Applying tariff cutting formula in a proper way: A user friendly tool for GTAP

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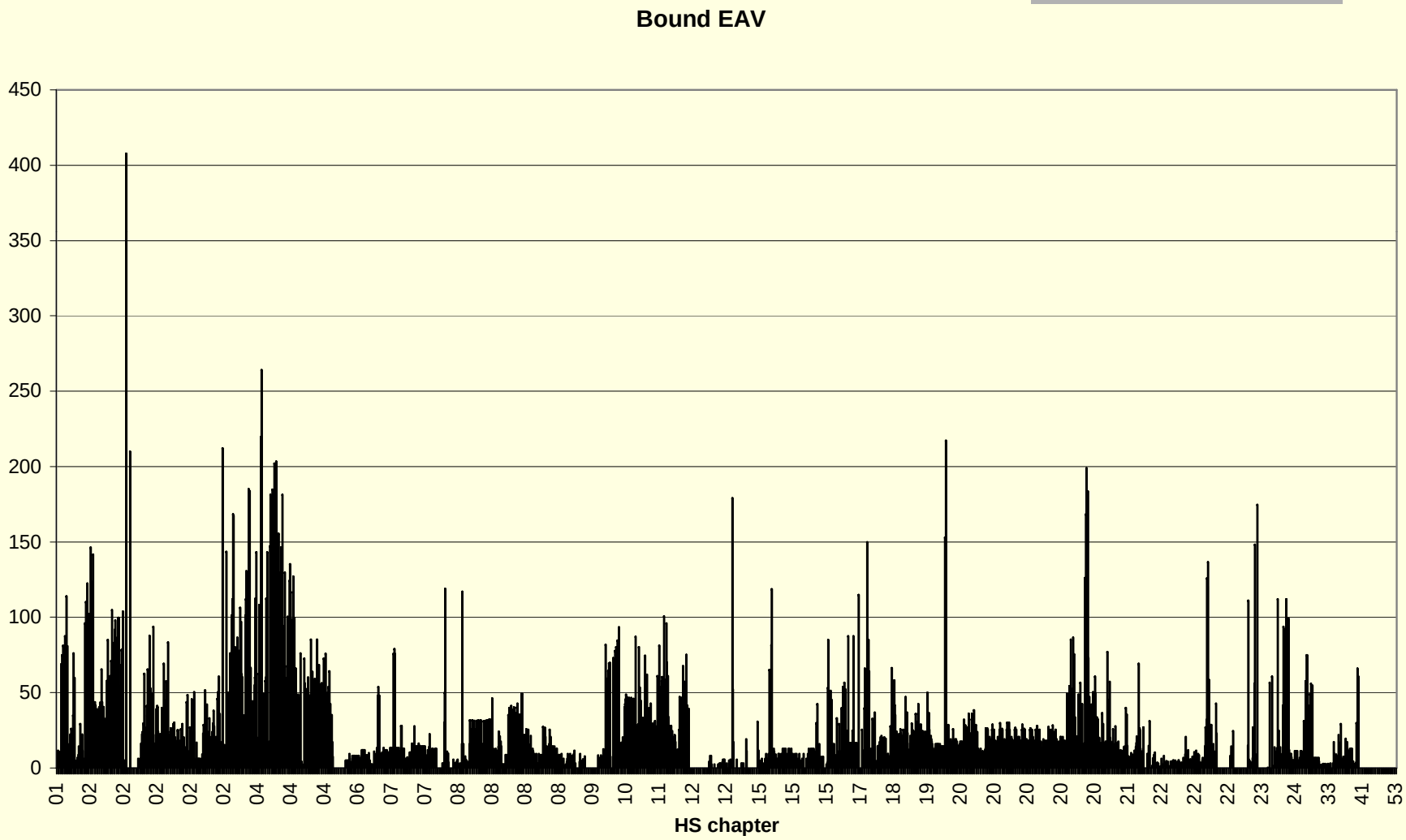
Motivations

