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A Gravity Model of Softwood Lumber Trade: An Application
to the Canada-U.S. Trade Dispute- Supplementary Material¹

by

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This online appendix supplementary results associated “A Gravity Model of Softwood Lumber Trade: An Application to the Canada-U.S. Trade Dispute”.

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Descriptive Statistics

Table S1: Descriptive Statistics: Exports to the U.S., China, & Japan

Variable	Unit	Obs	Mean	Std. Dev.	Min	Max
Quantity	'000s m ³	1820	255.26	379.51	0	2,192.38
Price	C\$/m ³	1820	187.97	166.54	0	2,940.11
Value	C\$×10 ⁶	1820	47.68	74.07	0	418.10
GDP Canada	C\$×10 ⁹	1820	265.77	213.16	35.00	898.75
GDP China	C\$×10 ⁹	364	2,695.00	1,261.00	853.30	5,196.00
GDP Japan	C\$×10 ⁹	364	1,478.00	156.20	1,144.00	1,738.00
GDP China&Japan	C\$×10 ⁹	364	4,173.00	1,355.00	2,061.00	6,840.00
U.S. Dollar	USD/CAD	1092	0.88	0.10	0.72	1.04
Chinese Yuan	CNY/CAD	364	5.84	0.74	4.69	7.55
Japanese Yen	JPY/CAD	364	88.91	9.96	73.11	115.67
Distances	km	1820	5,162.09	3,731.14	294.56	11,335.29
SWL	=1 if in place	1820	0.13	0.33	0	1.00
Tariff	%	1820	2.74	5.23	0.01	22.50

Source: Authors' calculations based on data collection.

Regression Models

The following regression equations/models are reported in Tables 5 through 8 in the text.

Table S2: Description of the variables used in the models

<i>Notation</i>	<i>Variable</i>	<i>Notation</i>	<i>Variable</i>
$W_{ij,t}$	Export quantity or value	θ_{ij}	Trade paired effect
$GDP_{i,t}$	Importer's GDP	γ_t	Time fixed effect
$GDP_{j,t}$	Exporter's GDP	$Rm_{x_{i,t}}$	Exporter's Remoteness effect
SWL_t	SWL tariff 2017	$Rm_{m_{j,t}}$	importer's Remoteness effect
R_{ij}	Distances	$\pi_{i,t}$	Importer-time fixed effect
$\tau_{ij,t}$	U.S. SWL tariff	$\chi_{j,t}$	Exporter-time fixed effect

OLS Specifications

Export to U.S. Only

1. Basic

$$\ln W_{ij,t} = \beta_1 \ln GPP_{i,t} + \beta_2 \ln GDP_{j,t} + \beta_3 \ln SWL_t + \beta_4 \ln R_{ij} + \delta \ln \tau_{ij,t} + u_{ij,t} \quad \text{Model (1)}$$

2. Paired FE

$$\ln W_{ij,t} = \beta_1 \ln GDP_{i,t} + \beta_2 \ln GDP_{j,t} + \beta_3 \ln SWL_t + \delta \ln \tau_{ij,t} + \theta_{ij} + u_{ij,t} \quad \text{Model (2)}$$

3. Time FE

$$\ln W_{ij,t} = \beta_1 \ln GDP_{i,t} + \beta_2 \ln GDP_{j,t} + \beta_3 \ln R_{ij} + \delta \ln \tau_{ij,t} + \gamma_t + u_{ij,t} \quad \text{Model (3)}$$

4. Paired & Time FE

$$\ln W_{ij,t} = \beta_1 \ln GDP_{i,t} + \beta_2 \ln GDP_{j,t} + \delta \ln \tau_{ij,t} + \theta_{ij} + \gamma_t + u_{ij,t} \quad \text{Model (4)}$$

PPML Specifications

5. Paired & Time FE:

$$W_{ij,t} = \exp(\beta_1 \ln GDP_{i,t} + \beta_2 \ln GDP_{j,t} + \delta \ln \tau_{ij,t} + \theta_{ij} + \gamma_t) \times u_{ij,t} \quad \text{Model (5)}$$

6. Remoteness Index

$$W_{ij,t} = \exp(\beta_1 \ln GDP_{i,t} + \beta_2 \ln GDP_{j,t} + \beta_3 \ln SWL_t + \delta \ln \tau_{ij,t} + \beta_4 \ln Rm_x_{i,t} + \beta_5 \ln Rm_m_{j,t} + \theta_{ij}) \times u_{ij,t} \quad \text{Model (6)}$$

Export to U.S. China & Japan:

7. Paired & Time FE

$$W_{ij,t} = \exp(\beta_1 \ln GDP_{i,t} + \beta_2 \ln GDP_{j,t} + \beta_3 \ln SWL_{j,t} + \delta \ln \tau_{ij,t} + \theta_{ij} + \gamma_t) \times u_{ij,t} \quad \text{Model (7)}$$

