

GATT Analysis

Kristy Buzard

4/24/2021

Contents

Next steps	2
To do	2
Done	3
Importing and cleaning the data	3
Sanity checks	3
Basic summary statistics	3
Specific tariffs	3
Ad valorem tariffs	3
How did liberalization vary across Schedules?	4
Summary stats for specific tariffs	4
Mean of specific tariffs by schedule and round	6
Summary stats for ad valorem tariffs	6
Mean of ad valorem tariffs by schedule and round	6
What was the total reduction in negotiated tariffs under the GATT in each round?	7
Which lines were only ad valorem, only specific, or both?	7
Mixed	7
Victor's intuition on mixed lines	9
Proportions of specific, ad valorem, mixed	9
Tariff Increases	9
No change from Smoot Hawley to Dillon B	14
No change from Smoot Hawley to Geneva	15
Lines that switch between specific, ad valorem, and compound	15
Summarizing the impact of tax intervals	18
Implementation dates	18
TOT analysis	18

Next steps

To do

1. Create centralized documentation
 - Include history from Unsolved problems in coding.docx (OneDrive)
2. Resolve “complicated” paragraphs, including 4 that still have no tariffs
 - *Matt is looking through last three rounds*
3. **Kennedy, Tokyo, Uruguay**
4. Choose other countries
 - Refine *Members.in.GATT.xlsx*
 - Focus on Benelux, Canada, Chile, France, India, U.K., Dominican Republic, Haiti, Italy, Germany, Peru, Japan
 - Matt is adding # of pages for each schedule
5. **Make list of accuracy checks, run them, fix typos in data**
 - Check for tariffs going up from round to round
6. **Figure out how to integrate “free” list**
 - For which rounds do we have the free list typed up? Just Torquay Free List.xlsx on G: drive
7. Condense data cleaning code
8. Read and summarize “Tariff negotiations and renegotiations under the GATT and the WTO” (hard copy at SU library)
 - Victor will ask Matt to see if he can get the book from the library, let me know if not
9. Read through Victor’s notes for ideas
 - What is status of ‘interesting paragraphs.pdf’ and ‘Splitting paragraphs in Dillon.pdf’?
10. Go back to questions in *Plan.docx* when last three rounds are finished
11. Identify lines that switch between specific and ad valorem
12. Look for gradualism in graphs
13. 10 lines in Dillon that have more than 2 years
14. Think about how variation in units affects specific summary stats
 - Look into trade-weighting
15. TOT analysis
16. Find implementation years (maybe get answer from Doug Irwin)
17. Get working draft together ASAP
18. Add Schedule A tariff data from 1946 (last available before Geneva 1947)
 - Are current Column 2 tariffs Smoot Hawley or the 1946 tariffs?

	Summary Statistics of Specific Tariffs by Round						
	Min	1st Quartile	Mean	Median	3rd Quartile	Max	N
Smoot Hawley	0	2.00	47.10	6.0	32.0	3000	1552
Geneva	0	2.00	47.10	6.0	32.0	3000	1552
Annecy	0	1.51	40.86	5.0	25.0	1800	1538
Torquay	0	1.23	33.16	5.0	24.5	1800	1543
GenevaA	0	1.00	32.41	4.0	22.5	1800	1544
GenevaB	0	1.00	26.67	3.5	20.0	1000	1544
GenevaC	0	1.00	26.29	3.5	20.0	1000	1545
DillonA	0	1.00	25.90	3.5	20.0	1000	1545
DillonB	0	1.00	25.57	3.5	20.0	1000	1542

Done

1. ~~Make Github version for CEA abstract~~
2. ~~Contact Tricia Mueller (USITC) and Roy Santana (WTO) [Bob Staiger's suggestions] [Feb 24]~~
3. ~~Figure out how to source multiple code files~~
4. ~~Program stats into abstract~~
5. ~~Resolve copyright issues, then (hopefully) post the correct schedules on Github~~
6. ~~Determine that TSUS tariffs were always at 5-digit, so we can just use the 5-digit tariff for all of the 7-digit subcategories~~
7. ~~Read and summarize "Two Centuries of Tariffs" (USITC, in G:drive folder)~~
8. ~~Consolidate various notes in Github / One Drive / G drive~~

Importing and cleaning the data

Importing and cleaning the data is done in "data_cleaning.rmd". It needs 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.

Sanity checks

0 rows have either a specific tariff and no unit or a unit with no specific tariff for some round.

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) in UnitsKey.rmd

```
source('UnitsKey.r')
```

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	39.00	35.0	50.0	105	1990
Geneva	5.00	25.0	39.00	35.0	50.0	105	1990
Annecy	2.50	20.0	33.95	30.0	45.0	105	1995
Torquay	2.50	15.0	26.38	24.5	35.0	105	1974
GenevaA	2.50	12.5	25.46	20.0	32.5	105	1973
GenevaB	1.88	12.5	22.08	20.0	27.5	90	1970
GenevaC	1.88	11.5	21.65	17.5	27.5	90	1969
DillonA	1.88	11.0	21.43	17.5	27.0	118	1969
DillonB	1.88	10.5	21.15	17.5	25.5	90	1970

Smoot Hawley Schedule Titles		
Schedule	# Lines	Title
1	397	Chemicals, Oil, and Paints
2	243	Earths, Earthenware, and Glassware
3	661	Metals and Manufactures of
4	53	Wood and Manufactures of
5	17	Sugar, Molasses, and Manufactures of
6	12	Tobacco and Manufactures of
7	471	Agricultural Products and Provisions
8	35	Spirits, Wines, and other Beverages
9	118	Cotton Manufactures
10	91	Flax, Hemp, Jute, and Manufactures of
11	160	Wool and Manufactures of
12	38	Silk Manufactures
13	55	Manufactures of Rayon or Other Synthetic Textile
14	145	Papers and Books
15	539	Sundries

- In Dillon, 1071 rows out of 3035 are missing, so there are 1964 ad valorem tariffs. So 64.71% of lines have *ad valorem* tariffs.

How did liberalization vary across Schedules?