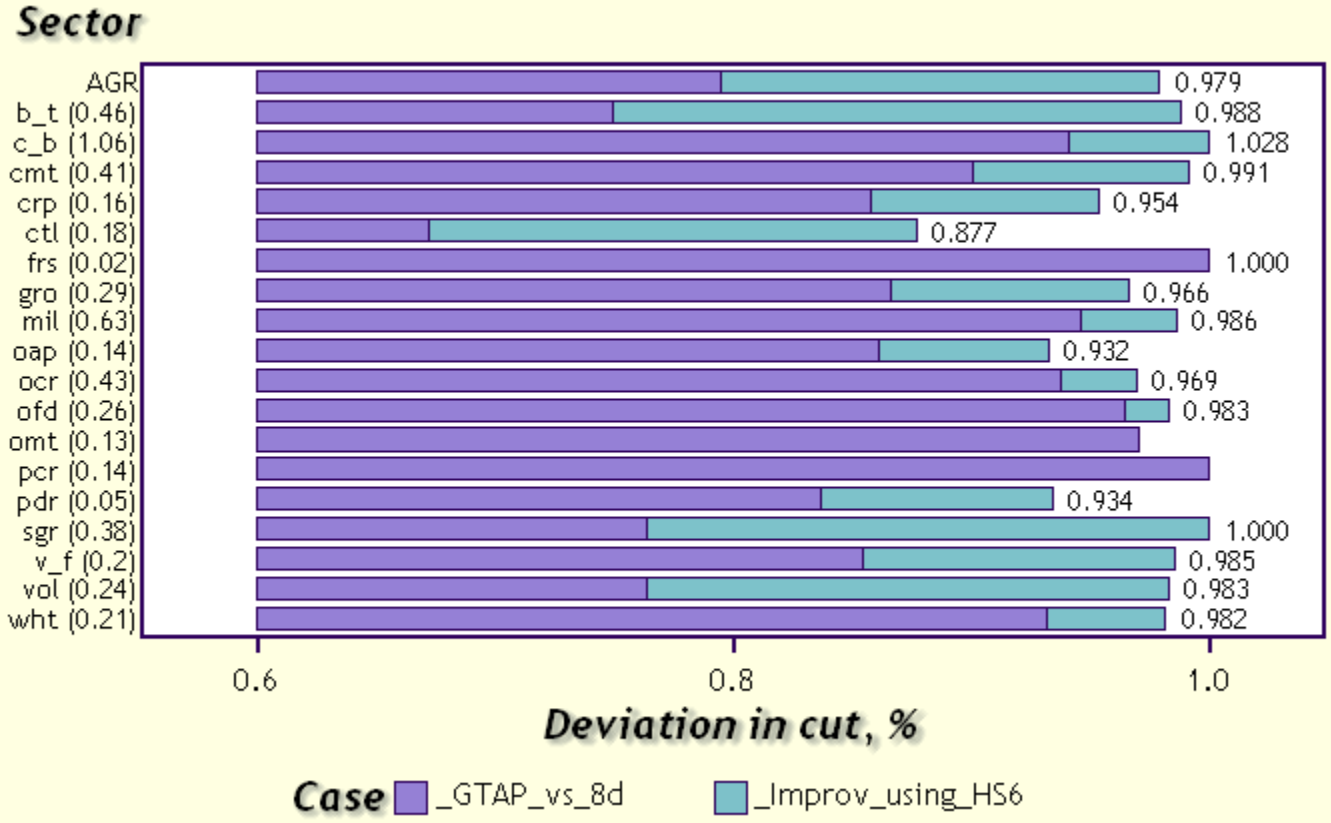
- Trade negotiations work at the tariff line level
- For the sake of precision, tariff cutting formula should stick to reality.
- Indeed:
  - Non linear formula are used
  - Tariff structure is heterogeneous
  - Binding overhang as well as preferences are not evenly distributed
  - Flexibility and exclusions are a central issue of WTO and FTA talks
  - Unit values and tariff structure

➲ Cutting the the average is not computing the average of redueced tariffs.

