



SCATTER WORKSHOP,
Brussels, June 8th

PAAVO MOILANEN / STRAFICA LTD



DG Research

SCATTER Helsinki Model sprawl analysis

Paavo Moilanen

Summary

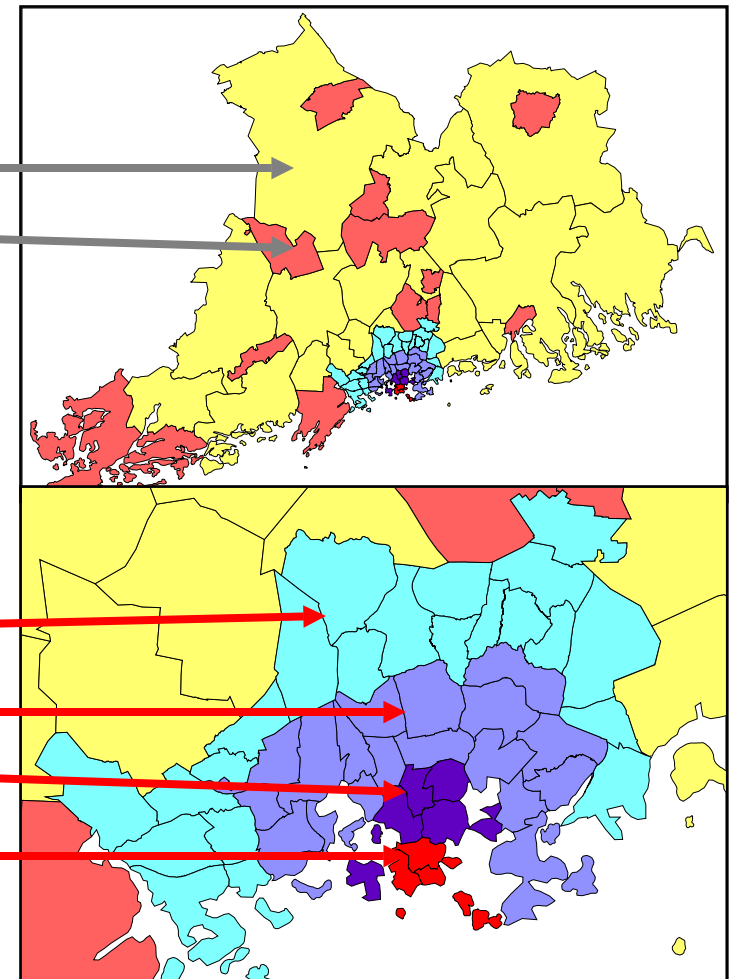
- Methodology
- Trends – both population and employment are sprawling
- Public transport policies make population to deconcentrate and employment to concentrate
- Road pricing measures invert this
- Land use policies (pricing/regul.) can contribute
- Packaging can thus be efficient

Superzones in the analysis

- Rural
- Urban outside the HMA

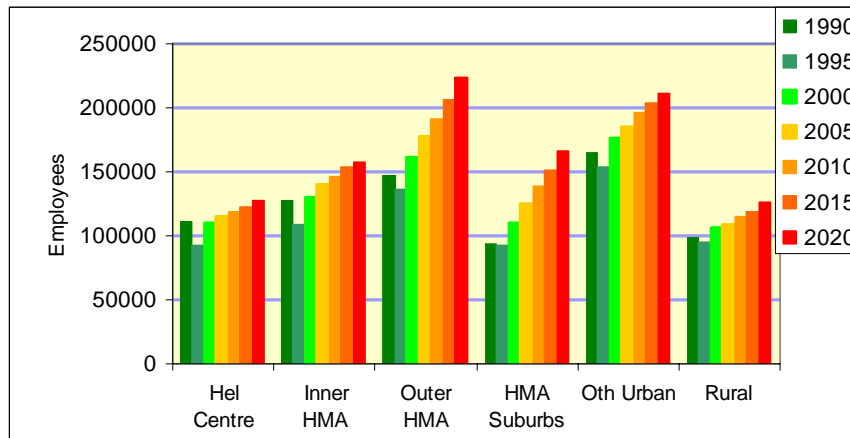
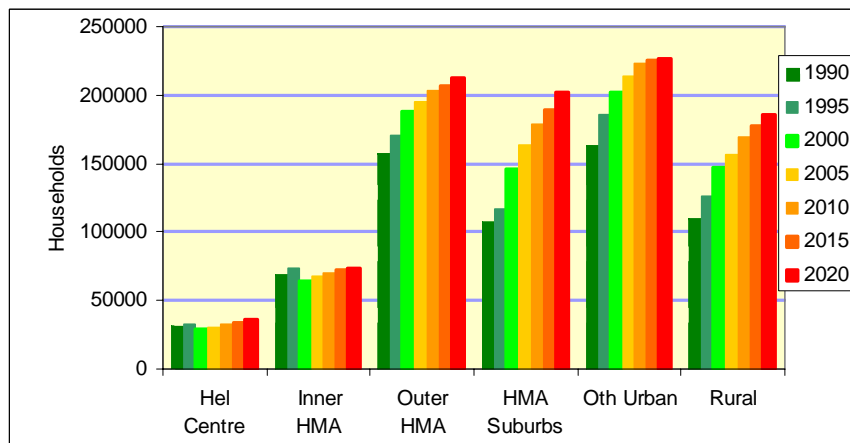
Helsinki Metropolitan area (HMA)

- HMA suburbs
- Outer Helsinki Metropolitan Area
- Inner Helsinki Metropolitan Area
- Helsinki centre

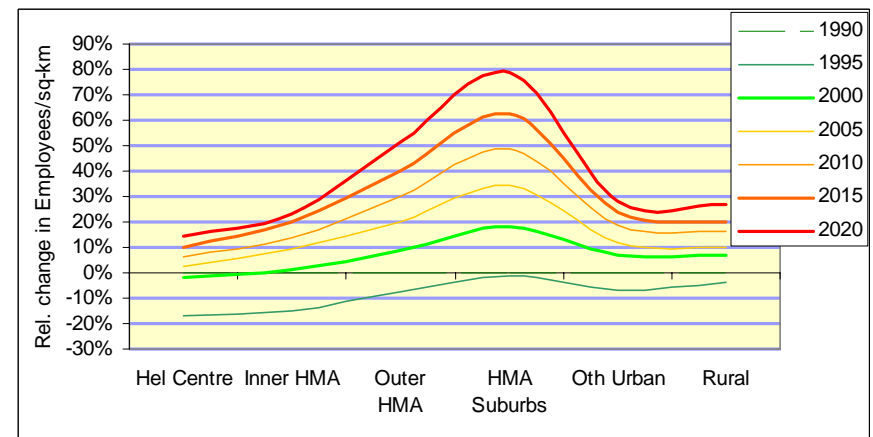
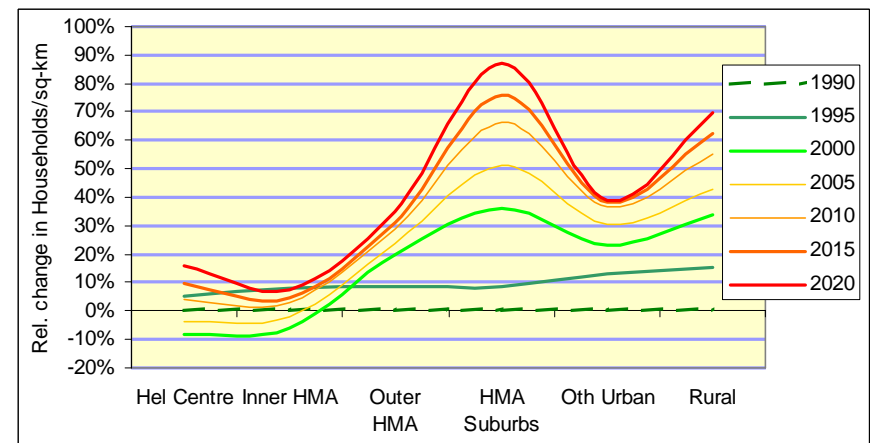


Population and densities in the base forecast

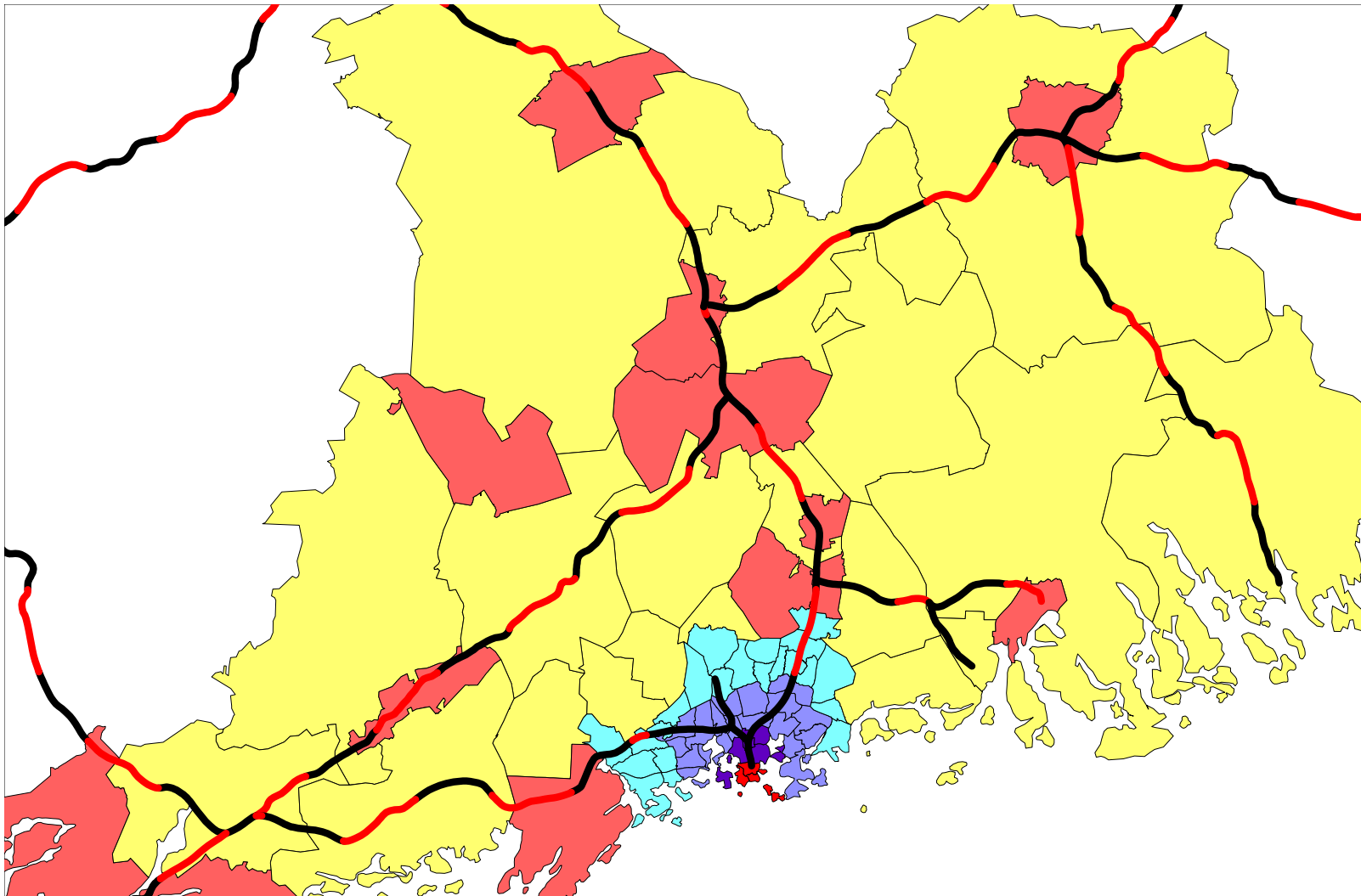
Population and employment:



Relative densities vs 1990:

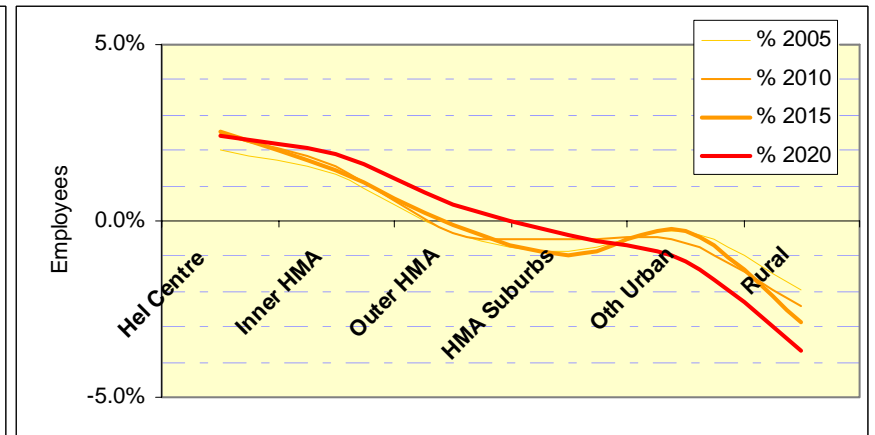
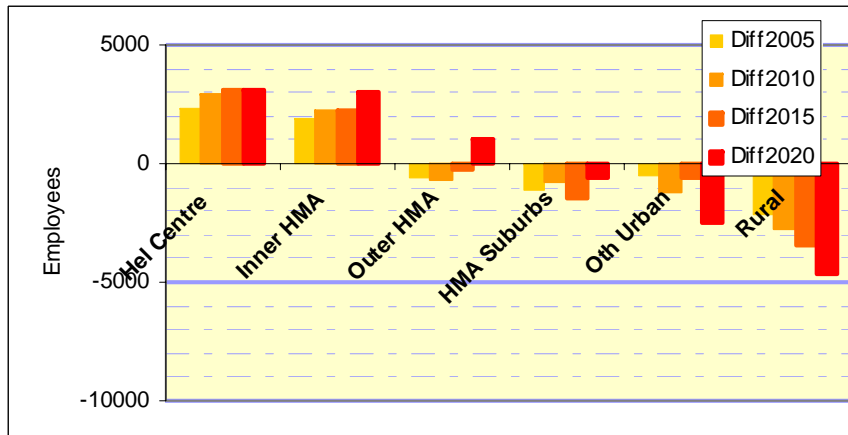
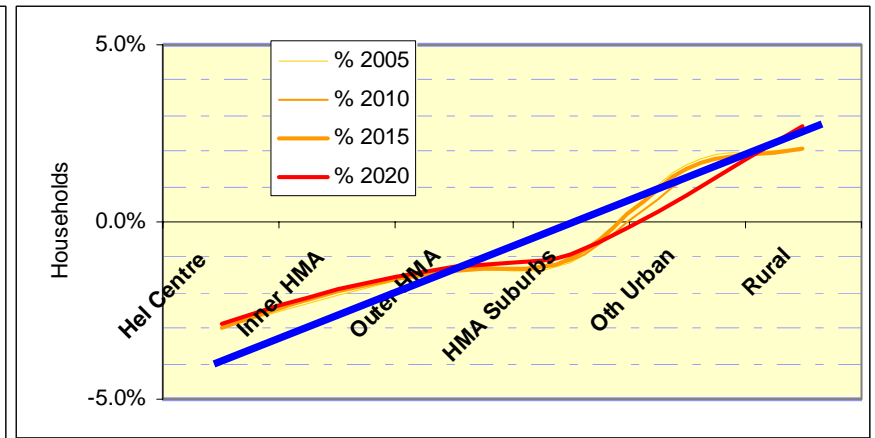
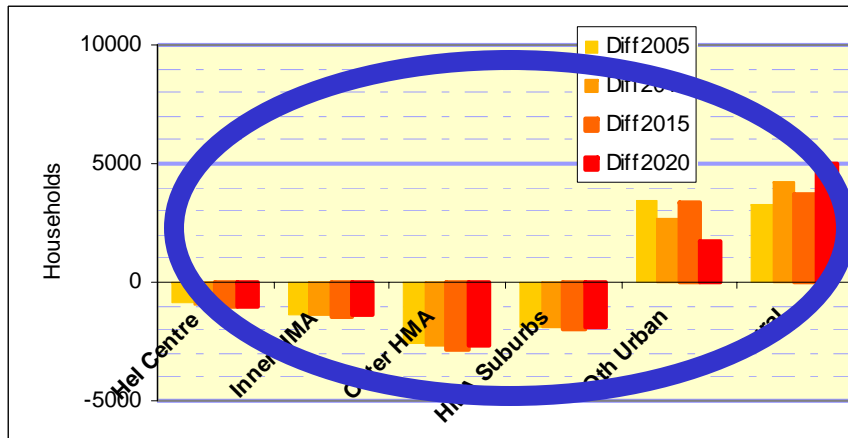


Speed up current rail services 25%?