First, descriptions of each schedule:

Summary stats for specific tariffs

The table below is exactly the same as the one above EXCEPT it drops the 220 lines that are impacted by the “tax interval” issue

Notes:

- 8 (spirits) largest, and consistent across rounds (1 ad valorem only)
- 5 (sugar) unambiguously smallest cuts, had some of the highest ad-valorem
- Reduction in median vs. mean: split exactly half and half as to which reduction was smaller
- Schedule 12 must be all ad valorem

Sched	SH_mean	DB_mean	mean_chg	SH_med	DB_med	med_chg	SH_obs	DB_obs	n
1	20.60	13.45	34.69	5.00	2.50	50.00	264	264	397
2	45.68	26.04	43.00	10.00	5.55	44.50	110	106	243
3	55.16	24.51	55.55	3.50	2.00	42.86	315	304	661
4	53.55	24.27	54.67	60.00	22.50	62.50	6	6	53
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	28.86	13.34	53.78	3.00	1.50	50.00	356	355	471
8	264.85	78.95	70.19	125.00	42.00	66.40	33	33	35
9	8.60	21.60	-151.14	6.50	15.00	-130.77	8	15	118
10	11.93	4.82	59.62	2.75	1.62	40.91	42	42	91
11	39.76	30.81	22.52	40.00	31.00	22.50	142	142	160
12	NaN	NaN	NaN	NA	NA	NA	0	0	38
13	41.00	25.68	37.36	45.00	25.00	44.44	35	41	55
14	11.73	12.96	-10.56	5.00	2.00	60.00	84	85	145
15	113.79	56.48	50.36	10.00	7.00	30.00	134	126	539

Sched	SH_mean	DB_mean	mean_chg	SH_med	DB_med	med_chg	SH_obs	DB_obs	n
1	20.70	13.53	34.63	5.00	2.50	50.00	262	262	389
2	53.99	27.41	49.24	10.00	5.25	47.50	90	90	199
3	58.37	21.80	62.65	4.00	2.00	50.00	297	287	609
4	53.55	24.27	54.67	60.00	22.50	62.50	6	6	53
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	29.10	13.41	53.91	3.00	1.50	50.00	353	353	468
8	264.85	78.95	70.19	125.00	42.00	66.40	33	33	35
9	11.30	6.75	40.23	10.00	6.06	39.38	6	6	91
10	11.93	4.82	59.62	2.75	1.62	40.91	42	42	91
11	39.12	27.81	28.89	40.00	30.00	25.00	129	129	145
12	NaN	NaN	NaN	NA	NA	NA	0	0	35
13	38.86	21.70	44.15	45.00	25.00	44.44	22	22	25
14	11.73	7.17	38.89	5.00	2.00	60.00	84	84	142
15	85.87	50.60	41.08	6.00	4.00	33.33	124	117	504

Sched	SH	G1	An	To	GC	DB	chgG1	chgAn	chgTo	chgGC	chgDB
1	20.60	34.62	34.54	16.44	15.57	13.45	-68.05	0.21	52.41	5.29	13.59
2	45.68	33.65	32.63	27.77	26.81	26.04	26.34	3.02	14.91	3.44	2.89
3	55.16	34.61	34.03	30.96	29.75	24.51	37.25	1.68	9.03	3.91	17.59
4	53.55	22.61	22.61	22.61	22.61	24.27	57.78	0.00	0.00	0.00	-7.37
5	24.42	23.36	23.33	23.32	23.31	23.28	4.35	0.15	0.03	0.02	0.16
6	147.50	94.54	86.42	67.25	62.65	62.19	35.90	8.59	22.18	6.85	0.73
7	28.86	15.98	15.80	14.25	14.19	13.34	44.64	1.11	9.78	0.45	5.99
8	264.85	143.48	125.87	95.87	86.18	78.95	45.82	12.28	23.83	10.11	8.39
9	8.60	22.38	22.38	21.90	21.90	21.60	-160.19	0.00	2.12	0.00	1.38
10	11.93	6.76	6.71	4.92	4.91	4.82	43.33	0.79	26.71	0.12	1.90
11	39.76	29.29	29.18	28.66	28.66	30.81	26.34	0.36	1.79	0.00	-7.48
12	NaN	150.00	150.00	150.00	150.00	NaN	NaN	0.00	0.00	0.00	NaN
13	41.00	28.38	27.95	25.45	25.45	25.68	30.78	1.51	8.94	-0.01	-0.92
14	11.73	18.54	18.43	16.39	15.04	12.96	-58.12	0.57	11.10	8.23	13.79
15	113.79	65.52	65.22	61.87	58.10	56.48	42.42	0.46	5.14	6.09	2.78

Mean of specific tariffs by schedule and round

Removing tax interval lines

Sched	Sp_SH	Sp_B	Sp_A	Sp_Ge	Sp_An	Sp_To	Sp_GC	Sp_DB	chgGe	chgAn	chgTo	chgGC
1	20.70	20.70	36.93	34.98	34.90	16.54	15.66	13.53	-68.95	0.21	52.61	5.30
2	53.99	53.99	41.74	36.67	35.47	29.61	28.48	27.41	32.08	3.27	16.53	3.80
3	58.37	58.37	48.25	33.47	32.87	29.85	28.56	21.80	42.66	1.81	9.18	4.30
4	53.55	53.55	43.55	22.61	22.61	22.61	22.61	24.27	57.78	0.00	0.00	0.00
5	24.42	24.42	23.51	23.36	23.33	23.32	23.31	23.28	4.35	0.15	0.03	0.02
6	147.50	147.50	83.64	94.54	86.42	67.25	62.65	62.19	35.90	8.59	22.18	6.85
7	29.10	29.10	19.59	16.06	15.89	14.33	14.27	13.41	44.80	1.11	9.78	0.46
8	264.85	264.85	192.65	143.48	125.87	95.87	86.18	78.95	45.82	12.28	23.83	10.11
9	11.30	11.30	8.80	7.94	7.94	6.75	6.75	6.75	29.72	0.00	14.95	0.00
10	11.93	11.93	7.38	6.76	6.71	4.92	4.91	4.82	43.33	0.79	26.71	0.12
11	39.12	39.12	36.16	29.10	28.98	28.43	28.43	27.81	25.60	0.40	1.91	0.00
12	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN
13	38.86	38.86	37.05	24.77	24.77	21.70	21.70	21.70	36.26	0.00	12.39	0.00
14	11.73	11.73	11.45	10.13	10.02	7.95	7.88	7.17	13.61	1.06	20.67	0.85
15	85.87	85.87	69.77	59.71	59.68	56.08	52.27	50.60	30.47	0.05	6.03	6.80

Summary stats for ad valorem tariffs

For several paragraphs, the maximum tariff for Dillon B changes 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.