Illustration of tariff distribution: EU agricultural protection

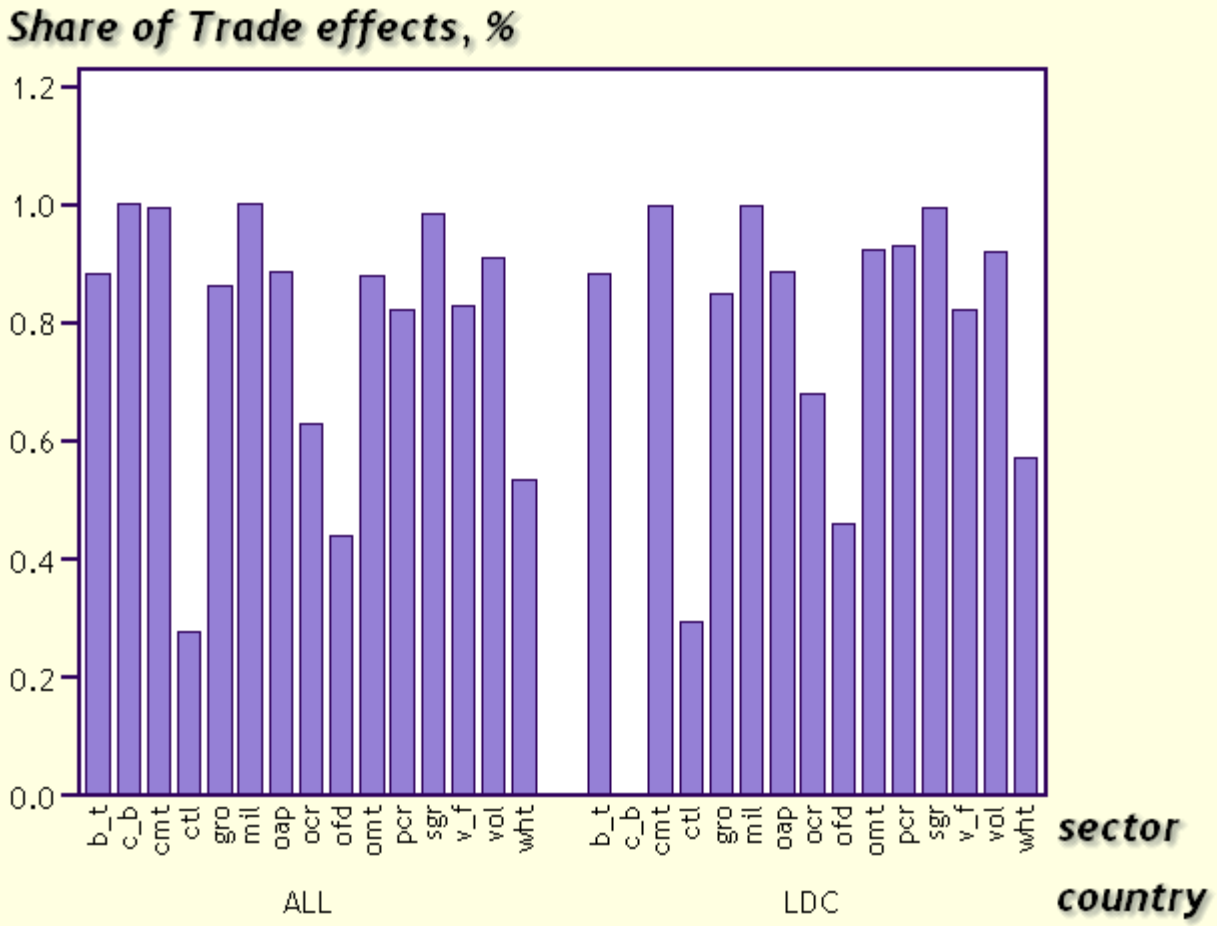


Applying the G20 formula on EU bound tariffs at different levels of aggregation



- Note: Simple average from CN8 to HS6, and from HS6 to GTAP nomenclature. Standard deviation of tariffs in brackets.

