Export Experience and the Choice of Invoice Currency: Evidence from Questionnaire Survey for Japanese SMEs

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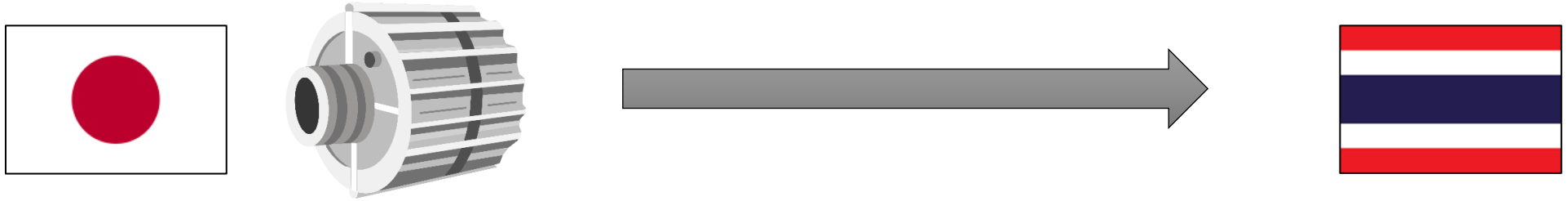
Very preliminary. Please do not quote.

Invoice currency



Producer's currency (PC)	Vehicle currency (VC)	Local currency (LC)
JPY	Third country's currency (ex. USD, EUR)	THB

- Invoice currency determines the exposure of the trade price to exchange rate fluctuations
- Trade-off of PCP for exporters: PCP frees exporters from the exchange rate risk but it may have negative effect on other contract terms such as unit export price

Support evidence of the "trade-off" from the Customs data of Thai firms' exports (Hayakawa, Matsuura, Laksanapanyakul and Yoshimi, 2019)

Unit export price is lower under PCP than FCP

Table A2. Export Prices: PCI versus Non-PCI

	(I)	(II)
1 for PCI (THB)	-0.230***	-0.473***
	[0.005]	[0.009]
Country-year FE	YES	YES
HS6-year FE	YES	YES
Firm-year FE	YES	NO
Number of observations	2,660,718	261,794
R-squared	0.6313	0.5419

Notes: The dependent variable is the log of the unit export price (export value divided by export quantity). The main independent variable is a dummy variable that takes the value of 1 if the invoicing currency is the PC and is 0 otherwise. ***, **, and * represent significance at the 1%, 5%, and 10% statistical levels, respectively. Parentheses contain the heteroscedasticity-consistent standard errors. We estimate by OLS. In column (I), we include all observations for the estimation, while the sample in column (II) is restricted only to observations on the first export to each firm.

What we do

◆Research question

- ☐How export experience affects exporters' choice of invoice currency?
- ☐Hayakawa et al. (2019): Same motivation, different approach

◆Questionnaire survey for Japanese SMEs

- ☐The effect of experience may be more clearly observed than large companies

◆Main hypothesis and tentative finding

- ☐Hypothesis: After export experience is accumulated, exporters are more likely to switch from PCP to FCP
  - ➢Export experience educates exporters in dealing with the exchange rate risk. Therefore, the disadvantage of FCP becomes smaller for experienced exporters
- ☐Our empirical results support the hypothesis.

Questionnaire survey for Japanese SMEs

- From 9 December 2019 to 31 January 2020
- For 2,100 SMEs which have export experience in these ten years
  - More concretely, in 2010, 2014 or 2018
  - The length and continuity of exporting differ across companies
- Response rate = 14.1% (296 SMEs)
- Main questions (that we use today):
  - Main invoice currency for each destination (China, Thailand, the US, Mexico, Euro area, the UK and "other countries"). Main type of product (finished, intermediate and other) and main type of importer (local subsidiary, affiliated company with capital relation, local distributer without capital relation, Japanese trading company, direct export to local customer and other) are answered for each destination.
  - The first year of exporting for each channel

[First export]

Company A

- **To China in 1998; Final product; To a local subsidiary; JPY (PCP)**
- **To the US: None**
- **To Euro area in 2005; Finished product; Through a trading company ; JPY (PCP)**

[Current export (in 2019)]

Company A

- **To China; Intermediate product; To a local subsidiary; USD (VCP)**
- **To the US: None**
- **To the Euro area; Finished product; Through a trading company ; EUR (LCP)**

- $Experience_f = 2019 - 1998 = 21$
- $Experience2_{fd} = 2019 - 1998 = 21$ (to China) and $2019 - 2005 = 14$ (to the Euro area)
  - To China: Type of product and invoice currency changed
  - To the US: No exports in the company's history
  - To the Euro area: Only invoice currency changed

Brief look at questionnaire results (1)

Table 1-1

What is the most frequently used currency in exporting?						
Country	Number of valid responses	Japanese yen	US dollar	Euro	Importer's currency	Other
China	175	126	35	0	13	1
Thailand	115	95	17	0	3	0
Other Asian countries	209	166	38	0	4	1
Oceania	11	8	2	0	1	0
Total	510	395	92	0	21	2

◆JPY is mostly used. (77.5%)

◆SMEs seem to have different preferences from large companies.

