Overview

- Characterization of travel time variability of car and PT trips (per component; bus & metro)
- Variability after all *predictable* variation is taken into account
  - Time of day, day of the week etc.
- Probably not mainly caused by ”incidents”
  - Congested traffic is inhererently random
- Approx. linear relationship btw speed^{-1} (min/km) and its stddev
  - Slope ~.3 for car
  - Slope ~1 for PT waiting and interchange
  - Weak relationship for PT in-vehicle time
  - Terminology: min/km is inverse of speed, not ”travel time”, really… makes a difference!

Definition…

- “Traffic congestion as a source of travel time variability should be analysed by distinguishing recurrent congestion (e.g., the day-to-day increase in traffic in the morning peak in working days) and non-recurrent congestion, caused by incidents like accidents, extreme weather and others that may cause very long travel times, which are of rare occurrence”
- Incidents probably play a minor part!

Data

- Wonderful PT data
- Car data looks a bit thin? Seems to work though

- Lognormal or loglog distributions
  - Not very skewed (”random” vs ”incidents”…)

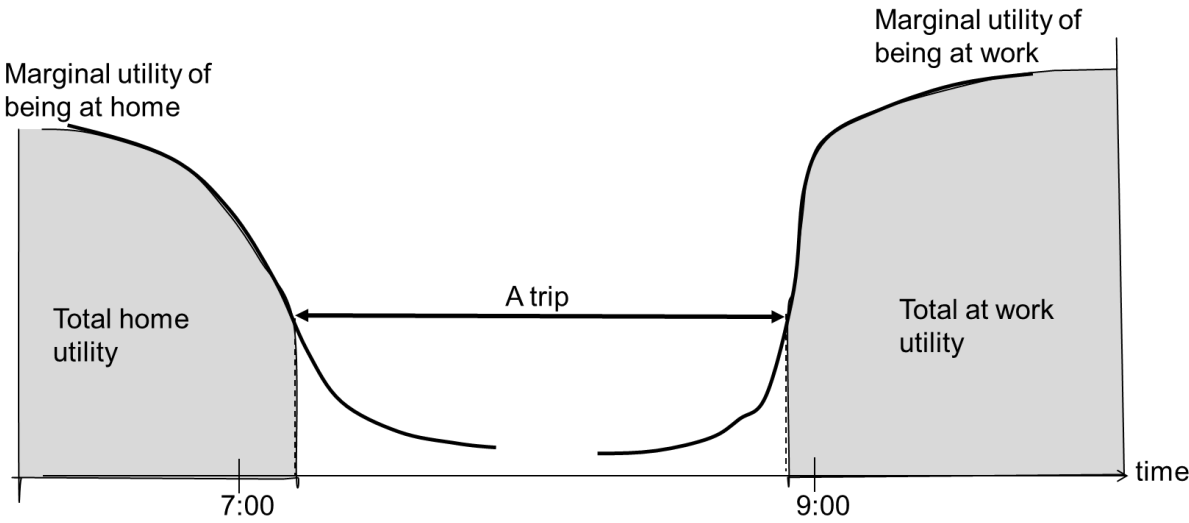
Comments – car

- Lower speed => higher variability
- Control for different speed limits & road types?
  - Would expect ”high congestion => high variability”, not e.g. ”30 km/h road has higher variability than 50 km/h road”
  - E.g. replace distance (km) with free-flow travel time

Comments - PT

- Waiting time: stddev ~ mean
  - Arrivals essentially random, then? Plausible (mean is 3 min!)
- Is variability of walking time really interesting?
  - Endogenous individual policy variable…
- Weak relation in-vehicle time – stddev
  - Strange? Would expect vicious circle?
  - At least as for cars?

Valuing variability



Scheduling model

Alpha/beta/gamma (step)

(Linear) slopes

Const. + slope

More general forms

Choose optimal dep.time

Reduced form

Stddev*f(tail mass)

Variance

0

Seldom closed forms

Some behavioural evidence here

Less behavioural evidence here (esp. RP)

… and worse, the evidence points to inconsistencies, disutility of delays as such, and premium on zero delays…

Implications for the paper

- The paper studies mostly SD
- … but there is little or no evidence that the SD is the ”best” measure
  - Either from theory (there are many scheduling models…)
  - … or from behavioural studies (few comparative studies)
- Suspicion: it matters whether there is a *promised* arrival time (timetable)
  - Psychological or due to activity scheduling
- … and the tail mass and length probably matters