

KVU OSLO- NAVET

Oslo Benchmarking update

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Ruter#



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Vehicle-kms or train-kms or seat-kms?

Vehicle-kms = train-kms for classic urban PT (tram, bus)

Big differences are apparent for modes using “trains” consisting of several vehicles (metro, railway, sometimes light rail...)

| T-BANE | 2013 | 2012 | 2011 | 2010 |
|---------------------------------|------|------|------|------|
| Operasjonelle nøkkeltall | | | | |
| Reiser (milL) | 85 | 82 | 81 | 76 |
| Personkm (milL) | 508 | 492 | 484 | 456 |
| Vognkm (milL) | 33,2 | 30,2 | 28,9 | 25,1 |
| Togkm (milL) | 6,8 | 6,1 | 6,1 | 5,7 |
| Plasskm (milL) | 4411 | 4022 | 3842 | 3341 |
| Beleggsprosent (plass) | 12 % | 12 % | 13 % | 14 % |
| Avganger (i 1000) | 288 | 289 | 287 | 257 |
| Togtimer (i 1000)** | 279 | 260 | 246 | 222 |

Vehicle-kms or train-kms or seat-kms?

Seat-kms give indication of capacity offered but are not easily available for all systems!

Vehicle- or train-kms give a good indication of “PT-availability” in the sense of “departures offered” ...

Compare: 2x 300m trains/hour – 20km
6x 100m trains/hour – 20km
40 \leftrightarrow 120 train-kms

Passengers or passenger-km?

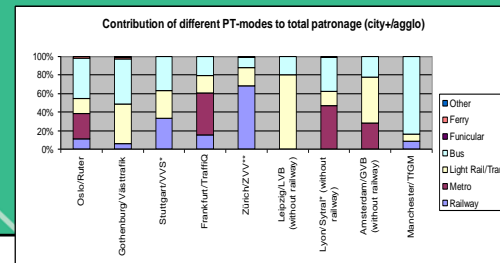
Use of passengers (or trips) neglects the distance travelled; passenger-kms takes such into account...

Railway and metro thus will create more passenger-kms per trip than tram and bus.

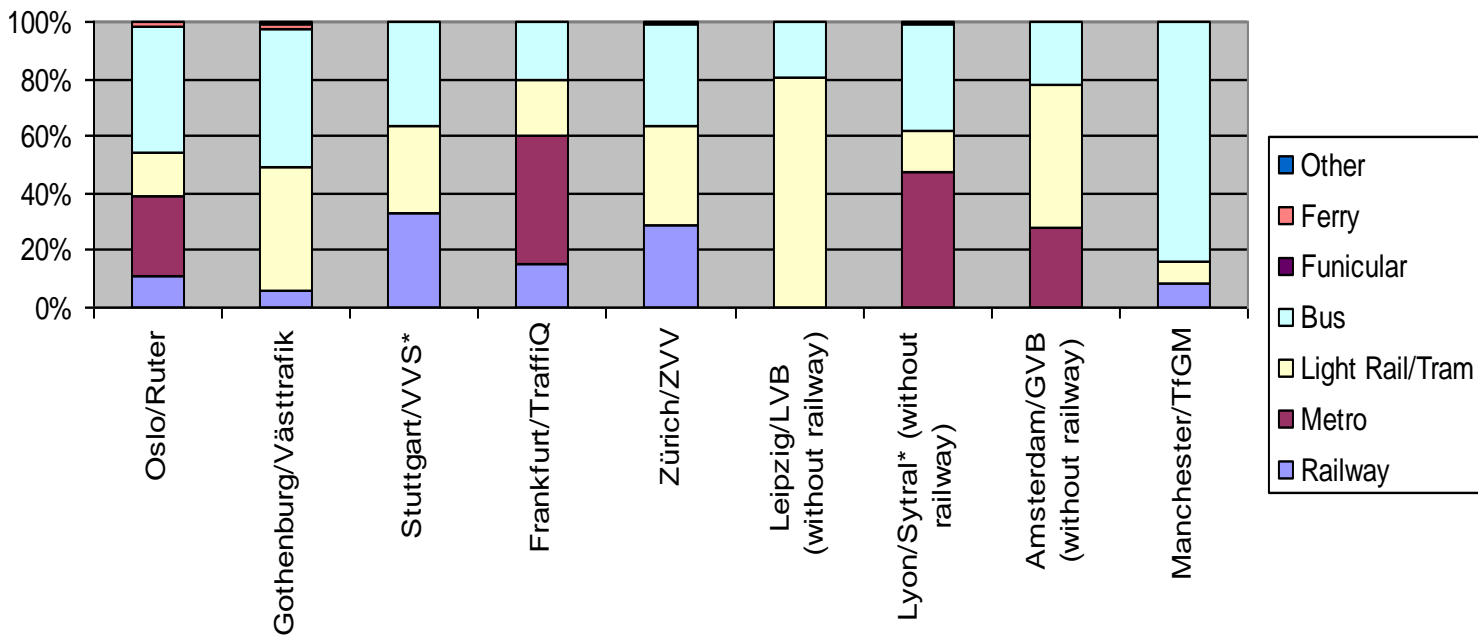
Passenger data easier available than passenger-km data...



