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## Regression Discontinuity (RD) Design: Regression Results and Plots

*Jinmahn Jo (ID#: 915528897)*

# 1 Regression Results

Table 1: Regression Results: RD Design, Linear Models 2% Bandwidth

<i>Dependent variable:</i>										
Daily Average Consumption in Period 1 (kWh/Day)										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(10)	
1[Treated]	0.167*** (0.043)	0.119*** (0.041)	0.127*** (0.034)	0.084** (0.037)	0.074** (0.032)	0.171*** (0.043)	0.131*** (0.041)	0.133*** (0.034)	0.089** (0.038)	0.077** (0.032)
NC0	0.080*** (0.018)	0.078*** (0.018)	0.044*** (0.015)	0.140*** (0.016)	0.108*** (0.014)	0.098*** (0.025)	0.132*** (0.024)	0.072*** (0.020)	0.161*** (0.022)	0.121*** (0.019)
NC0 * 1[Treated]						-0.038 (0.037)	-0.117*** (0.035)	-0.059** (0.030)	-0.047 (0.032)	-0.029 (0.028)
Daily Average CDDs	0.785*** (0.003)	1.056*** (0.003)	1.227*** (0.009)	1.227*** (0.008)		0.785*** (0.003)	1.056*** (0.003)	1.227*** (0.009)	1.227*** (0.008)	
Daily Average HDDs	0.295*** (0.002)	0.394*** (0.002)	0.513*** (0.007)	0.476*** (0.006)		0.295*** (0.002)	0.394*** (0.002)	0.513*** (0.007)	0.476*** (0.006)	
Bandwidth	2%	2%	2%	2%	2%	2%	2%	2%	2%	
FEs: Account-Premise IDs	No	No	Yes	No	Yes	No	No	Yes	No	Yes
FEs: Billing Year-Month	No	No	No	Yes	Yes	No	No	No	Yes	Yes
Observations	527,730	527,730	527,730	527,730	527,730	527,730	527,730	527,730	527,730	527,730
R <sup>2</sup>	0.0005	0.095	0.629	0.250	0.677	0.0005	0.095	0.629	0.250	0.677
Adjusted R <sup>2</sup>	0.0005	0.095	0.509	0.250	0.572	0.0005	0.095	0.509	0.250	0.572

*Note:*

\*p<0.1; \*\*p<0.05; \*\*\*p<0.01

## Regression Discontinuity (RD) Design: Regression Results and Plots

*Jinmahn Jo (ID#: 915528897)*

Table 2: Regression Results: RD Design, Linear Models 5% Bandwidth

<i>Dependent variable:</i>										
Daily Average Consumption in Period 1 (kWh/Day)										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1[Treated]	-0.121*** (0.024)	-0.172*** (0.023)	0.068*** (0.018)	-0.089*** (0.021)	0.039** (0.017)	-0.116*** (0.024)	-0.167*** (0.023)	0.069*** (0.018)	-0.085*** (0.021)	0.040** (0.017)
NC0	0.181*** (0.004)	0.168*** (0.004)	0.081*** (0.003)	0.202*** (0.004)	0.132*** (0.003)	0.205*** (0.006)	0.191*** (0.005)	0.086*** (0.004)	0.217*** (0.005)	0.135*** (0.004)
NC0 * 1[Treated]						-0.049*** (0.008)	-0.048*** (0.008)	-0.010* (0.006)	-0.031*** (0.007)	-0.005 (0.006)
Daily Average CDDs	0.787*** (0.002)	1.070*** (0.002)	1.248*** (0.005)	1.252*** (0.004)		0.787*** (0.002)	1.070*** (0.002)	1.248*** (0.005)	1.252*** (0.004)	
Daily Average HDDs	0.298*** (0.001)	0.403*** (0.001)	0.522*** (0.004)	0.489*** (0.003)		0.298*** (0.001)	0.403*** (0.001)	0.522*** (0.004)	0.489*** (0.003)	
Bandwidth	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
FEs: Account-Premise IDs	No	No	Yes	No	Yes	No	No	Yes	No	Yes
FEs: Billing Year-Month	No	No	No	Yes	Yes	No	No	No	Yes	Yes
Observations	1,699,554	1,699,554	1,699,554	1,699,554	1,699,554	1,699,554	1,699,554	1,699,554	1,699,554	1,699,554
R <sup>2</sup>	0.004	0.096	0.570	0.252	0.625	0.004	0.096	0.570	0.252	0.625
Adjusted R <sup>2</sup>	0.004	0.096	0.505	0.252	0.568	0.004	0.096	0.505	0.252	0.568