In general (big/radial) rail enhancement contribute to sprawl!

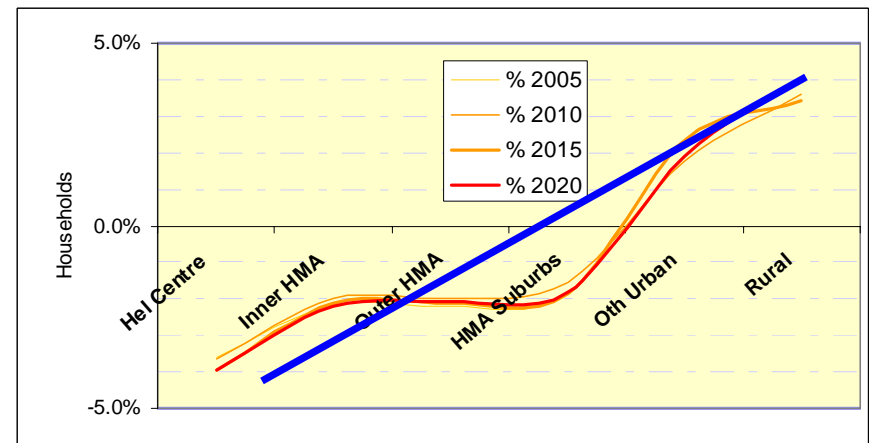
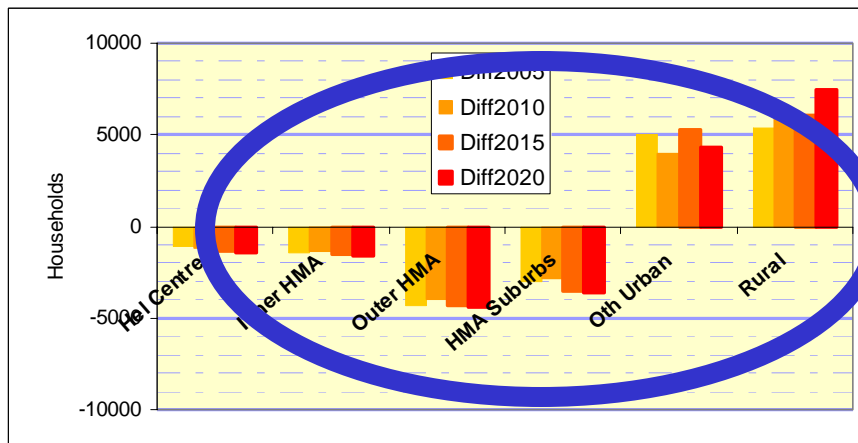
113 H - Decrease current rail travel times 30%



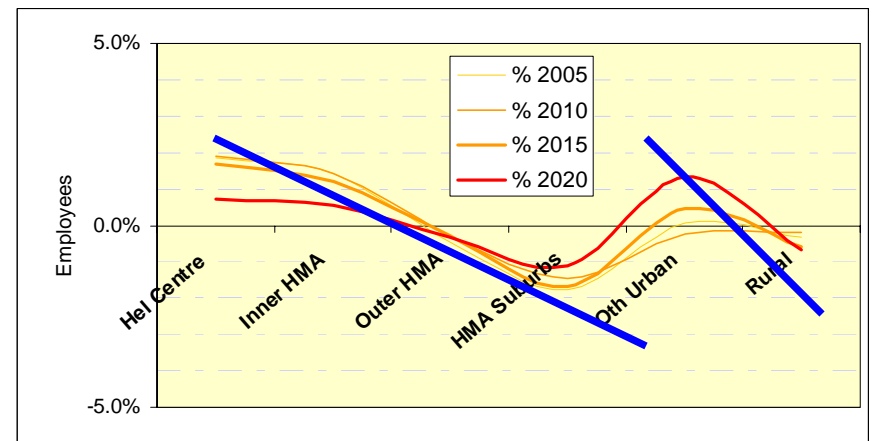
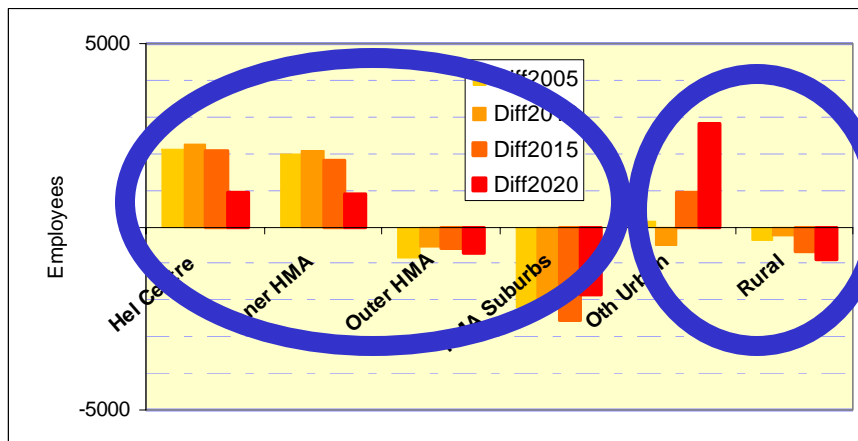
Like reduction of public transport fares

Relocation from HMA

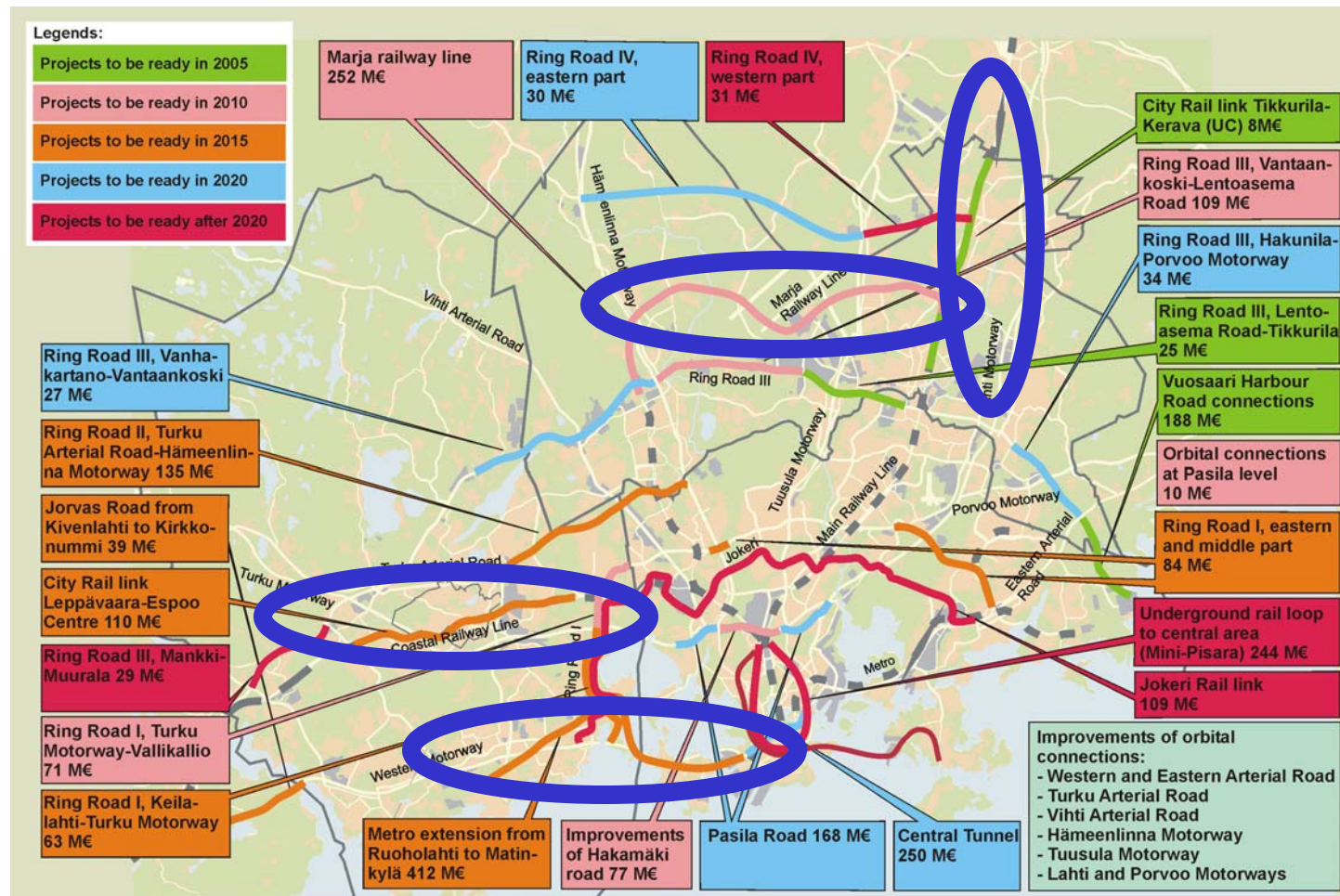
512 H - Decrease public transport fares by 20 %



From suburban areas towards centre and from rural areas to urban

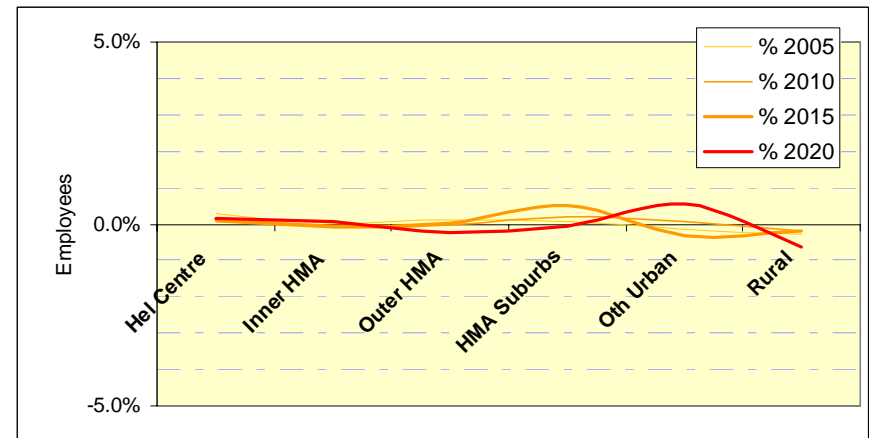
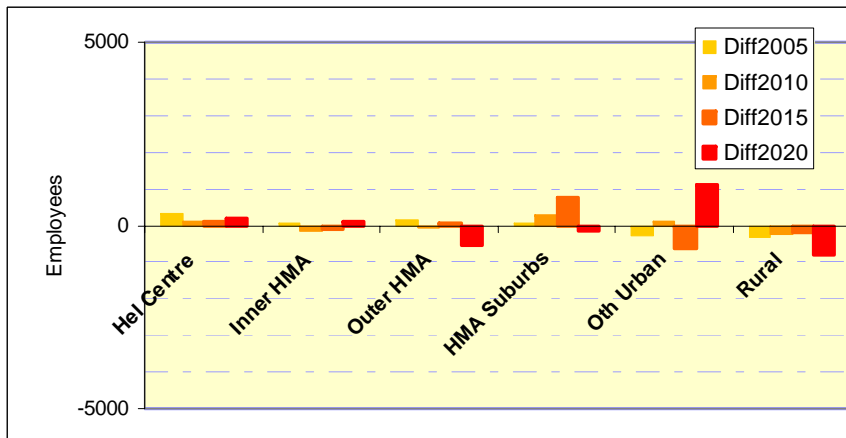
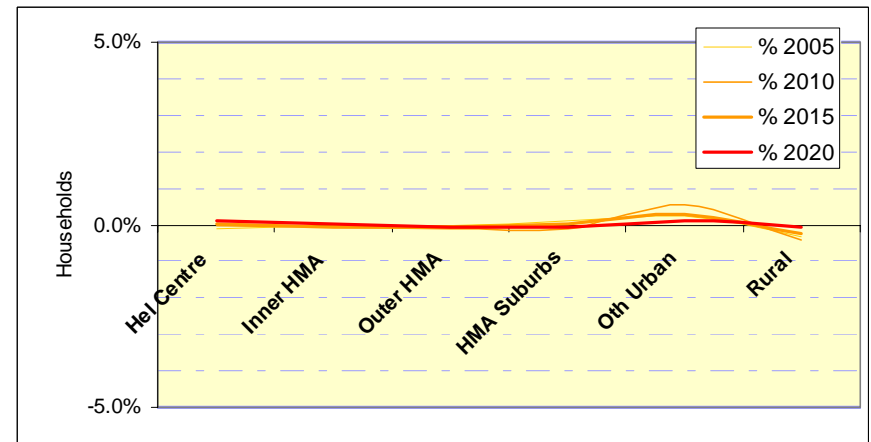
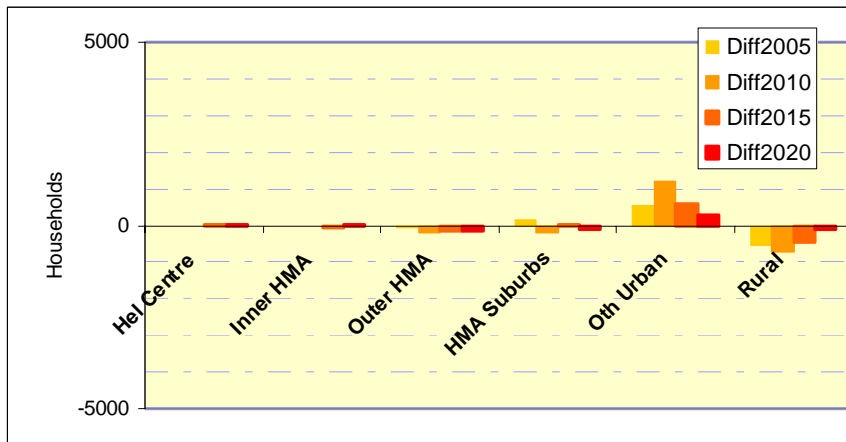


