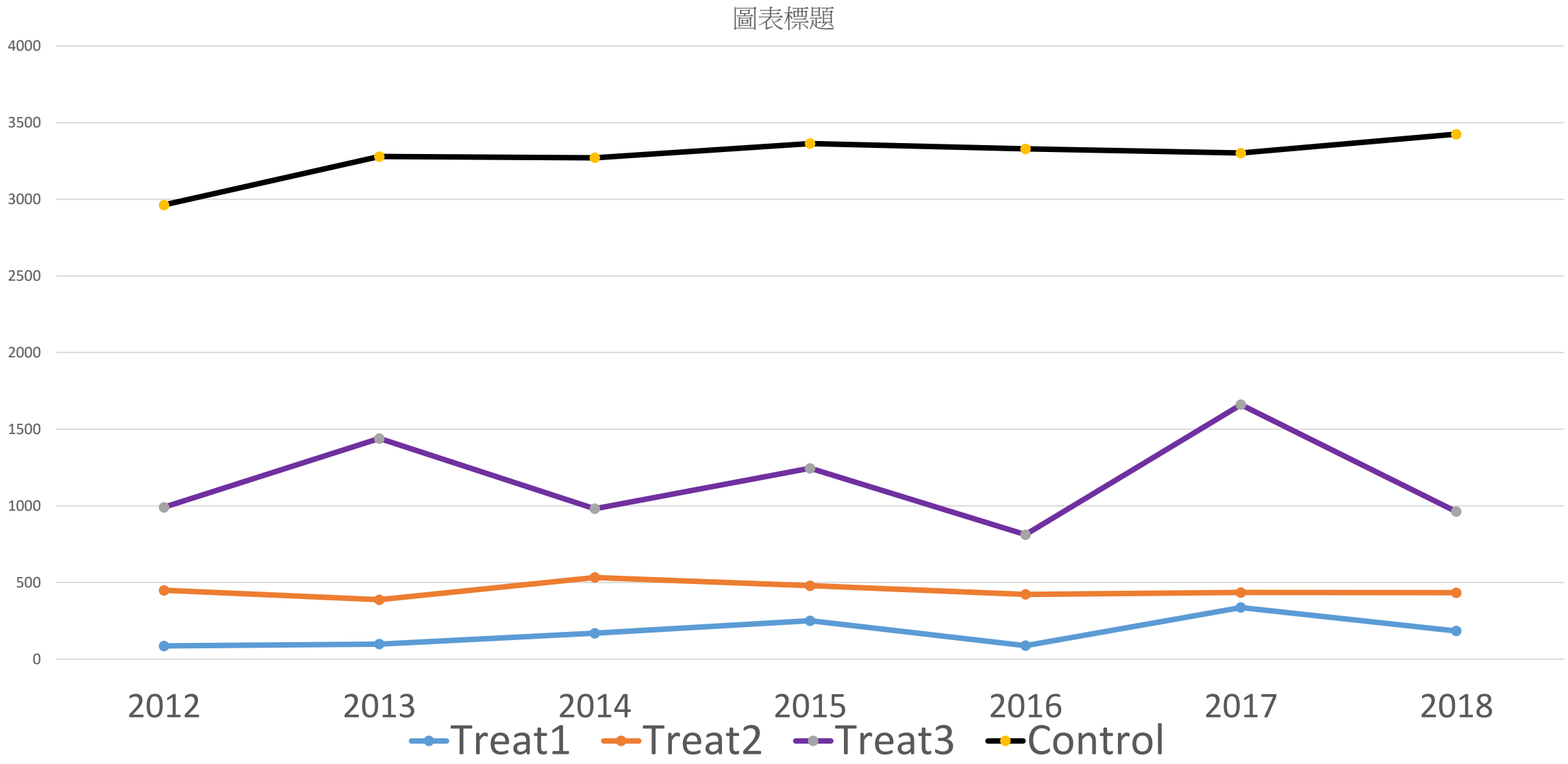


Table 1. Definition and sample statistics of the selected variables.