Mean of ad valorem tariffs by schedule and round

Removing tax interval lines

Sched	SH_mean	DB_mean	mean_chg	SH_med	DB_med	med_chg	SH_obs	DB_obs	n
1	29.90	14.17	52.61	25.00	12.50	50.00	206	205	397
2	45.58	23.93	47.51	50.00	21.00	58.00	163	158	243
3	37.76	17.15	54.58	35.00	13.00	62.86	466	478	661
4	33.91	15.09	55.51	33.33	15.00	55.00	47	47	53
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	31.74	14.22	55.20	35.00	13.00	62.86	119	120	471
8	60.00	30.00	50.00	60.00	30.00	50.00	1	1	35
9	36.99	22.26	39.81	40.00	20.00	50.00	112	105	118
10	37.45	15.09	59.69	40.00	12.50	68.75	58	58	91
11	49.49	24.93	49.62	50.00	22.50	55.00	114	109	160
12	57.50	23.33	59.43	60.00	21.75	63.75	38	38	38
13	51.90	27.01	47.95	50.00	25.00	50.00	50	40	55
14	21.75	8.70	60.01	20.00	8.00	60.00	124	123	145
15	43.82	22.40	48.87	40.00	17.00	57.50	484	474	539

Sched	SH_mean	DB_mean	mean_chg	SH_med	DB_med	med_chg	SH_obs	DB_obs	n
1	29.90	14.04	53.04	25.00	12.50	50.00	198	198	389
2	42.83	21.52	49.77	45.00	20.00	55.56	127	127	199
3	38.27	17.27	54.88	35.00	13.00	62.86	430	442	609
4	33.91	15.09	55.51	33.33	15.00	55.00	47	47	53
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	31.74	14.25	55.09	35.00	13.50	61.43	119	119	468
8	60.00	30.00	50.00	60.00	30.00	50.00	1	1	35
9	35.57	21.45	39.69	35.00	20.00	42.86	87	87	91
10	37.45	15.09	59.69	40.00	12.50	68.75	58	58	91
11	48.98	23.44	52.13	50.00	22.50	55.00	101	101	145
12	57.29	23.27	59.38	60.00	21.00	65.00	35	35	35
13	54.40	25.82	52.54	60.00	22.50	62.50	25	25	25
14	21.55	8.72	59.54	20.00	8.00	60.00	121	121	142
15	44.15	21.76	50.72	40.00	17.00	57.50	449	448	504

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

Mean and median of specific tariffs in each round

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

Mixed

Next we 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

How many lines have both ad valorem and specific in each round?

- Smoot Hawley: 513
- Geneva 1947: 487

Sched	SH	G1	An	To	GC	DB	chgG1	chgAn	chgTo	chgGC	chgDB
1	29.90	21.15	20.75	17.02	16.15	14.17	29.26	1.91	17.98	5.11	12.25
2	45.58	30.78	29.33	25.51	25.32	23.93	32.47	4.73	13.02	0.72	5.52
3	37.76	26.50	25.36	20.88	19.87	17.15	29.84	4.29	17.68	4.82	13.69
4	33.91	22.11	20.39	18.80	17.80	15.09	34.81	7.78	7.78	5.32	15.24
5	50.83	33.58	33.58	33.58	33.58	31.92	33.93	0.00	0.00	0.00	4.96
6	25.00	15.62	15.62	9.38	7.75	7.75	37.50	0.00	40.00	17.33	0.00
7	31.74	20.74	19.45	16.84	15.98	14.22	34.67	6.22	13.39	5.10	11.04
8	60.00	60.00	60.00	30.00	30.00	30.00	0.00	0.00	50.00	0.00	0.00
9	36.99	25.44	25.04	22.92	22.70	22.26	31.21	1.59	8.44	0.96	1.95
10	37.45	19.96	19.74	19.44	18.14	15.09	46.71	1.08	1.53	6.70	16.78
11	49.49	26.15	25.97	24.45	23.88	24.93	47.16	0.67	5.86	2.33	-4.40
12	57.50	36.82	34.05	29.66	27.16	23.33	35.96	7.52	12.90	8.43	14.11
13	51.90	35.40	33.69	28.93	27.18	27.01	31.80	4.82	14.13	6.03	0.63
14	21.75	13.28	12.47	10.91	10.19	8.70	38.96	6.09	12.47	6.61	14.66
15	43.82	31.56	30.79	27.12	25.96	22.40	27.98	2.42	11.93	4.28	13.69

Sched	SH	G1	An	To	GC	DB	chgG1	chgAn	chgTo	chgGC	chgDB
1	29.90	21.10	20.68	16.92	16.02	14.04	29.43	1.97	18.17	5.32	12.39
2	42.83	28.53	26.88	23.01	22.67	21.52	33.39	5.80	14.38	1.51	5.07
3	38.27	27.27	26.15	21.29	20.27	17.27	28.76	4.09	18.60	4.76	14.82
4	33.91	22.11	20.39	18.80	17.80	15.09	34.81	7.78	7.78	5.32	15.24
5	50.83	33.58	33.58	33.58	33.58	31.92	33.93	0.00	0.00	0.00	4.96
6	25.00	15.62	15.62	9.38	7.75	7.75	37.50	0.00	40.00	17.33	0.00
7	31.74	20.83	19.53	16.90	16.03	14.25	34.39	6.24	13.45	5.12	11.10
8	60.00	60.00	60.00	30.00	30.00	30.00	0.00	0.00	50.00	0.00	0.00
9	35.57	24.77	24.28	22.10	21.84	21.45	30.37	1.97	8.97	1.20	1.76
10	37.45	19.96	19.74	19.44	18.14	15.09	46.71	1.08	1.53	6.70	16.78
11	48.98	26.35	26.15	24.54	23.90	23.44	46.20	0.75	6.14	2.62	1.91
12	57.29	36.36	33.43	28.79	26.14	23.27	36.53	8.06	13.89	9.18	10.98
13	54.40	35.00	35.00	27.60	26.06	25.82	35.66	0.00	21.14	5.58	0.92
14	21.55	13.31	12.49	10.91	10.21	8.72	38.22	6.18	12.66	6.42	14.60
15	44.15	31.23	30.46	26.57	25.38	21.76	29.26	2.48	12.77	4.49	14.26