Planned Metropolitan Area Rail Investments...



do not however seem to contribute to sprawl

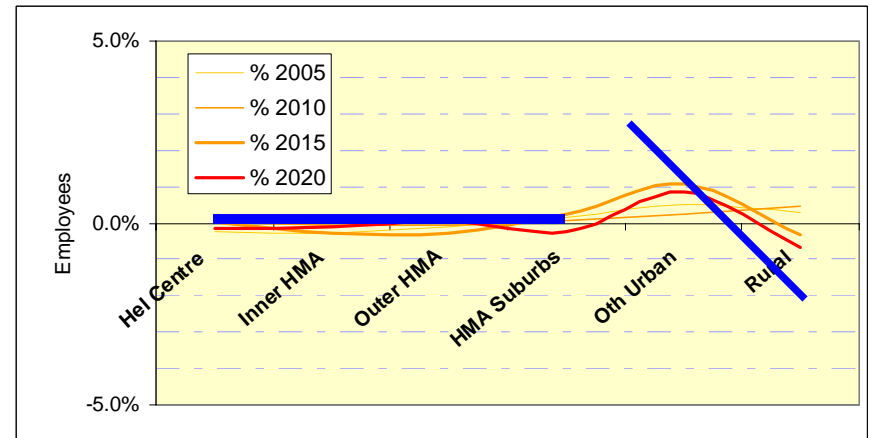
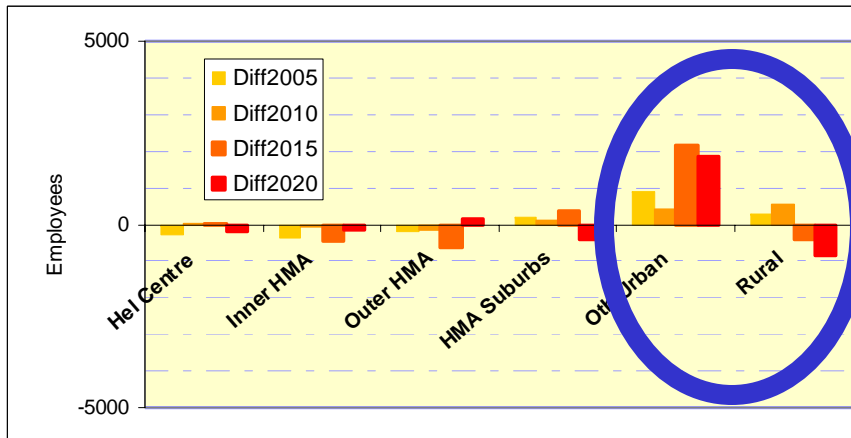
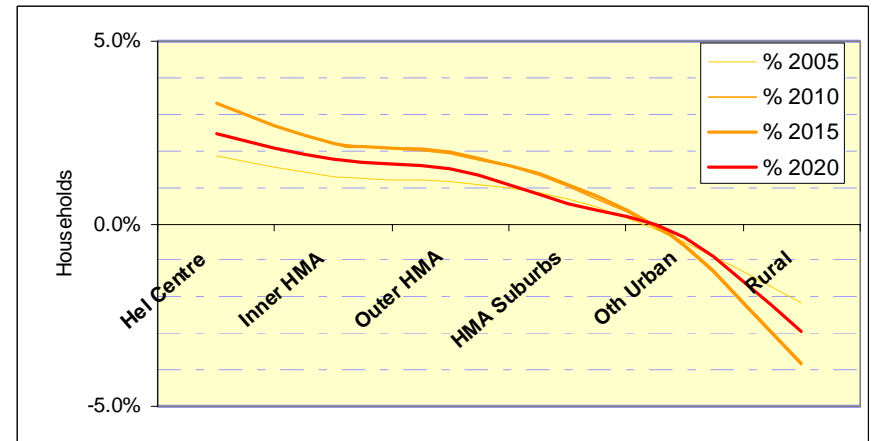
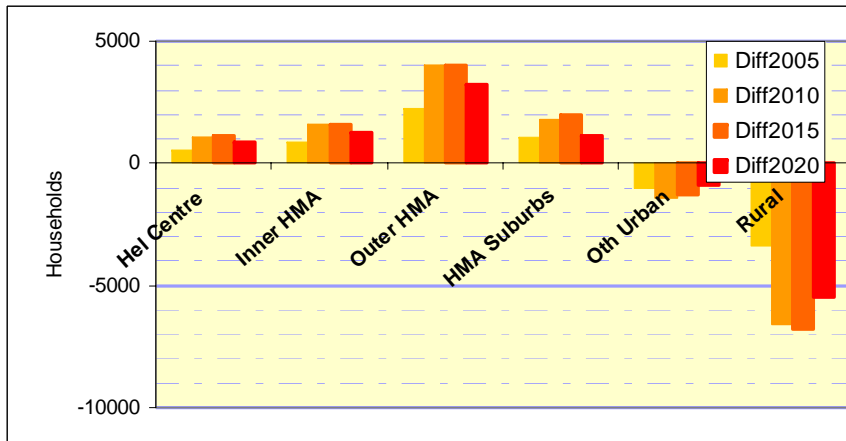
112 H - HMA plan-public transport rail investments, compare with do-nothing :



Road pricing is efficient reducing (population) sprawl

Relocation to HMA

411 H - Car operating costs +50%



Marginal cost-based pricing

412 H - Cordon (peak) pricing

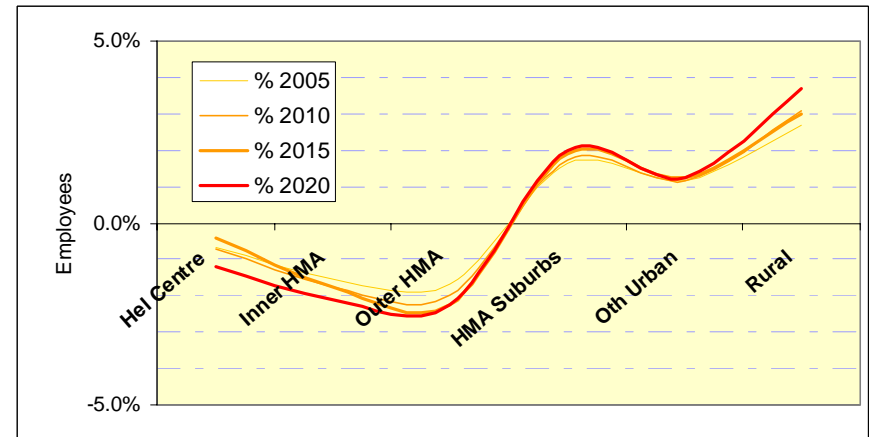
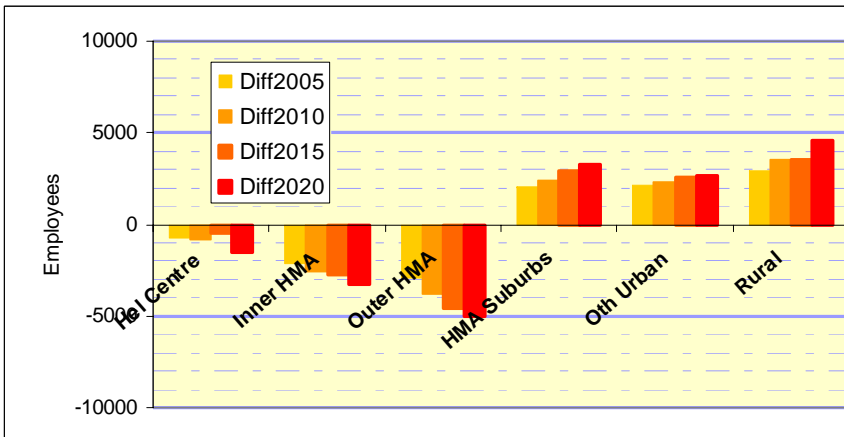
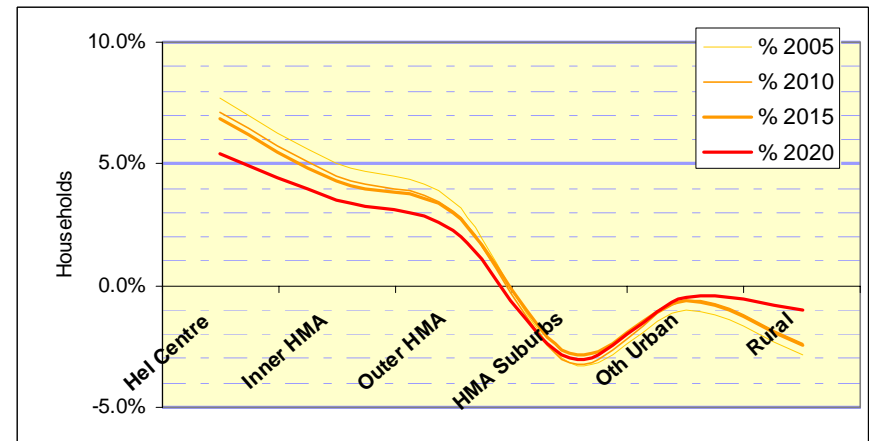
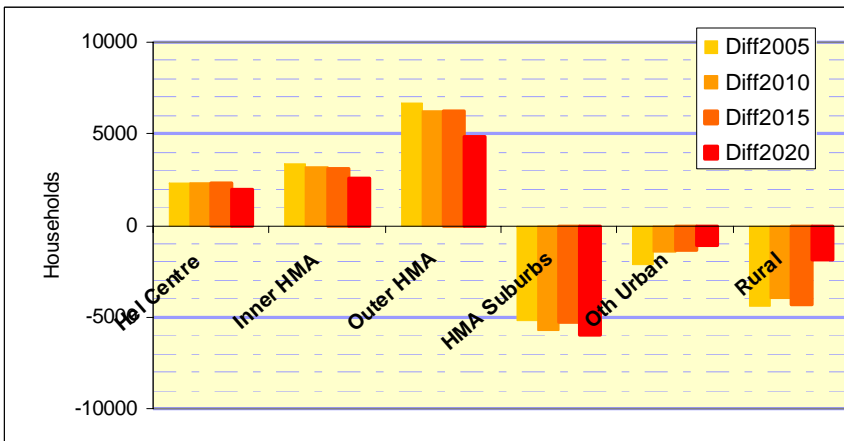
Radial Cordons 1.25 €/passage