*Note:*

\*p<0.1; \*\*p<0.05; \*\*\*p<0.01

## Regression Discontinuity (RD) Design: Regression Results and Plots

**Jinmahn Jo (ID#: 915528897)**

Table 3: Regression Results: RD Design, Linear Models 20% Bandwidth

<i>Dependent variable:</i>										
Daily Average Consumption in Period 1 (kWh/Day)										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1[Treated]	-0.404*** (0.012)	-0.537*** (0.012)	-0.047*** (0.009)	-0.296*** (0.011)	-0.031*** (0.009)	-0.401*** (0.012)	-0.531*** (0.012)	-0.046*** (0.009)	-0.292*** (0.011)	-0.029*** (0.009)
NC0	0.185*** (0.001)	0.167*** (0.001)	0.100*** (0.0004)	0.203*** (0.0005)	0.146*** (0.0004)	0.189*** (0.001)	0.174*** (0.001)	0.101*** (0.001)	0.208*** (0.001)	0.149*** (0.001)
NC0 * 1[Treated]						-0.009*** (0.001)	-0.015*** (0.001)	-0.002*** (0.001)	-0.009*** (0.001)	-0.006*** (0.001)
Daily Average CDDs	0.878*** (0.001)	1.106*** (0.001)	1.287*** (0.003)	1.300*** (0.002)		0.878*** (0.001)	1.106*** (0.001)	1.287*** (0.003)	1.300*** (0.002)	
Daily Average HDDs	0.364*** (0.001)	0.434*** (0.0005)	0.591*** (0.002)	0.555*** (0.002)		0.364*** (0.001)	0.434*** (0.0005)	0.591*** (0.002)	0.555*** (0.002)	
Bandwidth	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%
FEs: Account-Premise IDs	No	No	Yes	No	Yes	No	No	Yes	No	Yes
FEs: Billing Year-Month	No	No	No	Yes	Yes	No	No	No	Yes	Yes
Observations	6,555,533	6,555,533	6,555,533	6,555,533	6,555,533	6,555,533	6,555,533	6,555,533	6,555,533	6,555,533
R <sup>2</sup>	0.052	0.153	0.524	0.286	0.587	0.052	0.153	0.524	0.286	0.587
Adjusted R <sup>2</sup>	0.052	0.153	0.503	0.286	0.568	0.052	0.153	0.503	0.286	0.568

Note:

\*p<0.1; \*\*p<0.05; \*\*\*p<0.01

## Regression Discontinuity (RD) Design: Regression Results and Plots

*Jinmahn Jo (ID#: 915528897)*

Table 4: Regression Results: RD Design, Linear Models 50% Bandwidth

<i>Dependent variable:</i>										
Daily Average Consumption in Period 1 (kWh/Day)										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1[Treated]	-0.373*** (0.010)	-0.711*** (0.010)	-0.494*** (0.008)	-0.235*** (0.009)	-0.207*** (0.008)	-0.372*** (0.010)	-0.711*** (0.010)	-0.503*** (0.008)	-0.234*** (0.009)	-0.213*** (0.008)
NC0	0.167*** (0.0002)	0.145*** (0.0002)	0.121*** (0.0002)	0.179*** (0.0002)	0.158*** (0.0002)	0.161*** (0.0003)	0.147*** (0.0003)	0.130*** (0.0003)	0.172*** (0.0003)	0.164*** (0.0002)
NC0 * 1[Treated]						0.010*** (0.0004)	-0.002*** (0.0004)	-0.017*** (0.0004)	0.012*** (0.0004)	-0.012*** (0.0003)
Daily Average CDDs		1.017*** (0.001)	1.114*** (0.001)	1.356*** (0.003)	1.360*** (0.002)		1.017*** (0.001)	1.115*** (0.001)	1.356*** (0.003)	1.359*** (0.002)
Daily Average HDDs		0.427*** (0.001)	0.451*** (0.0005)	0.615*** (0.002)	0.587*** (0.002)		0.427*** (0.001)	0.451*** (0.0005)	0.615*** (0.002)	0.586*** (0.002)
Bandwidth	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%
FEs: Account-Premise IDs	No	No	Yes	No	Yes	No	No	Yes	No	Yes
FEs: Billing Year-Month	No	No	No	Yes	Yes	No	No	No	Yes	Yes
Observations	8,263,066	8,263,066	8,263,066	8,263,066	8,263,066	8,263,066	8,263,066	8,263,066	8,263,066	8,263,066
R <sup>2</sup>	0.172	0.278	0.526	0.366	0.589	0.172	0.278	0.527	0.366	0.589
Adjusted R <sup>2</sup>	0.172	0.278	0.516	0.366	0.580	0.172	0.278	0.516	0.366	0.580

*Note:*

\*p<0.1; \*\*p<0.05; \*\*\*p<0.01

## Regression Discontinuity (RD) Design: Regression Results and Plots

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Table 5: Regression Results: RD Design, Linear Models without Bandwidth

<i>Dependent variable:</i>										
Daily Average Consumption in Period 1 (kWh/Day)										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1[Treated]	-0.186*** (0.008)	-1.198*** (0.008)	-0.840*** (0.007)	0.002 (0.007)	0.240*** (0.007)	-0.385*** (0.009)	-1.421*** (0.008)	-1.418*** (0.008)	-0.150*** (0.008)	-0.272*** (0.007)
NC0	0.161*** (0.0001)	0.150*** (0.0001)	0.133*** (0.0001)	0.168*** (0.0001)	0.153*** (0.0001)	0.173*** (0.0002)	0.164*** (0.0002)	0.171*** (0.0002)	0.177*** (0.0002)	0.188*** (0.0002)
NC0 * 1[Treated]						-0.015*** (0.0003)	-0.016*** (0.0002)	-0.046*** (0.0002)	-0.011*** (0.0002)	-0.042*** (0.0002)
Daily Average CDDs	1.118*** (0.001)	1.160*** (0.001)	1.512*** (0.002)	1.516*** (0.002)		1.118*** (0.001)	1.160*** (0.001)	1.511*** (0.002)	1.509*** (0.002)	
Daily Average HDDs	0.478*** (0.001)	0.489*** (0.001)	0.610*** (0.002)	0.597*** (0.002)		0.476*** (0.001)	0.485*** (0.001)	0.610*** (0.002)	0.596*** (0.002)	
Bandwidth	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FEs: Account-Premise IDs	No	No	Yes	No	Yes	No	No	Yes	No	Yes
FEs: Billing Year-Month	No	No	No	Yes	Yes	No	No	No	Yes	Yes
Observations	9,023,712	9,023,712	9,023,712	9,023,712	9,023,712	9,023,712	9,023,712	9,023,712	9,023,712	9,023,712
R <sup>2</sup>	0.376	0.464	0.599	0.522	0.648	0.376	0.464	0.601	0.522	0.650
Adjusted R <sup>2</sup>	0.376	0.464	0.592	0.522	0.642	0.376	0.464	0.594	0.522	0.644

Note:

\*p<0.1; \*\*p<0.05; \*\*\*p<0.01

## 2 Plots

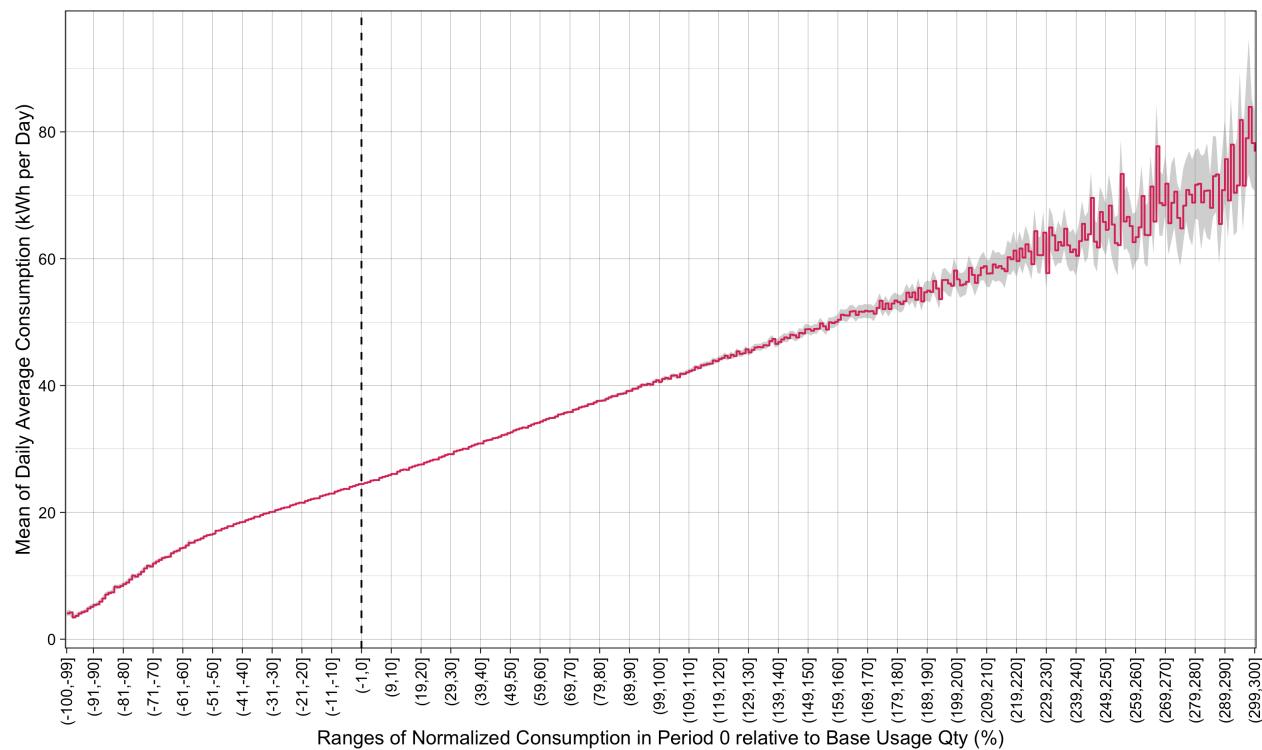


Figure 1: Mean of Daily Average Consumption by Ranges of Normalized Consumption in Period 0 (%)

