Centre for Transport & Society

University of the West of England, BRISTOL

CTS WINTER CONFERENCE 2012

‘Peak Car’

Where did the idea come from? And where is it going?

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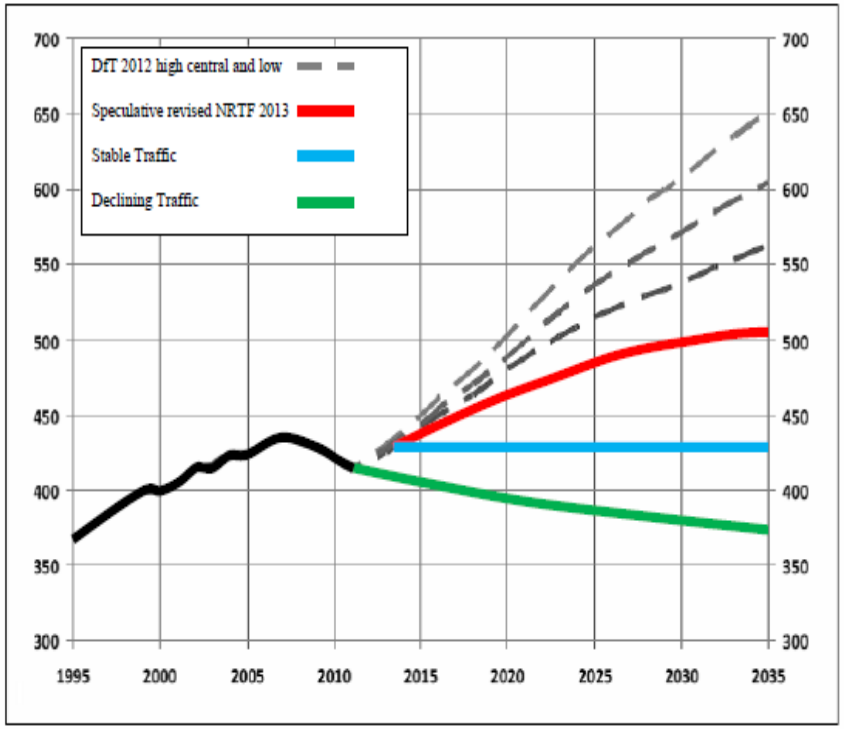
Definitions (after a fashion)



Care needed about traffic, car traffic, car ownership, car use per person, mileage, trips… but it's not disabling

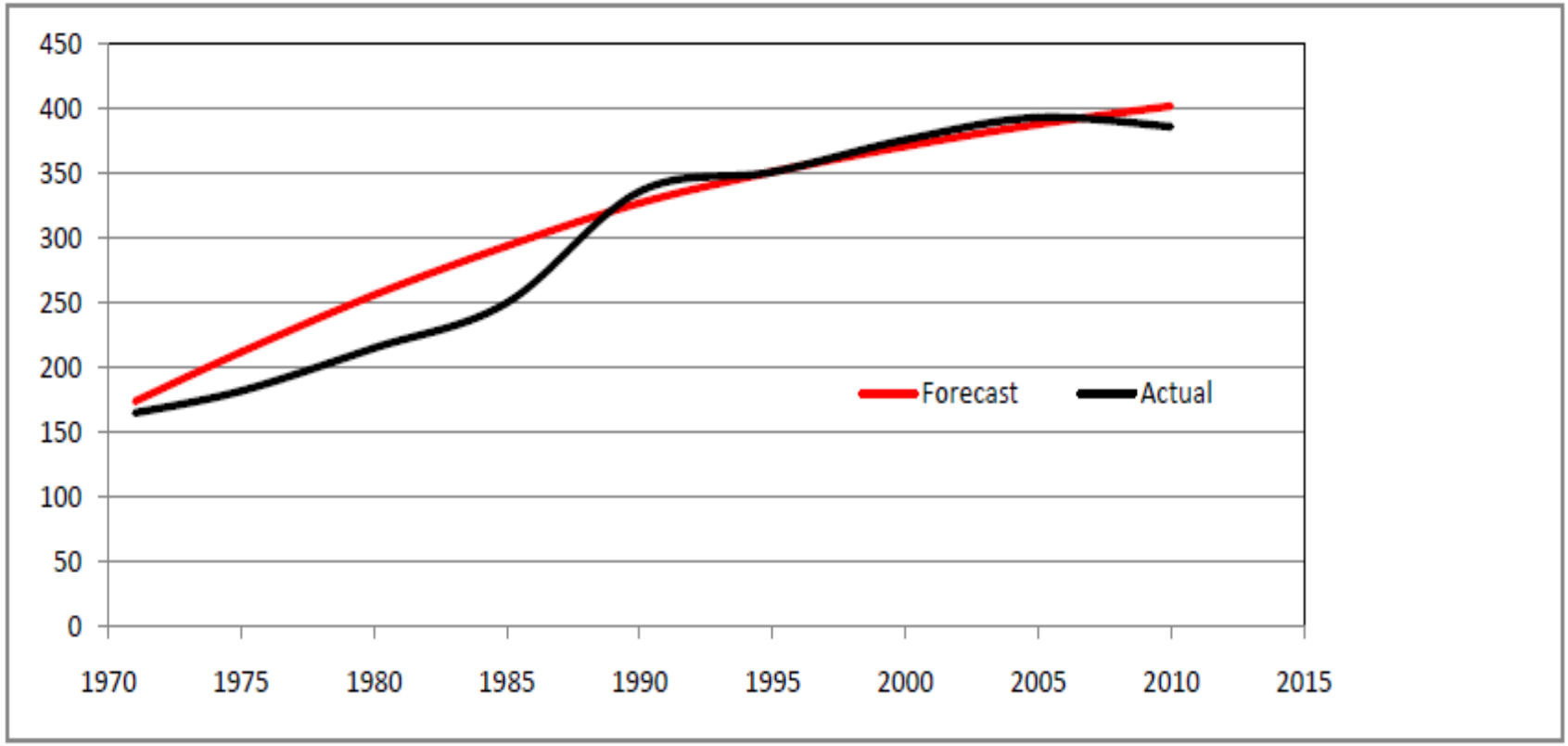
- Current official traffic forecasts
- **The 'Interrupted Growth' hypothesis.**
- **The 'Saturation' hypothesis.**
- **The 'Peak Car' hypothesis.**

At present, **very** rapid developments

- The idea of peak travel – but mostly peak car - has risen from a small minority interest to international research within 5 years, and mostly within the last 2 years – and changes by the week.
- There has been overview analysis for at least 25 countries, and detailed work in about ten.
- But in the UK, it all started over 40 years ago – and then disappeared for a generation...

The old tradition: in 1973 official forecasts expected saturation in car ownership by about 2010 – traffic forecast very accurate (for the wrong reasons?)

1973 DfT/TRL Car traffic forecast to 2010



An explanation? 'Travel time budgets'?

Zahavi and others 1970s – reinvented every decade

Schaeffer and Victor 2000:
Strong elasticity of distance wrt income, but *travel time is stable*. So higher income drives to faster modes – total distance goes on increasing, but slow modes (inc. car) replaced by air.

(predicted maximum US car use by 2010, and absolute decline in OECD countries)

Metz: Destinations increase with speed^2, but then more distance has diminishing marginal utility. Total *travel time is stable*, income becomes redundant. So total distance (and car distance) saturates.

(we have reached peak now, but *decline* is due to economy)

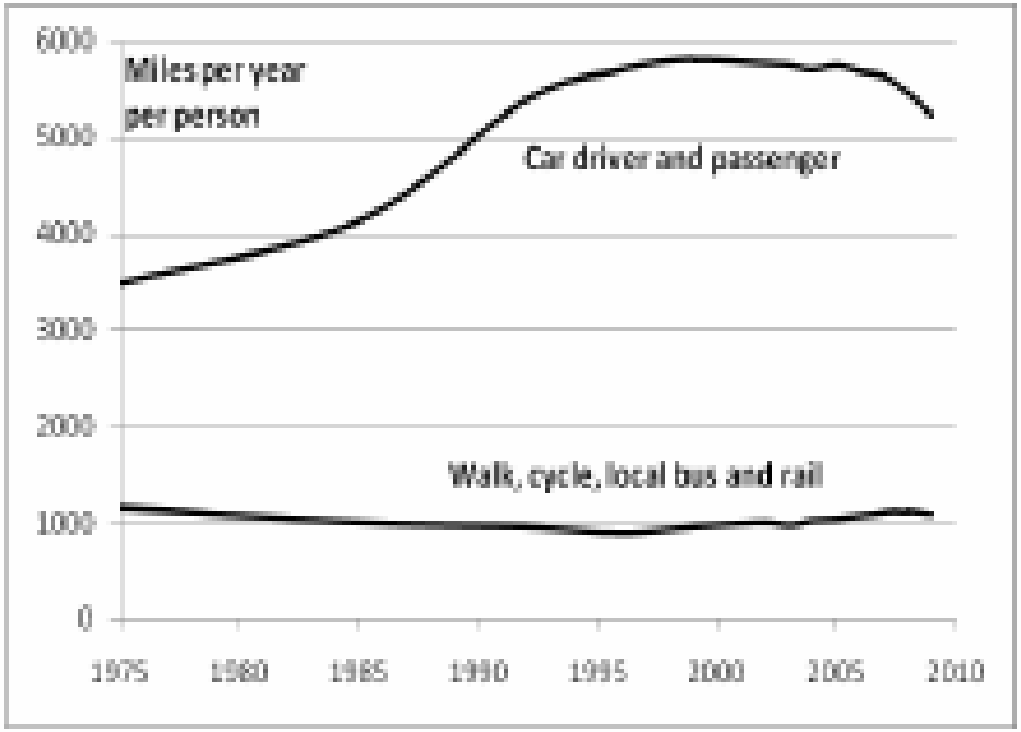
Unresolved issues with statistical averages being treated as behavioural constants
Not a behavioural explanation - but still an intriguing empirical observation