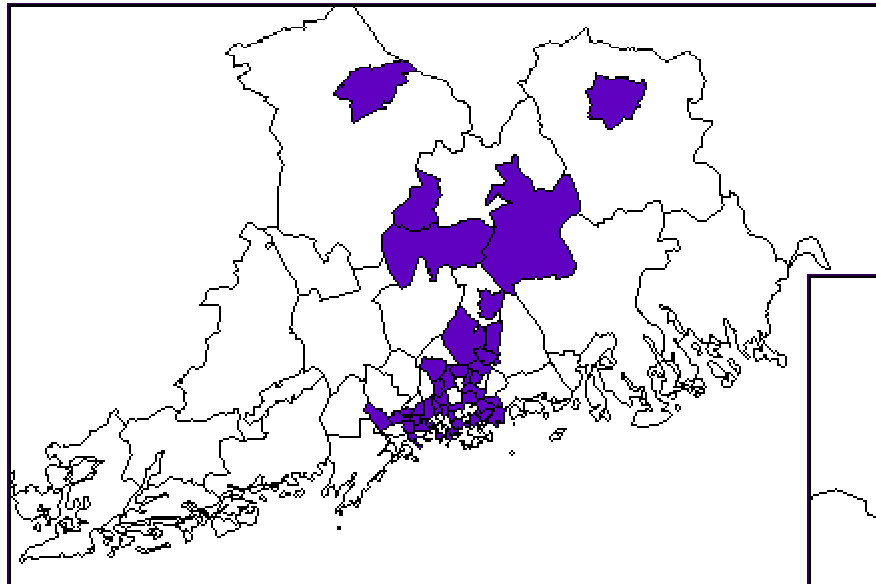
Orbital Cordons 2.5 €/passage

Road pricing is efficient reducing (population) sprawl

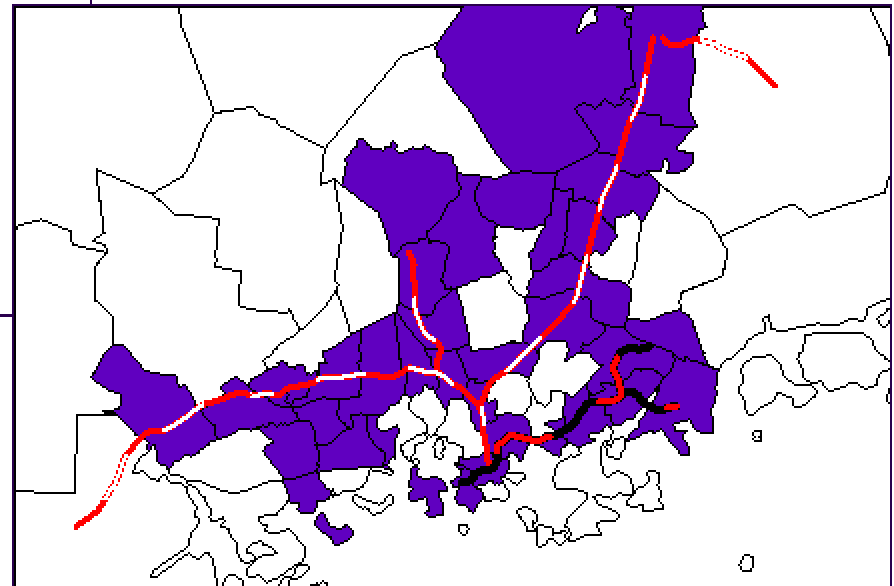
412 H - Cordon (peak) pricing



Land use measures

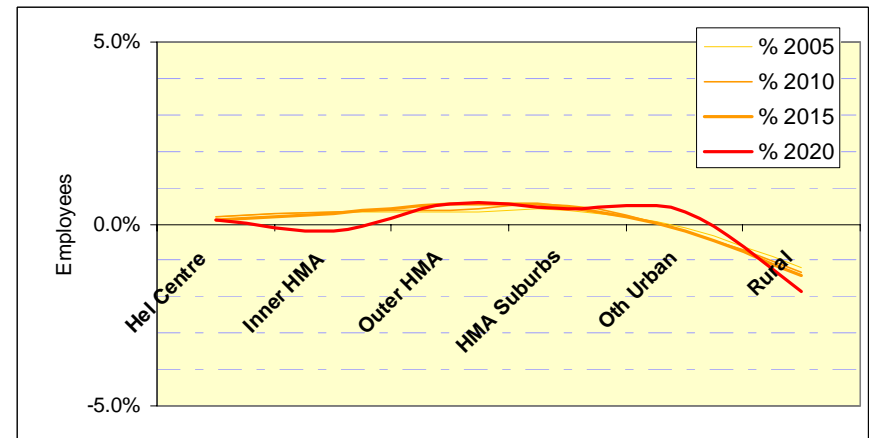
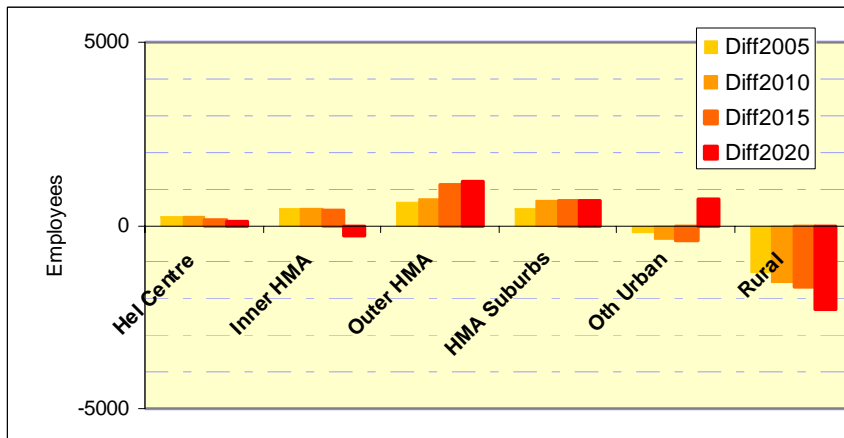
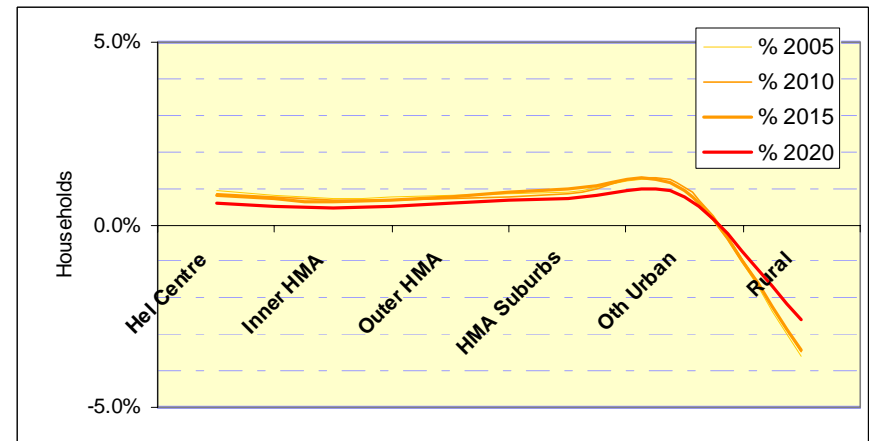
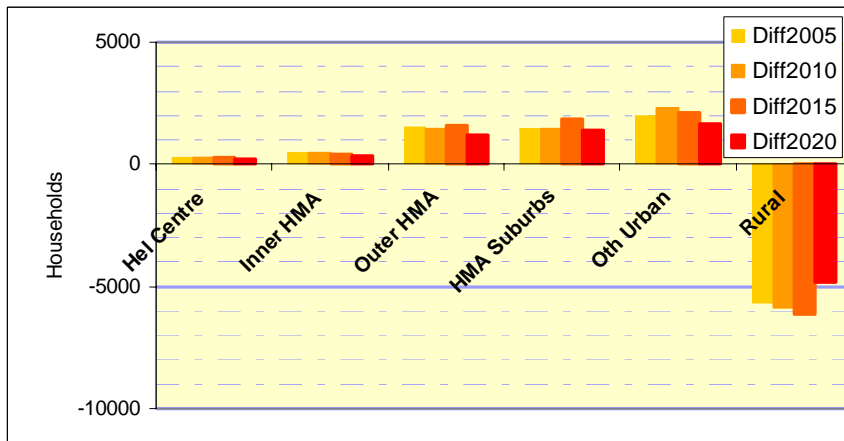


A-type land-use zones



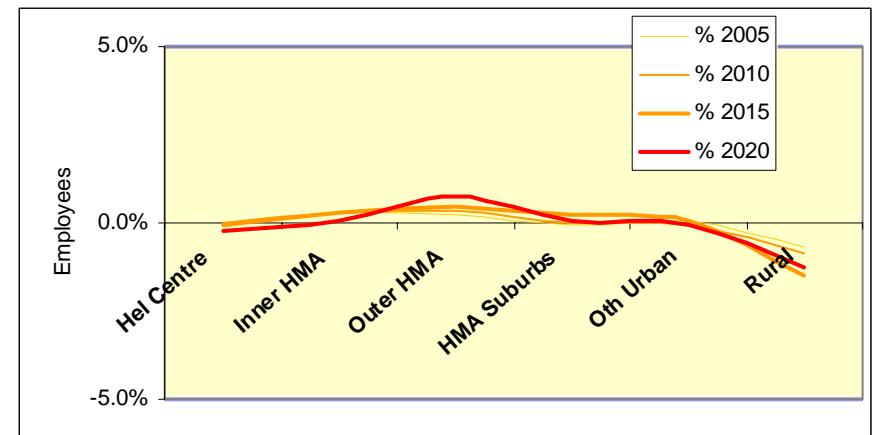
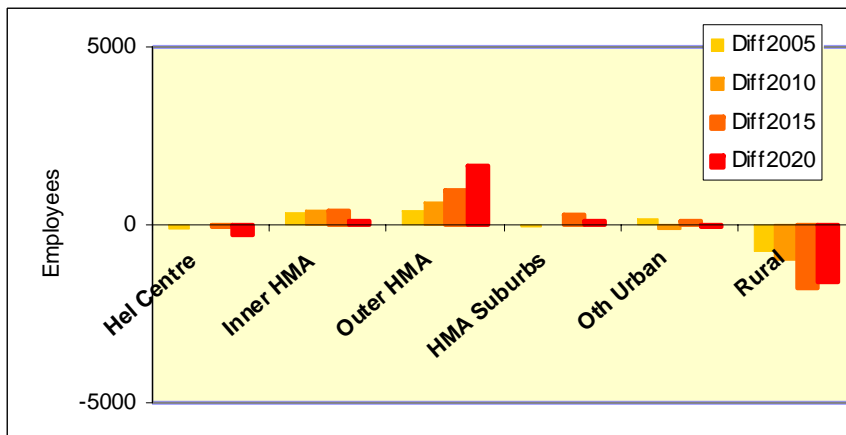
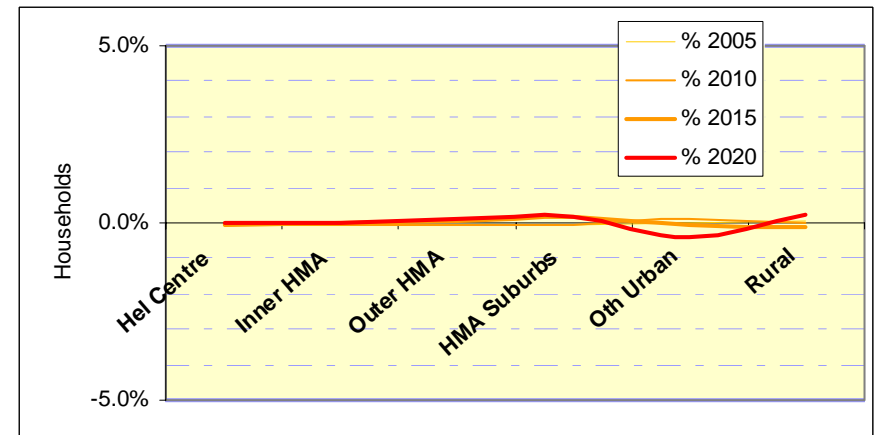
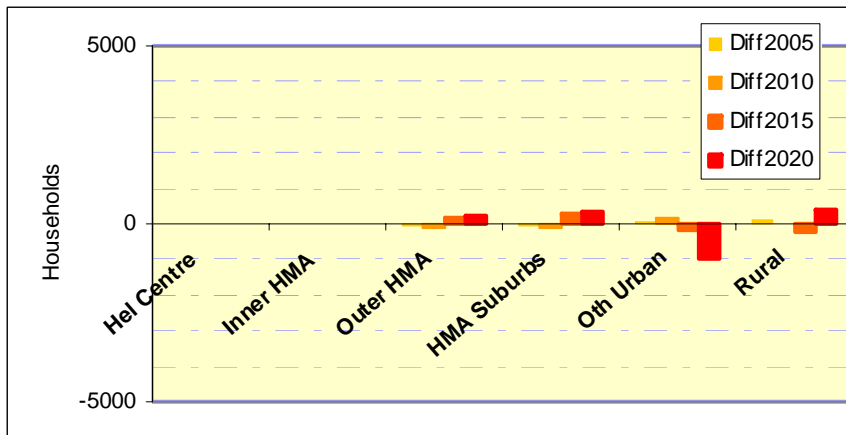
Pricing land-use seems (also) very efficient

311 H - Annual tax (development impact fee) in non urban zones
+ fiscal incentive (tax reduction) in urban zones



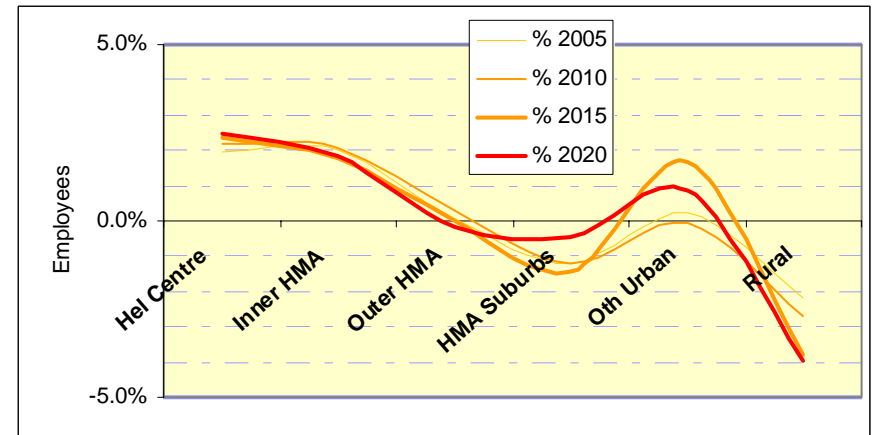
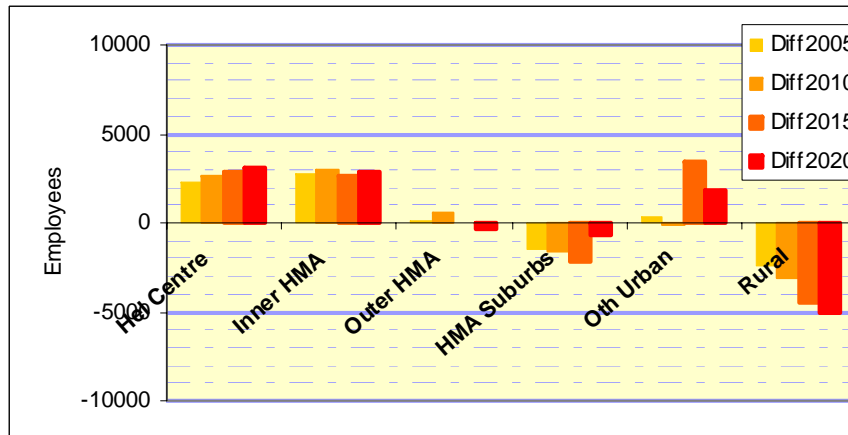
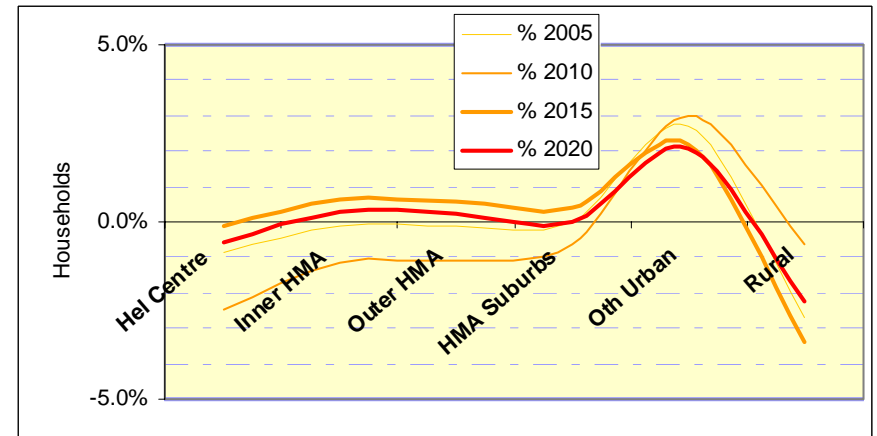
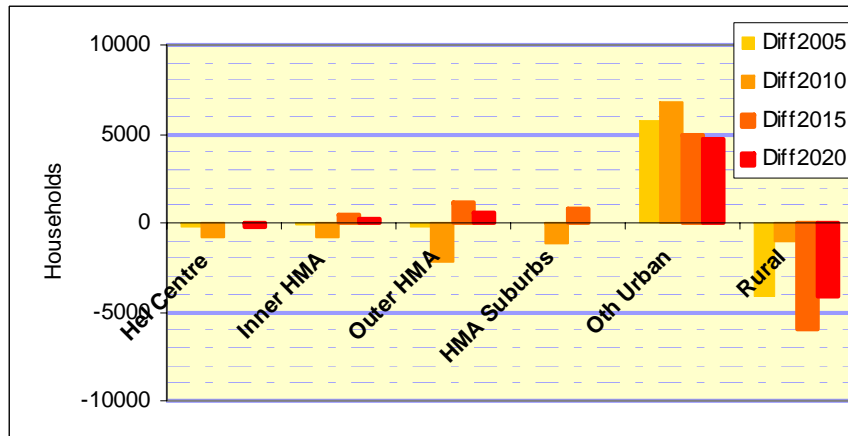
But not always?