Consequences on trade effects of working at the GTAP level



Remarks

- No systematic bias
  - In the case of the OMT sector, the GTAP level analysis brings a stronger cut than the HS6 (band effect)
  - The role of binding overhang (not represented here)
- Decreasing gains and increasing costs.
  - Moving to a 6 digits analysis to a 8 digit=
    - Reducing the error by 3% on tariff cut
    - Increasing the size of the database by 3.7
- No simple correlation between standard deviation of tariffs and errors

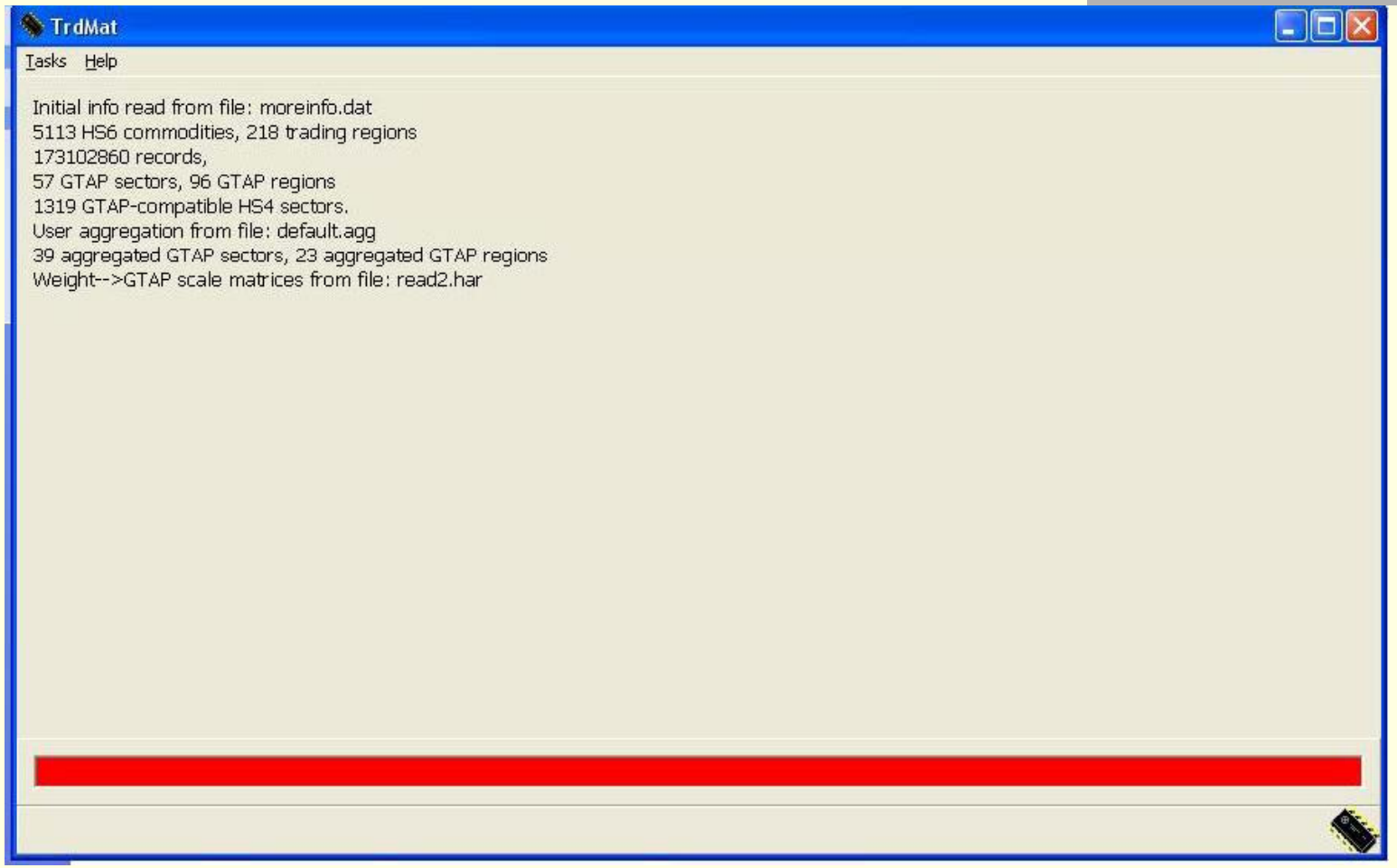
TrdMat

David Laborde, Mark Horridge

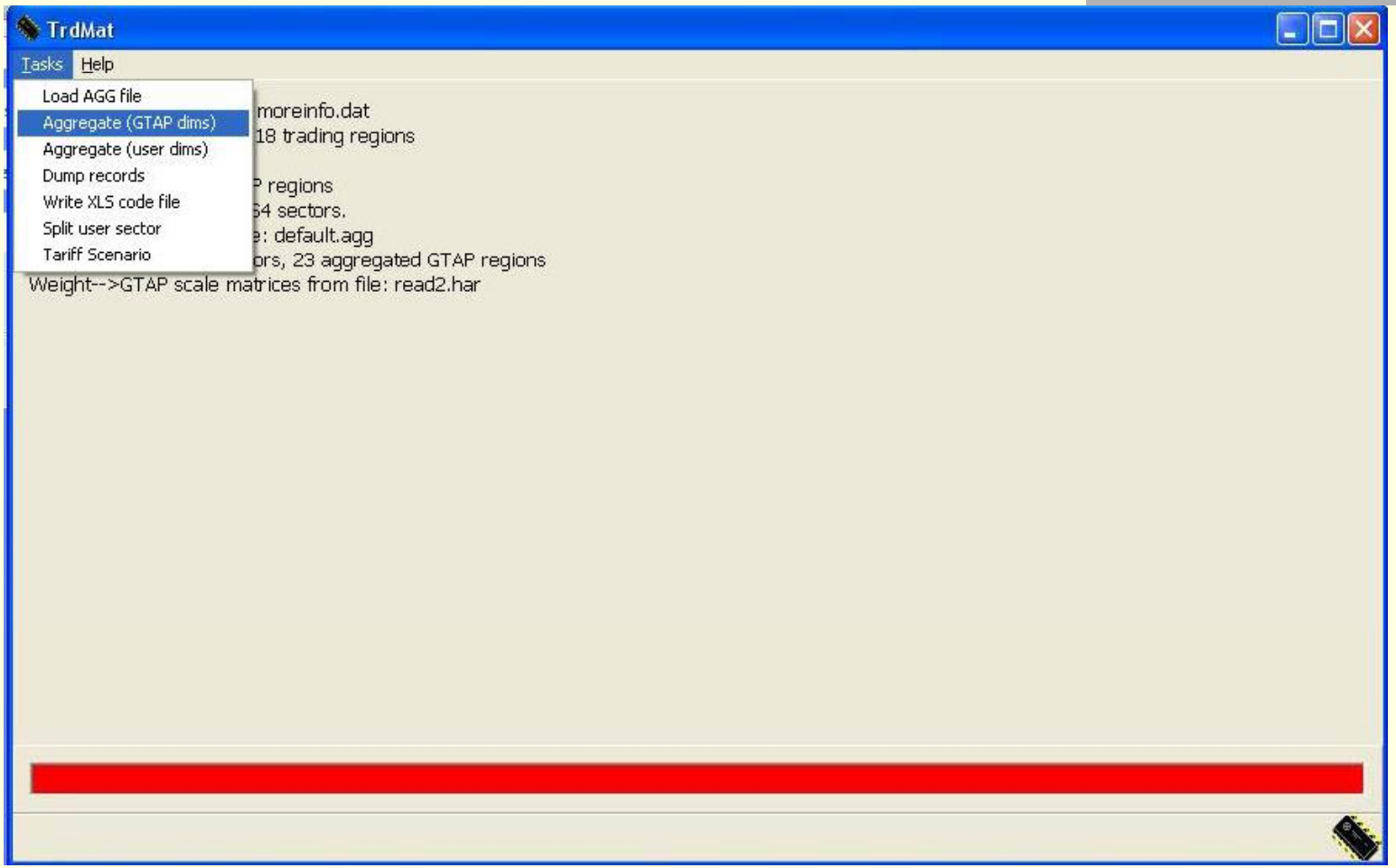
Main Features

- Uses:
  - Free aggregation (choice of the weighting scheme)
  - Tariff cutting assessment
  - Splitcom facility
- Compatibility of trade data with GTAP database
- Pre-defined groups:
  - Of products
  - Of countries
- Formula type
  - Linear, Swiss, Tiered, Girard
  - Cap
  - Unbound products rule

