



Forecasts for an uncertain future

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Why this matters

Strategic planning

- How many homes do we need?
- Do we build *<huge infrastructure project>* or not?

Planning services

- How many school places?
- How much fare revenue?

A wide range of user needs

Strategic planning

“10 million or 12 million people in 2050?”

**(+/- 1/2 million people)*

Local service planning

“How many four year olds in SE1 next autumn?”

**(+/- 30 children)*



Outline

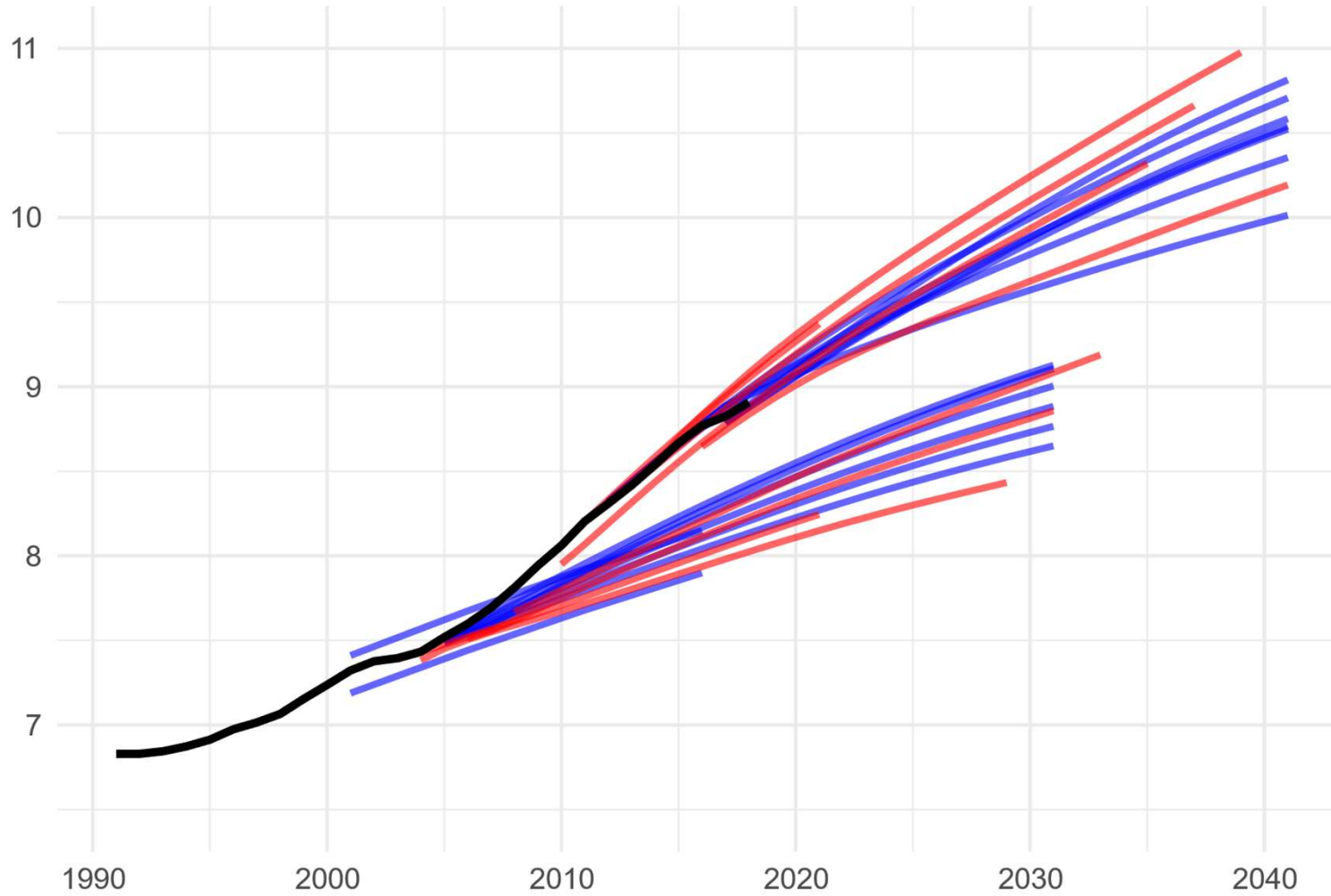
- The challenges
- Approach 1 – build a better model
- Approach 2 – build more models



The challenges

- Incorrect understanding of the past
- Incorrect assumptions about the future
- Incomplete models