331 H - ABC-type land use pricing policy applied to private services



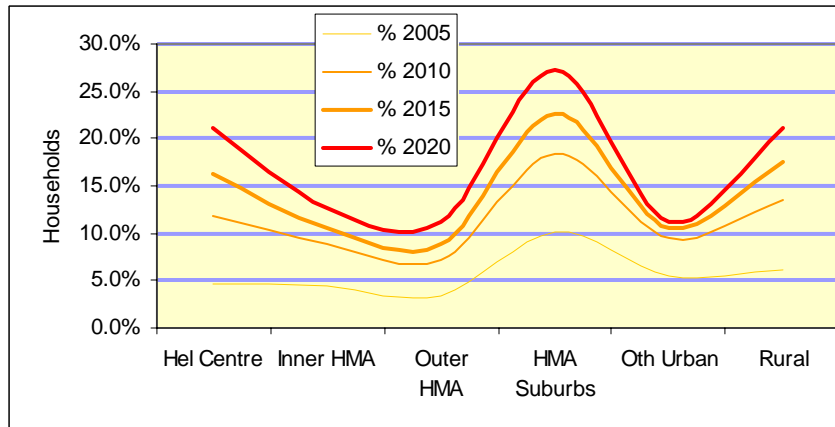
Policy package 3 – we can get both households and employment contained

813 H = 411 (VOC+50%) + 512 (fares -20%) + 311 (dev.fee) + 331 (LU pricing)

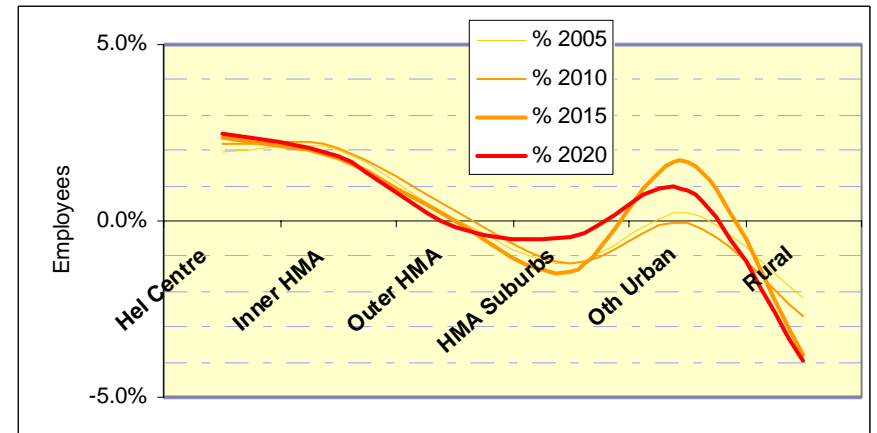
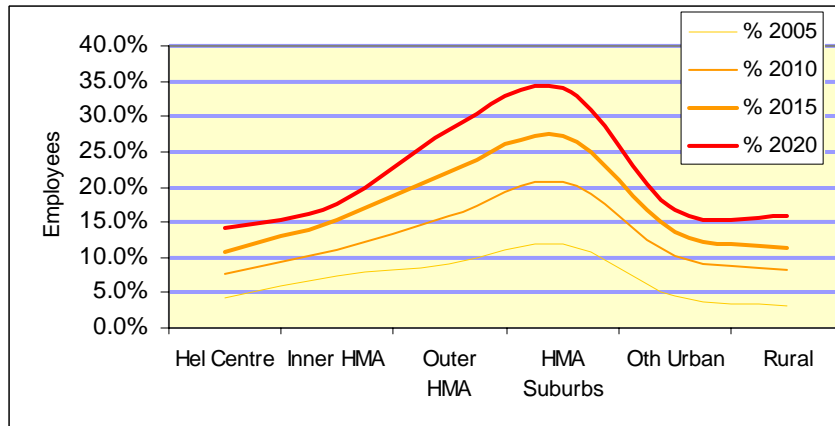
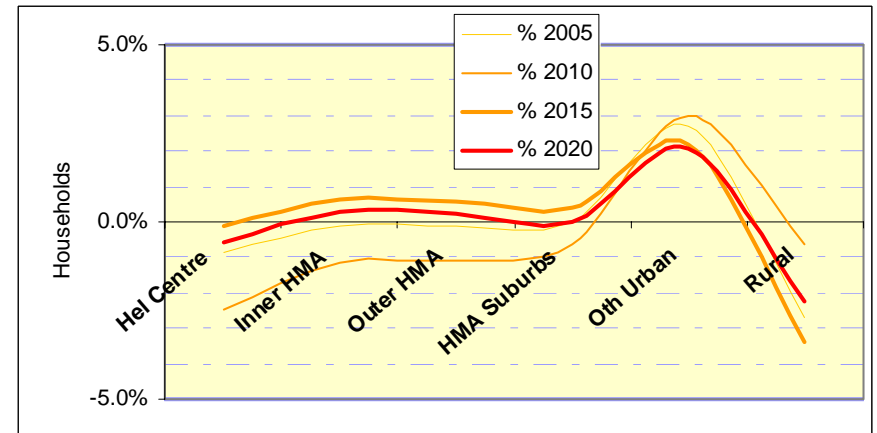


The effect of package 3 is still small compared to the base trend

Sprawl from 2000 in the base



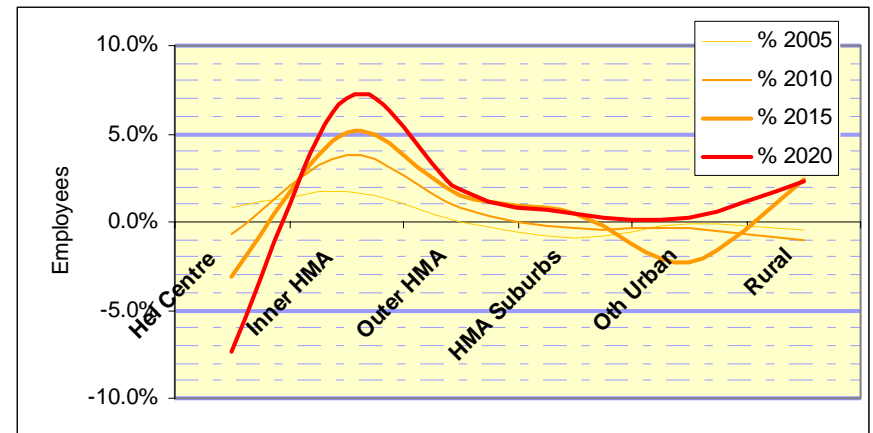
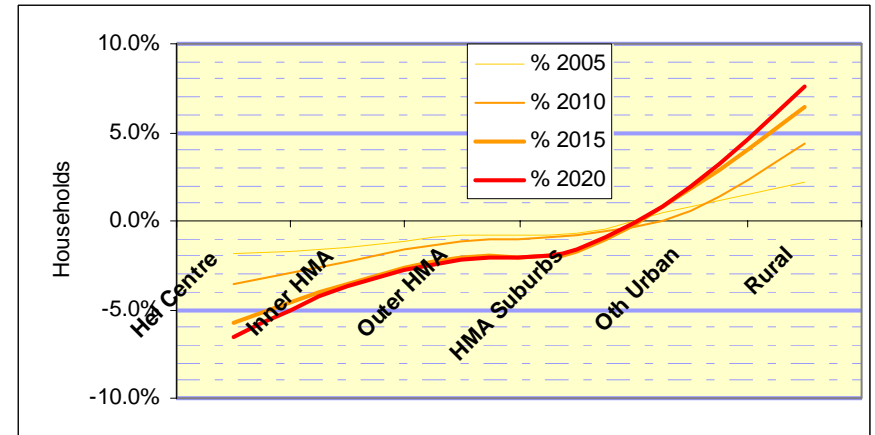
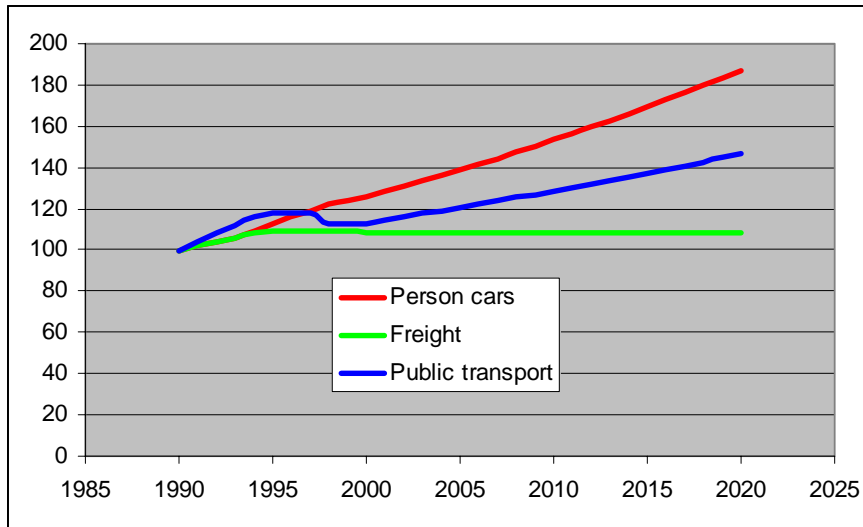
813 H = Policy Package 3 vs. base



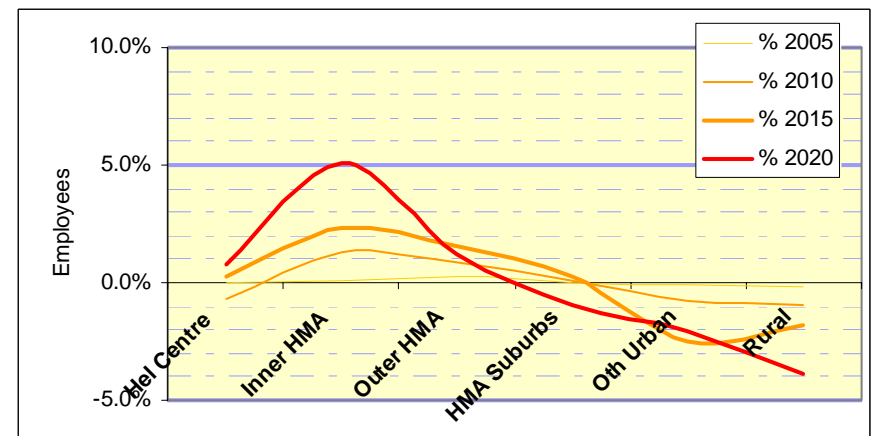
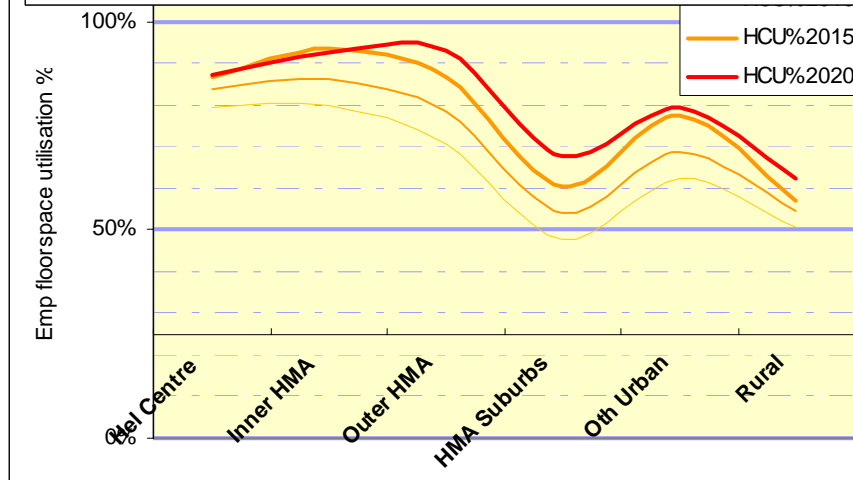
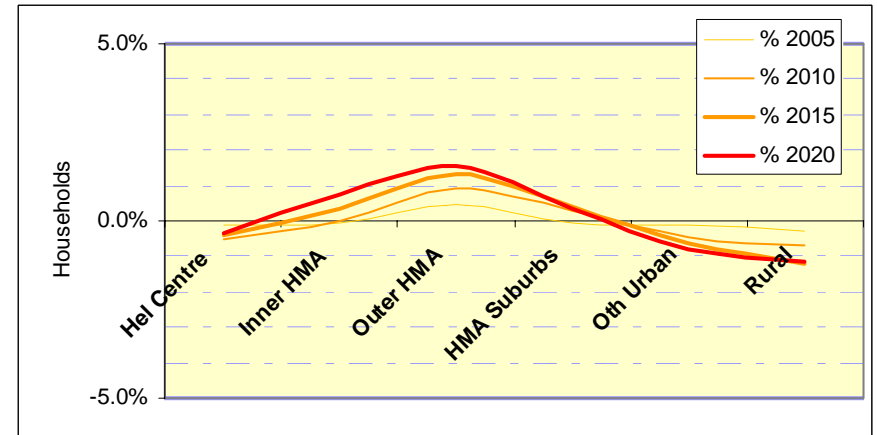
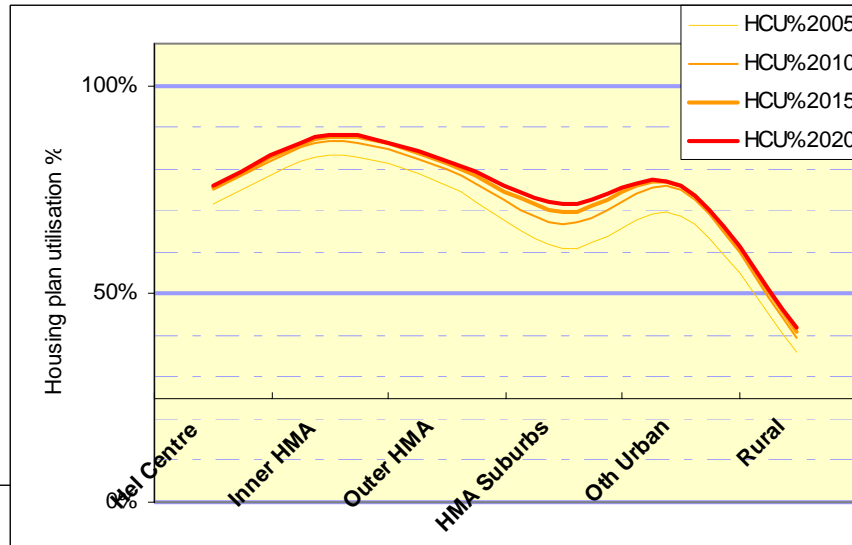
Conclusions

