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Inland Transport Committee

Working Party on Intermodal Transport and Logistics

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Item 6 (a) of the provisional agenda

Emerging issues in freight transport and logistics:

Issues, trends and performance in the industry

Targets for intermodal transport

Note by the secretariat

I. Introduction

1. The resolution on strengthening intermodal freight transport adopted by the Inland Transport Committee at its eighty-second session on 25 February 2021 calls upon the Working Party on Intermodal Transport and Logistics (WP.24) to work on setting up appropriate targets for market share of intermodal transport in the freight sector and a plan for achieving these targets.

2. At its previous session, WP.24 agreed that it should discuss the targets having a clear indication of the actual market shares of the intermodal transport in the countries of the United Nations Economic Commission for Europe (ECE). WP.24 requested its secretariat to prepare a document for the sixty-fifth session which would list the existing shares of intermodal transport for ECE countries.

3. Further to the request, the secretariat prepared this document to discuss indicators which could be possibly used for understanding market share of freight intermodal transport.

II. Indicators for market share of intermodal transport

4. Eurostat, which serves as a statistics office of the European Union, compiles a set of five indicators on the share of transport in containers and other intermodal transport units (ITUs) in the total freight transport performance by respective mode of transport. These indicators are referred to as indicators on the freight unitisation rate of the different modes of transport. In addition, a dataset is provided for comparison of unitisation across modes of transport¹. These are:

- Unitisation in the different modes of transport (based on TKM for gross weight of goods) (tran_ui_umod)

¹ See further: https://ec.europa.eu/eurostat/cache/metadata/en/tran_im_esms.htm.

- Unitisation in road freight transport (based on tonnes-kilometres for gross weight of goods) (tran_im_uroad)
- Unitisation in rail freight transport (based on tonnes-kilometres for gross-gross weight of goods) (tran_im_uroad)
- Unitisation in inland waterways freight transport (based on tonnes-kilometres for gross-gross weight of goods) (tran_im_uuiww)
- Unitisation in maritime freight transport (based on tonnes for gross weight of goods) (tran_im_umar).

5. Unitisation thus expresses the share of total goods transported in ITUs.

6. For rail freight transport, which is of interest to WP.24, ITUs comprise containers and swap bodies, road vehicles (accompanied) and semi-trailers (unaccompanied). The transport of accompanied (i.e. by the driver) road vehicles by rail corresponds to the concept of “rolling road”, where the entire trucks (lorries, lorries with trailers, road tractors with semi-trailers) are forwarded by special train wagons. Unaccompanied semi-trailers are also forwarded by rail. The unit for the basic data is million tonne-kilometres. The unitisation is calculated as the share of ITUs in total freight transport by rail. The weight of transported goods is measured as ‘gross-gross weight’, i.e. including packaging and the tare weight (weight when empty) of the container or other ITU in which the goods are transported.

7. Eurostat produces the indicator for unitisation in rail freight transport for the following countries: Austria, Belgium, Bulgaria, Croatia, Czechia, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Netherlands, Norway, Poland, Portugal, Romania, Republic of North Macedonia, Slovenia, Slovakia, Spain, Sweden, Switzerland, Turkiye, and the United Kingdom of Great Britain and Northern Ireland.

8. It should be noted that for the production of these indicators, Eurostat follows the so-called “German approach” for intermodal statistics production. This means that no stand-alone intermodal transport statistics are collected, but rather intermodal-relevant data are compiled from existing regulated data collection for the individual modes, and then adjusted to be as comparable as possible. Thus, the data do not create any additional burden on reporting countries and the initial respondents. The indicators have been produced using road, rail, inland waterways and maritime transport data, available within the European Statistical System.