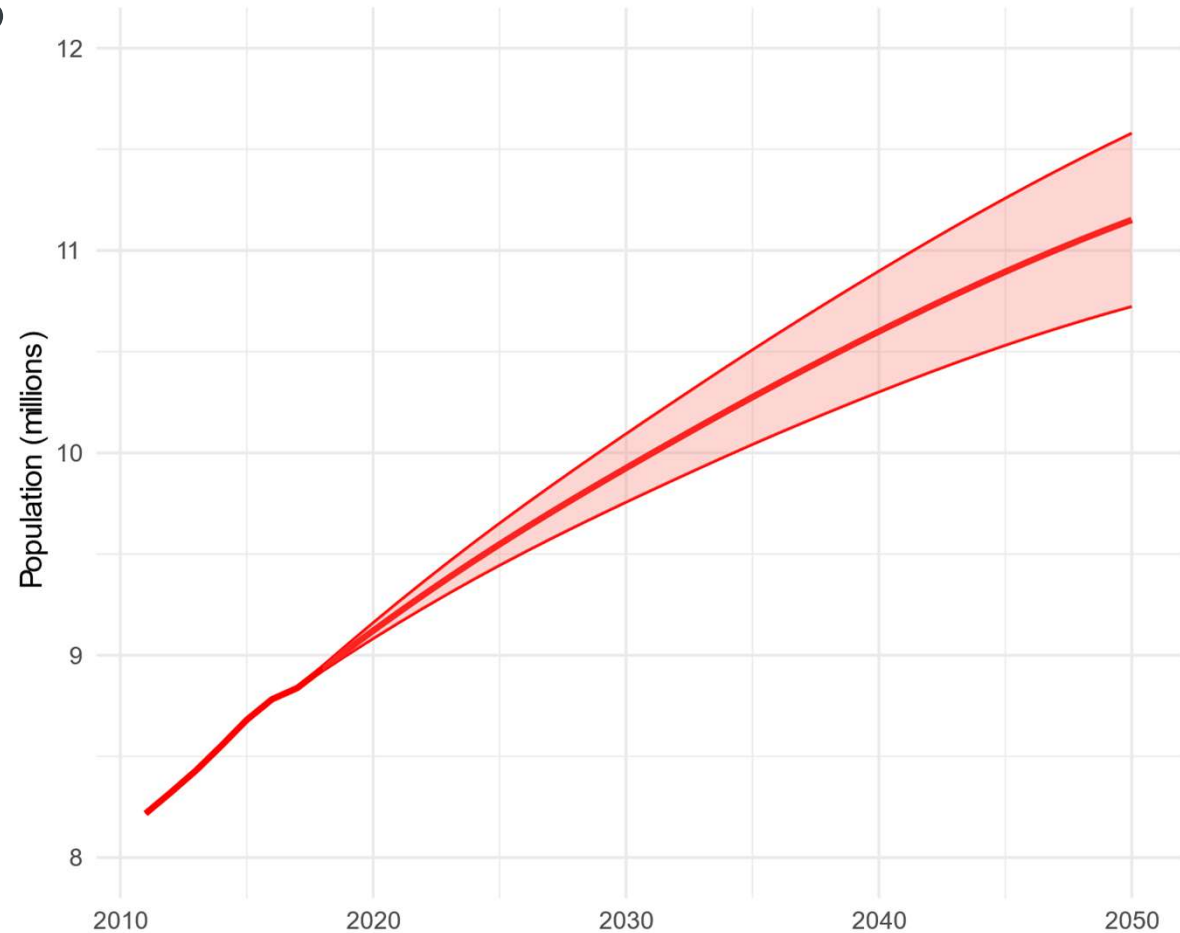
■ Past projections



*History doesn't
flatter...*

Recent projections

- Outcomes based on range of migration assumptions
- Does this capture true uncertainty?