Modelling Saturation in car use is OLD and continuing tradition

- Tanner, Tulpule etc in the 1970s – establishing the saturation level was the first step in calculating a trajectory towards it. Peak car taken as axiomatic
- Zahavi (1974), then later Schaeffer and Victor (2000) and Metz (2010) – a stable travel time budget implies peaking of car use
- **The idea of a saturation level *in the distant future* is easier to accept than the idea that it is here already**

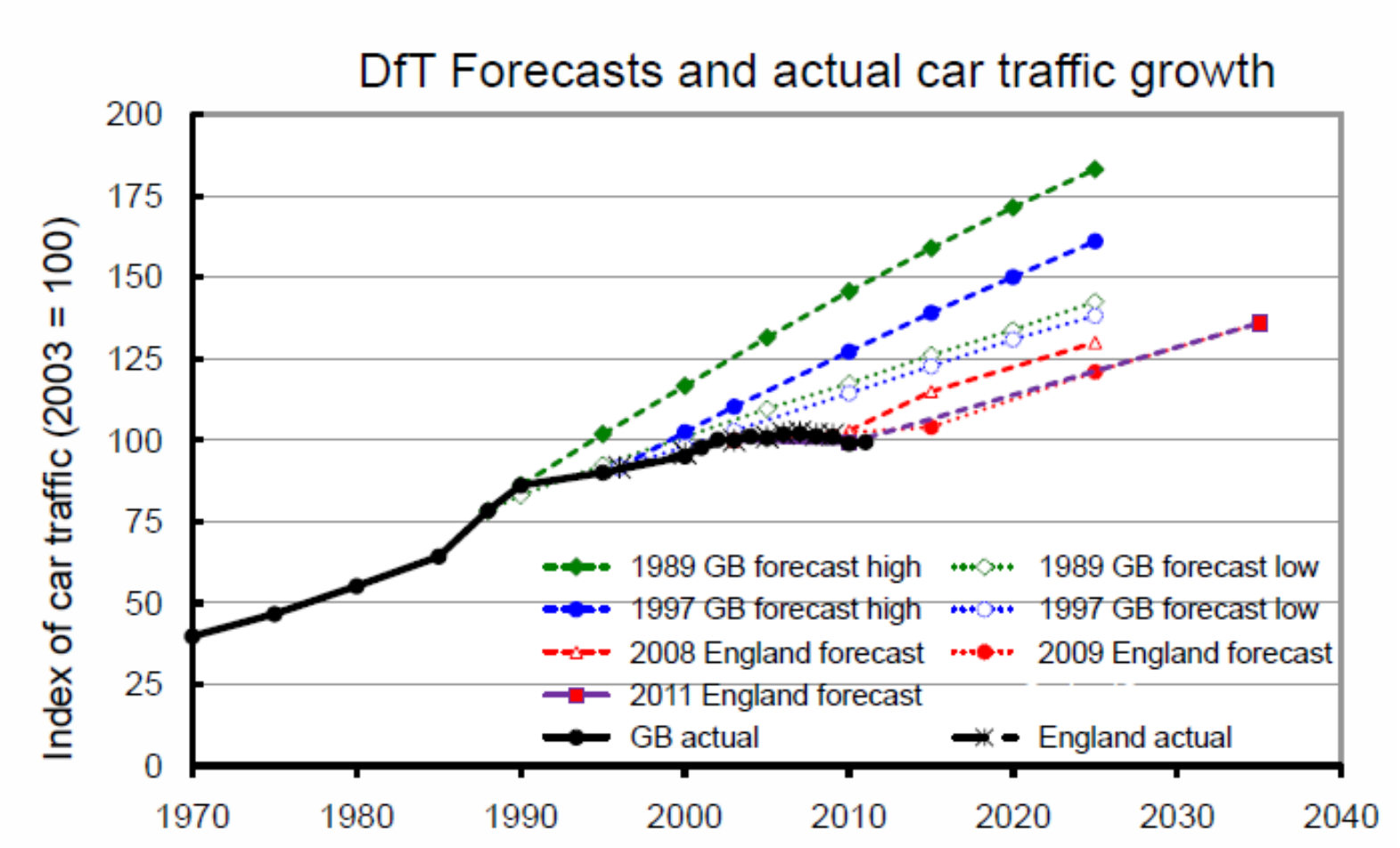
By 2010 clear that something important was happening

After decades of growth, car use levelled off and declined



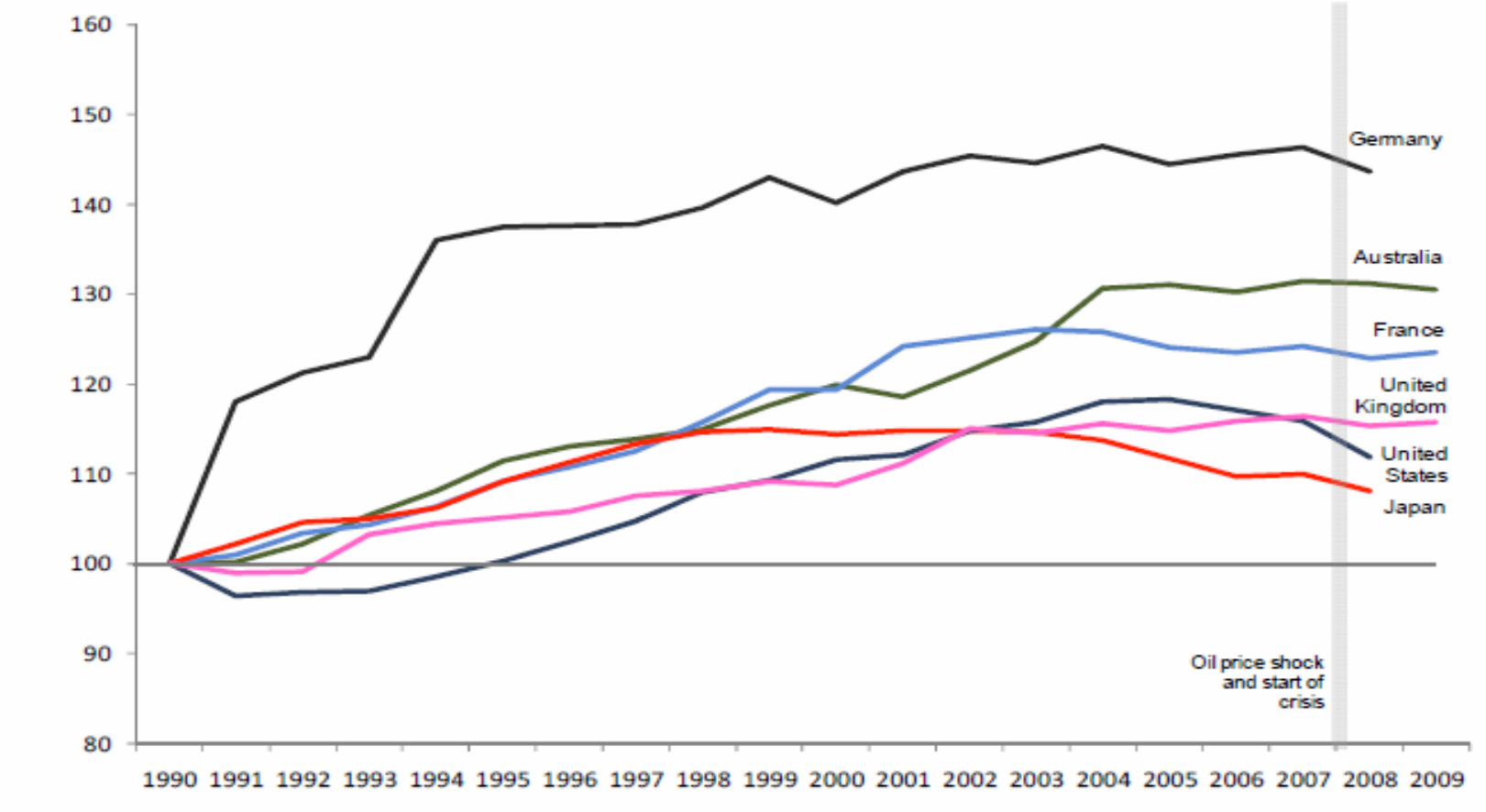
A progressive, systematic and continuing tendency for long term trends in car use to be over-forecast.