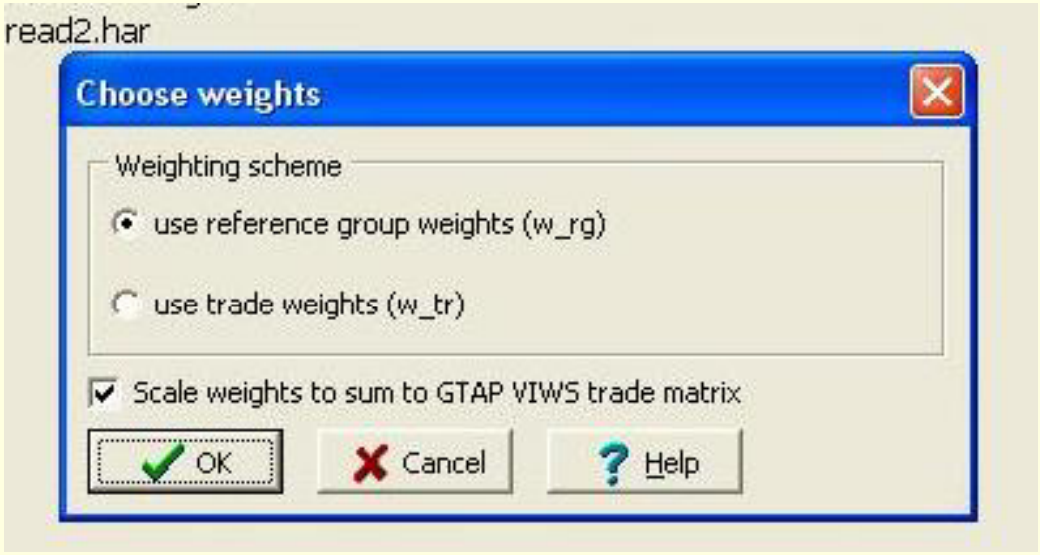
A free tour (1)


TrdMat
Tasks Help
Initial info read from file: moreinfo.dat
5113 HS6 commodities, 218 trading regions
173102860 records,
57 GTAP sectors, 96 GTAP regions
1319 GTAP-compatible HS4 sectors.
User aggregation from file: default.agg
39 aggregated GTAP sectors, 23 aggregated GTAP regions
Weight-->GTAP scale matrices from file: read2.har

A free tour (2)


TrdMat
Tasks
Help
Load AGG file
Aggregate (GTAP dims)
Aggregate (user dims)
Dump records
Write XLS code file
Split user sector
Tariff Scenario
moreinfo.dat
18 trading regions
regions
64 sectors.
e: default.agg
ors, 23 aggregated GTAP regions
Weight-->GTAP scale matrices from file: read2.har

A free tour (3)


read2.har
Choose weights
Weighting scheme
use reference group weights (w_rg)
use trade weights (w_tr)
Scale weights to sum to GTAP VIWS trade matrix
OK
Cancel
Help

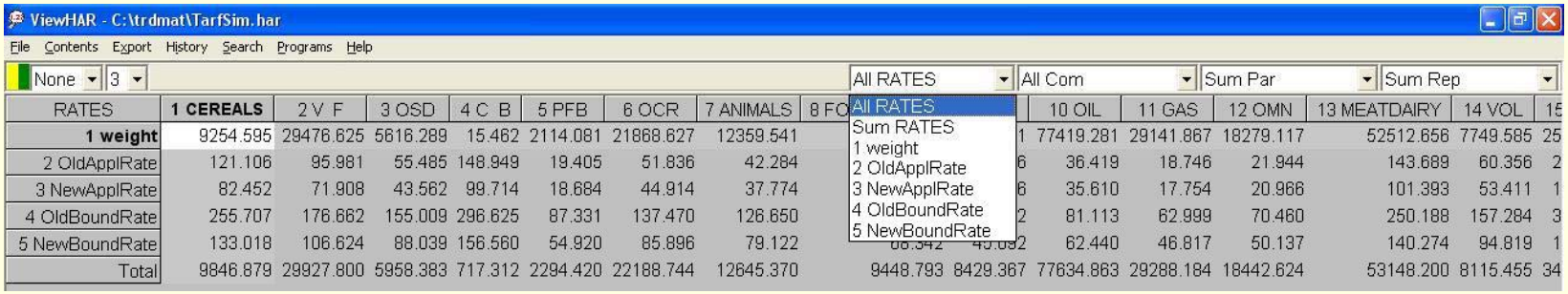
A free tour (4)