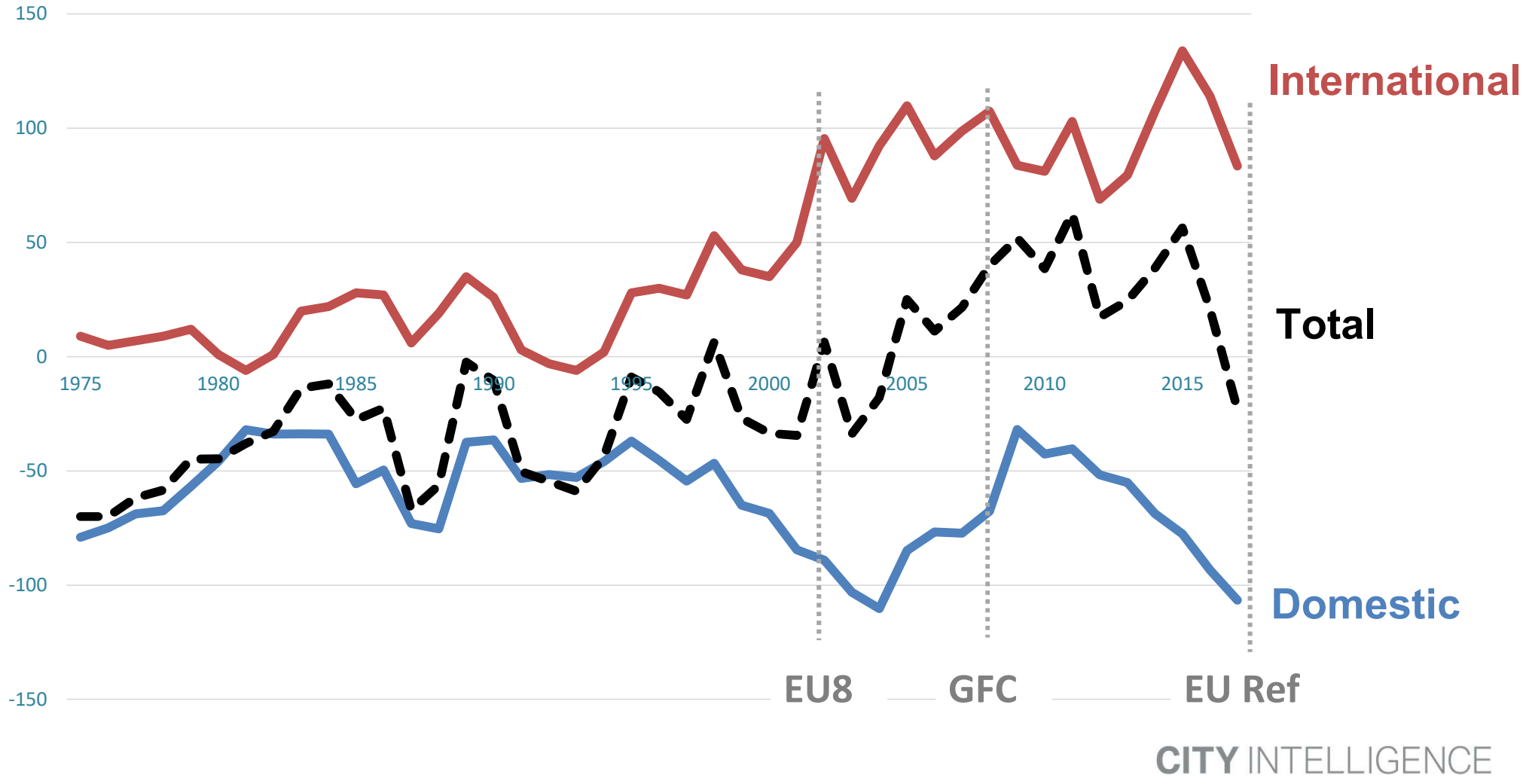
| Sensitivity to migration



Total flows over the border \approx 1 Million

Total net flow \approx 0

Anticipating migration is hard

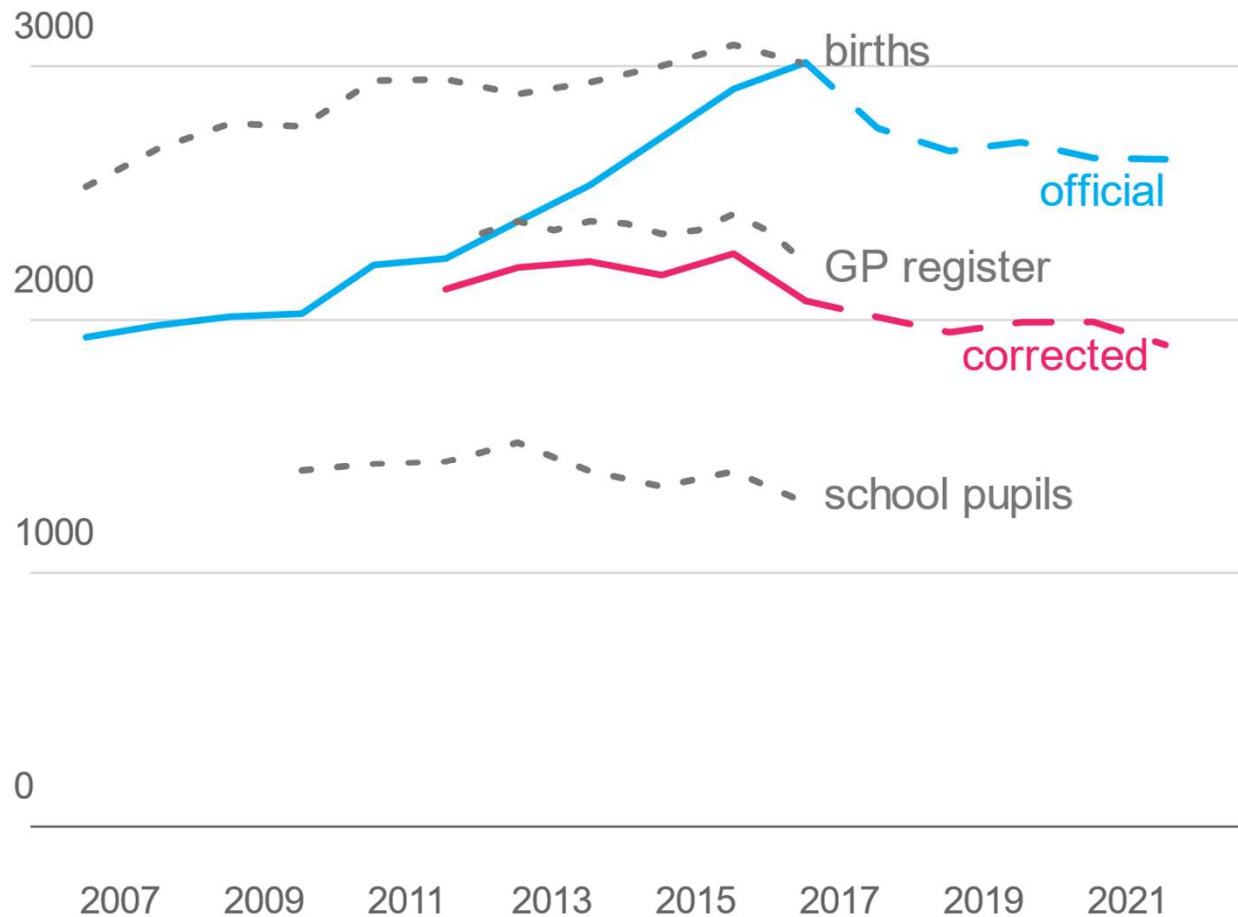




Building a better model

- Make the inputs more robust
- Improve assumptions about the future
- Account for more drivers of population change