## Regression Discontinuity (RD) Design: Regression Results and Plots

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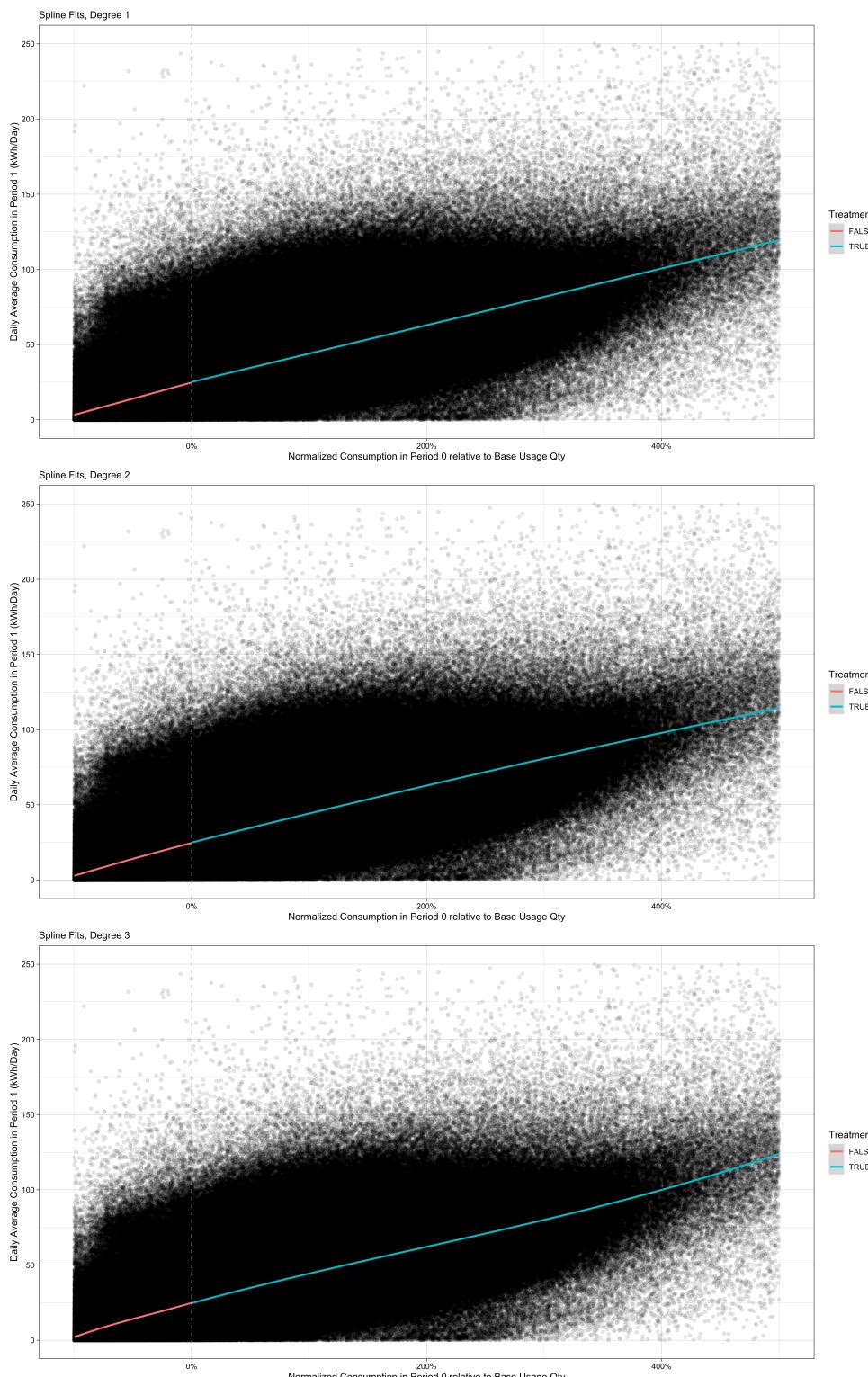


Figure 2: Scatter Plots with Spline Fits

Notes: Horizontal axis is normalized consumption in period 0 relative to base usage qty(%).