9. The below table shows unitisation rates in rail for these countries for 2010, 2015 and 2019.

| <i>Country</i> | <i>2010</i> | <i>2015</i> | <i>2019</i> |
|----------------|-------------|-------------|-------------|
| AT | 28.5 | 29.9 | NA |
| BE | 30.2 | NA | NA |
| BG | 10.4 | 5.8 | 6.6 |
| CH | 46.5 | 57.5 | 58.9 |
| CZ | 13.7 | 16.5 | 20 |
| DE | 35.2 | 39 | 42 |
| DK | 35.2 | 20.3 | 41.5 |
| EE | 0.9 | 1.7 | 3.8 |
| EL | 7.5 | 50.7 | 80.7 |
| ES | 39.7 | 50.6 | 54.3 |
| FI | 4.4 | 1.2 | 2.5 |

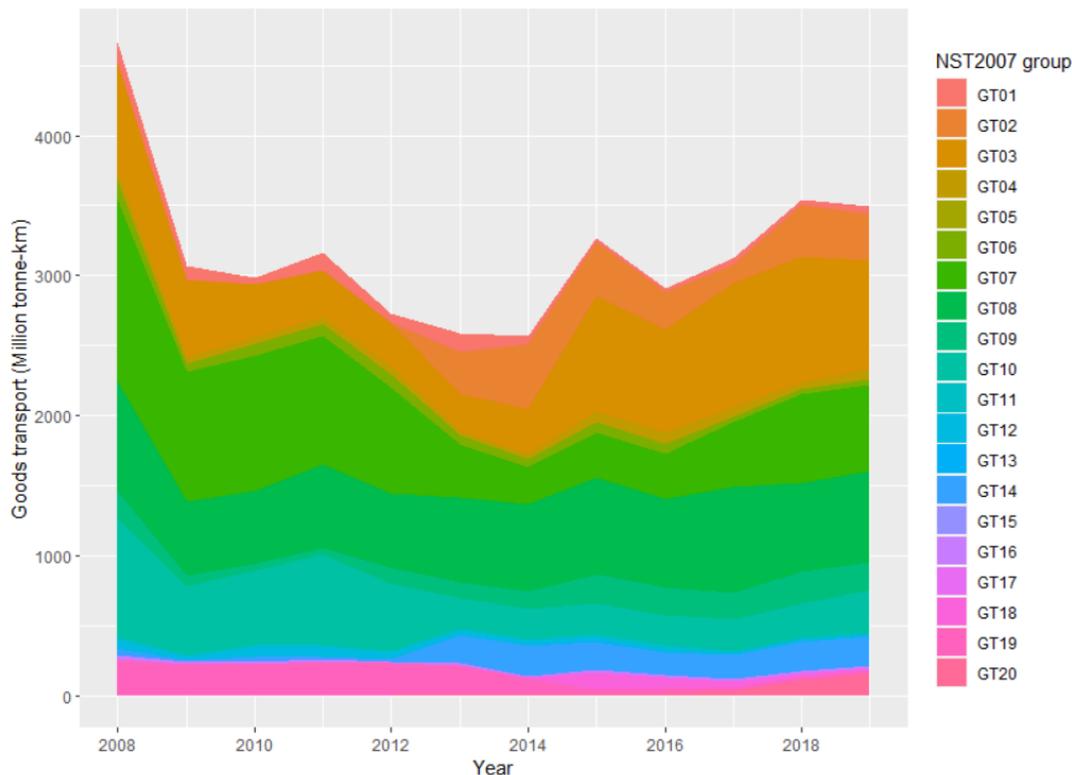
| <i>Country</i> | <i>2010</i> | <i>2015</i> | <i>2019</i> |
|----------------|-------------|-------------|-------------|
| FR | 24 | 28.7 | 33.7 |
| HR | 8.2 | 8.3 | 16.8 |
| HU | 16.1 | 14.6 | 13.3 |
| IE | 46.7 | 53.1 | 61.1 |
| IT | 47.1 | 49.3 | 61.9 |
| LT | 2.3 | 1.9 | 4.6 |
| LV | 2.1 | 1.2 | 1.4 |
| MK | 99.3 | 34.2 | 39.7 |
| NL | 34.9 | 35.7 | 40.8 |
| NO | 73.8 | 63 | 57.4 |
| PL | 4.1 | 7.8 | 13.1 |
| PT | 18.2 | 30 | 67.7 |
| RO | 5.9 | 4.8 | 7.5 |
| SE | 25.3 | 25.4 | 26.1 |
| SI | 26.7 | 30.9 | 34.9 |
| SK | 2.6 | 6.2 | 8.7 |
| TR | 21.9 | 34.3 | 38.9 |
| UK | 31.2 | 34.2 | 52.5 |

Source: Eurostat

10. The changes in these rates can result from either decreases or increases of the ITUs transported by rail but equally by decreases or increases in other rail freight transport (e.g. bulk cargoes) of total freight transported by rail. Thus, while the volumes of unitized transport may stay constant over time, the rate of unitization may fluctuate due to changes in other rail freight transport.