	Decrease in specific tariffs by round			
	Mean	% decrease	Median	% decrease
Smoot Hawley	47.10	0.00	6.0	0.00
Geneva	47.10	0.00	6.0	0.00
Annecy	40.86	13.25	5.0	16.67
Torquay	33.16	18.83	5.0	0.00
GenevaA	32.41	2.28	4.0	20.00
GenevaB	26.67	17.70	3.5	12.50
GenevaC	26.29	1.43	3.5	0.00
DillonA	25.90	1.47	3.5	0.00
DillonB	25.57	1.31	3.5	0.00

	Decrease in ad valorem tariffs by round			
	Mean	% decrease	Median	% decrease
Smoot Hawley	39.00	0.00	35.0	0.00
Geneva	39.00	0.00	35.0	0.00
Annecy	33.95	12.95	30.0	14.29
Torquay	26.38	22.30	24.5	18.33
GenevaA	25.46	3.49	20.0	18.37
GenevaB	22.08	13.29	20.0	0.00
GenevaC	21.65	1.93	17.5	12.50
DillonA	21.43	1.00	17.5	0.00
DillonB	21.15	1.30	17.5	0.00

- Annecy: 487
- Torquay: 484
- Geneva56A: 484
- Geneva56B: 484
- Geneva56C: 482
- DillonA: 476
- DillonB: 476

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

A few lines in each round have neither specific nor ad valorem. Matt is working on fixing this

[1] "Smoot-Hawley"

Sched	Product	Paragraph	id
3	17	355	980
3	1	368.c_18	1078
8	1	810	1889
14	1	1408	2443
15	17	1532.a	2866
15	12	1558	3035

[1] "Dillon B"

Sched	Product	Paragraph	id
3	1	368.c_18	1078
8	1	810	1889
14	1	1408	2443
15	17	1532.a	2866
15	12	1558	3035

Tariff Increases

Here we are looking round by round for lines that had an increase in either the ad valorem or specific tariff (or both). Later we will look at lines that switch from one type of tariff to the other.

[1] "Increased tariff from Smoot Hawley to Geneva"

##	Paragraph	id	Product	av_pc	sp_pc	Ad_Valorem_SH	Ad_Valorem_Geneva	Specific_SH
##	41	198	9	60	-25	25	10	2.0
##	59	279	1	NA	-500	NA	NA	300.0
##	59	280	2	NA	-500	NA	NA	300.0
##	59	281	3	NA	-500	NA	NA	300.0
##	212	498	11	NA	-300	60	NA	10.0
##	318	796	1	-50	NA	50	75	NA
##	318	797	2	-50	NA	50	75	NA
##	318	805	10	-50	NA	50	75	NA
##	331	857	10	NA	-50	NA	NA	3.0
##	355	971	8	22	-300	45	35	2.0
##	364	1023	2	-40	NA	50	70	NA
##	389	1251	4	-75	NA	10	18	NA
##	396	1266	1	-44	NA	45	65	NA
##	397	1296	29	-47	NA	45	66	NA
##	397	1300	33	-33	NA	45	60	NA
##	718.a	1486	3	-47	NA	30	44	NA
##	718.a	1487	4	-47	NA	30	44	NA
##	904.a	1904	2	-175	NA	10	28	NA
##	904.b	1910	3	-131	NA	13	30	NA
##	904.c	1914	3	-100	NA	16	32	NA
##	911.a	1952	7	-38	NA	40	55	NA
##	1005.a.3	2044	1	NA	-50	NA	NA	3.2
##	1022	2094	2	NA	-25	NA	NA	8.0
##	1301	2315	19	NA	-22	50	NA	45.0
##	1301	2319	23	NA	-33	55	NA	45.0
##	1301	2321	25	NA	-11	50	NA	45.0
##	1526.a	2696	2	-120	NA	25	55	125.0
##	1526.a	2697	3	-120	NA	25	55	250.0
##	1526.a	2698	4	-120	NA	25	55	500.0
##	1526.a	2699	5	-90	NA	25	48	600.0
##	1526.a	2700	6	-90	NA	25	48	700.0
##	1526.a	2701	7	-60	NA	25	40	900.0
##	1526.a	2702	8	-60	NA	25	40	1200.0
##	1527.a.2	2708	2	-10	NA	50	55	100.0
##	1527.b	2711	2	-10	NA	50	55	6.0
##	1527.c.2	2713	1	-10	NA	50	55	1.0
##	1527.c.2	2714	2	-30	NA	50	65	1.0
##	1527.c.2	2715	3	-10	NA	50	55	1.0
##	1537.c	2903	2	43	-50	35	20	2.0
##	Specific_Geneva	Units_SH	Units_Geneva	Interval				
##	2.5	1	1	NA				
##	1800.0	1	1	NA				
##	1800.0	1	1	NA				
##	1800.0	1	1	NA				
##	40.0	20	20	1				
##	NA	NA	NA	NA				
##	NA	NA	NA	NA				
##	NA	NA	NA	NA				
##	4.5	1	1	NA				
##	8.0	19	19	NA				
##	NA	NA	NA	NA				