8. Remoteness Index

$$W_{ij,t} = \exp(\beta_1 \ln GDP_{i,t} + \beta_2 \ln GDP_{j,t} + \beta_3 \ln SWL_{j,t} + \delta \ln \tau_{ij,t} + \beta_4 \ln Rm_x_{i,t} + \beta_5 \ln Rm_m_{j,t} + \theta_{ij}) \times u_{ij,t} \quad \text{Model (8)}$$

9. Exporter-time (or Importer-time) FE

$$W_{ij,t} = \exp(\delta \ln \tau_{ij,t} + \pi_{i,t} + \chi_{j,t} + \theta_{ij}) \times u_{ij,t} \quad \text{Model (9)}$$

Export to U.S. & China-Japan as one region:

10. Paired & Time FE

$$W_{ij,t} = \exp(\beta_1 \ln GDP_{i,t} + \beta_2 \ln GDP_{j,t} + \beta_3 \ln SWL_{j,t} + \delta \ln \tau_{ij,t} + \theta_{ij} + \gamma_t) \times u_{ij,t} \quad \text{Model (10)}$$

11. Remoteness Index

$$W_{ij,t} = \exp(\beta_1 \ln GDP_{i,t} + \beta_2 \ln GDP_{j,t} + \beta_3 \ln SWL_{j,t} + \delta \ln \tau_{ij,t} + \beta_4 \ln Rm_{x_{i,t}} + \beta_5 \ln Rm_{m_{j,t}} + \theta_{ij}) \times u_{ij,t} \quad \text{Model (11)}$$

12. Exporter-time (or Importer-time) FE

$$W_{ij,t} = \exp(\delta \ln \tau_{ij,t} + \pi_{i,t} + \chi_{j,t} + \theta_{ij}) \times u_{ij,t} \quad \text{Model (12)}$$

Additional Regression Results

Table S3: Doubled Distances Regression Results with Export Quantity as the Dependent Variable, Canadian Exports to the China-Japan Region, Varied Distances ^a

Variable	(10)	Doubled	(11)	Doubled	(12)	Doubled
	Original Paired&Time e FE	Paired&Time e FE	Original Remoteness	Paired Remoteness	Original Exp-time or Imp-time FE ^b	Paired Exp-time or Imp-time FE ^b
ln GDP _m	0.4650 (0.4243)	0.4650 (0.4243)	0.6840** (0.3345)	0.6840*** (0.3345)		
ln GDP _x	-1.7035*** (0.5064)	-1.7035*** (0.5064)	-1.5163*** (0.5722)	-1.5163*** (0.5722)		
ln R	13.5115*** (1.8351)		11.9680*** (1.0899)		10.2511*** (0.7067)	
ln (2×R)		13.5115*** (1.8351)		11.9680*** (1.0899)		10.2511*** (0.7067)
SWL	0.2516*** (0.0747)	0.2516*** (0.0747)	0.1014*** (0.0301)	0.1014*** (0.0301)		
ln τ (tax)	-0.0247* (0.0131)	-0.0247* (0.0131)	-0.0332*** (0.0082)	-0.0332*** (0.0082)	-0.1176 (0.0720)	-0.1176 (0.072)
Observations	1456	1456	1456	1456	1456	1456
Time dummy	YES	YES				
Pair dummy	YES	YES	YES	YES	YES	YES
Remoteness			YES	YES		

^a Statistical significance indicated as: *** p<0.01, ** p<0.05, * p<0.1.

^b See note on Table 6.

Table S4: Doubled Distances Regression Results with Export Value as Dependent Variable, Canadian Exports to the China-Japan Region, Varied Distances^a

Variable	(10)		(11)		(12)	
	Original Paired& Time FE	Doubled Paired&Time FE	Original Remoteness	Doubled Remoteness	Original Exp-time or Imp-time FE ^b	Doubled Exp-time or Imp-time FE ^b
ln GDP _m	0.4915 (0.3347)	0.4915 (0.3347)	0.7521* (0.4324)	0.7521* (0.4324)		
ln GDP _x	-1.9066*** (0.4659)	-1.9066*** (0.4659)	-0.6828 (0.6775)	-0.6828 (0.6775)		
ln R	8.8628*** (1.5618)		7.4905*** (1.5562)		5.4189*** (1.1361)	
ln (2×R)		8.8629*** (1.5618)		7.4905*** (1.5562)		5.4190*** (1.1361)
SWL	0.2207*** (0.0693)	0.2207*** (0.0693)	0.0472 (0.0344)	0.0472 (0.0344)		
ln τ (tax)	-0.0458*** (0.0139)	-0.0458*** (0.0139)	-0.0621*** (0.0078)	-0.0621*** (0.0078)	-0.1076* (0.0630)	-0.1076* (0.0630)
Observations	1232	1232	1232	1232	1232	1232
Time dummy	YES	YES				
Pair dummy	YES	YES	YES	YES	YES	YES
Remoteness			YES	YES		

^a Statistical significance indicated as: *** p<0.01, ** p<0.05, * p<0.1.

^b See note on Table 6.