Updated benchmarking results

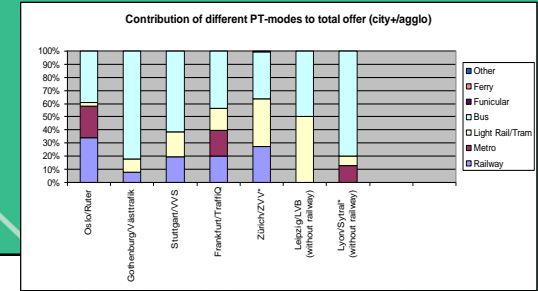


Contribution of different PT-modes to total patronage (passengers; city+agglo)

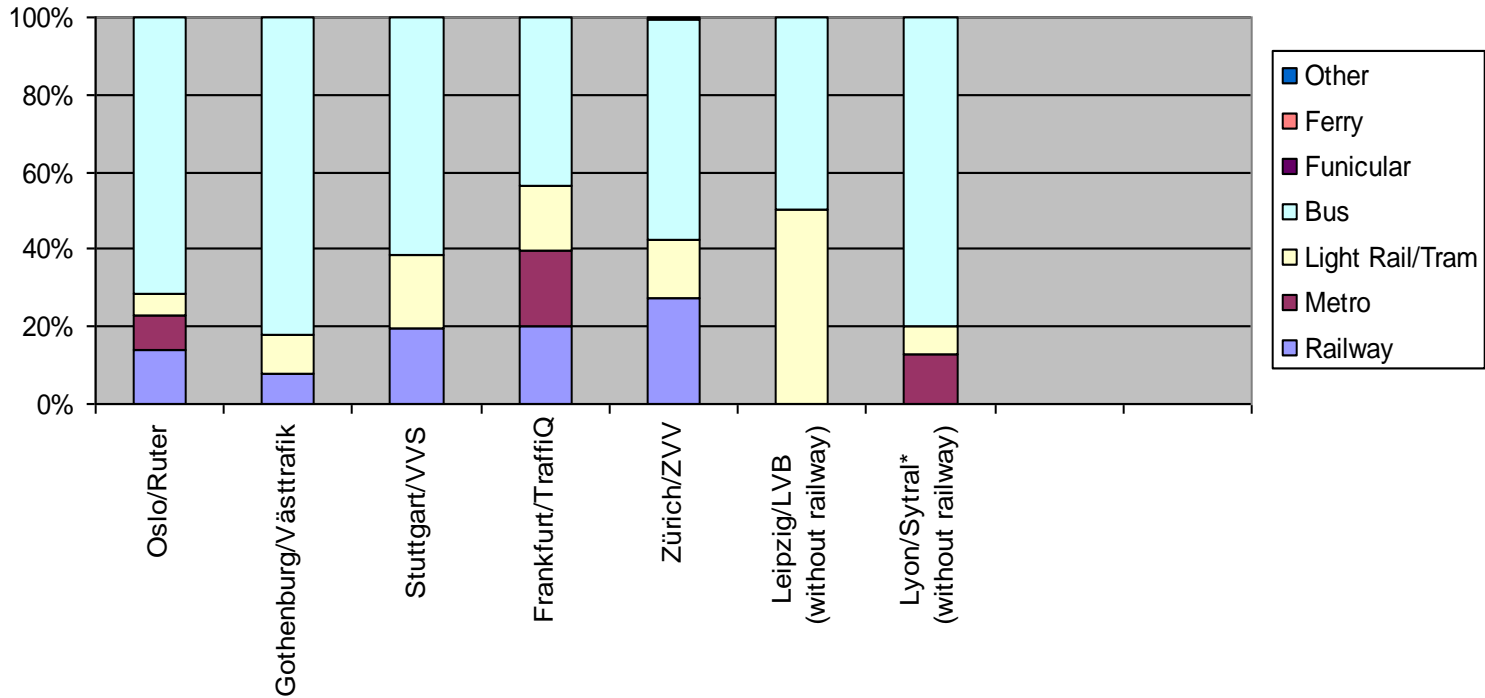


Updated benchmarking results

Oslo: now train kms Railway/Metro



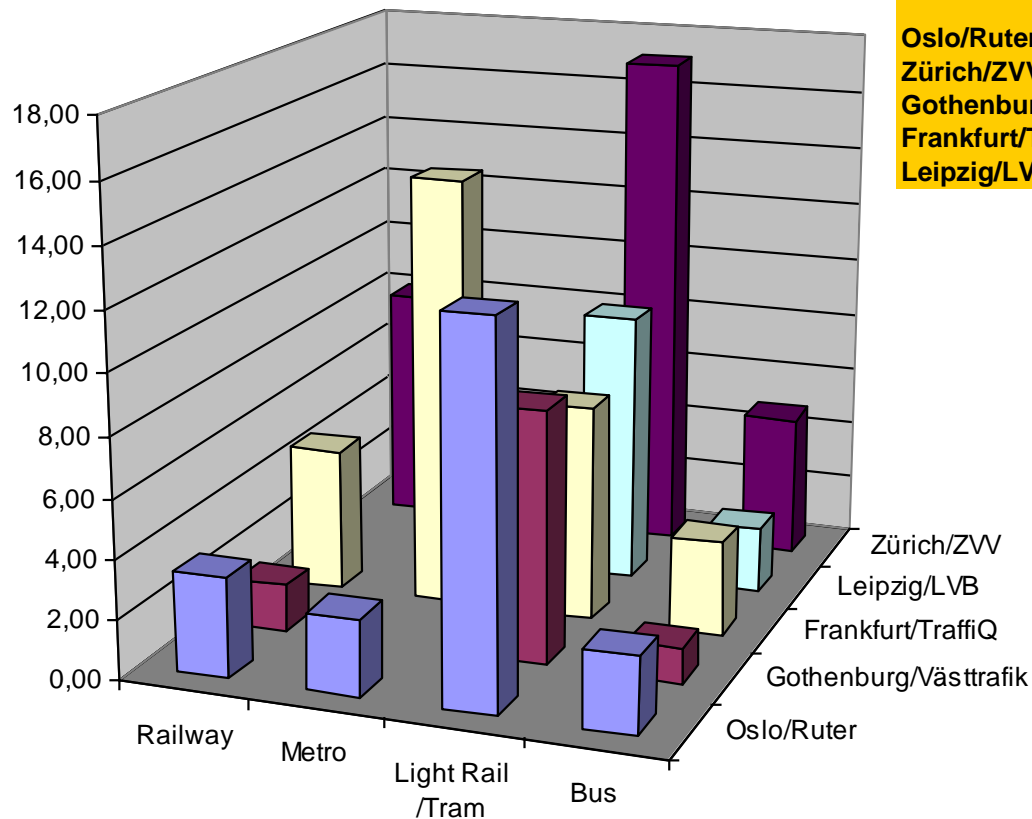
Contribution of different PT-modes to total offer (train/vehicle-kms; city+agglo)



Updated benchmarking results

Zurich added ...

Efficiency of different PT-modes (Passengers/vehicle-kms - year)



| | Railway | Metro | Light Rail /Tram | Bus |
|-----------------------|---------|-------|------------------|------|
| Oslo/Ruter | 3,36 | 2,56 | 12,56 | 2,55 |
| Zürich/ZVV | 8,00 | | 17,10 | 4,79 |
| Gothenburg/Västtrafik | 1,59 | | 8,43 | 1,18 |
| Frankfurt/TraffiQ | 4,82 | 14,48 | 7,23 | 3,19 |
| Leipzig/LVB | | | 9,12 | 2,20 |

Updated: Conclusions – questions – PT-impression Oslo

Input/output ratio of Oslo PT-modes is still telling something ...

Railway: less dramatic picture but still scope for better role/use

Metro: outside peak-hours likely lots of surplus capacity – operational patterns to be checked

Tram: appears to be popular and promising for playing a better role

Bus: too dominant role

Updated recommendations:

Railway:

- ▶ More passengers from East need to be brought directly to stops West of Oslo S – any new infrastructure to concentrate on this task.
- ▶ Turning facilities West and East of Oslo centre required to allow operational balancing of differing East/West demand.

Metro:

- ▶ Today's lines are already rather long and serving non-Metro environments (one would likely not plan them in a new scheme!).
- ▶ Avoid further regional extensions in low-density areas.
- ▶ Any new infrastructure to concentrate on improving operational patterns and system efficiency of existing lines!
- ▶ Create turning and de-centralised vehicle storage facilities.

Tram:

- ▶ Enable segregated alignments and signal priority (requires some good-bye from car-free flow philosophy! Unsignalled roundabouts?)
- ▶ Use not only in centre orientated corridors but also for feeders.
- ▶ Convert strong bus corridors to tramway.

Bus:

- ▶ Reduce direct parallel services to centre – more feeders.