Brief look at questionnaire results (2)

Table 1-2

How did your company changed the main invoice currency from when the company start exporting?	
	Number of valid responses
Main currency has not changed much	257
Main currency changed from Japanese yen to foreign currencies	15
Main currency changed from foreign currencies to Japanese yen	11
Total	283

◆Not surprisingly, the inertia of invoice currency is significant. (90.8%)

◆But some respondents experienced changes in the main invoice currency. (9.2%)

Brief look at questionnaire results (3)

Table 1-3

How does your company usually determines the invoice currency in exporting?	
	Number of valid responses
The currency your company prefers is chosen	212
The currency your counterpart (importer) prefers is chosen	56
Other	15
Total	283

- Surprisingly, most respondents use the invoice currency that they prefer. (74.9%)
- Importer's inclination has an influence. (19.8%)

“Firm(*f*)-destination(*d*)-level” analysis: Estimation (1)

◆(1) $PCP1_{fd} = \beta_0 + \beta_1 Experience_f + \beta_2 BP_f + \beta_3 CityBank_f + \beta_4 \ln Emp_f + \beta_5 TradingCompany_{fd} + \beta_6 IntraGroup_{fd} + FE_{ir} + \varepsilon_{fd}$

- $PCP1_{fd}$: Dummy variable which takes 1 if the main invoice currency is Japanese yen.
- $Experience_f$: 2019 – the year of first export
- $Experience2_{fd}$: 2019 – the year of first export (for each destination)
- BP_f: Takes 3 if the SME chooses “The currency your company prefers is chosen” to the question presented in the bottom panel of Table 1. BP_f takes 2 and 1 for “Other” and “The currency your counterpart (importer) prefers is chosen,” respectively.
- $BP2_f$: Takes 1 for $BP_f = 3$ and 0 for $BP_f = 1\ or\ 2$.
- $CityBank_f$ = Dummy variable which takes 1 if the main bank is one of city banks (Mizuho, Mitsubishi UFJ, Sumitomo Mitsui, Resona or Saitama Resona)
- $\ln lProd_f$: $\ln Sales_f - \ln Emp_f$
- $TradingCompany_{fd}$: Trading company dummy
- $IntraGroup_{fd}$: Intra-group dummy

“Firm(*f*)-destination(*d*)-level” analysis: Estimation (2) and (3)

◆(2) $SWITCH_{fd} = \gamma_0 + \gamma_1 Experience_f + \gamma_2 DifferentImp_{fd} + \gamma_3 DifferentProd_{fd} + \gamma_4 BP_f + \gamma_5 CityBank_f + FE_{ir} + \epsilon_{fd}$

- $SWITCH_{fd}$: Dummy variable which takes 1 if the invoice currency has been switched (**from PC to FC**) from first export to current export.
- $DifferentImp_{fd}$: Dummy for the case where the type of importer changes
- $DifferentProd_{fd}$: Dummy for the case where the type of product changes