##	NA	NA	NA	NA
##	NA	NA	NA	NA
##	NA	NA	NA	NA
##	NA	NA	NA	NA
##	NA	NA	NA	NA
##	NA	NA	NA	NA
##	NA	NA	NA	NA
##	NA	NA	NA	NA
##	NA	NA	NA	1
##	4.9	1	1	NA
##	10.0	44	44	NA
##	55.0	1	1	1
##	60.0	1	1	1
##	50.0	1	1	1
##	NA	20	NA	1
##	NA	20	NA	1
##	NA	20	NA	1
##	NA	20	NA	1
##	NA	20	NA	1
##	NA	20	NA	1
##	NA	20	NA	1
##	NA	19	NA	1
##	NA	55	NA	NA
##	NA	1	NA	NA
##	NA	1	NA	NA
##	NA	1	NA	NA
##	3.0	19	19	NA

[1] "Increased tariff from Geneva to Annecy"

Paragraph	id	Product	av_pc	sp_pc	Ad_Valorem_Geneva	Ad_Valorem_Annecy
##	385	1240	2	0	-67	10
##						10
Specific_Geneva	Specific_Annecy	Units_Geneva	Units_Annecy	Interval		
##	6		10	1	1	NA

[1] "Increased tariff from Annecy to Torquay"

Paragraph	id	Product	av_pc	sp_pc	Ad_Valorem_Annecy	Ad_Valorem_Torquay
##	212	500	13	-100.00	NA	35.0
##	360	1012	6	-50.00	NA	20.0
##	394	1260	2	NA	-12	NA
##	1013	2061	3	-50.00	NA	15.0
##	1114.d	2206	4	-0.67	0	37.2
##	1405	2380	3	-33.33	0	7.5
##	1405	2390	13	0.00	-50	10.0
##	1519.b	2666	1	-12.50	NA	20.0
##	1530.c	2808	5	-50.00	NA	10.0
##	1537.b	2896	8	-25.00	NA	10.0
Specific_Annecy	Specific_Torquay	Units_Annecy	Units_Torquay	Interval		
##	5.0		NA	20.0	NA	1
##	NA		NA	NA	NA	NA
##	1.0		1.1	1.0	1	NA
##	NA		NA	NA	NA	NA
##	37.5		37.5	1.0	1	NA
##	2.5		2.5	1.0	1	NA

##	1.0	1.5	0.5	1	NA
##	NA	NA	NA	NA	NA
##	NA	NA	NA	NA	NA
##	NA	NA	NA	NA	NA

[1] "Increased tariff from Torquay to Geneva56_C"

##	Paragraph	id	Product	av_pc	sp_pc	Ad_Valorem_Torquay	Ad_Valorem_Geneva56_C
##	202.a	410	7	-20.0	NA	35	42
##	202.a	411	8	NA	-20.0	NA	NA
##	202.a	412	9	-20.0	NA	25	30
##	202.a	413	10	-7.1	NA	28	30
##	202.a	414	11	NA	-6.2	NA	NA
##	202.a	415	12	-5.0	NA	20	21
##	202.a	417	14	-18.3	NA	30	36
##	202.a	418	15	-6.2	NA	24	26
##	209	474	6	-71.4	NA	18	30
##	212	493	6	-71.4	NA	35	60
##	214	514	7	-70.0	NA	20	34
##	302.b	650	1	NA	-71.4	NA	NA
##	357	983	1	-122.2	NA	22	50
##	357	984	2	-122.2	NA	22	50
##	360	1007	1	-13.3	NA	22	26
##	411	1331	4	-70.0	NA	25	42
##	701	1391	8	NA	-66.7	NA	NA
##	778	1823	1	-112.5	NA	8	17
##	1114.d	2205	3	-28.0	0.0	25	32

##	Specific_Torquay	Specific_Geneva56_C	Units_Torquay	Units_Geneva56_C	Interval
##	NA	NA	NA	NA	1
##	5.0	6.0	6	6	1
##	NA	NA	NA	NA	1
##	NA	NA	NA	NA	1
##	4.0	4.2	6	6	1
##	NA	NA	NA	NA	1
##	NA	NA	NA	NA	NA
##	NA	NA	NA	NA	NA
##	NA	NA	NA	NA	NA
##	NA	NA	NA	NA	NA
##	NA	NA	NA	NA	NA
##	17.5	30.0	1	1	NA
##	1.8	NA	19	NA	NA
##	7.5	NA	19	NA	NA
##	NA	NA	NA	NA	NA
##	NA	NA	NA	NA	NA
##	6.0	10.0	1	1	NA
##	NA	NA	NA	NA	NA
##	37.5	37.5	1	1	NA

[1] "Increased tariff from Geneva56_C to Dillon_B"

##	Paragraph	id	Product	av_pc	sp_pc	Ad_Valorem_Geneva56_C	Ad_Valorem_Dillon_B
##	24	102	6	-300.0	67	9.0	36
##	24	103	7	-373.3	67	7.5	36
##	202.a	413	10	-30.0	NA	30.0	39
##	202.a	414	11	NA	-32	NA	NA
##	202.a	415	12	-33.3	NA	21.0	28