ViewHAR - C:\trdmat\TarfSim.har

File Contents Export History Search Programs Help

	Header	Type	Dimension	Coeff	Total	Name
1	CUM	RE	Ans*Com*Par*Rep	ACCUM	216967431.54	Accumulated (w_tr weighted) trade flow and tariff revenue results
2	RATE	RE	RATES*Com*Par*Rep	RATES	3024116.62	Old/new, applied/bound tariff rates
3	SHOK	RE	Com*Par*Rep	POWTARFSHOK	-25177.29	Percent changes in powers of applied tariff

A free tour (5)



RATES	1 CEREALS	2 V_F	3 OSD	4 C_B	5 PFB	6 OCR	7 ANIMALS	8 FO	10 OIL	11 GAS	12 OMN	13 MEATDAIRY	14 VOL	15
1 weight	9254.595	29476.625	5616.289	15.462	2114.081	21868.627	12359.541	1	77419.281	29141.867	18279.117	52512.656	7749.585	25
2 OldApplRate	121.106	95.981	55.485	148.949	19.405	51.836	42.284	6	36.419	18.746	21.944	143.689	60.356	2
3 NewApplRate	82.452	71.908	43.562	99.714	18.684	44.914	37.774	6	35.610	17.754	20.966	101.393	53.411	1
4 OldBoundRate	255.707	176.662	155.009	296.625	87.331	137.470	126.650	2	81.113	62.999	70.460	250.188	157.284	3
5 NewBoundRate	133.018	106.624	88.039	156.560	54.920	85.896	79.122	2	62.440	46.817	50.137	140.274	94.819	1
Total	9846.879	29927.800	5958.383	717.312	2294.420	22188.744	12645.370	9448.793	8429.367	77634.863	29288.184	18442.624	53148.200	8115.455	34

Tariff scenario: how it works

- RGROUP: Foreign [WORLD-GBR]
- RGROUP: Lusosphere [AGO+BRA+PRT] ! a comment
- RGROUP: SSDD [Foreign^Lusosphere]
- RGROUP: PortEmpire [Lusosphere-PRT]
- CGROUP: MeatPrd [1501+1502+02]
- CGROUP: Helicopters [880211+880212]
- CGROUP: WineSpirit [2204+2205+2205+2206+2208] ! exludes 2207 industrial alcohol
- RGROUP: BalticStates [EST+LVA+LTU] ! Estonia, Latvia and Lithuania

- TRULE: [WineSpirit][WORLD][BalticStates] swiss 0.9 0.42
- TRULE: [WineSpirit][EST][LVA] swiss 0.5 0.31
- trule: [ALLPROD][WORLD][WORLD] none
- trule: [fmp][WORLD][WORLD] min 0.4
- trule: [83][WORLD][Lusosphere] swiss 0.7 0.6 ! example of swiss
- trule: [MeatPrd][PortEmpire][Lusosphere] girard 1
- trule: [MeatPrd][Foreign-THA][PortEmpire] girard 1
- trule: [MeatPrd][AGO][BRA] none
- trule: [2204][AZE][BRA] swiss 0.3 0.22
- trule: [ALLPROD][WTO][World] swiss 0.3 0.22
- trule: [ALLPROD][WTO][World] Tiered 3 0.6 0.5 0.4 0.3 0.1