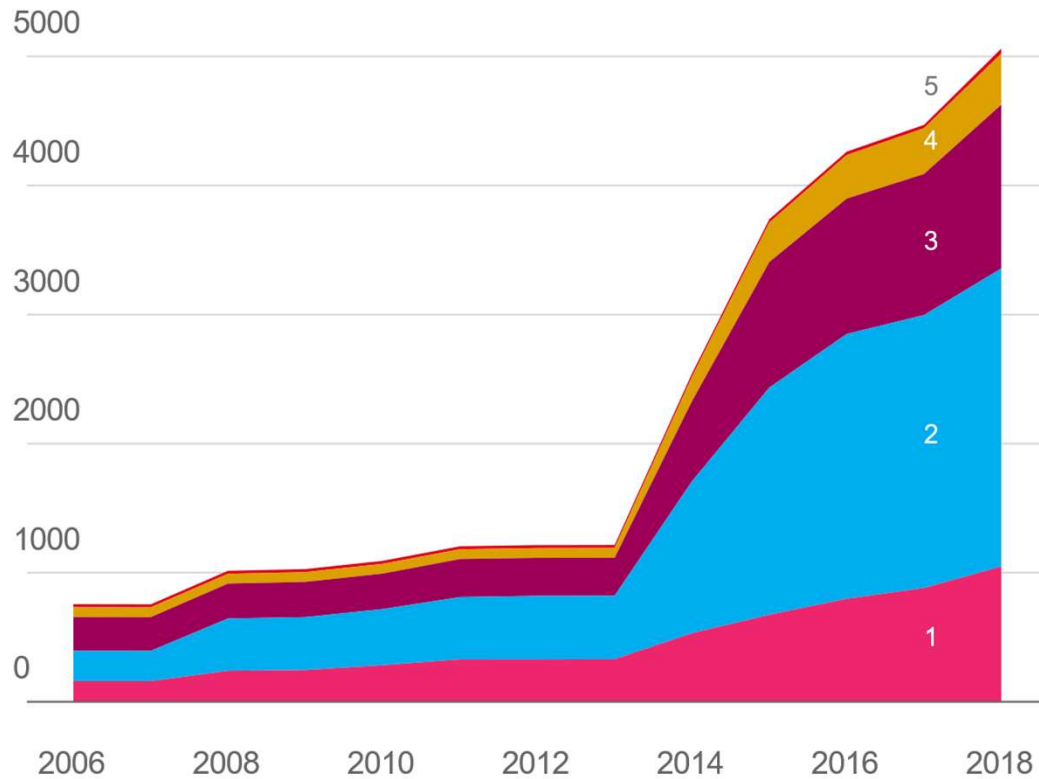
Increasing robustness of inputs



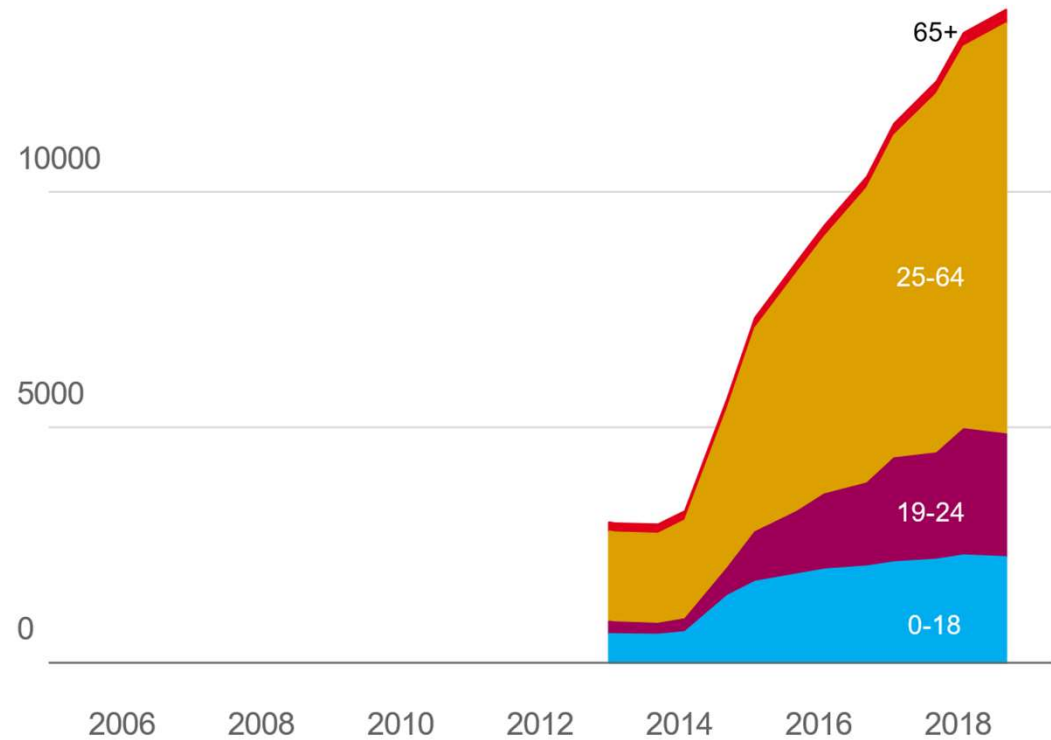
- Monitor official data vs admin sources
- Use to improve reliability of inputs