##	209	470	2	-37.1	NA	8.8	12
##	209	475	7	-55.6	NA	22.5	35
##	331	856	9	NA	-20	NA	NA
##	354	951	1	-70.0	68	25.0	42
##	354	952	2	-70.0	68	25.0	42
##	354	953	3	-54.5	67	27.5	42
##	354	960	10	-54.5	67	27.5	42
##	354	961	11	-54.5	72	27.5	42
##	354	962	12	-70.0	80	25.0	42
##	354	963	13	-54.5	86	27.5	42
##	365	1032	9	-18.4	-18	19.0	22
##	371	1097	2	NA	-50	NA	NA
##	371	1098	3	-50.0	NA	15.0	22
##	371	1100	5	NA	-50	NA	NA
##	371	1101	6	-50.0	NA	15.0	22
##	371	1102	7	-50.0	NA	15.0	22
##	371	1103	8	NA	-50	NA	NA
##	371	1104	9	-50.0	NA	7.5	11
##	371	1106	11	NA	-50	NA	NA
##	371	1107	12	-50.0	NA	15.0	22
##	372	1114	3	-33.3	NA	10.5	14
##	411	1330	3	-36.0	NA	25.0	34
##	412	1338	7	NA	-100	NA	NA
##	721.e	1531	1	NA	-12	NA	NA
##	1014	2068	6	-300.0	NA	2.5	10
##	1108	2161	7	-140.0	0	25.0	60
##	1108	2162	8	-140.0	0	25.0	60
##	1108	2163	9	NA	-260	25.0	NA
##	1108	2164	10	NA	-260	25.0	NA
##	1108	2165	11	-52.0	0	25.0	38
##	1108	2166	12	-140.0	0	25.0	60
##	1108	2167	13	NA	-203	25.0	NA
##	1108	2168	14	NA	-203	25.0	NA
##	1108	2169	15	-52.0	0	25.0	38
##	1109.a	2170	1	-140.0	0	25.0	60
##	1109.a	2171	2	NA	-203	25.0	NA
##	1109.a	2172	3	-52.0	0	25.0	38
##	1109.a	2173	4	-50.0	0	20.0	30
##	1109.a	2174	5	-50.0	0	20.0	30
##	1109.a	2175	6	-50.0	0	20.0	30
##	1301	2304	8	-122.2	NA	22.5	50
##	1404	2368	9	-6.7	20	7.5	8
##	1549.a	2968	1	20.0	-7995	12.5	10
##	1551	2987	7	NA	-60	NA	NA
##	1551	2988	8	NA	-60	NA	NA
##	Specific_Geneva56_C Specific_Dillon_B Units_Geneva56_C Units_Dillon_B Interval						
##		30.00		10.0		1	1
##		51.00		17.0		1	1
##		NA		NA		NA	NA
##		4.25		5.6		6	6
##		NA		NA		NA	NA
##		NA		NA		NA	NA
##		NA		NA		NA	NA
##		3.00		3.6		1	1

##	0.62	0.2	19	19	NA
##	2.50	0.8	19	19	NA
##	5.50	1.8	19	19	NA
##	7.50	2.5	19	19	NA
##	9.00	2.5	19	19	NA
##	12.50	2.5	19	19	NA
##	17.50	2.5	19	19	NA
##	425.00	500.0	19	19	NA
##	125.00	187.5	19	19	1
##	NA	NA	NA	NA	1
##	200.00	300.0	19	19	1
##	NA	NA	NA	NA	1
##	NA	NA	NA	NA	1
##	125.00	187.5	19	19	1
##	NA	NA	NA	NA	1
##	250.00	375.0	19	19	1
##	NA	NA	NA	NA	1
##	NA	NA	NA	NA	NA
##	NA	NA	NA	NA	NA
##	10.00	20.0	18	18	NA
##	4.00	4.5	1	1	NA
##	NA	NA	NA	NA	NA
##	30.00	30.0	1	1	1
##	30.00	30.0	1	1	1
##	30.00	108.0	1	1	1
##	30.00	108.0	1	1	1
##	30.00	30.0	1	1	1
##	37.50	37.5	1	1	1
##	37.50	113.5	1	1	1
##	37.50	113.5	1	1	1
##	37.50	37.5	1	1	1
##	37.50	37.5	1	1	1
##	37.50	113.5	1	1	1
##	37.50	37.5	1	1	NA
##	37.50	37.5	1	1	NA
##	37.50	37.5	1	1	NA
##	37.50	37.5	1	1	NA
##	NA	NA	NA	NA	1
##	2.50	2.0	1	1	NA
##	0.21	17.0	1	18	NA
##	0.50	0.8	55	55	NA
##	1.50	2.4	55	55	NA

No change from Smoot Hawley to Dillon B

```
sm_db <- 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)

sm_db2 <- subset(sm_db, is.na(sp_pc) | sp_pc==0) %>% subset(is.na(av_pc) | av_pc==0)
```

The code above produces 339 lines that are the same in Smoot Hawley and Dillon B (i.e. that don't change at all through these five rounds of negotiations—we assume. We still need a check for rates going up.)

No change from Smoot Hawley to Geneva

```
# all the lines that are exactly the same in Smoot Hawley and 1946_before
same <- shortnames %>%
  filter( ((is.na(Sp_SH) == is.na(Sp_B) & is.na(Sp_SH)) | Sp_SH == Sp_B)
          & ((is.na(AV_SH) == is.na(AV_B) & is.na(AV_SH)) | AV_SH == AV_B)
          & ((is.na(Un_SH) == is.na(Un_B) & is.na(Un_SH)) | Un_SH == Un_B))

# all the lines that are exactly the same in Smoot Hawley and Geneva
same <- data_set %>%
  filter( ((is.na(Specific_SH) == is.na(Specific_Geneva) & is.na(Specific_SH)) | Specific_SH == Specific_Geneva)
          & ((is.na(Ad_Valorem_SH) == is.na(Ad_Valorem_Geneva) & is.na(Ad_Valorem_SH)) | Ad_Valorem_SH == Ad_Valorem_Geneva)
          & ((is.na(Units_SH) == is.na(Units_Geneva) & is.na(Units_SH)) | Units_SH == Units_Geneva) )

# supposed to be all the lines that have any difference, but misses lines that switch
# between ad valorem and specific. Almost certainly is because of treatment of NAs
diff <- data_set %>%
  filter( Specific_SH != Specific_Geneva | Ad_Valorem_SH != Ad_Valorem_Geneva |
          Units_SH != Units_Geneva )

# lines that are NOT in "same"
t <- setdiff(data_set$id,same$id)
same_removed <- data_set[t,]

# lines that are NOT in either "same" or "diff"
t3 <- setdiff(same_removed$id,diff$id)
samediff_removed <- data_set[t3,]

# both these methods miss out on the ones that are not equal because one is an NA
units_diff <- data_set %>%
  filter( (Units_SH != Units_Geneva) )

units_diff2 <- data_set[which(data_set$Units_SH != data_set$Units_Geneva), ]

# tbl %>% rowwise(id) %>% mutate(s = sum(c_across(x:w)) %>% ungroup())
# all(is.na(x))
# all(is.na(c_across(stuff)))
```

The code above produces 1019 lines that are the same in Smoot Hawley and Geneva.