(not attributed to peaking or saturation, but to faulty external input data)



‘it’s not only us – maybe it’s real’

Private Car Use 1990-2009 for six, OECD/ITF 2010 (similar in 24)

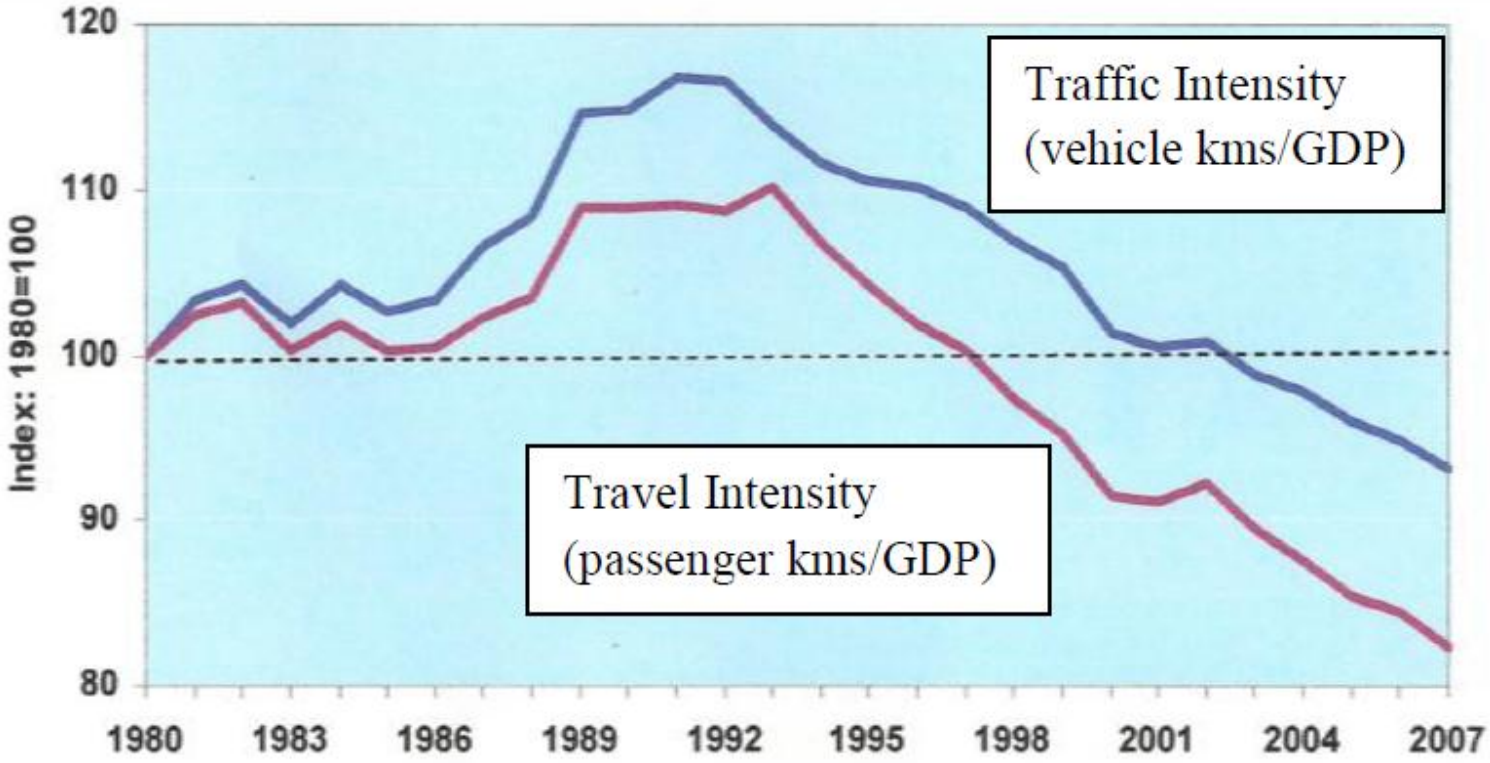


The search for evidence on structural change in demand

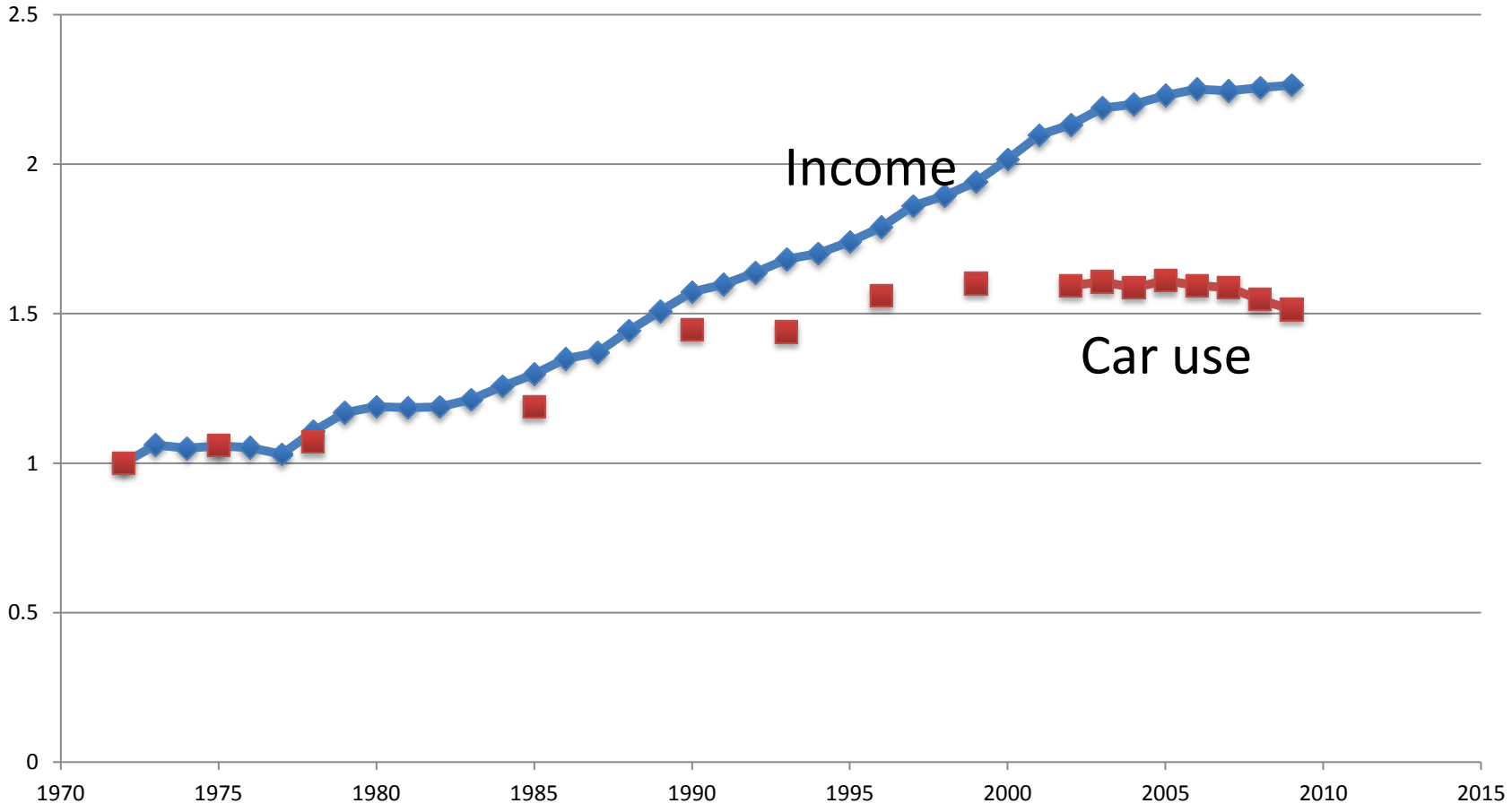
A remarkable convergence on four key research themes in many different countries

- Decoupling or reversal of *income* effect
- *Age/Cohort* effects
- *Urban* policy impacts moderated by *density* and *life cycle* transitions
- Mobile internet, *e-activities and cultural shifts about the 'love affair'*