Improve assumptions about the future

Homes by # bedrooms

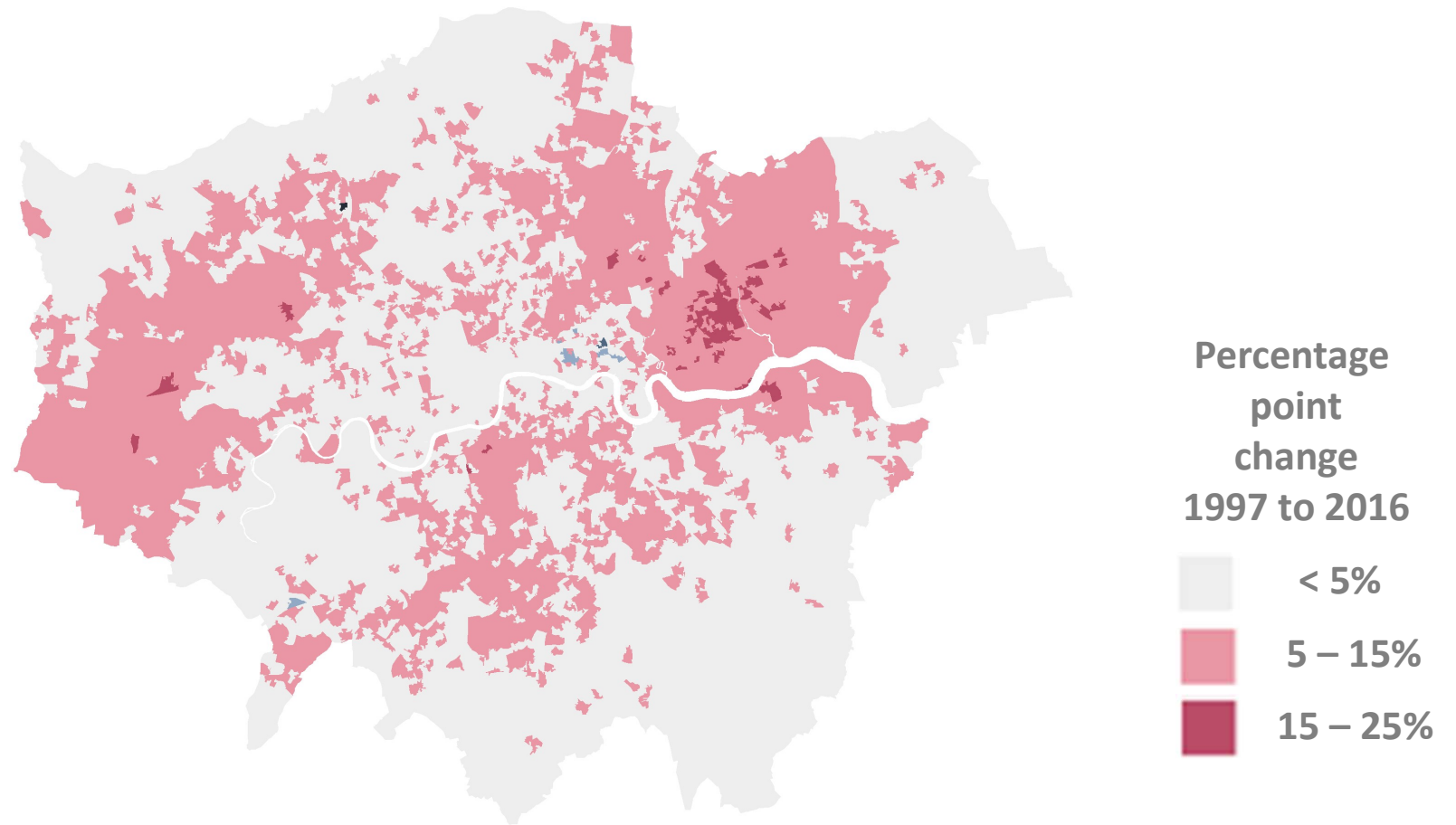


GP register by age



Improve understanding of drivers and dynamics

Change in proportion of adult-sharer households



Source data from the Consumer Data Research Centre

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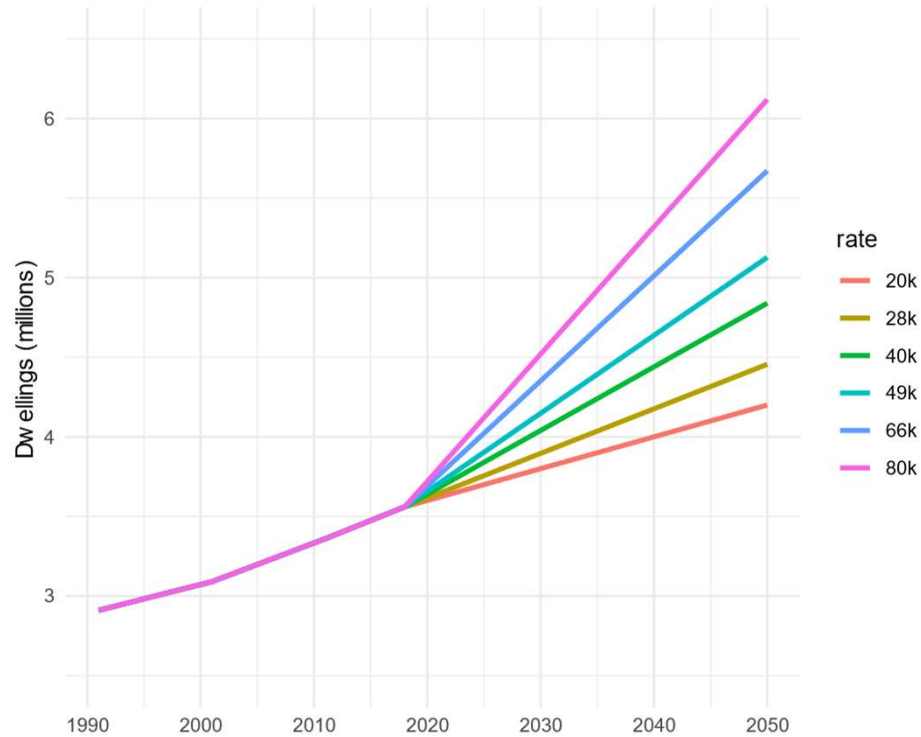
Alternative approach – build more models

- Combined results of multiple *independent* models more reliable than result from a single model
- Disagreements between models give insights into uncertainty
- It's OK for models to have limitations
 - so long as they're *different* limitations