**Regression Discontinuity (RD) Design: Regression Results and Plots**

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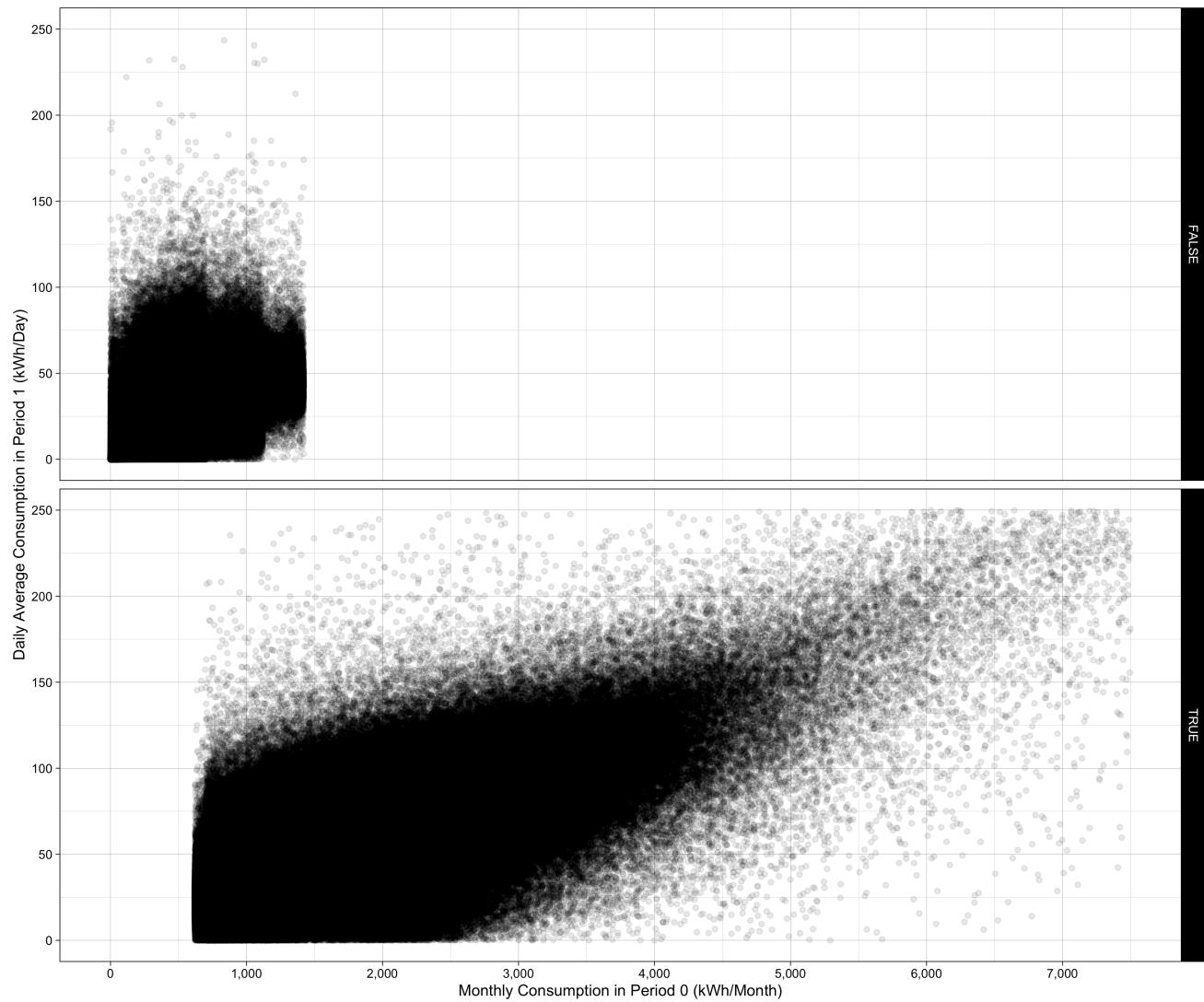