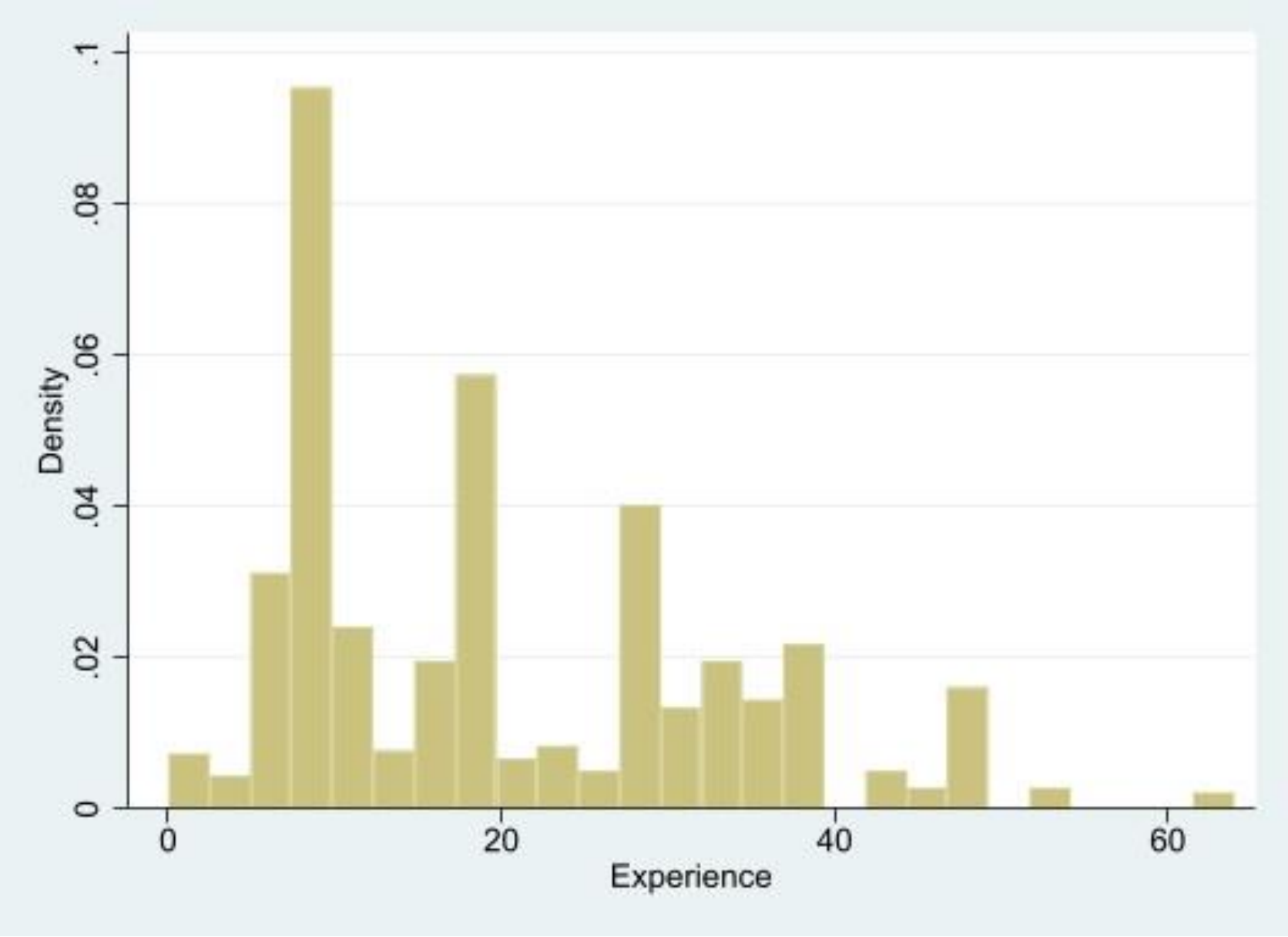
◆(3) $SWITCH2_{fd} = \theta_0 + \theta_1 Experience_f + \theta_2 DifferentImp_{fd} + \theta_3 DifferentProd_{fd} + \theta_4 BP_f + \theta_5 CityBank_f + FE_{ir} + \delta_{fd}$

- $SWITCH2_{fd}$: Dummy variable which takes 1 if the invoice currency has been switched (**from FC to PC**) from first export to current export.