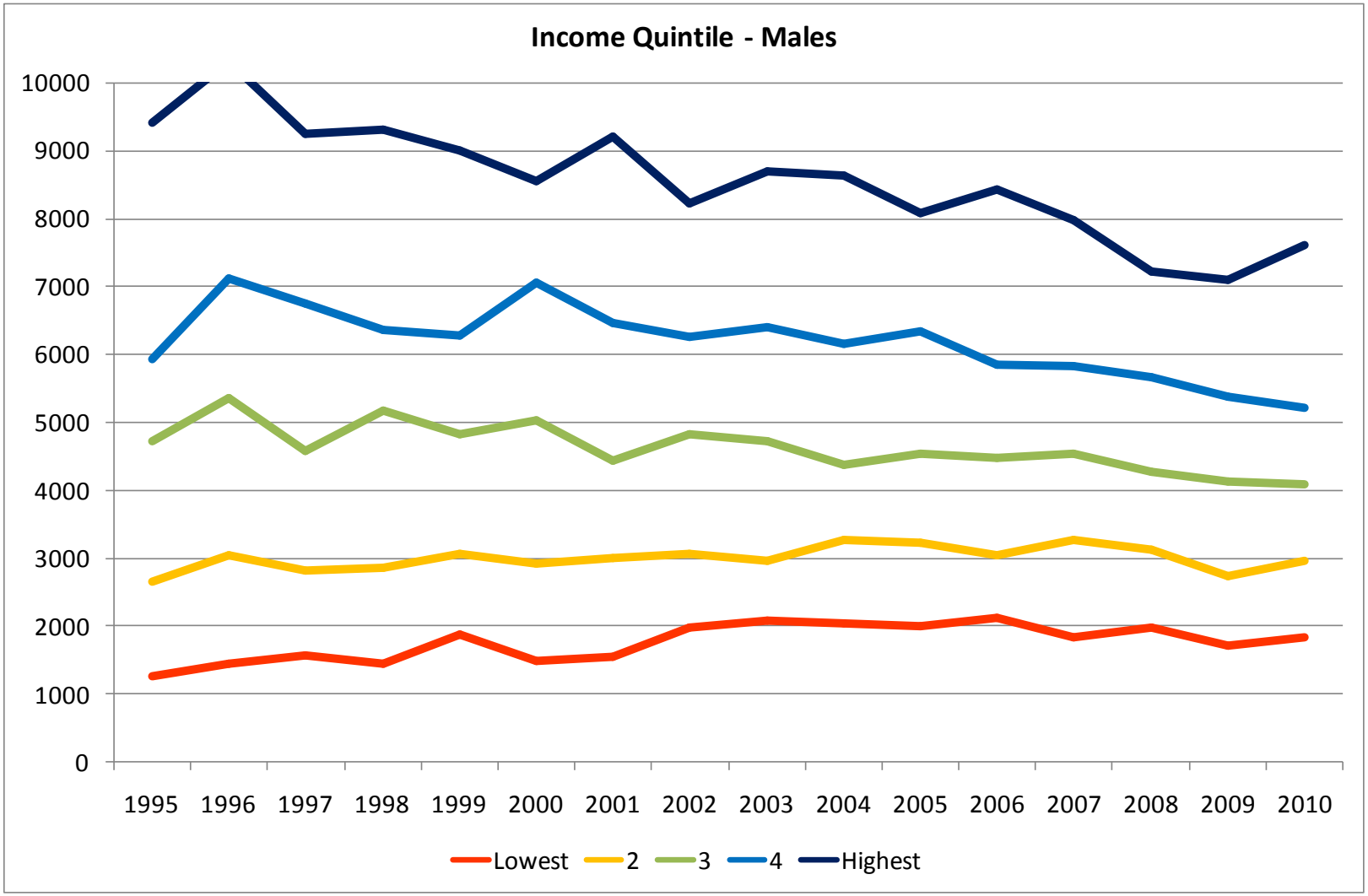
Revival of interest - discovery by 2007 of change in relationship between mobility and income around 1992-4, little noticed



David Metz: ‘Decoupling of distance travelled from income’ (since 1990?)

