GATT Analysis

Kristy Buzard

2/6/2021

Contents

Importing and cleaning the data

Importing and cleaning the data is currently done with program "Cleaning the data in R .rmd" . It need to be reprogrammed before being added here because it is nearly 1000 lines long. The chunk below calls that program to make the processed data available to the rest of the commands in this document.

```
source("C:/Users/krist/Github/Gradualism/data_cleaning.rmd", local = knitr::knit_global())
```

Basic summary statistics

Specific tariffs

We see below that the specific tariffs come down by roughly half from Smoot Hawley.

- About half came in Geneva, the rest through Dillon. That is, Geneva did half the work and the following four rounds did the other half

But this could be deceptive since different lines use different units

- Victor has standardized everything to be in cents (per U.S. dollar) – add UnitsKey.rmd code here so that it is accessible when needed within the knitr session

	Summary Statistics of Specific Tariffs by Round						
	Min	1st Quartile	Mean	Median	3rd Quartile	Max	N
Smoot Hawley	0	2.00	48.24	6.0	30.00	3000	1527
Geneva	0	1.25	33.22	5.0	25.00	2000	1531
Annecy	0	1.11	32.23	4.2	25.00	2000	1528
Torquay	0	1.00	27.82	3.5	20.00	2000	1525
GenevaA	0	1.00	27.46	3.5	20.00	2000	1527
GenevaB	0	1.00	27.07	3.5	20.00	2000	1527
GenevaC	0	1.00	26.73	3.4	20.00	2000	1524
DillonA	0	1.00	25.40	3.0	18.75	2000	1519
DillonB	0	1.00	24.73	3.0	17.50	2000	1518

Ad valorem tariffs

Strikingly, the reductions look to be of the same magnitude for Ad valorem, again with Geneva doing about half the work.

	Summary Statistics of Ad Valorem Tariffs by Round						
	Min	1st Quartile	Mean	Median	3rd Quartile	Max	N
Smoot Hawley	5.00	25.0	38.81	35.00	50.0	90	1960
Geneva	2.50	15.0	27.51	25.00	35.0	90	1943
Annecy	2.50	15.0	26.39	22.50	35.0	90	1946
Torquay	1.88	12.5	22.43	20.00	30.0	90	1944
GenevaA	1.88	11.5	21.89	17.75	27.5	90	1943
GenevaB	1.88	11.0	21.67	17.50	27.5	118	1943
GenevaC	1.88	10.5	21.39	17.50	27.5	90	1944
DillonA	1.00	10.5	19.52	15.50	25.0	90	1941
DillonB	0.50	10.0	18.94	15.00	25.0	90	1942

- Roughly 2/3 of the lines have an ad valorem tariff. In Dillon, NA rows out of 2998 are missing, so 2998 ad valorem tariffs. NA/0 (NA%) test2

How did liberalization vary across Schedules?

Summary stats for specific tariffs

Sched	SH_mean	DB_mean	mean_chg	SH_med	DB_med	med_chg	SH_obs	DB_obs	n
1	24.52	13.51	44.90	5.00	2.50	50.00	256	264	397
2	45.17	28.21	37.56	10.00	5.55	44.50	113	106	243
3	56.25	26.13	53.55	3.50	2.00	42.86	317	302	661
4	53.55	22.61	57.78	60.00	17.50	70.83	6	6	52
5	24.42	23.28	4.69	0.38	0.15	59.73	11	11	17
6	147.50	62.19	57.84	52.50	23.50	55.24	12	12	12
7	28.53	15.74	44.83	3.00	1.50	50.00	349	348	461
8	277.42	80.98	70.81	125.00	42.00	66.40	31	31	34
9	8.60	21.60	-151.14	6.50	15.00	-130.77	8	15	116
10	12.63	5.04	60.06	2.00	1.50	25.00	37	37	84
11	39.96	31.42	21.37	40.00	33.00	17.50	134	134	153
12	NaN	NaN	NaN	NA	NA	NA	0	0	36
13	41.03	25.58	37.67	45.00	25.00	44.44	34	40	53
14	11.66	12.84	-10.16	5.00	2.00	60.00	85	86	146
15	113.80	56.48	50.37	10.00	7.00	30.00	134	126	533