11. For example, Bulgaria sees the rate of unitization decreasing over time. However, when looking over time at volumes of goods transported by rail in Bulgaria, one can note that while goods transported in ITUs remain rather stable, the drop of the unitization rate in rail is caused by the increase in transport of goods such as (GT03) metal ores and other mining and quarrying products – see figure 1 below:

Figure 1
Transport of goods by NST 2007 category (standard goods classification for transport statistics²) for Bulgaria between 2010 and 2019



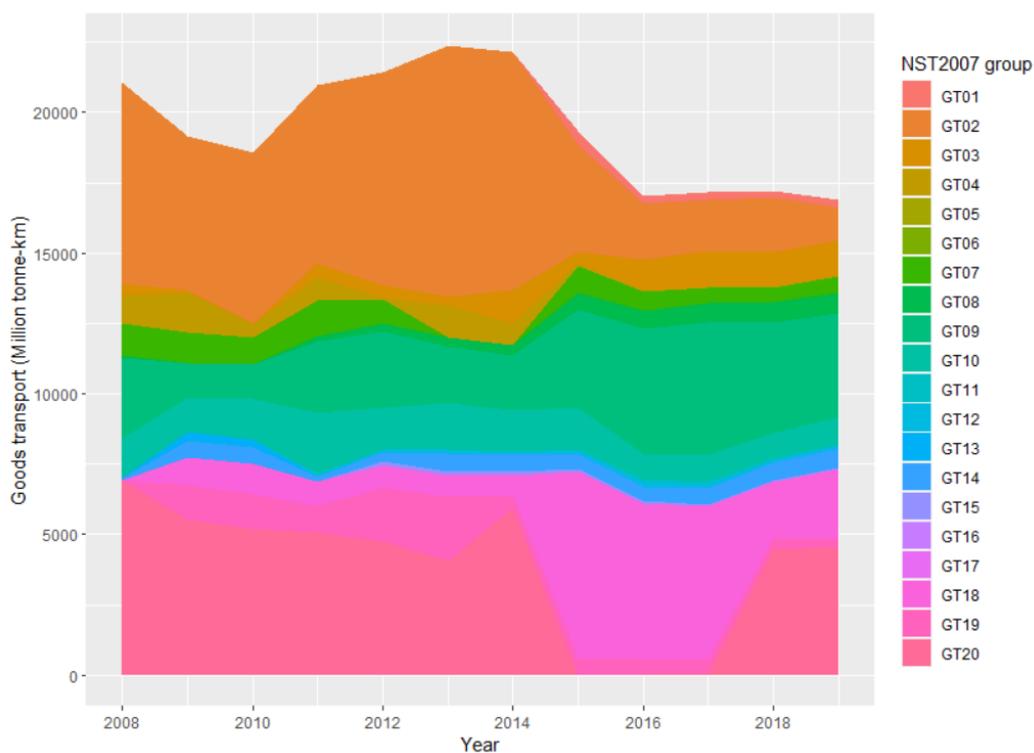
..Source: Eurostat rail_go_grpgood table

12. The United Kingdom of Great Britain and Northern Ireland saw an increase in the rate of rail unitisation. However, when looking at the transported goods over time, one can note a rather substantial reduction in transport of goods such as (GT02) coal and lignite; crude petroleum and natural gas, while at the same time the cargo transported in ITUs remained rather stable, so the increase in unitisation in rail is in fact caused by a reduction of bulk cargo carried by rail – see figure 2 below.

² <https://unece.org/classification-nst-2007>.