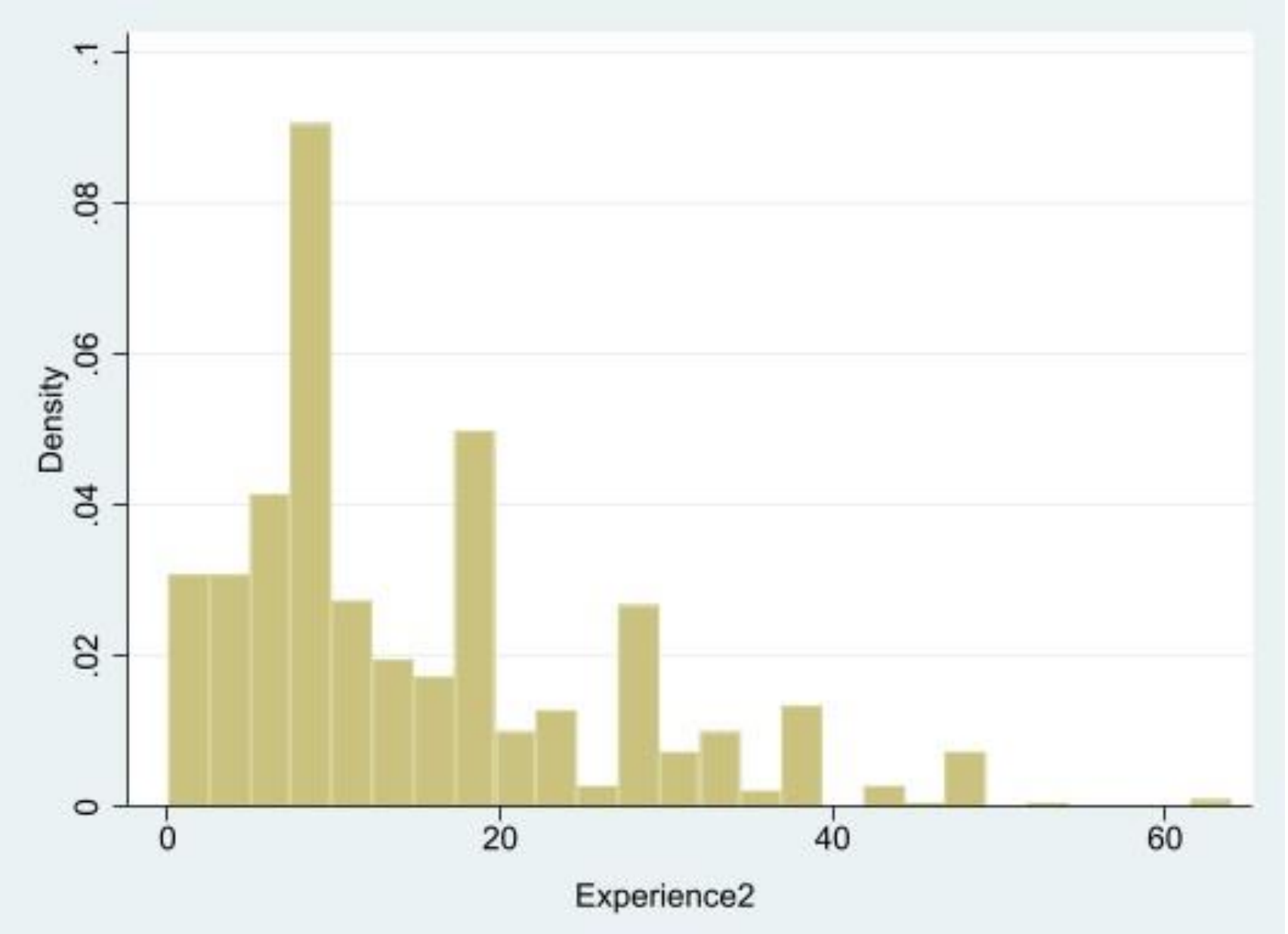
Summary statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
PCP0	727	0.68	0.47	0.00	1.00
LCP0	727	0.11	0.31	0.00	1.00
PCP1	727	0.65	0.48	0.00	1.00
LCP1	727	0.11	0.31	0.00	1.00
SWITCH	727	0.04	0.19	0.00	1.00
SWITCH2	727	0.03	0.17	0.00	1.00
Experience	727	20.43	13.16	0.00	64.00
Experience2	725	15.07	11.51	0.00	64.00
BP	724	2.57	0.78	1.00	3.00
BP2	724	0.75	0.44	0.00	1.00
Citybank	727	0.44	0.50	0.00	1.00
ln(Emp)	727	4.48	1.19	0.00	7.47
ln(Sales)	727	7.92	1.34	4.65	11.56
ln(Prod)	727	3.44	0.58	2.24	6.74
TradingCompany	727	0.23	0.42	0.00	1.00
IntraGroup	727	0.21	0.41	0.00	1.00
DifferentImp	727	0.25	0.44	0.00	1.00
DifferentProd	727	0.16	0.37	0.00	1.00