Variable	Definition	Mean	S.D
Sale values	Sales value per year (JPY 1 million).	2.067	8.700
Business day	Number of business days (in 100).	1.929	1.271
Customer	Number of customers (in 1,000).	5.269	7.232
Price	Sales value per customer (JPY 1,000/person).	0.625	2.496
Productivity_labor	Sale values per labor (JPY 100,000/person).	1.685	2.082
Productivity_farm	Sale values per self-farm labor (JPY 100,000/person).	11.766	35.106
Productivity_hire	Sale values per hired labor (JPY 100,000/person).	2.101	3.043
Labor_hire	Number of hired labor (JPY 100,000/person).	5.675	20.264
R_hire_male	Ratio of male hired labor to total hired labor.	0.135	0.238
R_hire_elderly	Ratio of hired labor aged 65 to total hired labor.	0.158	0.298
R_hire_permanent	Ratio of hired permanent labor to total hired labor.	0.318	0.411
Labor_farm	Number of farm labor (person).	2.407	3.578
R_farm_elderly	Ratio of farm labor aged 65 to total farm labor.	0.387	0.420
R_farm_male	Ratio of male self-farm labor to total farm labor.	0.517	0.339
Population	Number of population in a county (1 million).	2.608	2.325
Unemployment	Average unemployment rate in a county (%).	3.081	0.858
Hotel	Number of hotels in a county (in 1000).	1.321	0.812

Table 2. Sample statistics of the outcome variables.

	Treatment 1		Treatment 2		Treatment 3		Control				
	Non-farm & homestay		Farm & homestay		Non-farm & restaurant		Farm & restaurant		Uncondition DiD1	Uncondition DiD2	Uncondition DiD3
Outcome	Mean	S.D	Mean	S.D	Mean	S.D	Mean	S.D			
	Post-policy period (year 2017 & 2018)										
Sale values	0.244	0.410	0.434	1.180	1.331	2.531	3.361	10.796	0.037	-0.078	0.165
Business day	1.041	1.145	1.150	1.150	2.158	1.239	2.421	1.049	0.111	0.027	-0.007
Customer	0.208	0.338	0.317	0.368	7.572	7.609	8.929	7.874	-0.227	-0.252	0.729
Price	1.098	1.102	0.958	1.157	0.215	0.219	0.337	0.602	0.132	-0.173	0.016
Productivity_labor	0.570	1.018	0.940	1.438	1.387	2.322	2.341	2.361	0.204	-0.042	0.335
Productivity_hire	0.633	2.145	1.044	2.626	1.687	2.781	2.972	3.545	0.335	-0.063	0.442
Productivity_farm	1.186	2.134	2.059	5.544	11.141	25.111	20.671	49.314	-1.999	-2.178	1.772
N	28		790		87		1,247				
	Pre-policy period (year 2012-2016)										
Sale values	0.143	0.191	0.448	1.010	1.103	1.889	3.298	11.761			
Business day	0.986	1.099	1.179	1.206	2.220	1.208	2.477	1.025			
Customer	0.164	0.218	0.298	0.353	6.572	6.439	8.658	7.730			
Price	0.958	0.926	1.123	4.486	0.192	0.215	0.329	0.667			
Productivity_labor	0.299	0.403	0.915	1.438	0.985	1.047	2.274	2.285			
Productivity_hire	0.243	0.435	1.053	2.356	1.191	1.383	2.918	3.130			
Productivity_farm	0.954	1.855	2.005	4.779	7.138	17.363	18.440	43.365			
N	55		2,094		233		2,855				

The Main Results

Table 3. Estimation results of the sale values equation.

Variable	Coef.	S.E	Magnitude
Treat1*Post	0.754**	0.315	22.9%
Treat2*Post	-0.067*	0.034	-2.0%
Treat3*Post	0.278	0.164	8.4%
Treat1	-0.689**	0.356	
Treat2	0.312**	0.161	
Treat3	-1.490***	0.353	
Post	0.034	0.149	
Labor_hire	0.402***	0.039	
R_hire_male	0.275	0.366	
R_hire_elderly	-1.776***	0.226	
R_hire_permanent	0.746***	0.204	
Labor_farm	0.026*	0.013	
R_farm_elderly	-0.238*	0.124	
R_farm_male	0.466**	0.189	
Population	0.163**	0.077	
Unemployment	-0.009	0.077	
Hotel	-0.215*	0.125	
Constant	-0.607*	0.331	
Adjusted R2	0.898		
N	7,389		

Detailed Components of Sale Values

Table 4. Estimated DiD effect of Business operation

Key variable	Coef.	S.E	Magnitude
	# of business days		
Treat1*Post	0.235*	0.128	9.5%
Treat2*Post	0.048	0.078	2.0%
Treat3*Post	-0.051	0.166	-2.1%
Adjusted R2	0.371		
	# of customers (visitors)		
Treat1*Post	0.394**	0.184	4.6%
Treat2*Post	-0.141*	0.071	-1.6%
Treat3*Post	0.659*	0.750	7.6%
Adjusted R2	0.493		
	Price (sale values per customer)		
Treat1*Post	0.112*	0.058	33.9%
Treat2*Post	-0.036*	0.019	-10.8%
Treat3*Post	0.017	0.042	5.1%
Adjusted R2	0.521		

Robustness Checks of the Main Results

- Test on the Common Trend Assumption

Table 5. Results of the statistical tests on the common trend assumption.