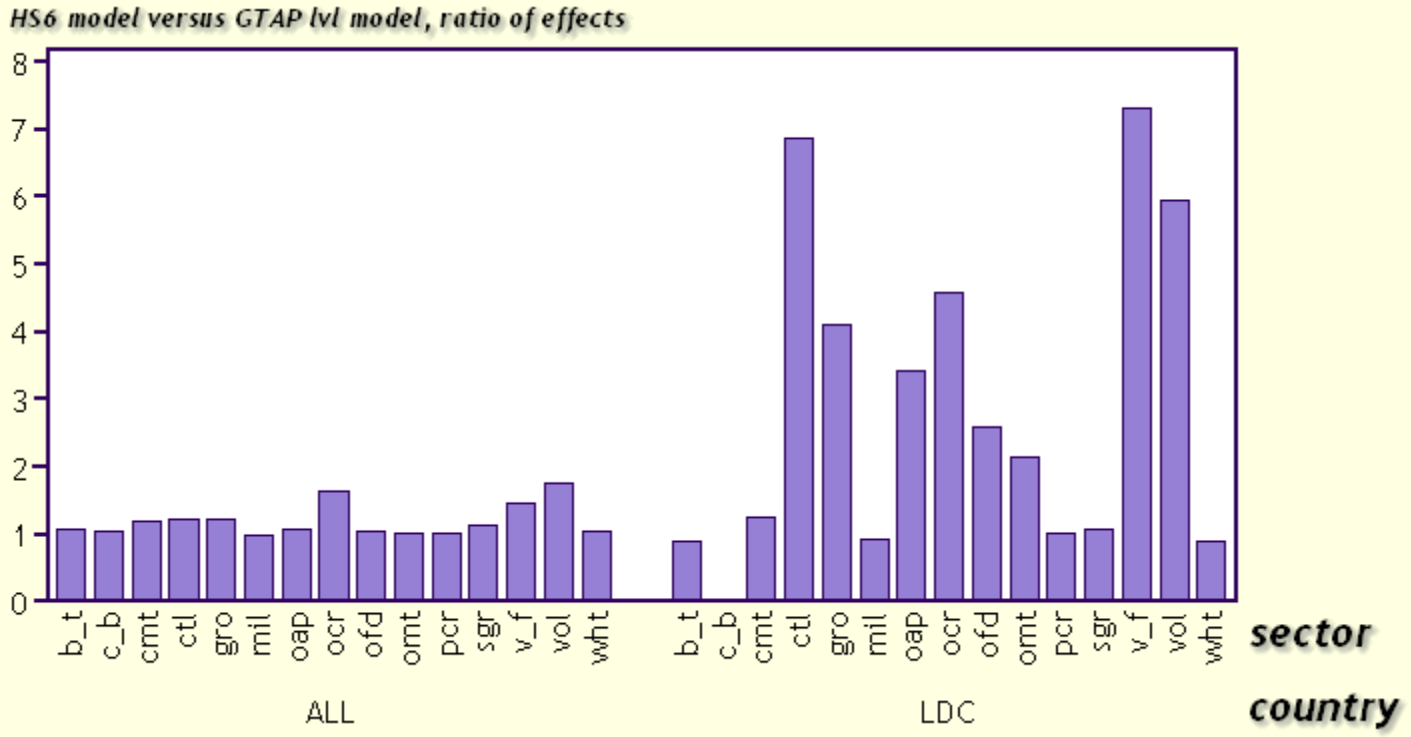
Delivery time

- 15th of June. Trial version downloadable based on GTAP6 data. (MMv1.2)
- 15th of June - 15th of July. Tests and comments.
- 15th of September. First release based on GTAP7 tariff dataset (MMv2.1).

References

- **“TrdMat a program to adapt detailed trade and tariff data to GTAP-related purposes”** M.Horridge and D.Laborde
- **“Unit value choice and tariff cutting formula”** D. Laborde
- **“Tariff cutting formula utility for GTAP”** D. Laborde
- **“Binding overhang and Tariff cutting formula”.** *Review of world economy***.** H.Bchir, S.Jean et D. Laborde

But the story does not end here…



- **Conclusion:**
  - **New use of SplitCom**
  - **New modelling tools**

Comments on Trade

- BACI for MacMap vs BACI normal
- From BACI to GTAP: Keeping distribution and rescaling
- Quality index by reporter, HS2 or HS4. Which country data we should take?
  - Entropy approach with prior distribution
- Misclassification issue:
  - The importer is right. It applies the tariff.