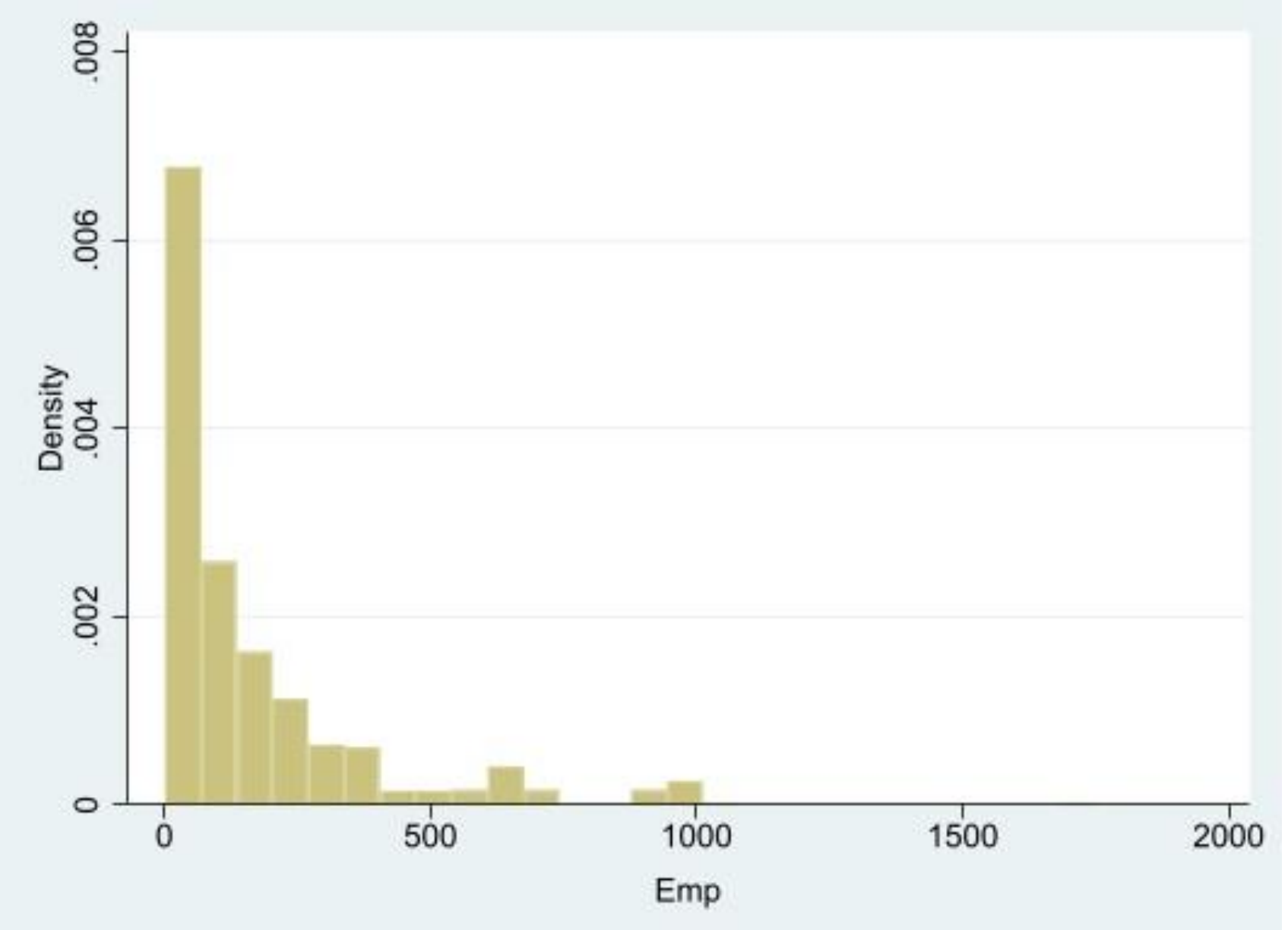
Distribution of *Experience*



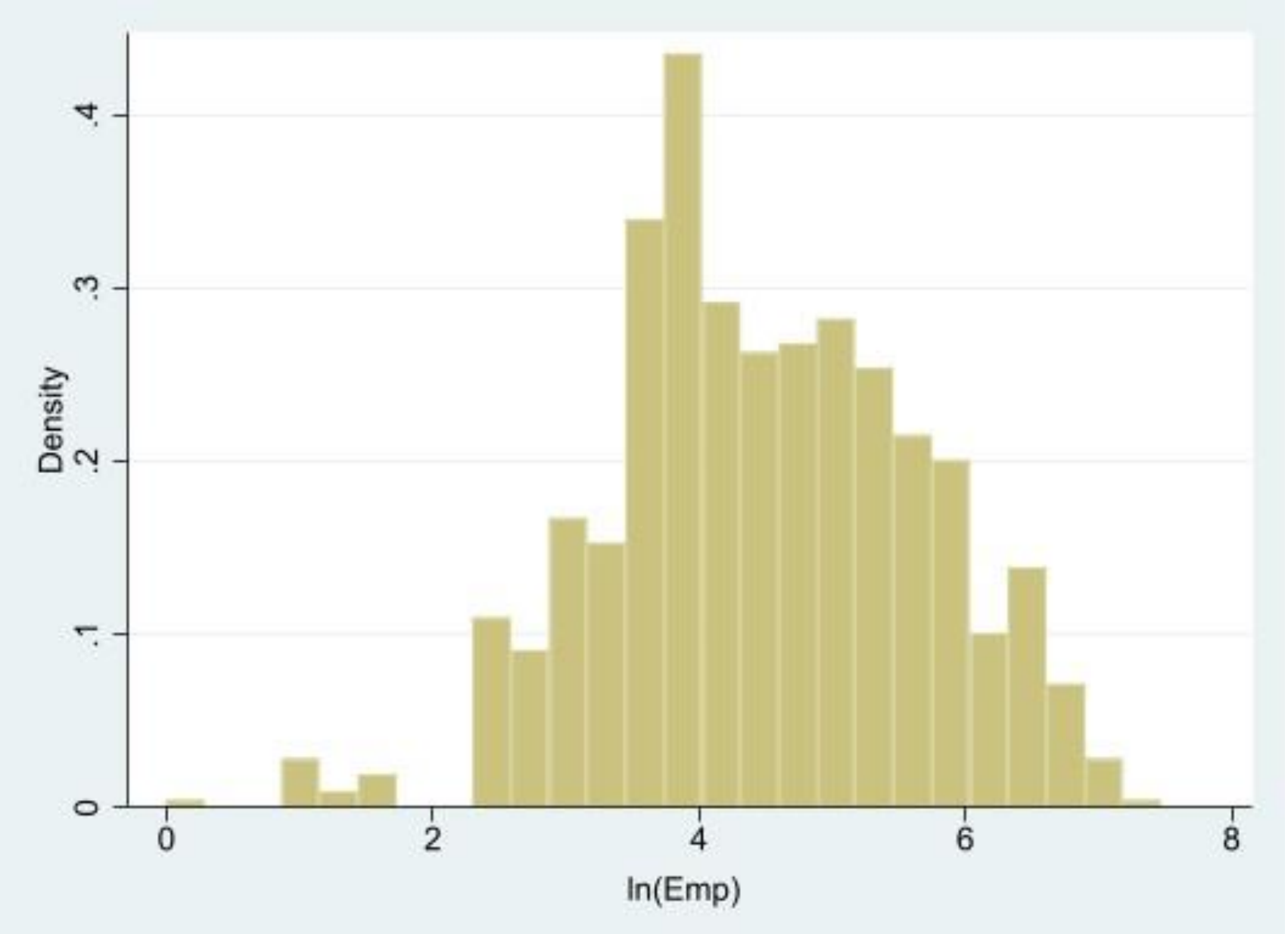
Distribution of *Experience2*