Lines that switch between specific, ad valorem, and compound

Below are the lines that either change units or change between specific only, ad valorem only or both specific and ad valorem. Indicator variables for each round (G for Geneva, A for Annecy, etc.) show in which round the change(s) occurred. Variable “unit_ch” equals 1 if the unit changed.

##	Sched	Product	Paragraph	id	G	A	T	GA	GB	GC	DA	DB	unit_ch	Interval
##	1	16	28.a	148	1	NA	NA	NA	NA	NA	NA	NA	NA	1
##	1	10	53	253	1	NA	1	NA	NA	NA	NA	NA	NA	1
##	1	6	72	324	1	NA	NA	NA	NA	NA	NA	NA	NA	1
##	2	4	210	479	1	NA	NA	NA	NA	NA	NA	NA	NA	1
##	2	2	212	489	1	NA	NA	NA	NA	NA	NA	NA	NA	1
##	2	3	212	490	1	NA	1	NA	NA	NA	NA	NA	0	1

##	2	4	212	491	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	1
##	2	10	212	497	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	1
##	2	11	212	498	1	NA	NA	NA	NA	NA	NA	NA	0	1	1
##	2	12	212	499	1	NA	NA	NA	NA	NA	NA	NA	NA	1	1
##	2	13	212	500	NA	NA	1	NA	NA	NA	NA	NA	0	1	1
##	2	14	212	501	1	NA	1	NA	NA	NA	NA	NA	NA	1	1
##	2	15	212	502	1	NA	NA	NA	NA	NA	NA	NA	NA	1	1
##	2	4	213	506	1	NA	NA	NA	NA	NA	NA	NA	NA	1	1
##	2	2	218.d	535	1	NA	1	NA	NA	NA	NA	NA	NA	1	1
##	2	5	218.d	538	1	NA	NA	NA	NA	NA	NA	NA	NA	1	1
##	2	7	218.f	554	1	NA	NA	NA	NA	NA	NA	NA	NA	1	1
##	2	11	218.f	558	NA	NA	NA	NA	NA	NA	1	NA	NA	1	1
##	2	4	226	592	1	NA	NA	NA	NA	NA	NA	NA	NA	1	1
##	3	3	302.d	654	NA	NA	1	NA	NA	NA	NA	NA	0	NA	NA
##	3	3	304	693	1	NA	NA	NA	NA	NA	NA	NA	NA	1	1
##	3	4	304	694	1	NA	NA	NA	NA	NA	NA	NA	NA	1	1
##	3	5	304	695	1	NA	NA	NA	NA	NA	NA	NA	NA	1	1
##	3	11	304	701	1	NA	NA	NA	NA	NA	NA	NA	NA	1	1
##	3	12	304	702	1	NA	NA	NA	NA	NA	NA	NA	NA	1	1
##	3	13	304	703	1	NA	NA	NA	NA	NA	NA	NA	NA	1	1
##	3	21	304	711	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
##	3	22	304	712	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
##	3	23	304	713	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
##	3	24	304	714	1	NA	NA	NA	NA	NA	NA	NA	0	NA	NA
##	3	25	304	715	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
##	3	26	304	716	1	NA	NA	NA	NA	NA	NA	NA	0	NA	NA
##	3	30	304	720	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
##	3	38	304	728	1	NA	NA	NA	NA	NA	NA	NA	NA	1	1
##	3	39	304	729	1	NA	NA	NA	NA	NA	NA	NA	NA	1	1
##	3	40	304	730	1	NA	NA	NA	NA	NA	NA	NA	NA	1	1
##	3	41	304	731	1	NA	NA	NA	NA	NA	NA	NA	NA	1	1
##	3	46	304	736	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
##	3	47	304	737	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
##	3	48	304	738	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
##	3	1	308	749	1	NA	1	NA	NA	NA	NA	NA	NA	1	1
##	3	3	308	751	1	NA	1	NA	NA	NA	NA	NA	NA	1	1
##	3	12	316.a	790	1	NA	NA	NA	NA	NA	NA	NA	NA	1	1
##	3	4	318	799	1	NA	NA	NA	NA	NA	NA	NA	NA	1	1
##	3	7	318	802	1	NA	NA	NA	NA	NA	NA	NA	NA	1	1
##	3	17	355	980	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
##	3	1	357	983	NA	NA	NA	NA	NA	1	NA	NA	0	NA	NA
##	3	2	357	984	NA	NA	NA	NA	NA	1	NA	NA	0	NA	NA
##	3	7	358	996	1	NA	NA	NA	NA	NA	NA	NA	NA	1	1
##	3	16	365	1039	NA	NA	NA	NA	NA	NA	1	NA	0	NA	NA
##	3	18	365	1041	NA	NA	NA	NA	NA	NA	1	NA	0	NA	NA
##	3	1	368.c_2	1061	NA	NA	NA	NA	NA	NA	1	NA	NA	NA	NA
##	3	2	368.c_2	1062	NA	NA	NA	NA	NA	NA	1	NA	NA	NA	NA
##	3	1	368.c_17	1077	NA	NA	1	NA	NA	NA	NA	NA	0	NA	NA
##	3	2	371	1097	1	NA	NA	NA	NA	NA	NA	NA	NA	1	1
##	3	5	371	1100	1	NA	NA	NA	NA	NA	NA	NA	NA	1	1
##	3	8	371	1103	1	NA	NA	NA	NA	NA	NA	NA	NA	1	1
##	3	11	371	1106	1	NA	NA	NA	NA	NA	NA	NA	NA	1	1
##	3	14	371	1109	1	NA	NA	NA	NA	NA	NA	NA	NA	1	1
##	3	2	375	1189	NA	NA	NA	NA	NA	1	NA	NA	0	NA	NA