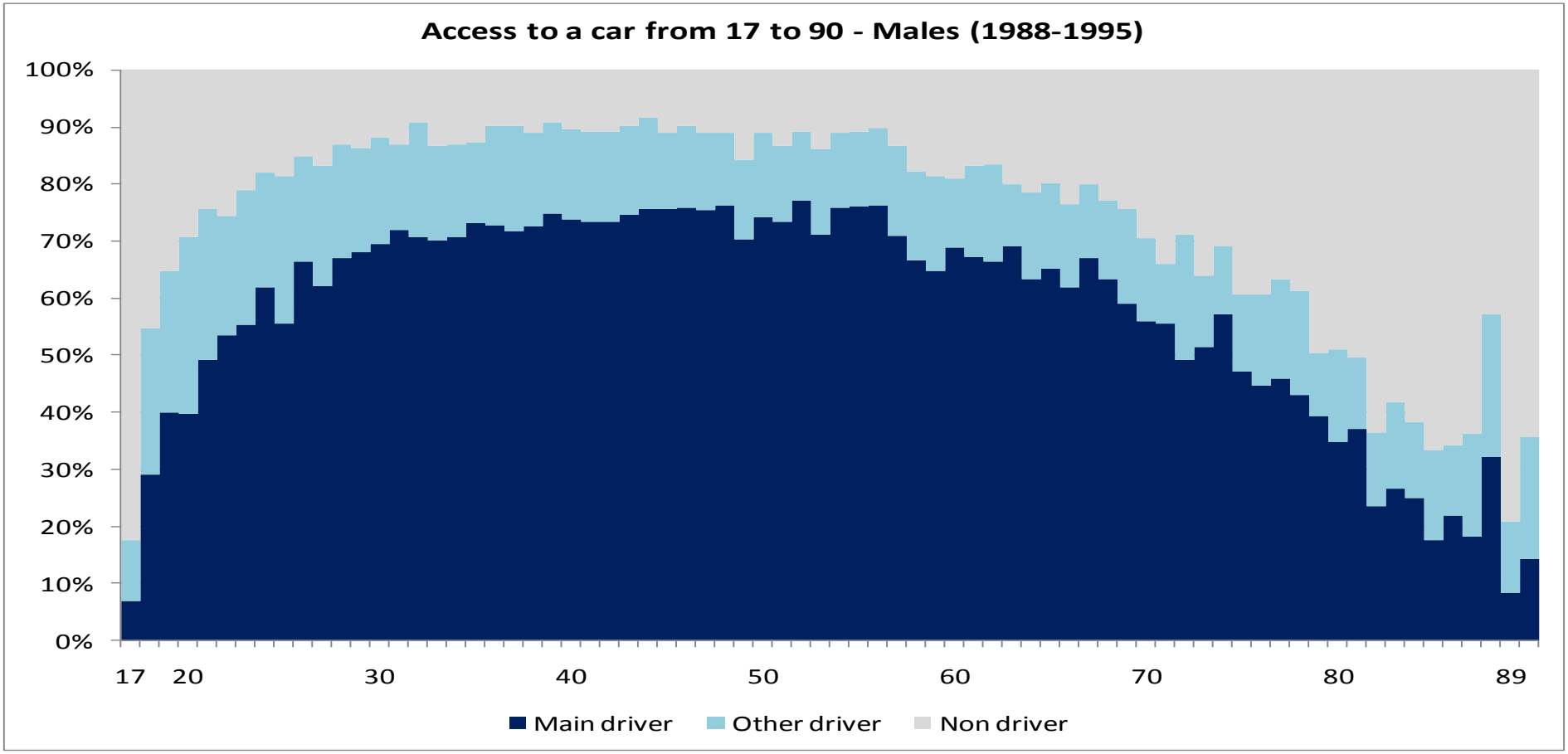


Stokes: biggest falls in car use by **highest** income men



- Higher income men are driving less
- ... And lower incomes, driving more

Access to a car by age – Men 1988-95 1995-01 2002-08



- Fast take up from age 17
- Decline after age 50

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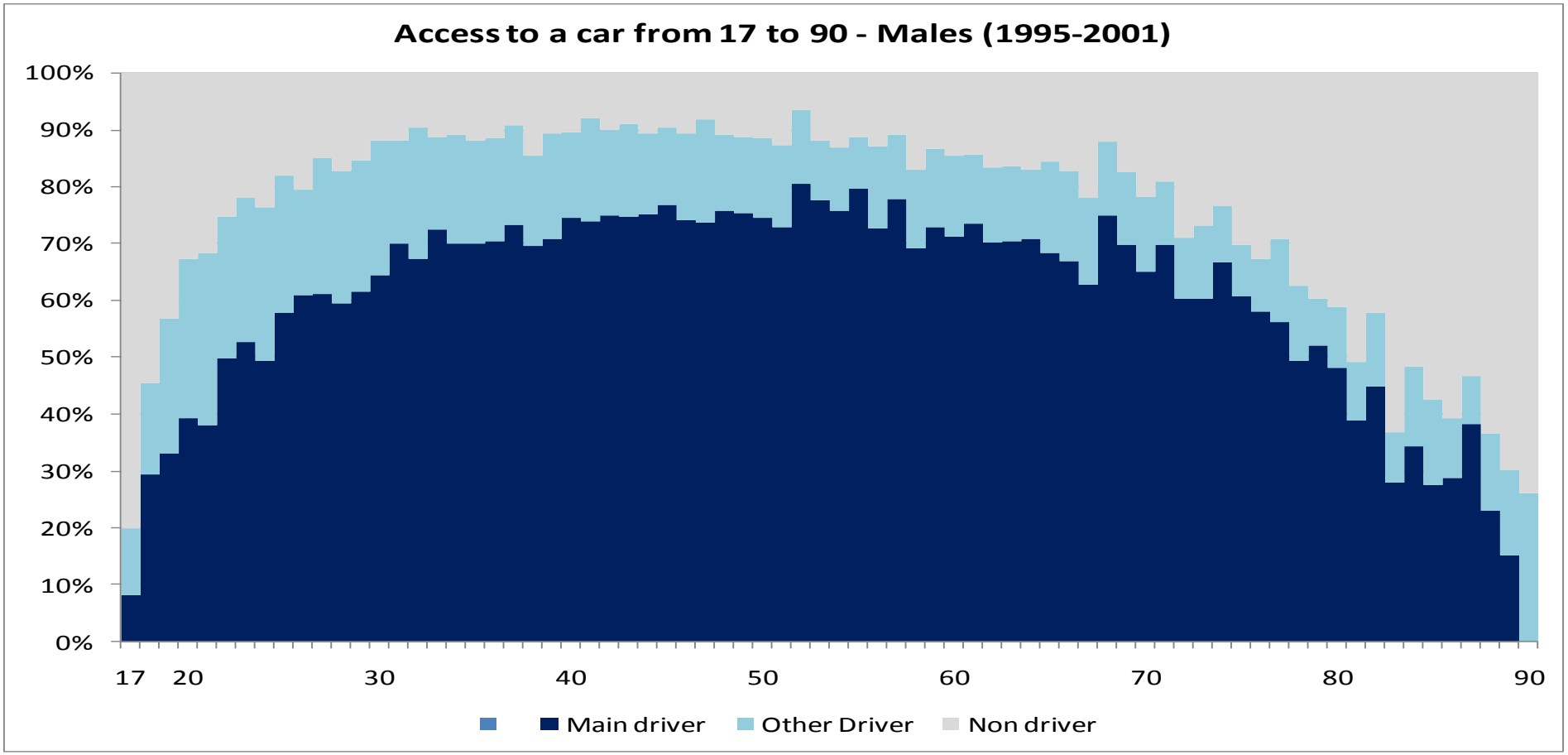

- Slightly slower rise
- 'peak' remains to late 50s

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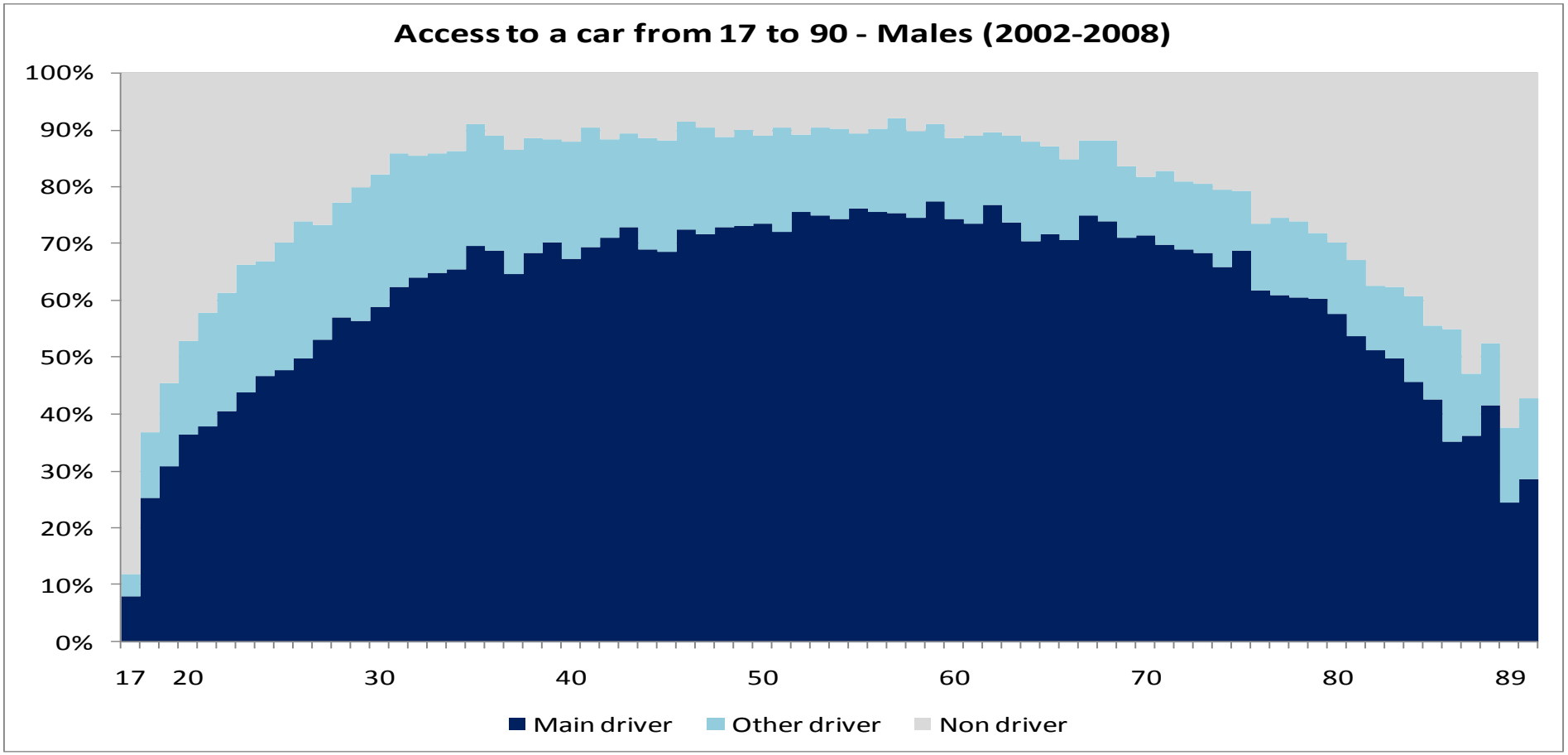