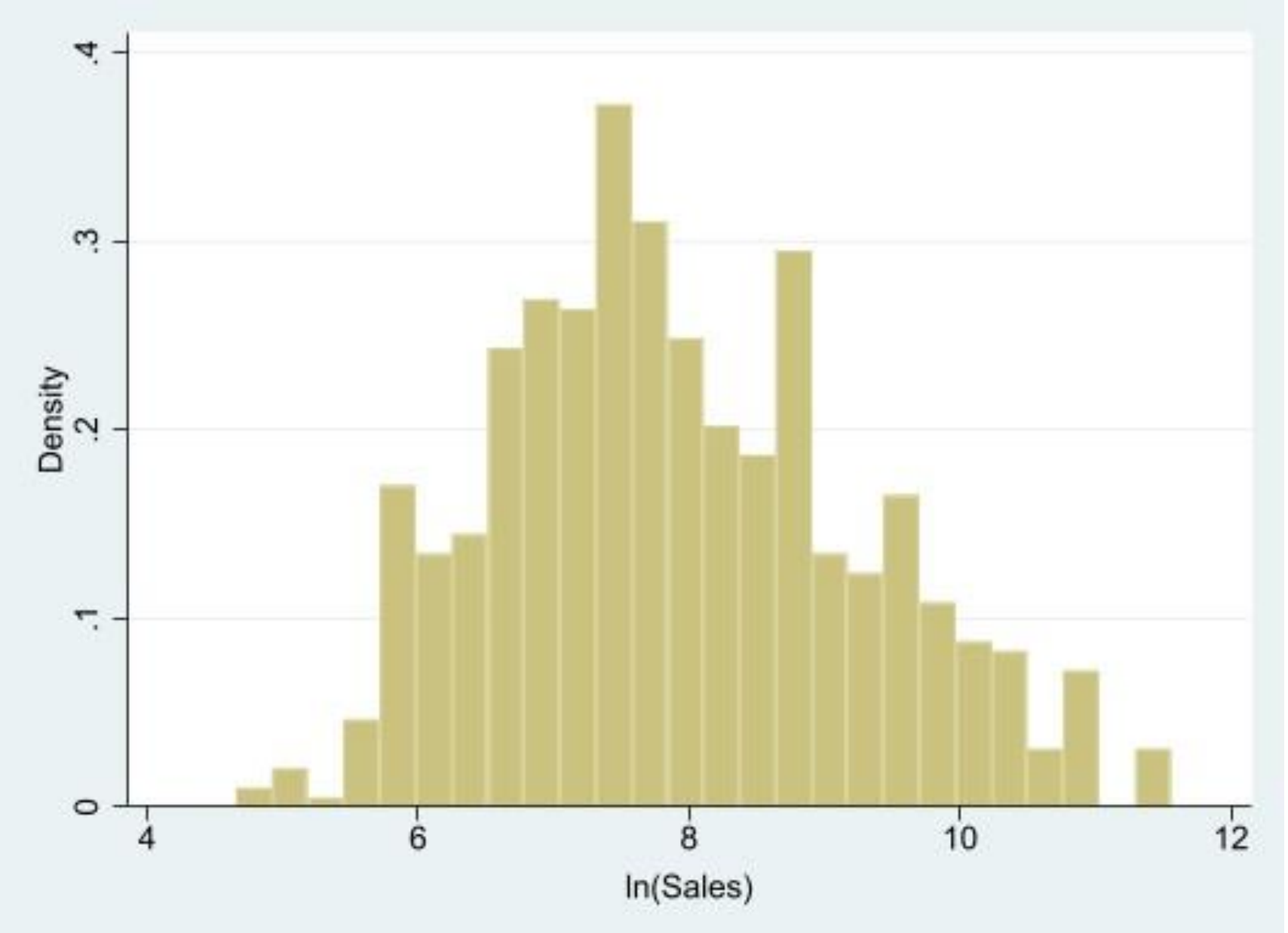
Distribution of *Emp*



Distribution of *ln(Emp)*



Distribution of *ln(Sales)*



Distribution of *ln(Prod)*