- There are measures that increase sprawl and can reduce it – these are just examples
- Packaging is needed to increase the good effects and even out side-effects of single policies
- The effects of policies are usually small in the end as there are big background "basetrends" in operation

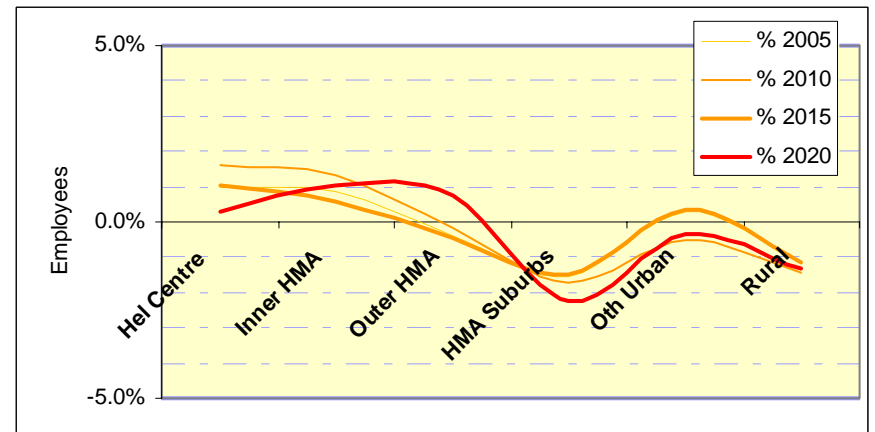
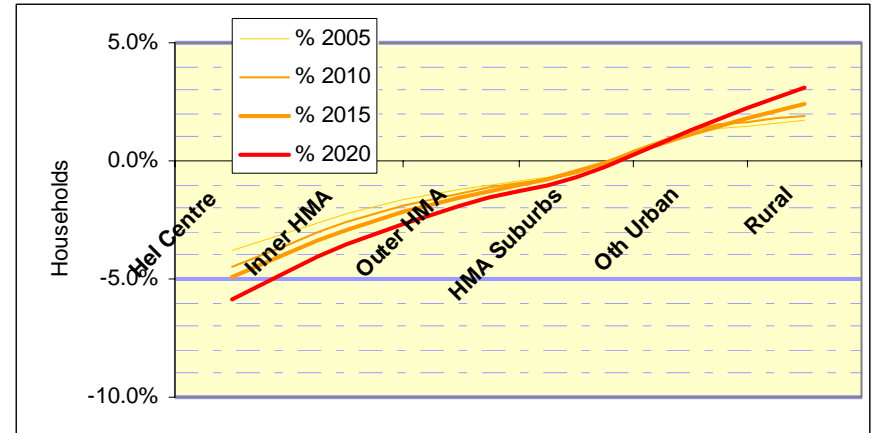
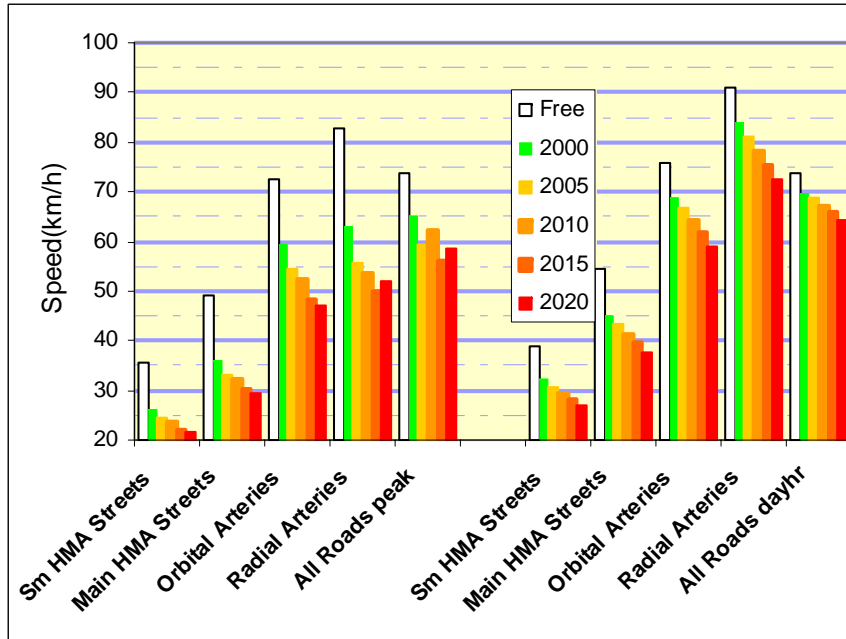
Removal of basetrend 1: Transport prices



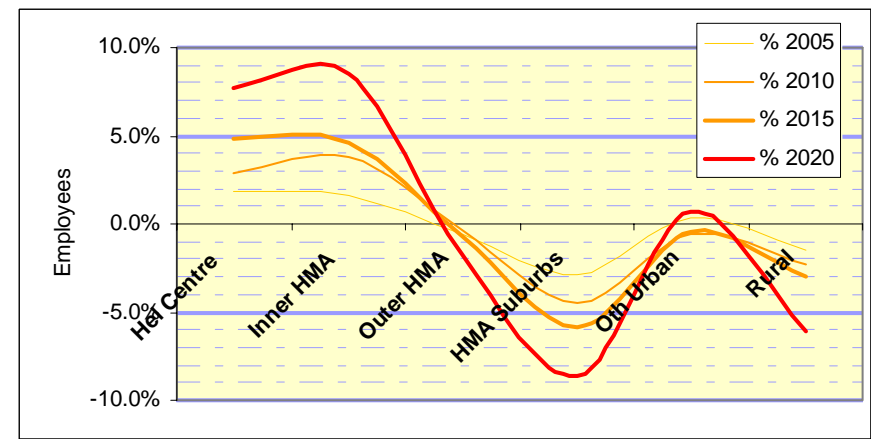
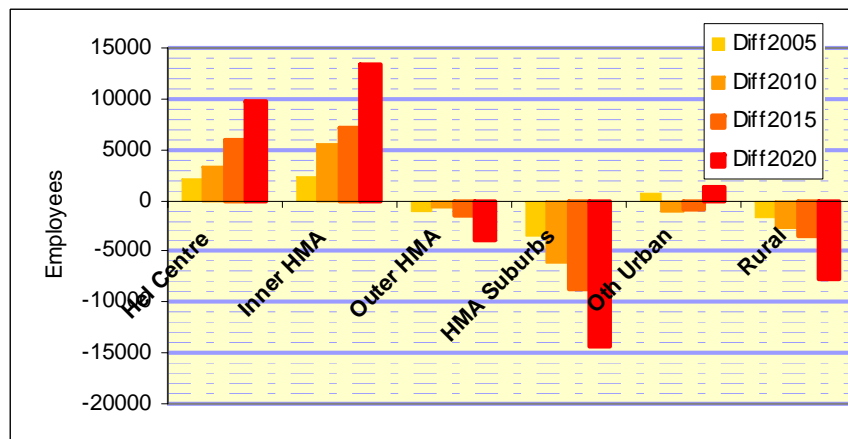
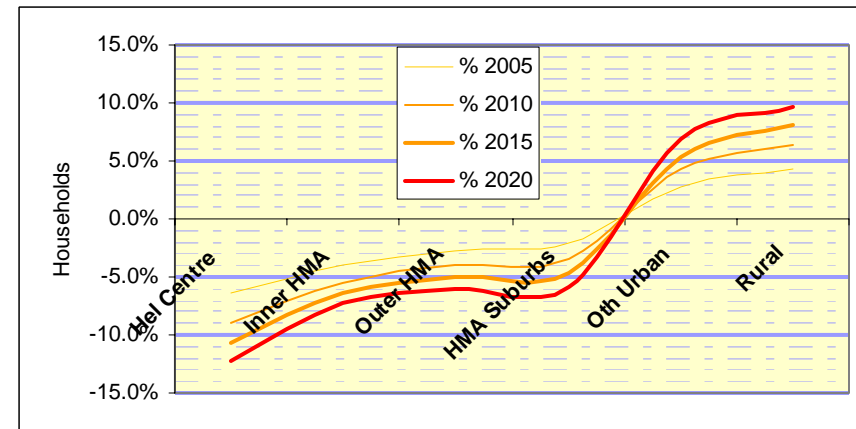
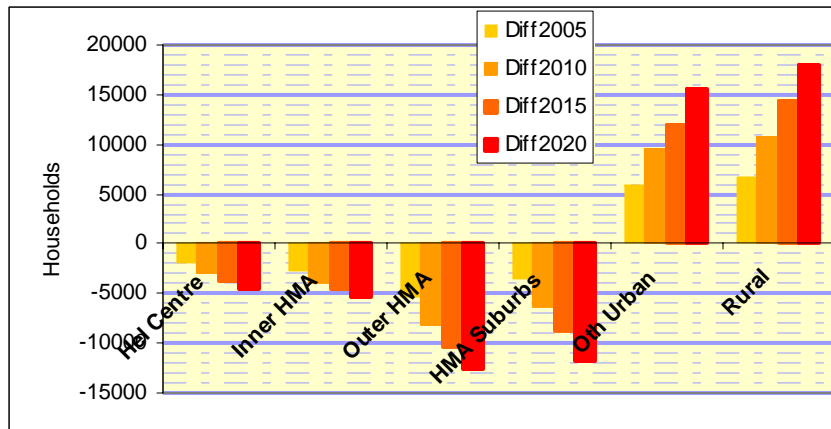
Removal of basetrend 2: Land use plans



Removal of basetrend 3: Congestion

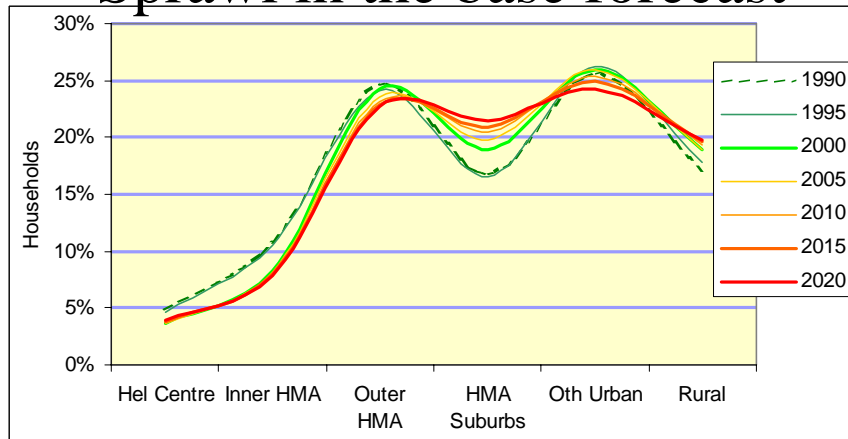


Combined effect of removing all base trends

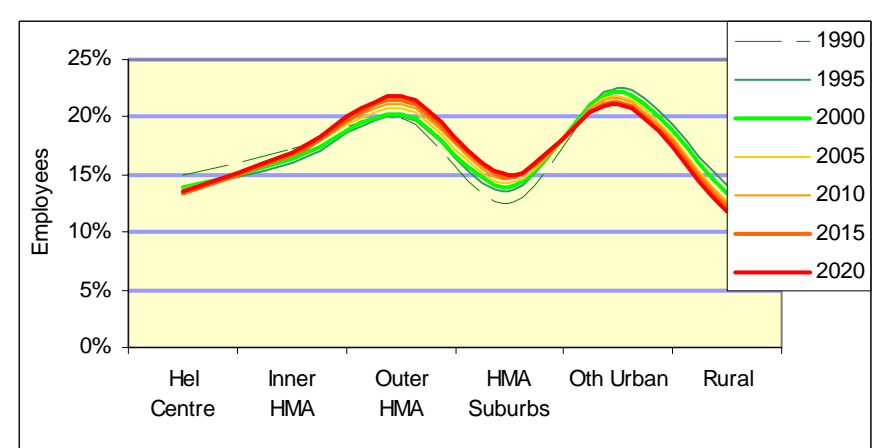
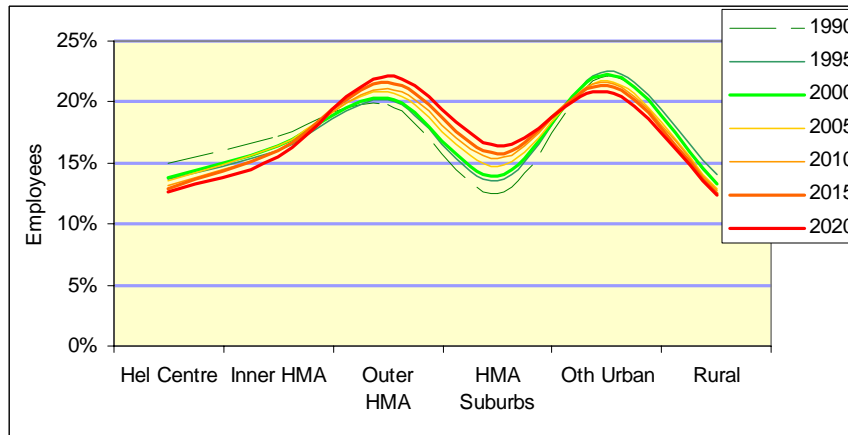
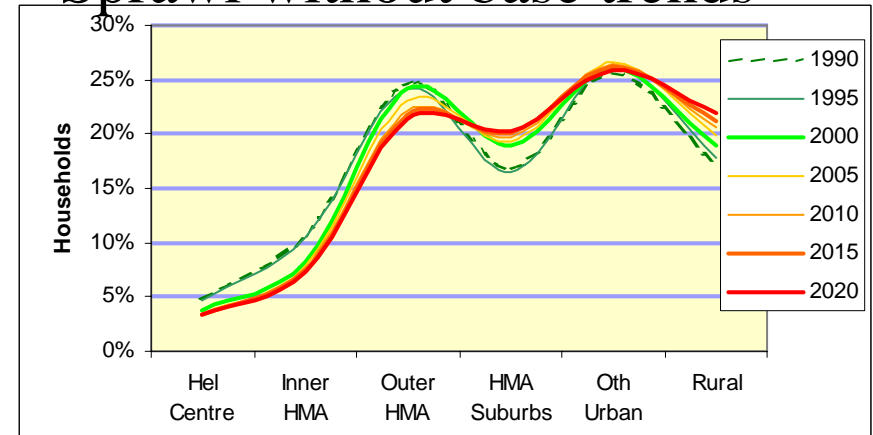


What is left: The growth of population and economy (mobility) – the megatrend?