Figure 2

Transport of goods by NST 2007 category for United Kingdom of Great Britain and Northern Ireland between 2010 and 2019



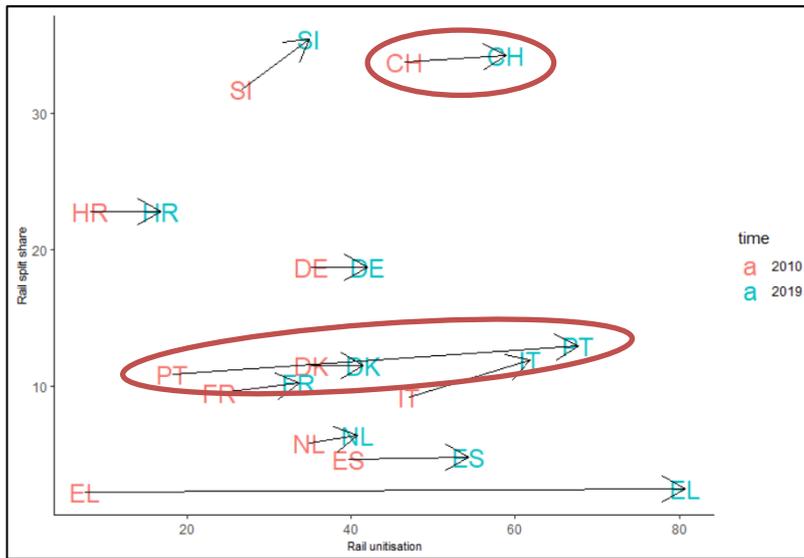
Source: Eurostat *rail_go_grpgood* table

13. These two examples show that the unitization rate in rail should be analysed in combination with rail freight modal share. Should the rail freight modal share increase and at the same time the unitization rate in rail increase, this implies that rail is able to absorb more carriage of cargo possibly at the expense of other inland modes and that this increase can be associated with the increased carriage of ITUs.

14. For example, Switzerland and Portugal as well as 11 other ECE countries saw increases in both unitization rate in rail and rail freight modal share between 2010 and 2019 – see figure 3 below of all these cases.

Figure 3

The ratios between rail share and rail utilisation for 2010 and 2019 for selected ECE countries, among them Portugal and Switzerland. The figure shows only ECE countries with higher rail utilization and increasing rail share

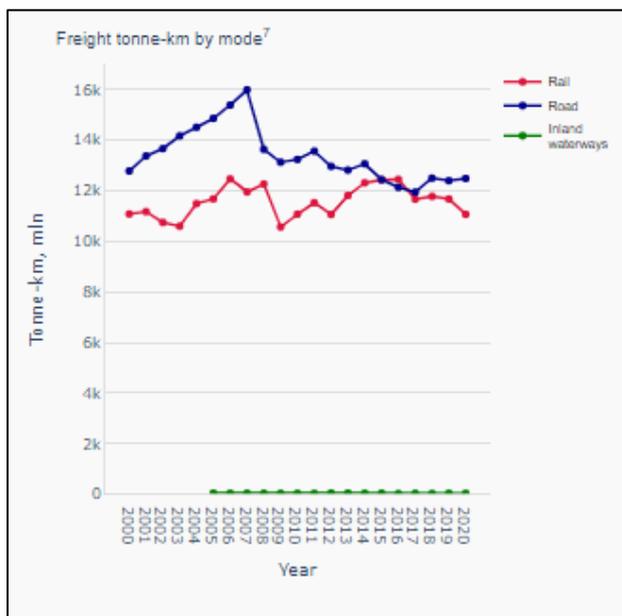


Source: ECE and Eurostat

15. The modal split data for Switzerland shows increasing transport volumes by rail and decreasing volumes for road between 2010 and 2020 – see figure 4 below:

Figure 4

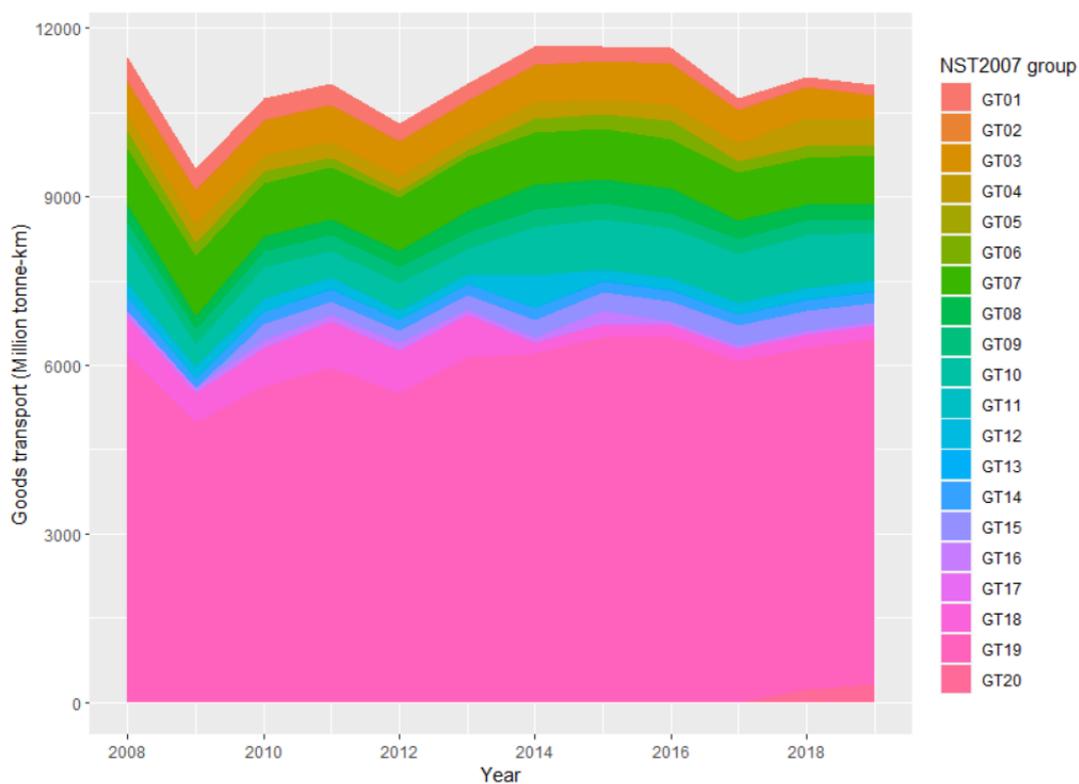
Transport of goods by inland modes of transport for Switzerland, 2000-2020. Note that road data are based on residency (Swiss lorries) while rail and inland waterway data are based on territory



Source: ECE

16. At the same time, looking at the volumes of transported goods over time, the majority of goods in Switzerland are those that can be reasonably concluded to already be transported in ITUs (GT19 (“unidentifiable goods”) with a slightly increasing trend – see figure 5 below:

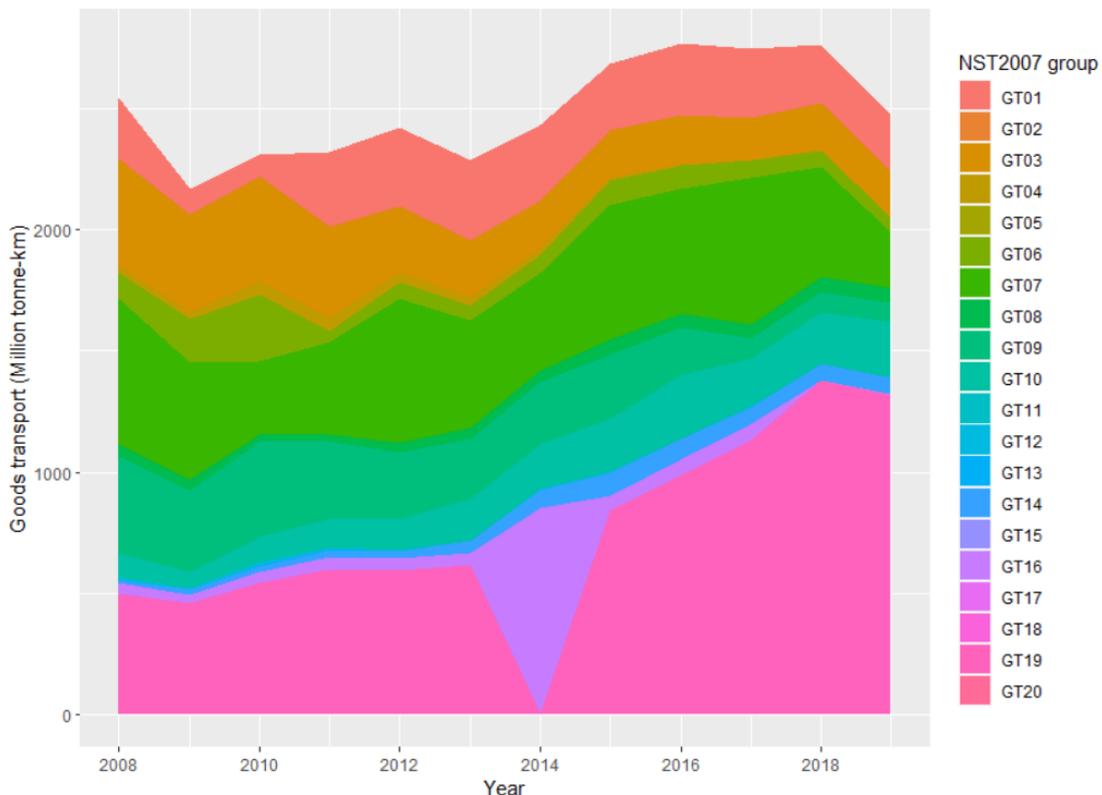
Figure 5
Transport of goods NST 2007 category for Switzerland between 2010 and 2019