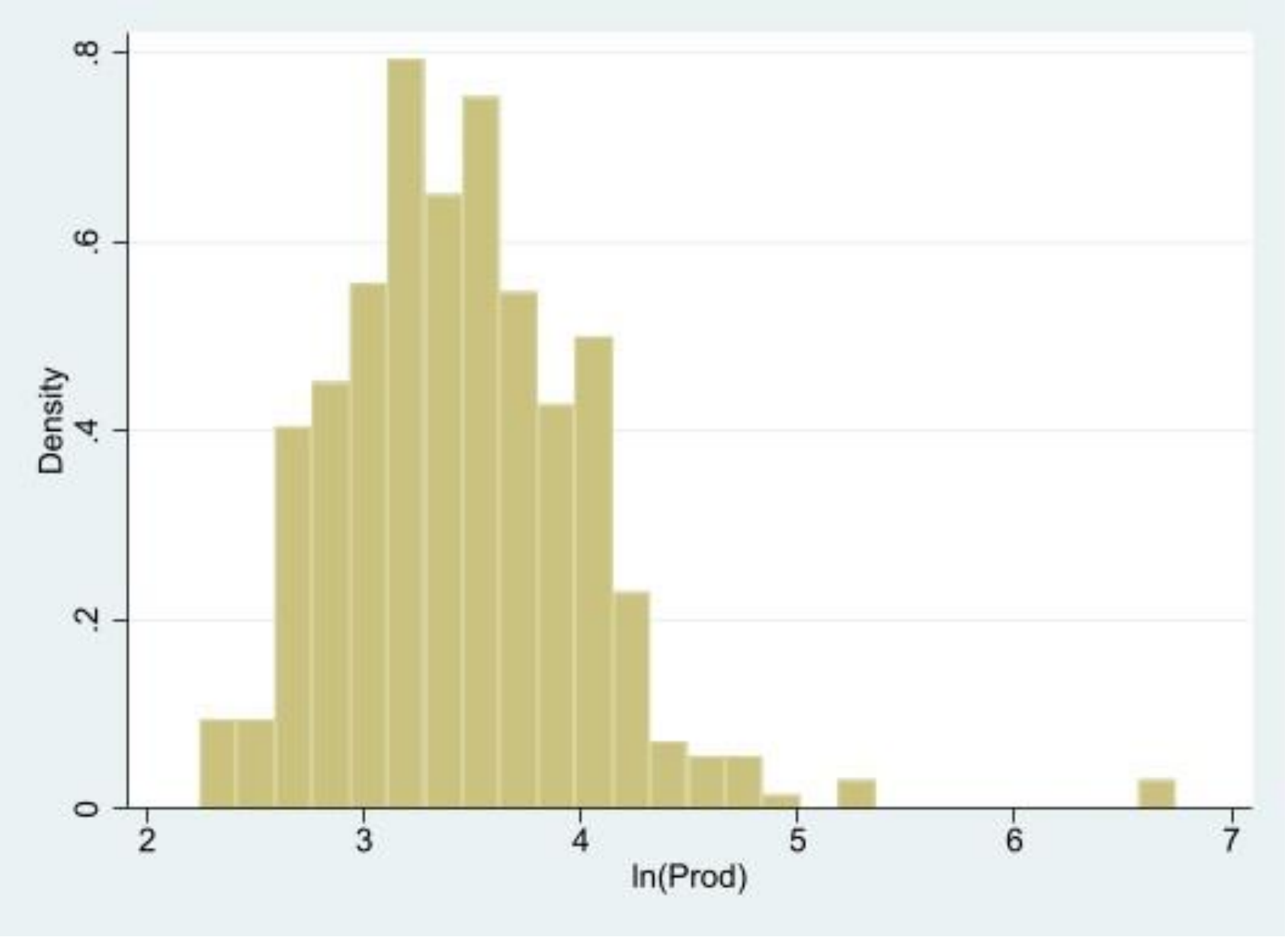


Table 3. Determinants of the probability of PCP in current exports (Dependent variable: *PCP1*)