- Markedly slower rise
- 'peak' to mid 60s
- Bigger % with car at 90 than at 18

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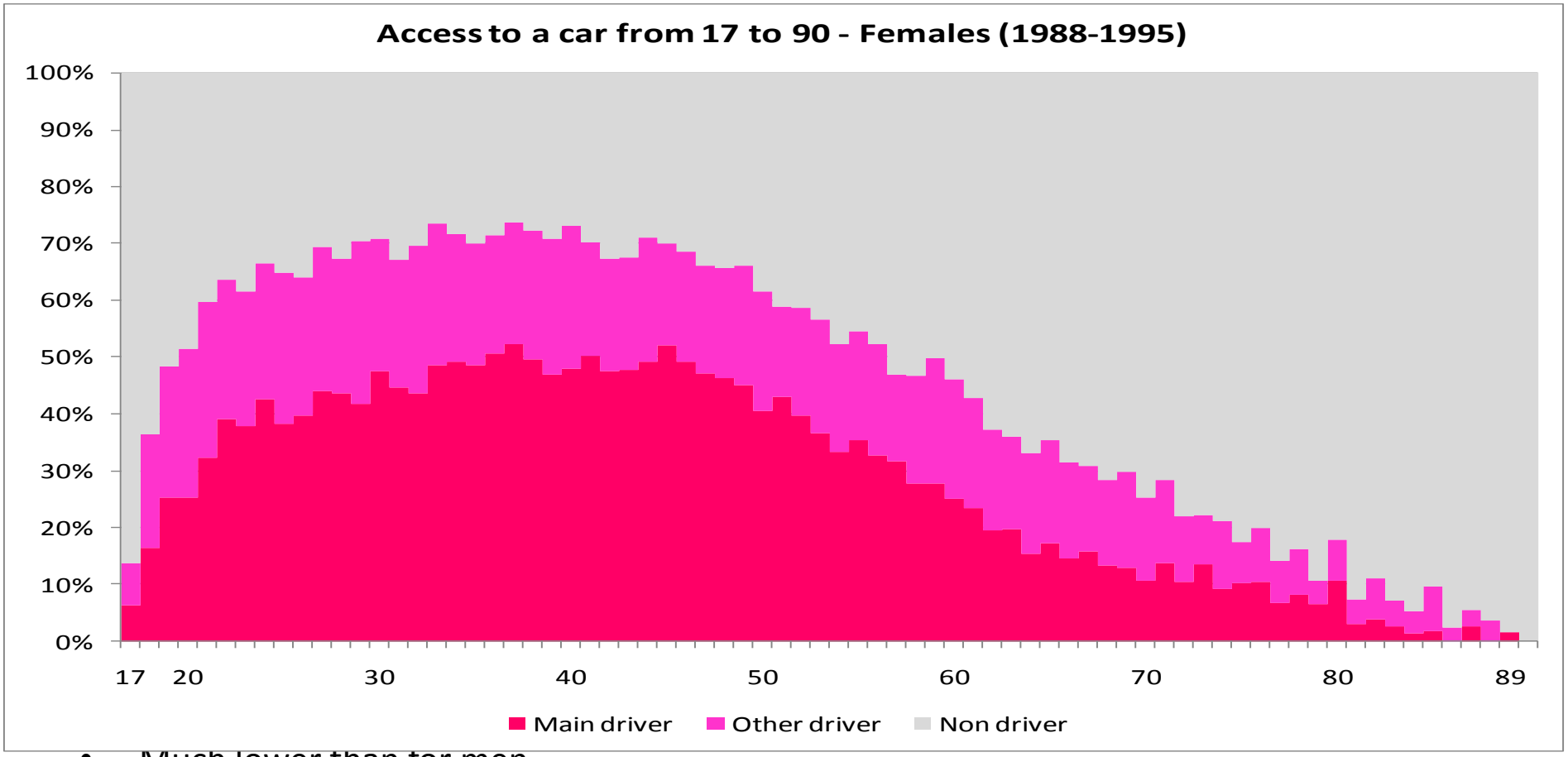
Access to a car by age – Women 1988-95 1995-01 2002-08



- Much lower than for men
- Tail off from about 45

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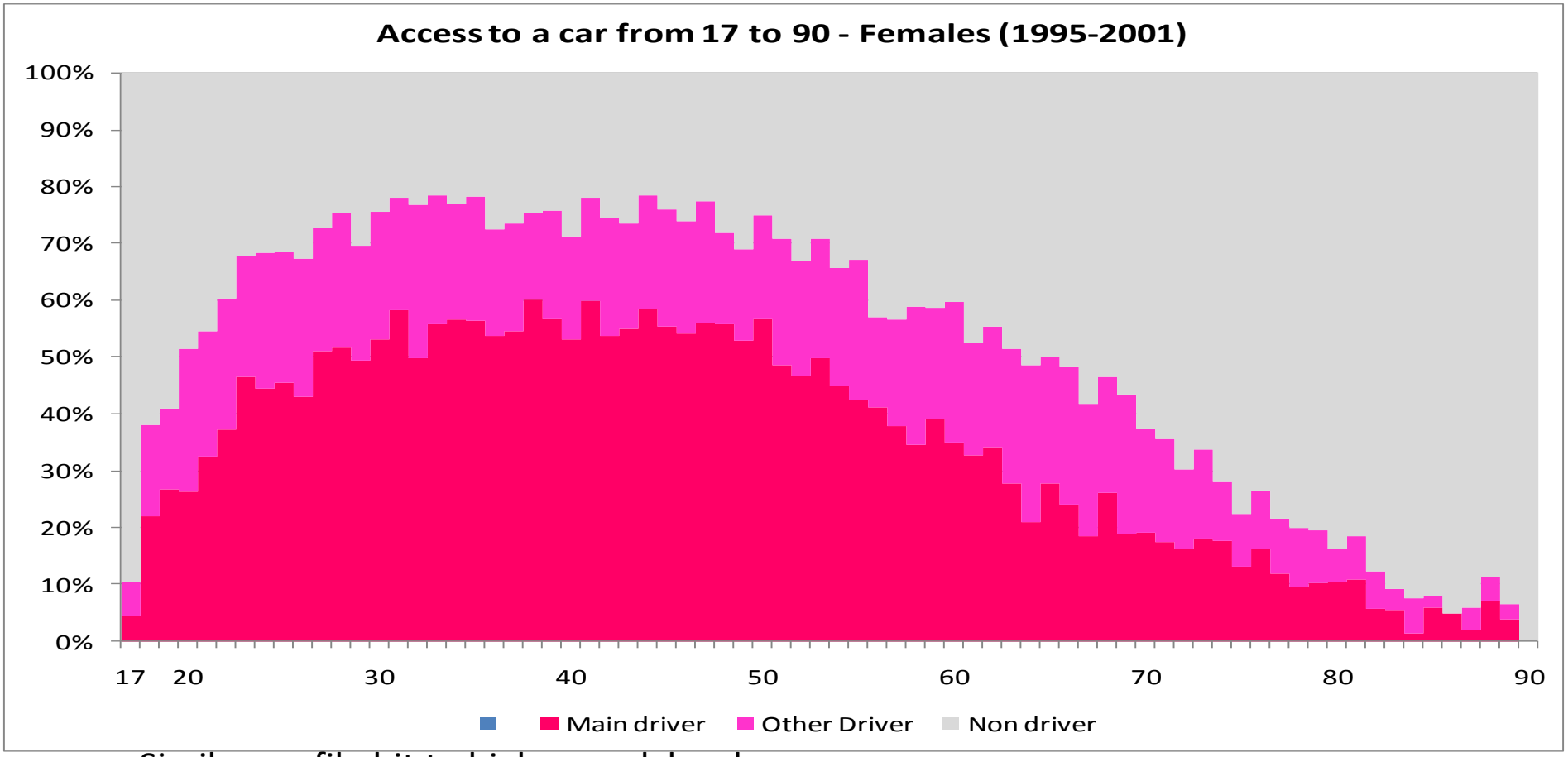

- Similar profile bit to higher peak level

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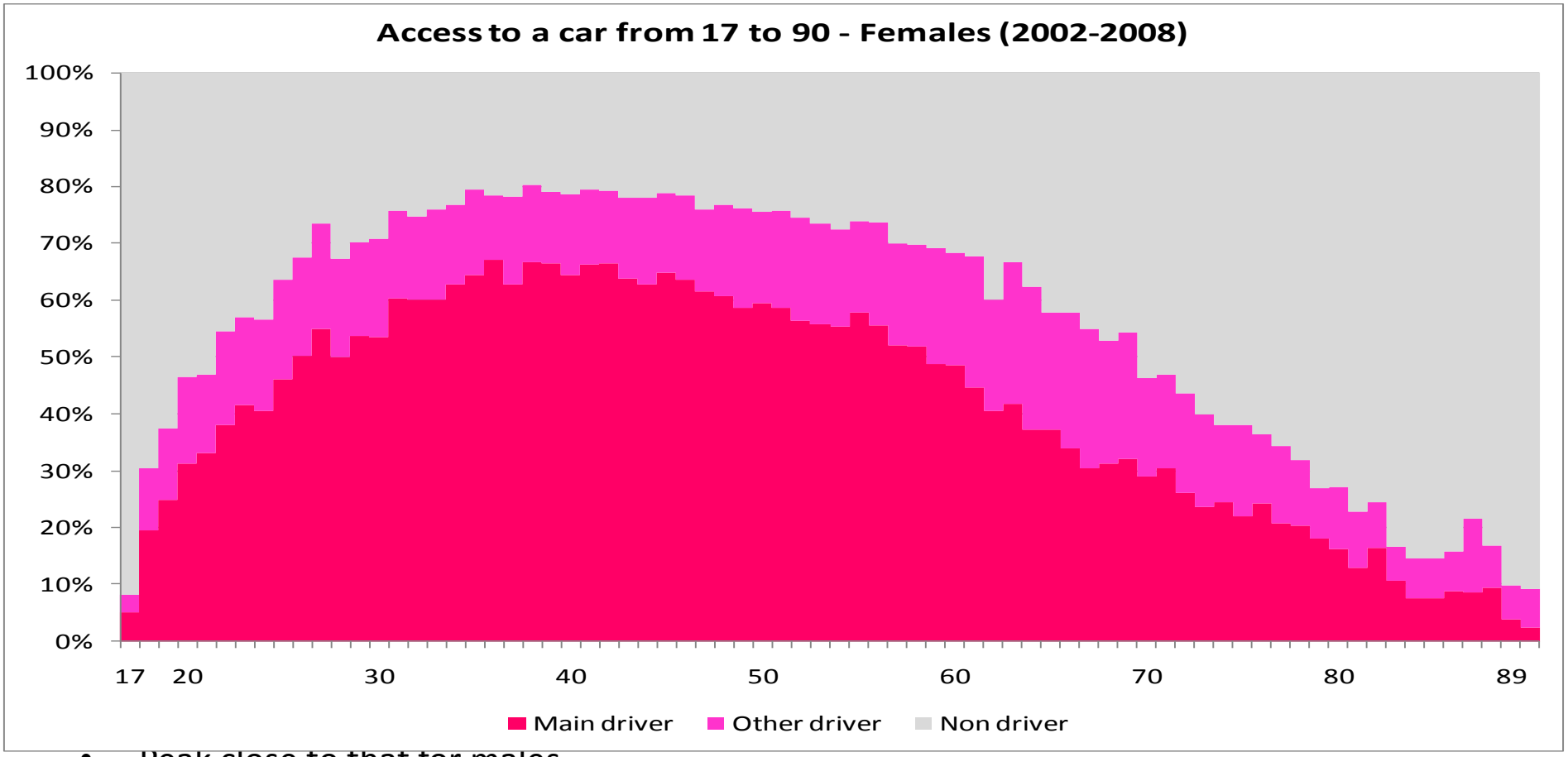