Figure 3: Scatter Plot by Treatment Status

*Notes: Horizontal axis is monthly consumption in Period 0 (kWh/Month).*

## Regression Discontinuity (RD) Design: Regression Results and Plots

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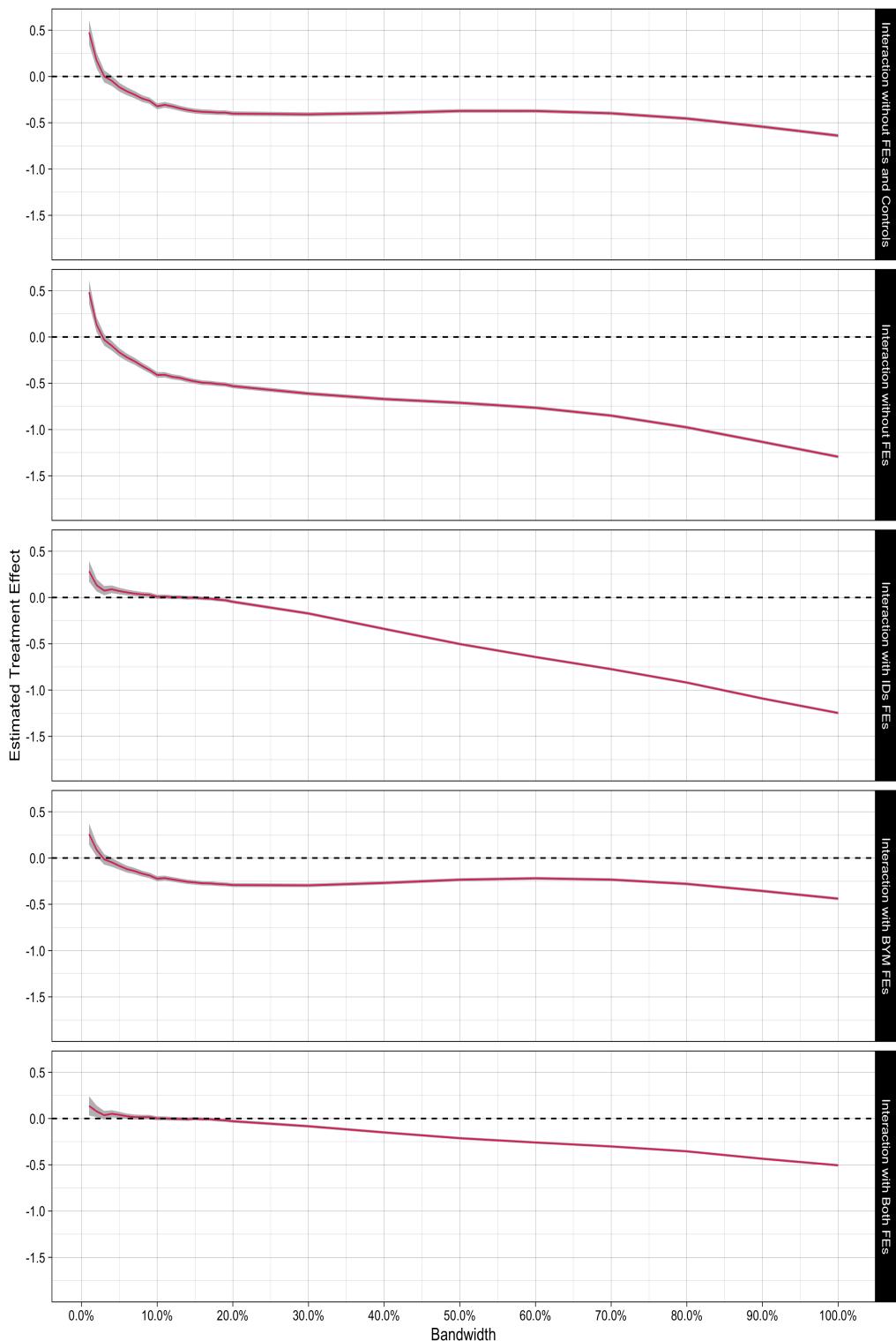


Figure 4: Estimated Treatment Effect by Bandwidth, Linear Model with Interaction

*Notes: With 95% confidence interval.*