Sprawl in the base forecast



Sprawl without base trends

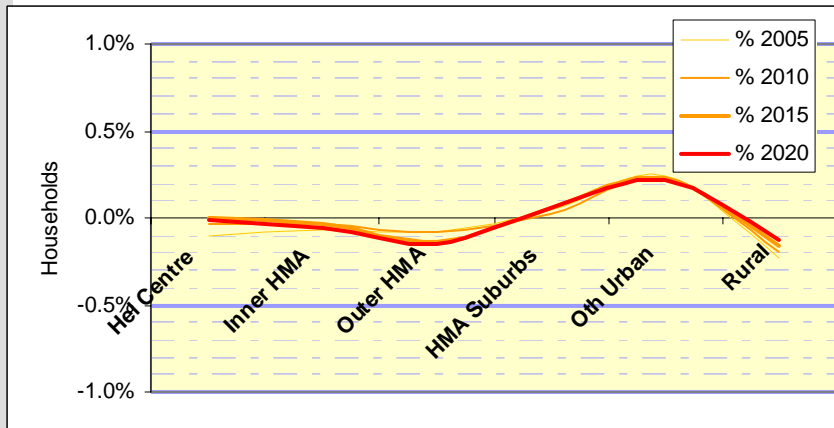


Conclusions II

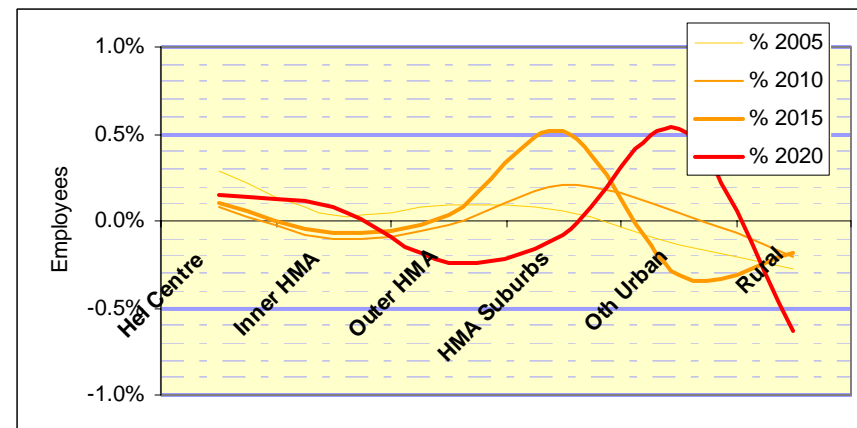
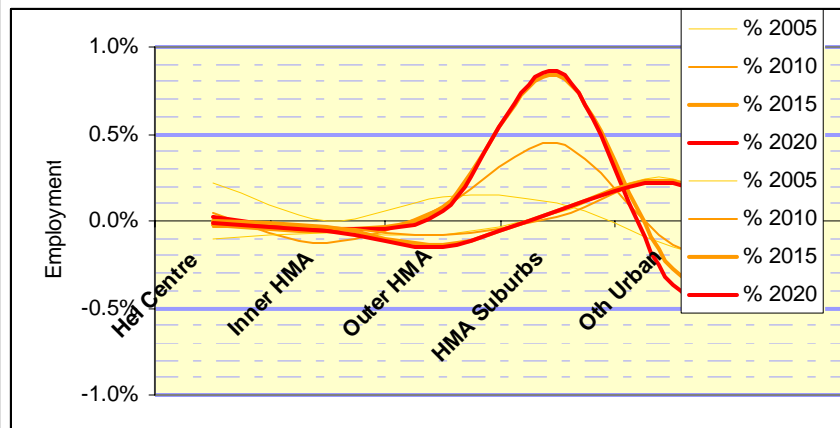
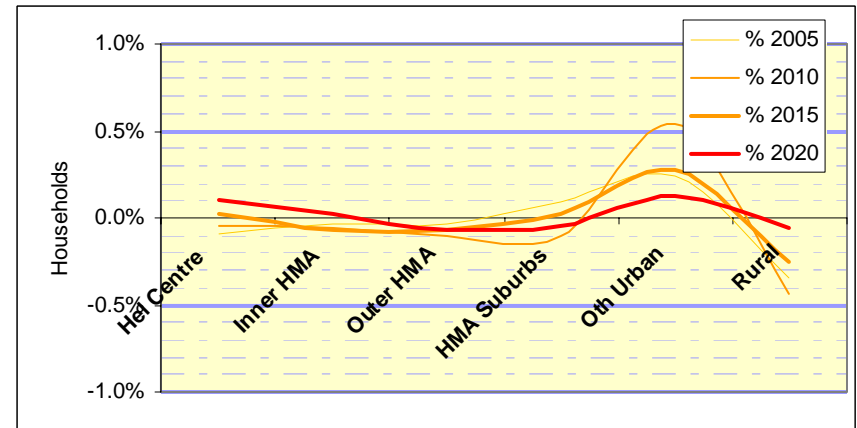
- The combined effects of various base trends create a "straightjacket" to policies
- What matters in the end is the growth in population and economy (leading to increased mobility and standard of living) that requires ever more space

Base forecast changes the policy outcome

HMA Plan without base forecast



Plan with base forecast





SCATTER WORKSHOP,
Brussels, June 8th

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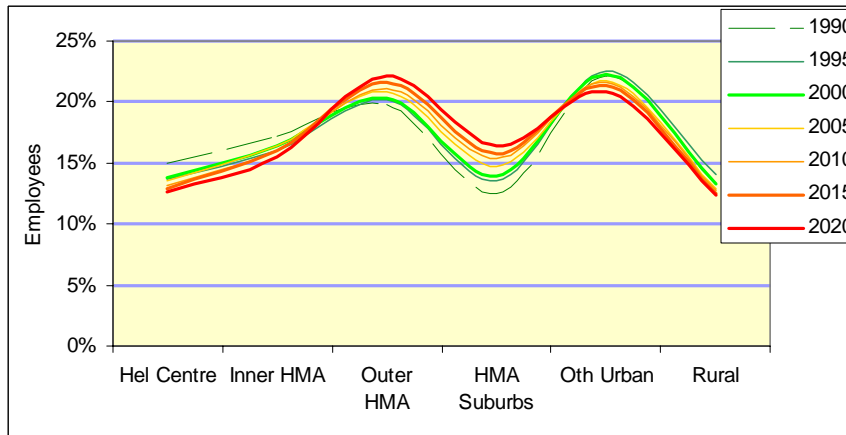
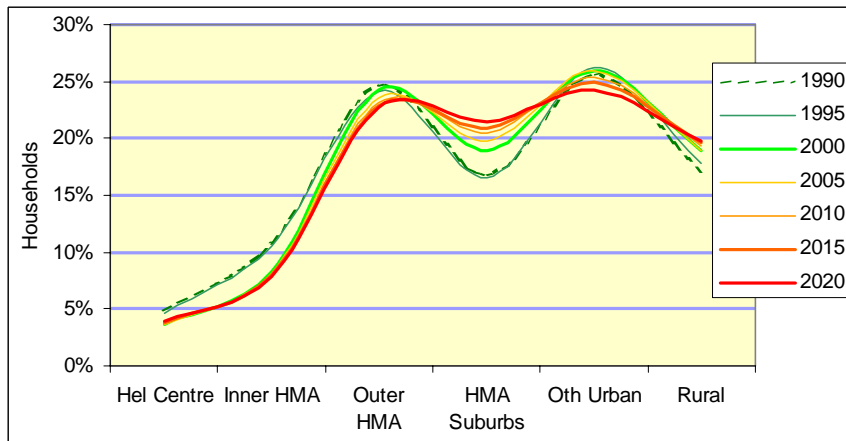


DG Research

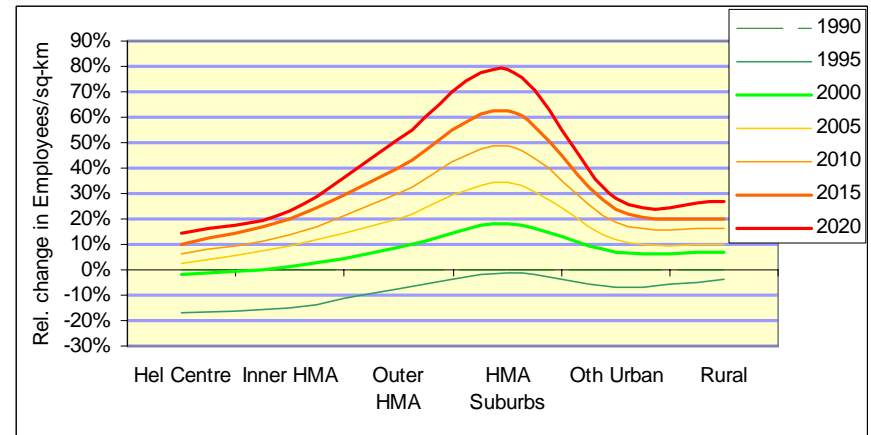
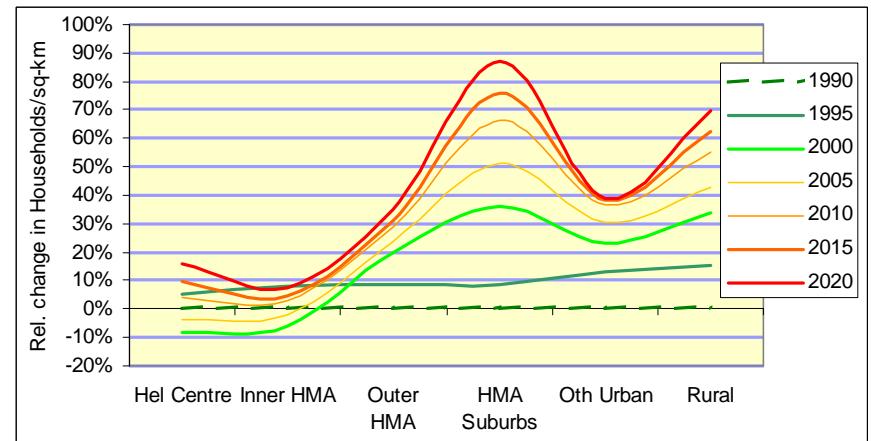
Other tests

Future trends in sprawl

Sprawl:



Relative densities vs 1990:

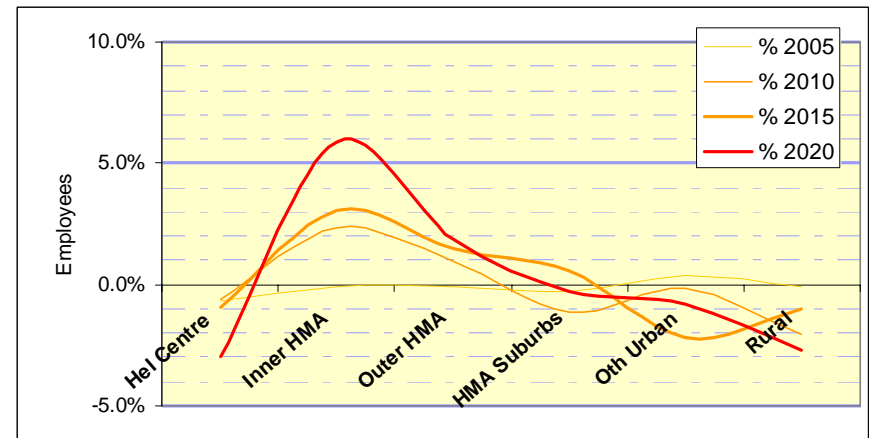
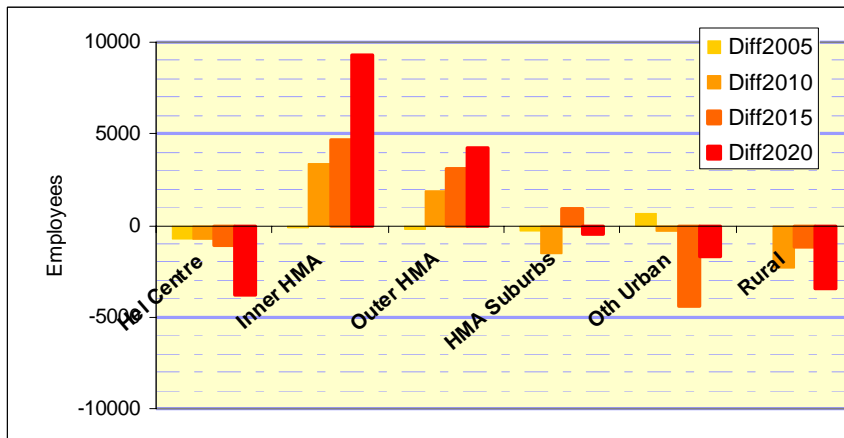
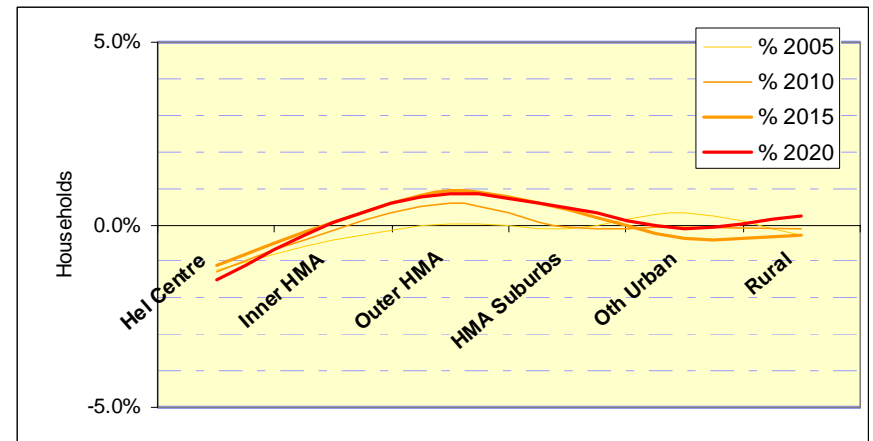
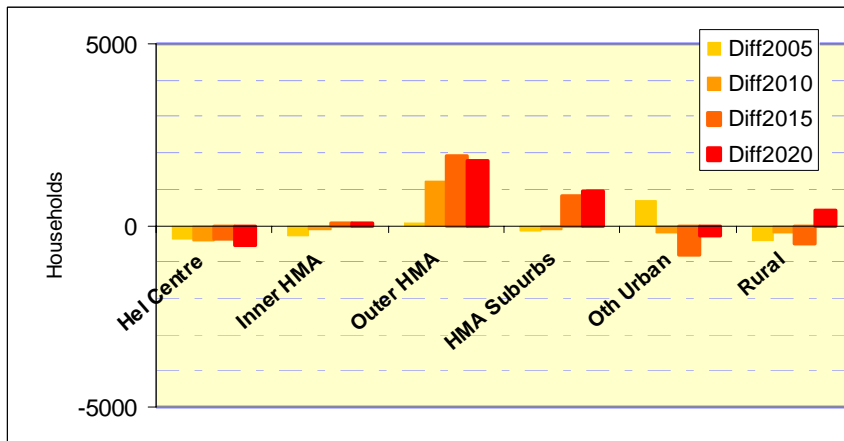