- Peak close to that for males
- Lengthening of peak level

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Urban Policy/Density/Transitions

Rich, economically successful cities with high incomes and growing population – greatest reduction in car use **(London – similar trends to cities like Munich, Paris – and smaller cities like Freiburg, Strasbourg…)**

- Also reductions in medium size towns especially English 'sustainable travel towns' 2004-8 ,
- and lower car use in high density new urban developments.

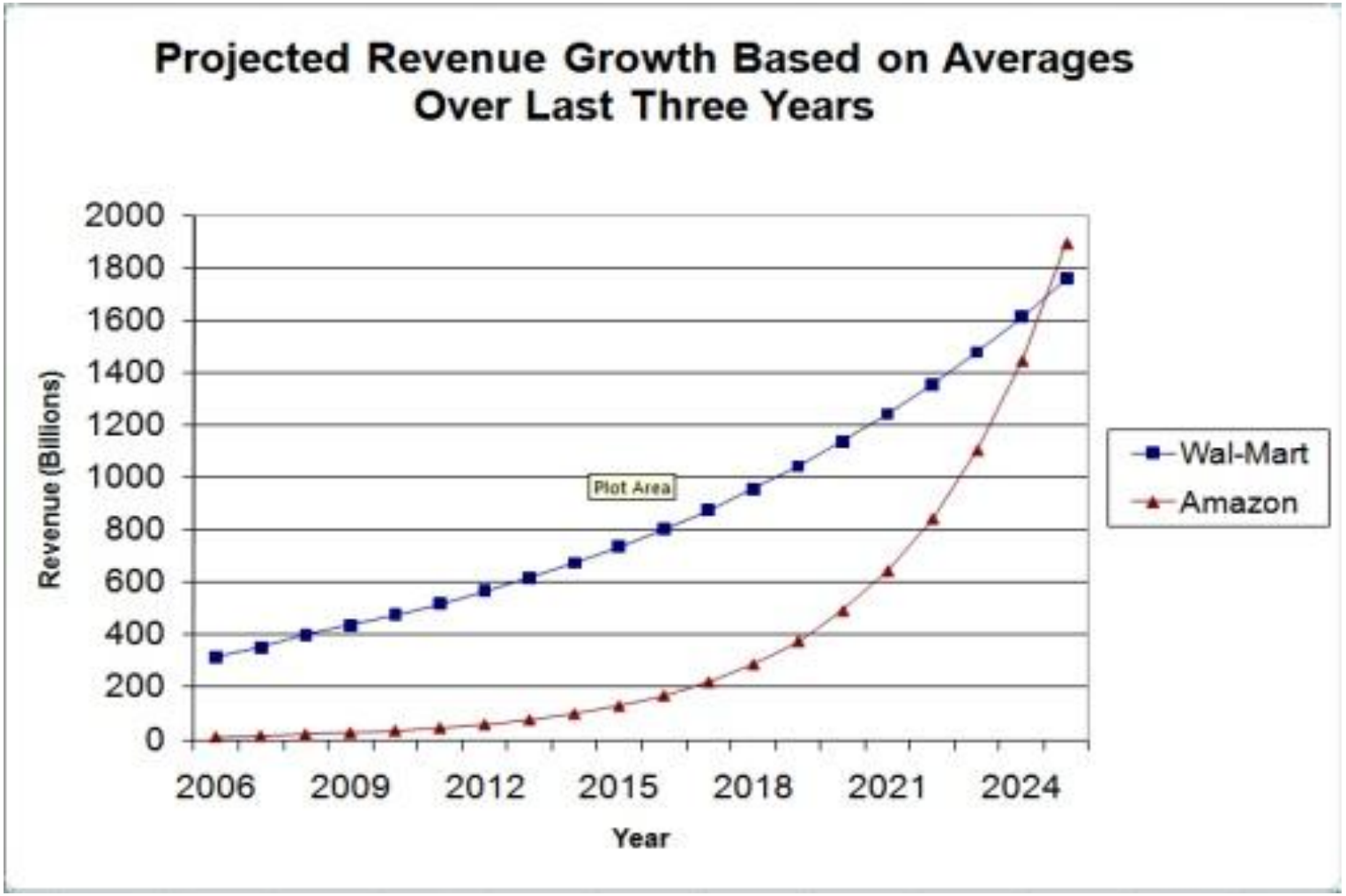
Behaviour change builds up over time triggered by life events – same profile as time-dependent lagged elasticities

So not *only* because of economic pressure – Policy effects?

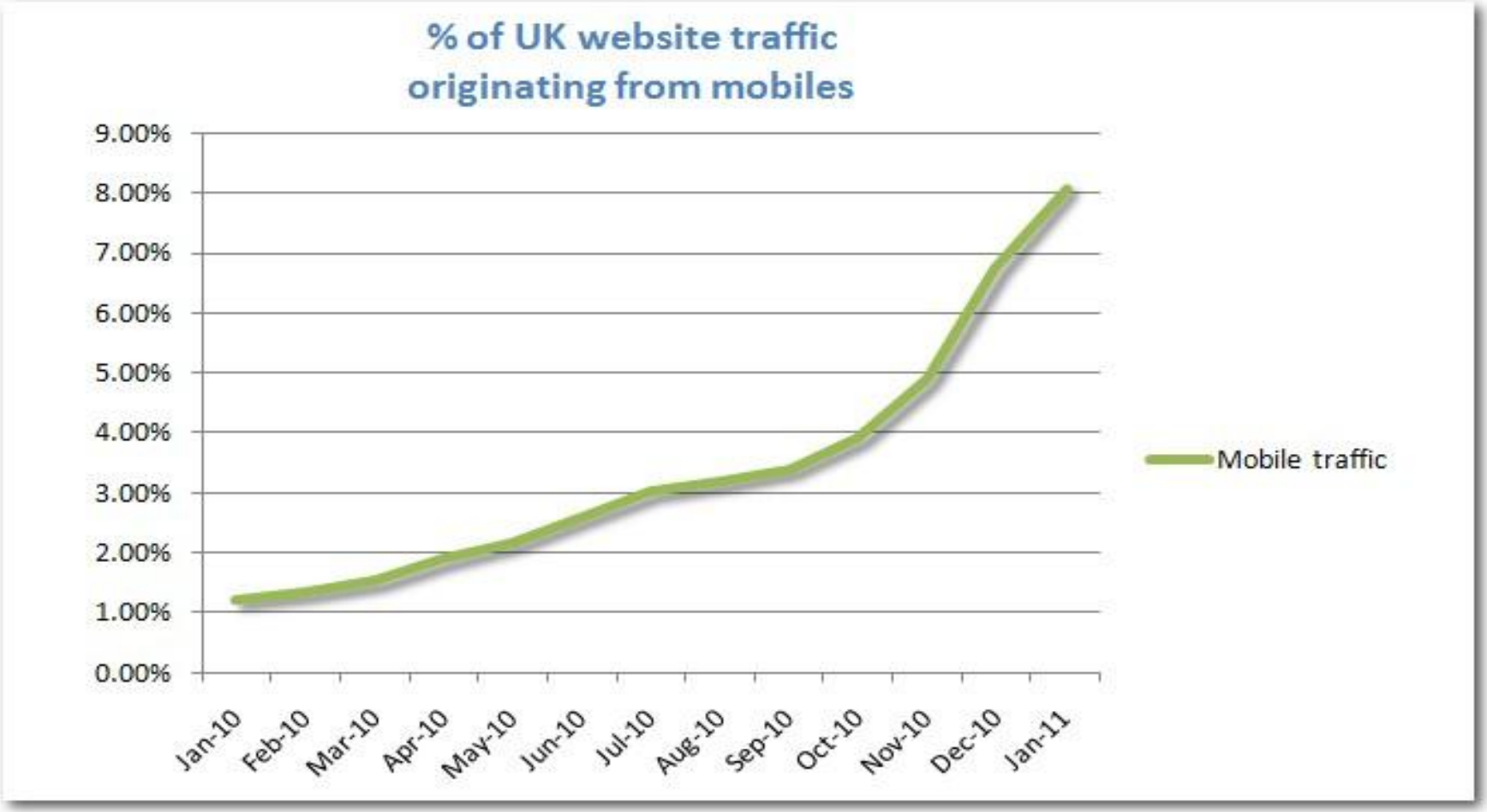
Non Transport Trends

- Rise of mobile computing
- Cultural and attitudinal changes
- Health, environment as motivations
- Demographic changes – aging population, more single person households, later birth age, young and also ‘empty nesters’ going back to city, richer urban ‘tourists’ taking over villages...
- Changes in **images** of contemporary life