The table below is exactly the same as the one above EXCEPT it drops the 200 169 lines that are impacted by the "tax interval" issue

Sched	SH_mean	DB_mean	mean_chg	SH_med	DB_med	med_chg	SH_obs	DB_obs	n
1	24.66	13.55	45.05	5.00	2.50	50.00	254	263	392
2	54.06	29.96	44.57	10.00	5.25	47.50	91	90	199
3	59.32	23.36	60.61	4.00	2.00	50.00	300	287	613
4	53.55	22.61	57.78	60.00	17.50	70.83	6	6	52
5	24.42	23.28	4.69	0.38	0.15	59.73	11	11	17
6	147.50	62.19	57.84	52.50	23.50	55.24	12	12	12
7	28.78	15.83	44.99	3.00	1.50	50.00	346	346	458
8	277.42	80.98	70.81	125.00	42.00	66.40	31	31	34
9	11.30	6.75	40.23	10.00	6.06	39.38	6	6	89
10	12.63	5.04	60.06	2.00	1.50	25.00	37	37	84
11	39.30	28.30	27.99	40.00	33.00	17.50	121	121	138
12	NaN	NaN	NaN	NA	NA	NA	0	0	33
13	39.81	22.91	42.45	45.00	25.00	44.44	26	28	36
14	11.66	7.11	39.00	5.00	2.00	60.00	85	85	143
15	85.88	50.60	41.08	6.00	4.00	33.33	124	117	498

Schedule 12 must be all ad valorem

Summary stats for ad valorem tariffs

Sched	SH_mean	DB_mean	mean_chg	SH_med	DB_med	med_chg	SH_obs	DB_obs	n
1	29.71	14.21	52.16	25.00	12.50	50.00	206	205	397
2	44.94	24.06	46.45	45.00	21.00	53.33	154	157	243
3	37.65	17.16	54.42	35.00	13.00	62.86	467	479	661
4	34.21	15.58	54.47	33.33	15.00	55.00	46	46	52
5	50.83	31.92	37.21	50.00	22.50	55.00	6	6	17
6	25.00	7.75	69.00	25.00	7.75	69.00	2	2	12
7	31.40	14.01	55.39	35.00	12.50	64.29	116	117	461
8	60.00	30.00	50.00	60.00	30.00	50.00	1	1	34
9	36.12	22.35	38.12	40.00	20.00	50.00	110	103	116
10	37.58	15.10	59.82	40.00	12.50	68.75	55	55	84
11	49.94	25.02	49.89	50.00	25.00	50.00	109	105	153
12	57.36	23.38	59.25	60.00	21.00	65.00	36	36	36
13	51.94	26.81	48.39	50.00	25.00	50.00	49	39	53
14	21.70	8.68	60.00	20.00	8.00	60.00	125	124	146
15	43.95	22.60	48.58	40.00	17.00	57.50	478	467	533

For several paragraphs, the maximum tariff for Dillon B is "lost" when we get rid of the tax interval lines (2,9,11). Still I'm not going to print the tables with the maxes in them for now.

Sched	SH_mean	DB_mean	mean_chg	SH_med	DB_med	med_chg	SH_obs	DB_obs	n
1	29.70	14.17	52.30	25.00	12.50	50.00	201	200	392
2	42.78	21.67	49.35	45.00	20.00	55.56	126	126	199
3	38.16	17.32	54.62	37.50	13.00	65.33	434	445	613
4	34.21	15.58	54.47	33.33	15.00	55.00	46	46	52
5	50.83	31.92	37.21	50.00	22.50	55.00	6	6	17
6	25.00	7.75	69.00	25.00	7.75	69.00	2	2	12
7	31.40	14.04	55.28	35.00	12.50	64.29	116	116	458
8	60.00	30.00	50.00	60.00	30.00	50.00	1	1	34
9	34.42	21.55	37.41	35.00	20.00	42.86	85	85	89
10	37.58	15.10	59.82	40.00	12.50	68.75	55	55	84
11	49.41	23.48	52.48	50.00	22.50	55.00	96	97	138
12	57.12	23.32	59.18	60.00	20.00	66.67	33	33	33
13	52.88	26.71	49.49	60.00	24.00	60.00	33	31	36
14	21.49	8.70	59.53	20.00	8.00	60.00	122	122	143
15	44.30	21.95	50.44	40.00	17.00	57.50	443	441	498

What was the total reduction in negotiated tariffs under the GATT in each round?