Other investment tests

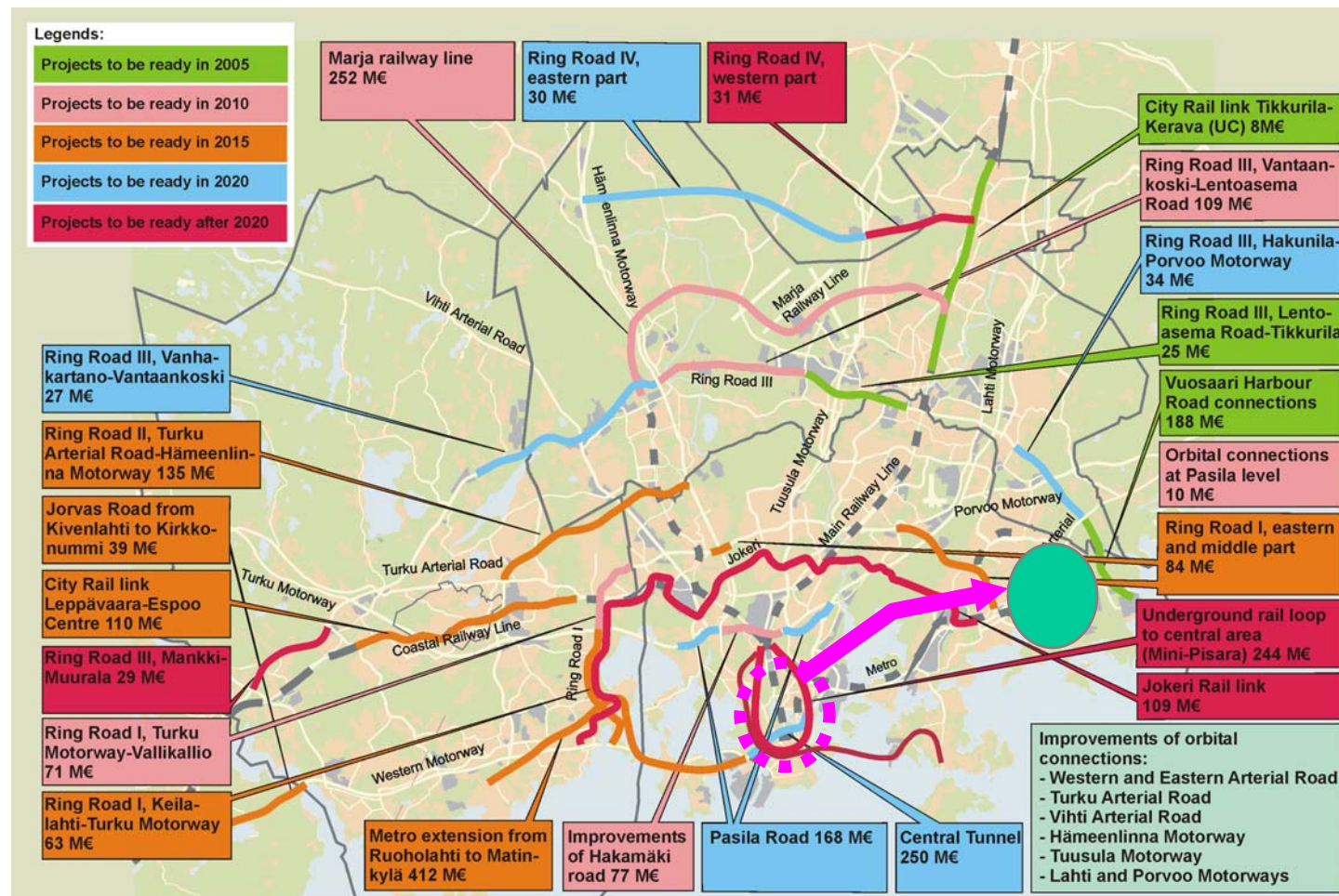
- Effect of Road inv. plan in HMA was small
- Effect of PLJ plan overall in HMA was small
- Effect of orbital investments in HMA was small

Regulation OK (but how done in practise?)

321 H - ABC-type land use regulation policy applied to private services

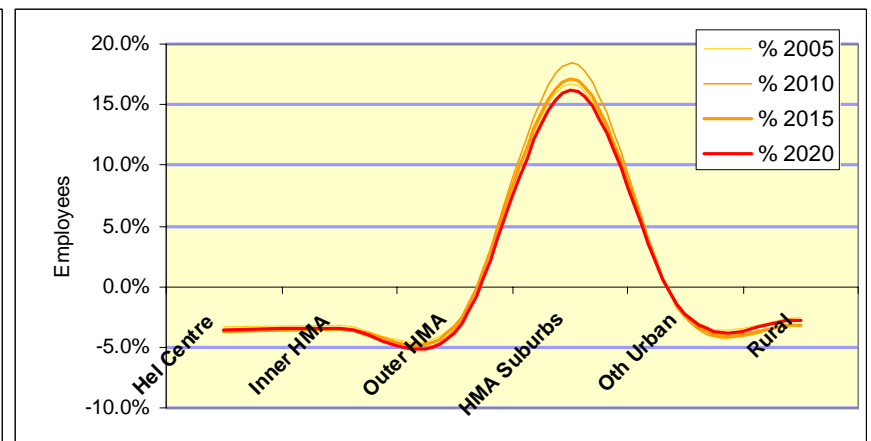
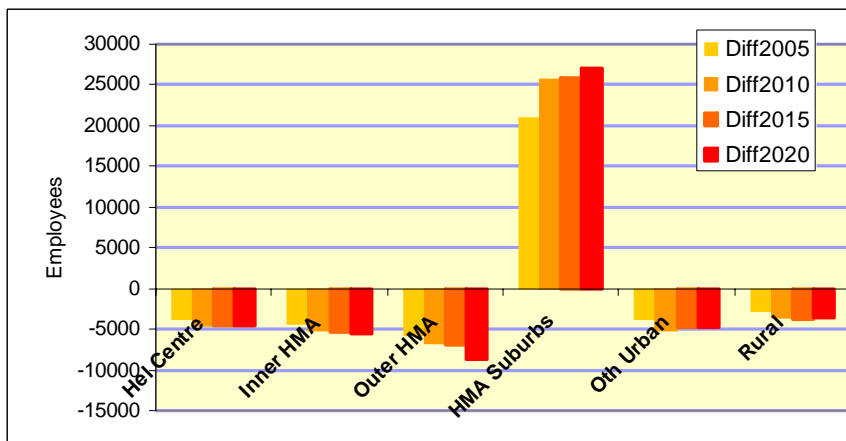
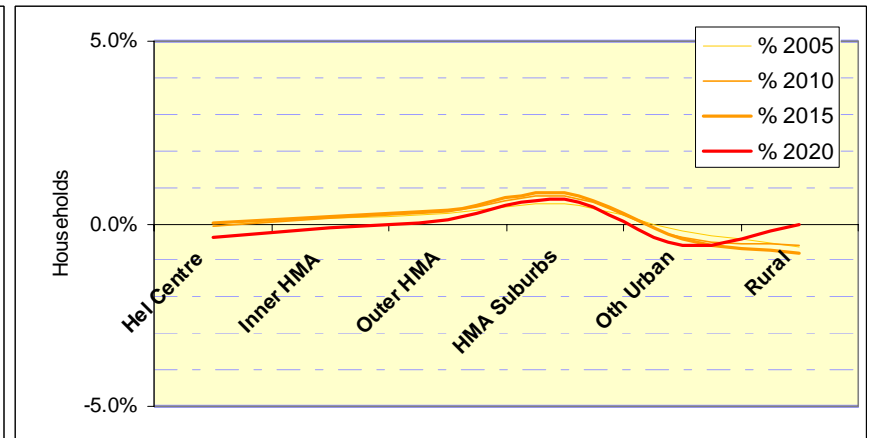
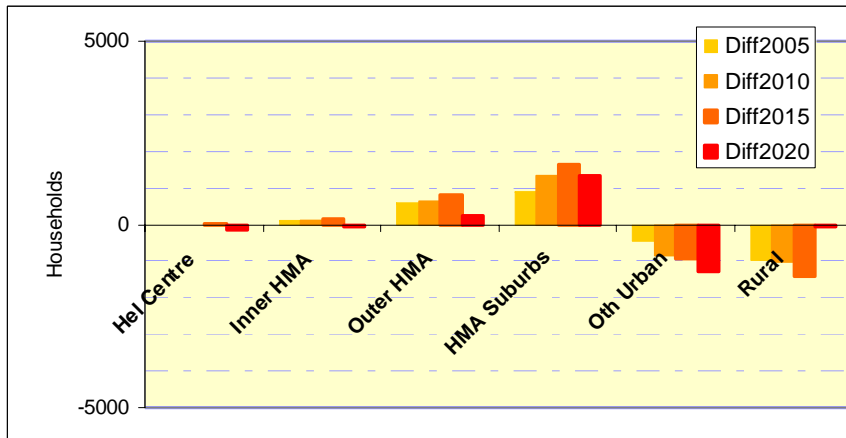


A new employment centre?



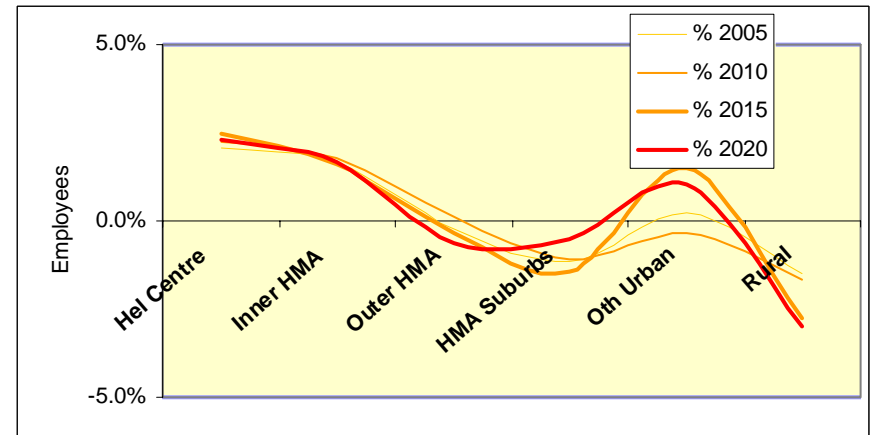
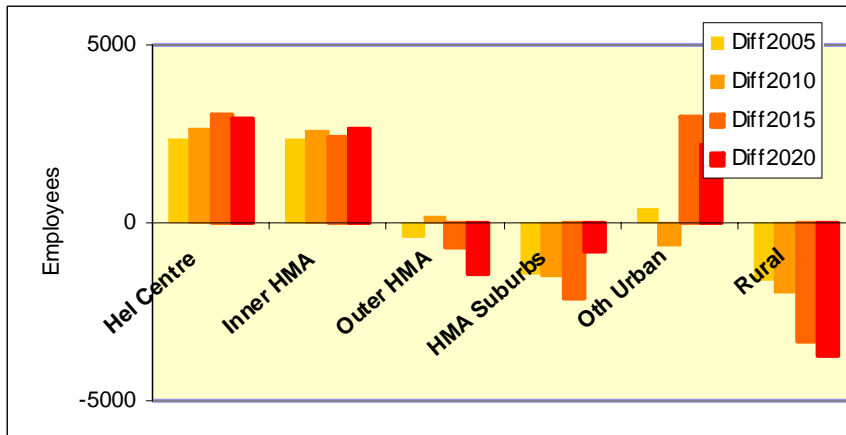
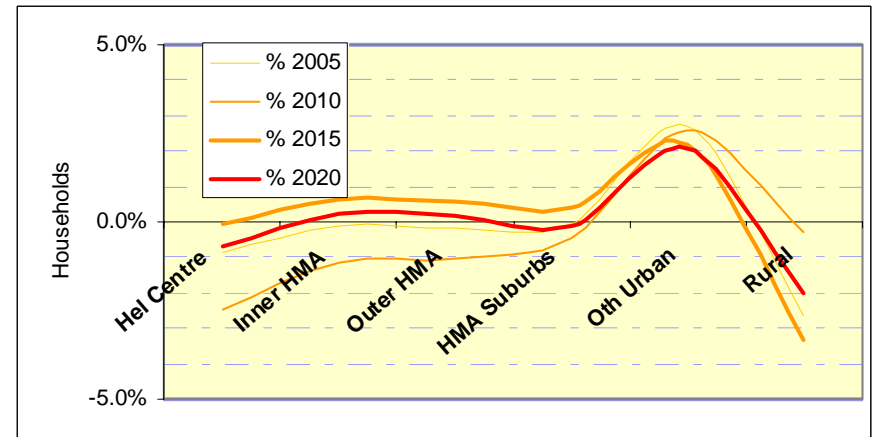
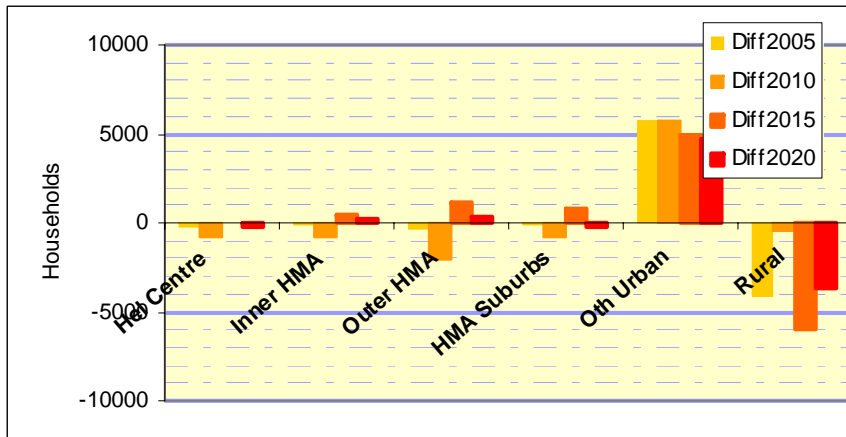
A new employment centre in the HMA?

211 H - New Centre in East (Vuosaari)



Policy package 1

811 H = 411 (VOC+50%) + 512 (fares -20%) + 311 (dev.fee)



Policy package 2

812 H = 411 (VOC+50%) + 512 (fares -20%) + 331 (LU pricing)