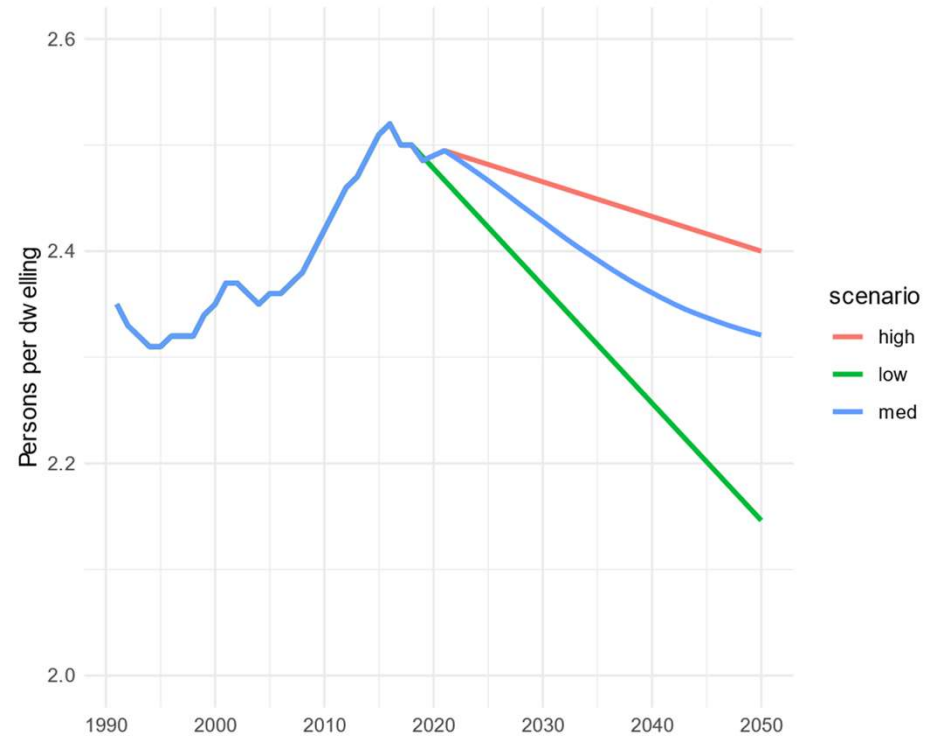
Housing-led projections

Population linked to housing/occupation scenarios

Homes



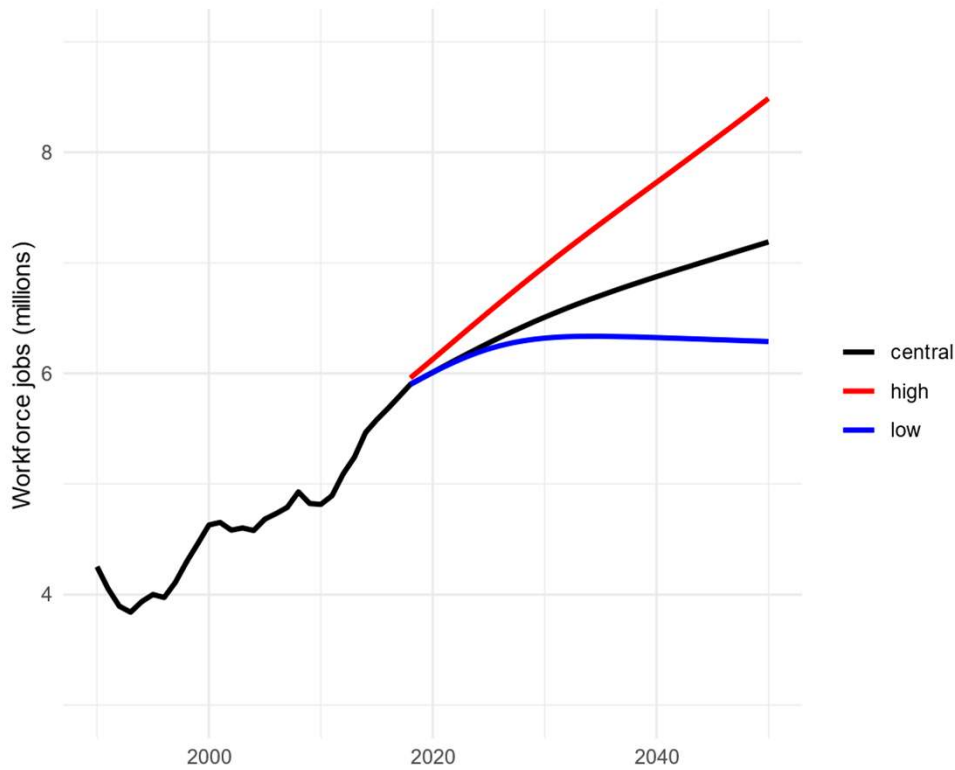
Average people per home



Employment-led projections

Population linked to scenarios of GVA growth and jobs

Jobs