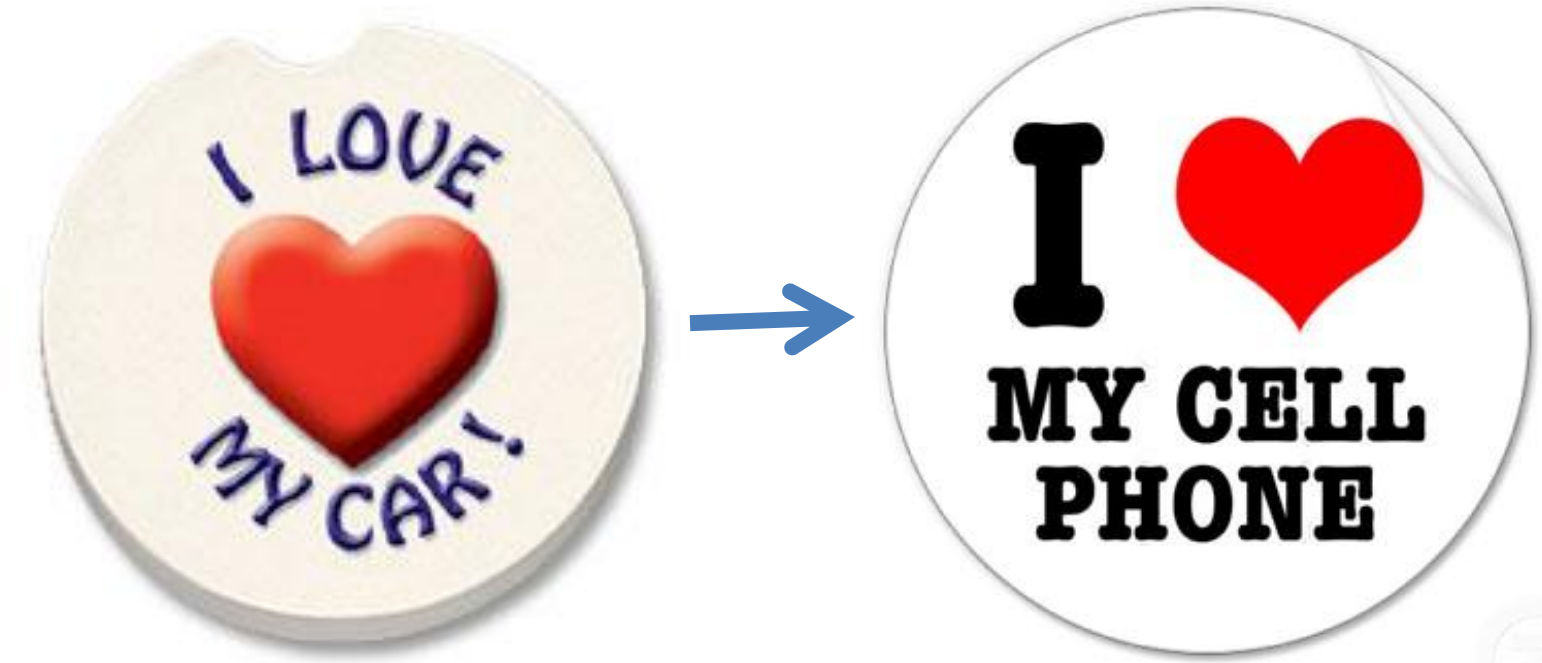
On-line shopping



Mobile internet access

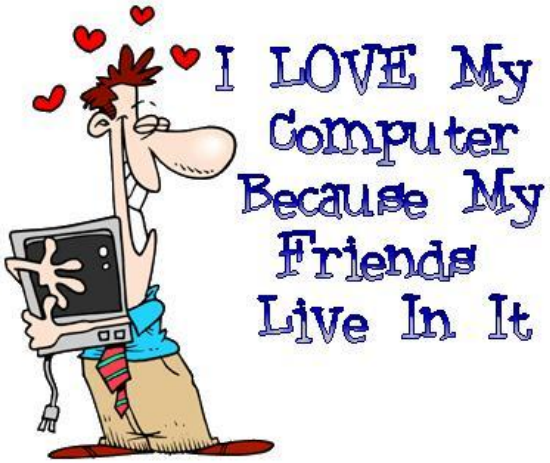


A shift in the ‘salient imagery’



“Love affair with the car: I love my car because….”

The search for another love




I love my iPhone

Very recent…

- OECD/ITF research round table in Paris – especially notable USA, BMW, and French research, inputs from a dozen others
- The simultaneous publication of a research report by Scott LeVine and Peter Jones, a different nuanced statement by the report's 4 sponsors, and a substantially different press release by the RAC Foundation

Le Vine and Jones (December 2012)

THE REPORT

- Analysis confined to pre-recession
- Most trends observed by other researchers confirmed
- Important new analysis of company car use decline
- The future is complex and unresolved

THE RAC PRESS RELEASE

‘over-whelmingly we remain a country of car drivers…there has been much talk of ‘peak car’ – the idea that individual car use has reached a plateau – but strip out the one-off impact of a collapse in company car mileage and prior to the recession we were actually driving more’

~~The~~ An official UK view

The main basic drivers of growth in car use – income, prices, population - have not changed; when the economy gets right car use will grow again – at a declining rate but more or less in proportion to population throughout the forecasting period of 30 + years.

(I think this will change by summer 2013, with lower traffic forecasts, and greater recognition of uncertainty, to 'saturation not quite yet')

TOO MANY EXPLANATIONS

- ‘We can explain it all by income, price and population’
- ‘we can explain it all by company cars and recession’
- ‘we can explain it all by travel time budget’
- ‘we can explain it all by cultural change, age, decoupling and policy impacts’

(foolish to exclude any of these factors by ‘all’)

Conclusion

The research issues are not resolved – and will not be in the next year or two.

Therefore there remains uncertainty – but this is not a question of an error band around forecasts, it is a question of contested views of the future

We should focus more on what sort of future we choose – and there is a rather wider choice than we have thought.

Policy implications

- The effects of policy on trends
- Road construction and finance
- Tax revenue and the environment
- Robustness to alternative futures
- Demand management

1. Policy does have an effect

- Some evidence that the cumulative effects of policies to discourage car use and encourage walk/cycle/public transport have **bigger impacts** on car use, over several years, than conventional (non-dynamic) elasticities.
- The **empirical evidence base is now very strong** but not well enough known: better public transport, traffic restraint, parking, charging, pedestrianisation, cycling, 'smarter choices', low-car redevelopment in brown-field sites...

2. Road construction and finance

- Design and building of major infrastructure, especially new and expanded roads, may be too big, in the wrong time, at the wrong place...
- And where these are funded by private finance with public guarantees there is a big problem of the fair allocation of downside risk

3. Tax revenue and environment

- There is a major **problem** of the long term buoyancy of tax revenue from the transport sector. System-wide road pricing as a medium term measure but even that will not solve the long term.
- **BUT** there is a major **advantage** in terms of environmental damage, quality of life, health etc, as initiatives which ‘go with the grain’ of trends have less resitance and more effect

4. Robustness to alternative futures

- ‘Peak car’ is *possible but not certain;*
  the propositions are *contested not consensus;*
  and the arguments are *not yet resolved*.

- Therefore problem of project and policy appraisal – what initiatives are **robust** to different futures? (For example, expansion of **public transport** is necessary, but for different reasons, both if car use trend is increasing or reducing)

Demand management

- Consider demand management (by pricing or ‘soft’ measures): if car use growth continues, this policy is vital, for environment and economic efficiency.
- But if car use stabilises or reduces, the balance may shift: it will still be important to deliver mobility and access to activities and products. So we will still need demand policies but a different focus