	(I)	(II)	(III)	(IV)	(V)	(VI)	(VII)	(VIII)	(IX)
	Probit	Probit	Probit	OLS	Probit	Probit	Probit	Probit	Probit
Experience	0.003	0.006	0.007*	0.002	0.008	0.007	0.006	0.011**	
	(0.004)	(0.004)	(0.004)	(0.002)	(0.005)	(0.005)	(0.005)	(0.005)	
Experience2									0.006
									(0.005)
BP		0.554***			0.595***	0.595***	0.602***		0.605***
		(0.066)			(0.075)	(0.075)	(0.075)		(0.075)
BP2								1.058***	
								(0.133)	
CityBank		-0.050			-0.068	-0.080	-0.126	-0.049	-0.065
		(0.110)			(0.131)	(0.130)	(0.128)	(0.131)	(0.131)
ln (Emp)		-0.072			-0.083			-0.101	-0.072
		(0.049)			(0.064)			(0.064)	(0.063)
ln (Sales)						-0.058			
						(0.053)			
ln (Prod)							0.013		
							(0.114)		
TradingCompany		0.890***			0.949***	0.942***	0.949***	0.967***	0.932***
		(0.146)			(0.191)	(0.191)	(0.194)	(0.190)	(0.192)
IntraGroup		-0.007			-0.050	-0.057	-0.087	-0.038	-0.061
		(0.131)			(0.149)	(0.148)	(0.144)	(0.149)	(0.150)
Industry*Region FE	NO	NO	YES	YES	YES	YES	YES	YES	YES
No. Obs.	724	724	649	617	646	646	646	646	644
R-squared	0.001	0.150	0.160	0.148	0.282	0.281	0.280	0.281	0.280

Table 4. Determinants of the probability that the invoice currency has been changed from PC (in first exports) to FC (in current exports) (Dependent variable: *SWITCH*)

	(I)	(II)	(III)	(IV)	(V)	(VI)	(VII)	(VIII)
	Probit	Probit	Probit	OLS	Probit	Probit	Probit	Probit
Experience	0.021***	0.016**	0.031***	0.002*	0.029***	0.033***		0.029***
	(0.007)	(0.007)	(0.009)	(0.001)	(0.008)	(0.010)		(0.010)
Experience2							0.031***	
							(0.010)	
DifferentImp		1.009***			1.708***	1.664***	1.628***	1.651***
		(0.216)			(0.405)	(0.433)	(0.393)	(0.427)
DifferentProd		-1.185***			-1.505***	-1.244**	-1.612***	-1.305**
		(0.442)			(0.560)	(0.512)	(0.590)	(0.508)
BP						-0.805***		
						(0.198)		
BP2								-1.337***
								(0.358)
CityBank						0.717**		0.571*
						(0.328)		(0.316)
Industry*Region FE	NO	NO	YES	YES	YES	YES	YES	YES
No. Obs.	496	496	265	406	265	263	265	263
R-squared	0.048	0.149	0.257	0.040	0.405	0.507	0.399	0.498

Table 4. Determinants of the probability that the invoice currency has been changed from PC (in first exports) to FC (in current exports) (Dependent variable: *SWITCH*)

	(I)	(II)	(III)	(IV)	(V)	(VI)	(VII)	(VIII)
	Probit	Probit	Probit	OLS	Probit	Probit	Probit	Probit
Experience	0.004	0.004	0.009	0.001	0.004	0.002		0.003
	(0.009)	(0.009)	(0.016)	(0.001)	(0.017)	(0.017)		(0.017)
Experience2							0.010	
							(0.021)	
DifferentImp		0.295			0.365	0.421	0.367	0.389
		(0.286)			(0.518)	(0.536)	(0.494)	(0.524)
DifferentProd		-0.241			0.156	0.091	0.142	0.108
		(0.349)			(0.549)	(0.561)	(0.538)	(0.559)
BP						0.084		
						(0.181)		
BP2								0.086
								(0.337)
CityBank						-0.095		-0.103
						(0.396)		(0.392)
Industry*Region FE	NO	NO	YES	YES	YES	YES	YES	YES
No. Obs.	231	231	67	148	67	67	67	67
R-squared	0.002	0.011	0.069	0.063	0.084	0.086	0.085	0.085

Summary

- Empirical results
  - PCP is more likely to be chosen when the invoice currency is mostly chosen by the exporter (i.e. the exporter has dominating bargaining power).
  - PCP is more likely to be chosen when SMEs export through trading companies.
  - Conditional on cases where SMEs started exporting under PCP, exporters who have longer experience of exporting tend to switch the invoice currency from PCP to FCP.
  - Exporters who have larger bargaining power or whose main bank is not a city bank tend to sustain PCP.
- Future works
  - Heckman estimation, more explanatory variables capturing the changes in firm status between first and current exports, and so on.