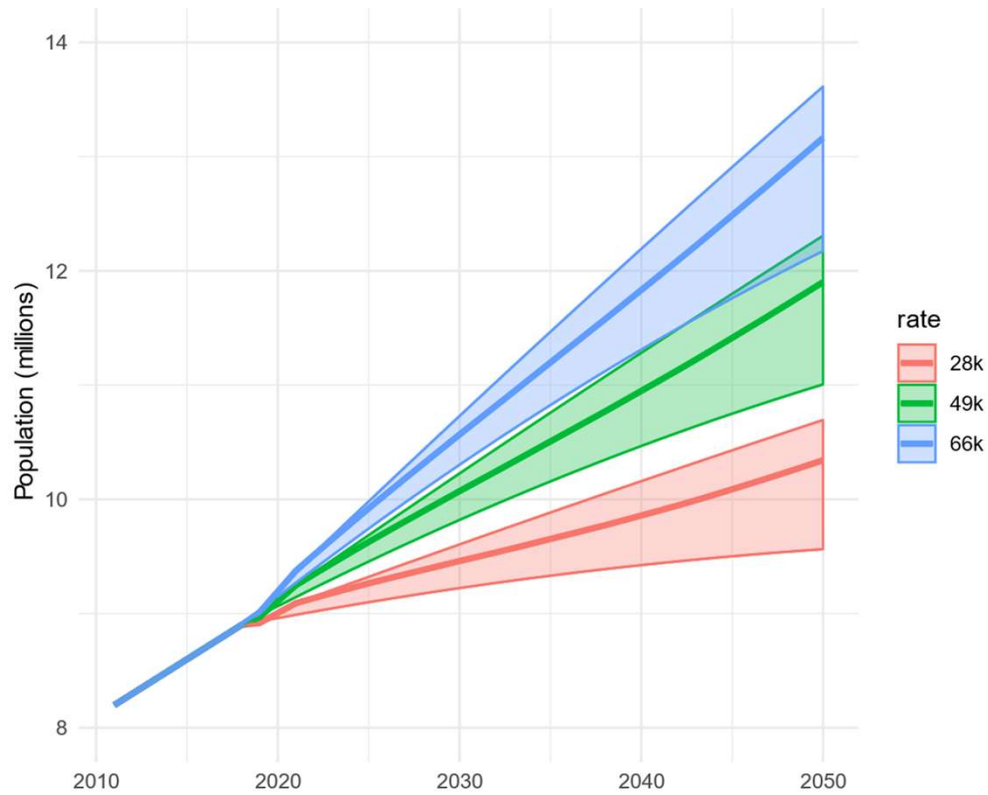


Unemployment rate

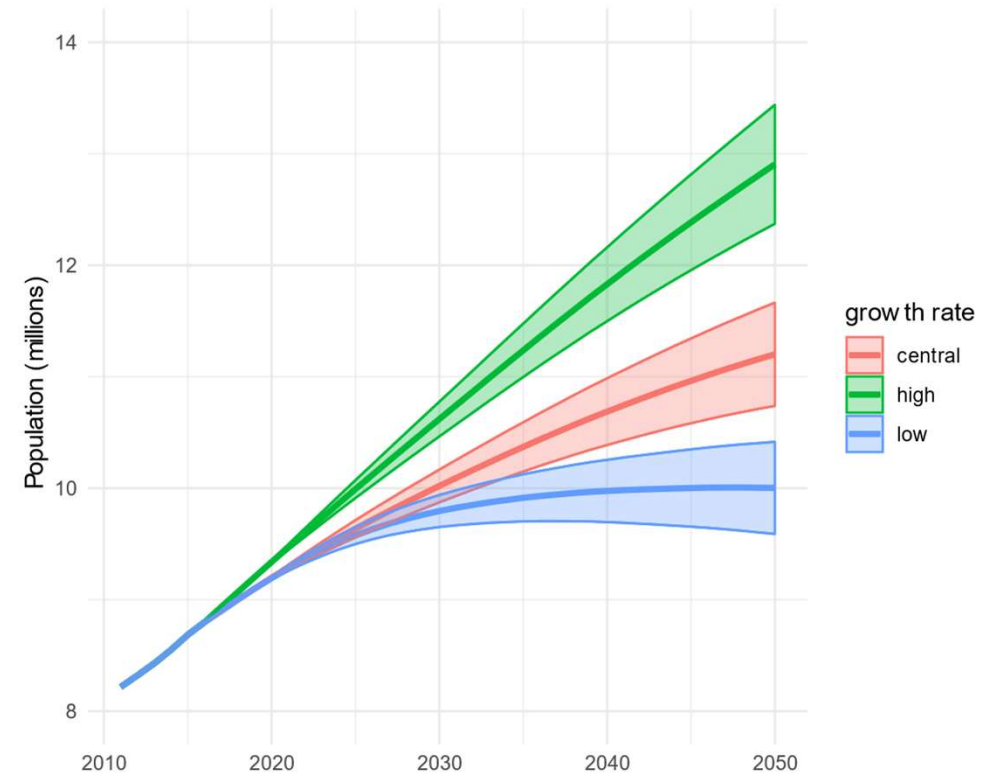


Develop projection *ensemble*

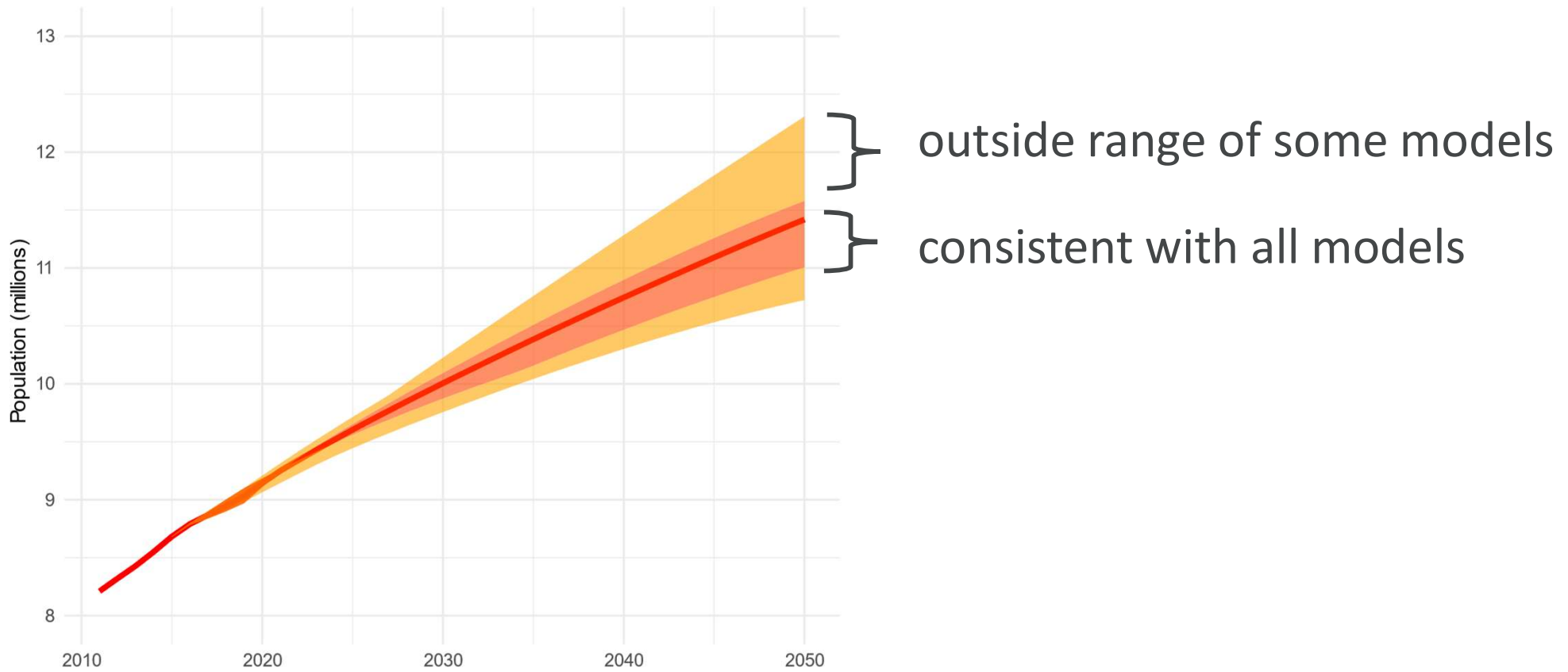
Housing-led



Employment-led



Combine results of multiple models



| In review

- Projecting population in London is challenging
- Diversifying data sources can improve robustness
- Using multiple models improves confidence and provides additional insight

| Final thoughts

- How can we convey uncertainty more effectively?
- Critical to understand needs of stakeholders

Value of projection = Quality * Impact