##	3	4	382.a	1215	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	1
##	3	11	397	1278	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	1
##	7	4	726	1545	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	1
##	7	2	754	1663	1	NA	NA	NA	NA	NA	NA	NA	1	NA	NA
##	7	1	779	1824	NA	NA	NA	NA	1	1	NA	NA	0	NA	NA
##	9	4	909	1929	1	NA	NA	NA	NA	NA	NA	NA	NA	1	1
##	9	7	909	1932	1	NA	NA	NA	NA	NA	NA	NA	NA	1	1
##	9	14	909	1939	1	NA	NA	NA	NA	NA	NA	NA	NA	1	1
##	9	2	910	1944	1	NA	NA	NA	NA	NA	NA	NA	NA	1	1
##	9	8	911.a	1953	1	NA	NA	NA	NA	NA	NA	NA	NA	1	1
##	9	2	915	1975	1	NA	NA	NA	NA	NA	NA	NA	NA	1	1
##	9	9	923	2003	1	NA	NA	NA	NA	NA	NA	NA	NA	1	1
##	11	9	1108	2163	NA	NA	NA	NA	NA	NA	1	NA	0	1	1
##	11	10	1108	2164	NA	NA	NA	NA	NA	NA	1	NA	0	1	1
##	11	13	1108	2167	NA	NA	NA	NA	NA	NA	1	NA	0	1	1
##	11	14	1108	2168	NA	NA	NA	NA	NA	NA	1	NA	0	1	1
##	11	2	1109.a	2171	NA	NA	NA	NA	NA	NA	1	NA	0	1	1
##	12	3	1208	2283	1	NA	NA	NA	NA	NA	1	NA	NA	1	1
##	13	1	1301	2297	NA	1	NA	NA	NA	NA	NA	NA	NA	1	1
##	13	3	1301	2299	NA	1	NA	NA	NA	NA	NA	NA	NA	1	1
##	13	5	1301	2301	NA	NA	NA	1	NA	NA	NA	NA	NA	1	1
##	13	9	1301	2305	NA	NA	NA	NA	NA	NA	1	NA	NA	1	1
##	13	15	1301	2311	1	NA	NA	NA	NA	NA	NA	NA	NA	1	1
##	13	17	1301	2313	1	NA	NA	NA	NA	NA	NA	NA	NA	1	1
##	13	19	1301	2315	1	NA	NA	NA	NA	NA	NA	NA	0	1	1
##	13	21	1301	2317	1	NA	NA	NA	NA	NA	NA	NA	0	1	1
##	13	23	1301	2319	1	NA	NA	NA	NA	NA	NA	NA	0	1	1
##	13	25	1301	2321	1	NA	NA	NA	NA	NA	NA	NA	0	1	1
##	14	13	1405	2390	1	NA	1	NA	NA	NA	NA	NA	1	NA	NA
##	14	6	1413	2487	1	NA	NA	NA	NA	NA	NA	NA	NA	1	1
##	15	5	1504.a	2530	1	NA	NA	NA	NA	NA	NA	NA	NA	1	1
##	15	5	1504.b.1.2	2541	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
##	15	10	1506	2559	1	NA	NA	NA	NA	NA	NA	NA	NA	1	1
##	15	1	1509	2564	NA	1	NA	NA	NA	NA	NA	NA	0	NA	NA
##	15	1	1526.a	2695	1	NA	NA	NA	NA	NA	NA	NA	0	1	1
##	15	2	1526.a	2696	1	NA	NA	NA	NA	NA	NA	NA	NA	1	1
##	15	3	1526.a	2697	1	NA	NA	NA	NA	NA	NA	NA	NA	1	1
##	15	4	1526.a	2698	1	NA	NA	NA	NA	NA	NA	NA	NA	1	1
##	15	5	1526.a	2699	1	NA	NA	NA	NA	NA	NA	NA	NA	1	1
##	15	6	1526.a	2700	1	NA	NA	NA	NA	NA	NA	NA	NA	1	1
##	15	7	1526.a	2701	1	NA	NA	NA	NA	NA	NA	NA	NA	1	1
##	15	8	1526.a	2702	1	NA	NA	NA	NA	NA	NA	NA	NA	1	1
##	15	1	1527.a.2	2707	NA	1	NA	NA	NA	NA	NA	NA	0	1	1
##	15	2	1527.a.2	2708	1	NA	NA	NA	NA	NA	NA	NA	NA	1	1
##	15	2	1527.b	2711	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
##	15	1	1527.c.2	2713	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
##	15	2	1527.c.2	2714	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
##	15	3	1527.c.2	2715	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
##	15	4	1527.c.2	2716	NA	NA	NA	NA	NA	NA	1	NA	0	NA	NA
##	15	5	1527.c.2	2717	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
##	15	3	1530.e	2819	1	NA	NA	NA	NA	NA	NA	NA	NA	1	1
##	15	4	1535	2873	1	NA	NA	NA	NA	NA	NA	NA	NA	1	1
##	15	8	1535	2877	1	NA	NA	NA	NA	NA	NA	NA	NA	1	1
##	15	11	1535	2880	1	NA	1	NA	NA	NA	NA	NA	NA	1	1

##	15	5	1537.b	2893	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	1
##	15	8	1541.a	2923	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	1
##	15	25	1541.a	2940	NA	NA	NA	1	NA	NA	NA	NA	0	NA	
##	15	1	1548	2967	1	NA	1	NA	NA	NA	NA	NA	0	NA	
##	15	1	1549.a	2968	NA	NA	NA	NA	1	NA	1	NA	0	NA	
##	15	4	1549.b	2976	NA	NA	1	NA	NA	NA	NA	NA	0	NA	
##	15	5	1549.b	2977	NA	NA	1	NA	NA	NA	NA	NA	0	NA	
##	15	1	1550.a	2978	NA	NA	NA	1	NA	NA	NA	NA	0	NA	

Summarizing the impact of tax intervals

Implementation dates

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

TOT analysis

We'll need measure of importer market power

1. inverse foreign supply elasticities are at HS6 level, are much more recent
 - Ross will look into the feasibility (data and code) of creating these measures for the 1930s/40s
 - Would we want Broda, Limao, Weinstein version (requires trade flows only) or Anson Soderbery's heterogeneous version?
 - Ross recalls he's seen a joint project between Anson Soderbery and Doug Irwin about the 1930s
2. product differentiation index (Rauch), also newer, but maybe less sensitive to changes over time
3. market share might be credible enough, and easier to get

We'll need to think about whether it's credible to try the identification strategy Ross has used in his work