	(A)	(B)	(C	(D)
	Sale values	Business days	Customers	Price
Treat 1 vs. Control	0.192	1.587	0.111	1.011
	(0.661)	*(0.207)*	*(0.739)*	*(0.315)*
Treat 2 vs. Control	0.041	0.714	0.016	0.075
	(0.840)	*(0.398)*	*(0.899)*	*(0.784)*
Treat 3 vs. Control	1.057	0.804	0.008	2.336
	(0.304)	*(0.370)*	*(0.929)*	*(0.126)*

Note: the values of t test are reported. Parentheses are the p-value.

Tests using hypothetical shocks in pre-policy years (use 2012-2016 only)

Table 6. Estimation results of the hypothetical shocks.

	(A)		(B)		(C		(D)	
	Sale values		Business days		# of customers		Price	
Variable	Coef.	S.E	Coef.	S.E	Coef.	S.E	Coef.	S.E
Treat1*Year 2014	-0.295	0.801	-0.446	0.468	-2.150	1.289	-0.197	0.217
Treat2*Year 2014	0.047	0.151	0.163	0.121	-0.268	0.356	-0.014	0.056
Treat3*Year 2014	0.110	0.425	0.068	0.130	-0.414	0.845	0.035	0.041
Adjusted R2	0.900		0.393		0.509		0.374	
Treat1*Year 2015	-0.153	0.842	0.492	0.464	0.124	1.124	0.613	0.459
Treat2*Year 2015	-0.157	0.132	-0.009	0.074	-0.267	0.282	0.505	0.458
Treat3*Year 2015	-1.001	0.633	-0.331*	0.178	-0.143	0.958	-0.091	0.087
Adjusted R2	0.900		0.392		0.509		0.392	
Treat1*Year 2016	0.793	0.621	0.207	0.271	-0.032	0.941	-0.053	0.230
Treat2*Year 2016	0.024	0.107	-0.138	0.088	-0.486	0.316	-0.147	0.111
Treat3*Year 2016	0.325	0.549	-0.017	0.183	-0.817	0.836	0.107	0.078
Adjusted R2	0.900		0.392		0.509		0.379	

Note: The sample period used in estimation is between 2012 and 2016. The sample size is 5,237.

Competition Advantage

Given the main results, we ask why do non-farm enterprises have competition advantage against farms?

-- A Look at Labor Productivity !

Results on Labor Productivity

Table 5. Estimated DiD effect of labor productivity

Key variable	Coef.	S.E	Magnitude
	Productivity_total labor		
Treat1*Post	0.311**	0.125	13.7%
Treat2*Post	-0.016	0.095	-0.7%
Treat3*Post	0.274	0.307	12.0%
Adjusted R2	0.264		
	Productivity_farm labor		
Treat1*Post	0.158	2.767	0.9%
Treat2*Post	-1.528*	1.146	-8.3%
Treat3*Post	1.185	2.956	6.4%
Adjusted R2	0.572		
	Productivity_hired labor		
Treat1*Post	0.686**	0.355	23.5%
Treat2*Post	0.006	0.144	0.2%
Treat3*Post	0.258	0.382	8.9%
Adjusted R2	0.262		

Summary of Findings

- The reform of welcoming non-farm enterprises to home-stay market achieves its policy goal by increasing their sale values.
- However, this reform results in a direct competition effect on farm-stay agritourism.

-- reduction in sale values (magnitude is moderate, only 2%).

-- driven by the reduction in # of customers (2%) and price level (11%).

-- use price-cutting strategies to compete with non-farm home-stay firms.

-- non-farm enterprises enjoy competition advantages on hired labors.

- Non-farm restaurants benefit from the home-stay policy reform as well.

-- may be due to business diversification to run home-stays and food services.

- Policy targeting on home-stay has spillover impacts on restaurants, especially for non-farm enterprises.

To be continued…

- Distributional effect?
- Heterogeneity analysis?

Comments on the dataset

- A valuable dataset for agribusiness farms.
- The sample size is relatively small. Consider to accommodate sampling weights to increase external validation.
- The design of the questionnaires across different years should be consistent.
- Additional information from administrative profiles.

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- Excellent technical assistance provided by Lin Lin is acknowledged.
- The findings of this project do not reflect the view of the MOFF or Hitotsubashi university. The authors are responsible for any errors.

The END

Comments are welcome

Hope to see you in Japan !