Source: Eurostat

17. For Portugal, the volume of GT19 goods have substantially increased between 2010 and 2019 – see figure 6 below.

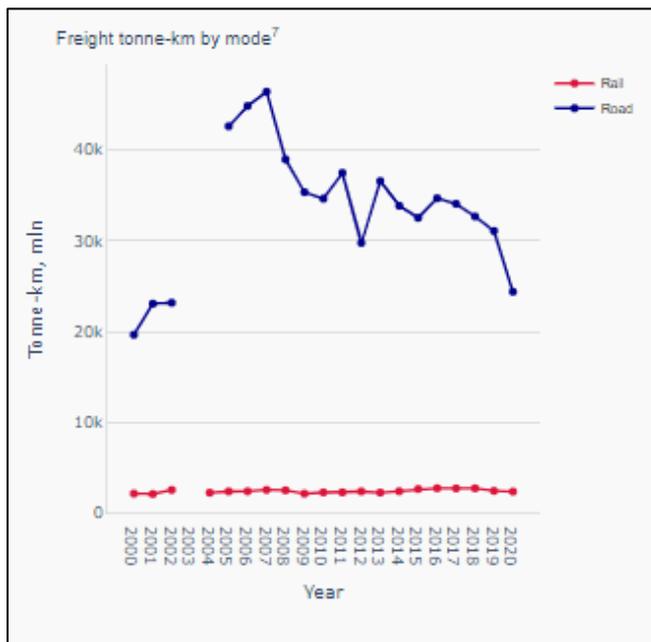
Figure 6
Transport of goods by SCL (standard goods classification for transport statistics) for Portugal between 2010 and 2019



Source: Eurostat

18. At the same time, the modal split data for Portugal shows only slightly increasing volumes by rail and a decrease in volumes by road which results in an increased share of rail in freight inland transport modal split – see figure 7.

Figure 7
Transport of goods by inland modes of transport for Portugal, 2000-2020



Source: ECE

III. Targets

19. In view of information provided in section II of this document, in setting targets for the market share of intermodal transport, WP.24 may wish to base such targets on the indicators for unitisation rate in rail and for the rail freight modal share, notwithstanding the complexities in measuring intermodal transport mentioned above. WP.24 may wish to suggest that targets are set for increased unitisation in rail and increased rail freight modal share and that such targets are set for 2026 and 2030.

20. At the same time, it is noted that the unitisation rate in rail is not available for all ECE countries with rail operations, but Eurostat produces that indicator for countries listed in para 7. For other ECE countries with rail operations, it would need to be researched further if this indicator could be calculated based on accessible data (for example, from the International Union of Railways (UIC)) or whether these data would need to be obtained directly from those countries.

21. The rail freight modal share can be calculated based on data available in the ECE statistical database based on data for transport of goods transported by road vehicles registered in the reporting country, carriage of goods by rail and carriage of goods by inland waterways. If territorialized data for modal split should be used, such can be taken from Eurostat, however, such will not be available for all ECE member countries. Further research would need to be done on the availability of territorialized data for modal split for ECE countries not covered through Eurostat. The difference between residency-based and territory-based road freight data is significant in European Union member States due to the single market and broadly liberalised cabotage rules. In states that are not part of this market the difference between the two methods is likely much smaller, though the secretariat does not have data to quantify this difference.