Mean and median of specific tariffs in each round

	Decrease in specific tariffs by round			
	Mean	% decrease	Median	% decrease
Smoot Hawley	48.24	0.00	6.0	0.00
Geneva	33.22	31.13	5.0	16.67
Annecy	32.23	2.99	4.2	16.00
Torquay	27.82	13.69	3.5	16.67
GenevaA	27.46	1.26	3.5	0.00
GenevaB	27.07	1.44	3.5	0.00
GenevaC	26.73	1.27	3.4	2.86
DillonA	25.40	4.98	3.0	11.76
DillonB	24.73	2.62	3.0	0.00

	Decrease in ad valorem tariffs by round			
	Mean	% decrease	Median	% decrease
Smoot Hawley	38.81	0.00	35.00	0.00
Geneva	27.51	29.12	25.00	28.57
Annecy	26.39	4.09	22.50	10.00
Torquay	22.43	14.99	20.00	11.11
GenevaA	21.89	2.41	17.75	11.25
GenevaB	21.67	1.01	17.50	1.41
GenevaC	21.39	1.30	17.50	0.00
DillonA	19.52	8.75	15.50	11.43
DillonB	18.94	2.95	15.00	3.23

Which lines were only ad valorem, only specific, or both?

Mixed

Next need to know about the lines that have both ad valorem and specific (or take them out from above); at least quantify them to start

```
## [1] 498
```

```
## [1] 484
```

```
## [1] 484
```

```
## [1] 479
```

```
## [1] 480
```

```
## [1] 480
```

```
## [1] 478
```

```
## [1] 470
```

```
## [1] 470
```

Victor's intuition on mixed lines

I believe many of the changes from specific tax to ad valorem or otherwise is because of the tax intervals. You could search the keywords "tax boundaries" and "tax interval(s)" in Extra column of every round to locate them.

Proportions of specific, ad valorem, mixed

Smoot Hawley 2998 total lines minus 451 lines with both specific and ad valorem leaves 2505 that have at most one or the other. 1417 ad valorem only; 1013 specific only. This leave 75 with neither. Why?

```
##  Sched Product Paragraph
##      2       1     222.d
##      3       1  368.c_18
##      8       2       805
##      8       1       810
##     11       9    1101.a
##     11       1    1117.c
##     14       1      1408
##     15      17    1532.a
##     15      11      1558
##
##  Crown, cylinder, rolled, and sheet glass, not plate glass, if ground wholly or in part (whether or n
ished) otherwise than for the purpose of ornamentation, or if 1/4 inch or more thick and obscured by col
##
##
##                                                                                                When any ar
##
##
##
##
##
```

```
##  Sched Product Paragraph
##      2       1     222.d
##      3       1  368.c_18
##      8       2       805
##      8       1       810
##     11       9    1101.a
##     14       1      1408
##     15      17    1532.a
##     15      11      1558
##
##  Crown, cylinder, rolled, and sheet glass, not plate glass, if ground wholly or in part (whether or n
ished) otherwise than for the purpose of ornamentation, or if 1/4 inch or more thick and obscured by col
##
##
##                                                                                                When any ar
##
##
##
##
##
```

How many lines see no change from Smoot Hawley to Dillon B?

The code below produces 391 lines that were the same

```
lines <- data_set %>%
        mutate(av_pc =((Ad_Valorem_SH - Ad_Valorem_Dillon_B)/Ad_Valorem_SH)*100,sp_pc
        =((Specific_SH - Specific_Dillon_B)/Specific_SH)*100)
```

```r
lines2 <- subset(lines,is.na(sp_pc) | sp_pc==0) %>% subset(is.na(av_pc) | av_pc==0)
```

Summarizing the impact of tax intervals

Implementation dates

Geneva 1: January 1, 1948 (Irwin 2017, p. 486)