



Australian Government
Productivity Commission

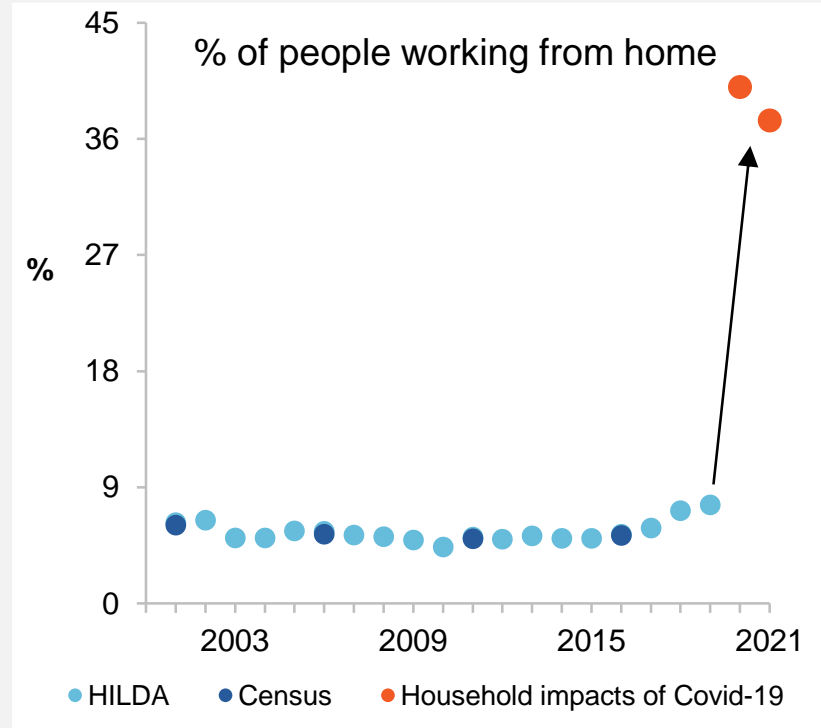
A simple model of working from home

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Working from home is here to stay



Research question

What is the effect on the labour market if labour is changed from a homogenous good to a location specific good?

**i.e. there is labour in the home
and labour in the office?**

Findings



Working from home \Rightarrow Increased labour supply



Avoiding commute makes individual better off



Flexible wages yield better outcomes for everyone



A simple model is a useful tool

Our contribution

1

Commuting

- Lennox 2022
- Beck, M.J. and Hensher, D.A. 2021

2

Productivity

- Bloom et al 2015 QJE
- Emanuel and Harrington 2021

3

Stated preferences

- Mas and Pallais 2017 AER
- Barrero, Bloom and Davis 2021

Firm set up

$$\pi = p \cdot f(L_h, L_o) - w^h L_h - w^o L_o$$

Where:

- π is profit
- p is the unit price of the output good
- L_h is hours worked at home per week
- L_o is hours worked at the office per week
- w^h is the wage paid to labour supplied from the home
- w^o is the wage paid to labour supplied from the office

Individual set up

The individual has the following utility function:

$$\max_{C, H, L_h, L_o} U(C, H, L_h, L_o)$$

With the constraints:

$$H = \bar{T} - L_h - (1 + t)L_o \quad (\text{time budget})$$

$$C = w^h L_h + w^o L_o \quad (\text{money budget})$$

Simulation using GAMS

CES utility function:

$$(\alpha_C C^r + \alpha_H H^r + \alpha_{L_h} L_h^r + \alpha_{L_o} L_o^r)^{\frac{1}{r}}$$

CES production function:

$$(\beta_{L_h} L_h^\rho + \beta_{L_o} L_o^\rho)^{\frac{1}{\rho}}$$

Simulation using GAMS

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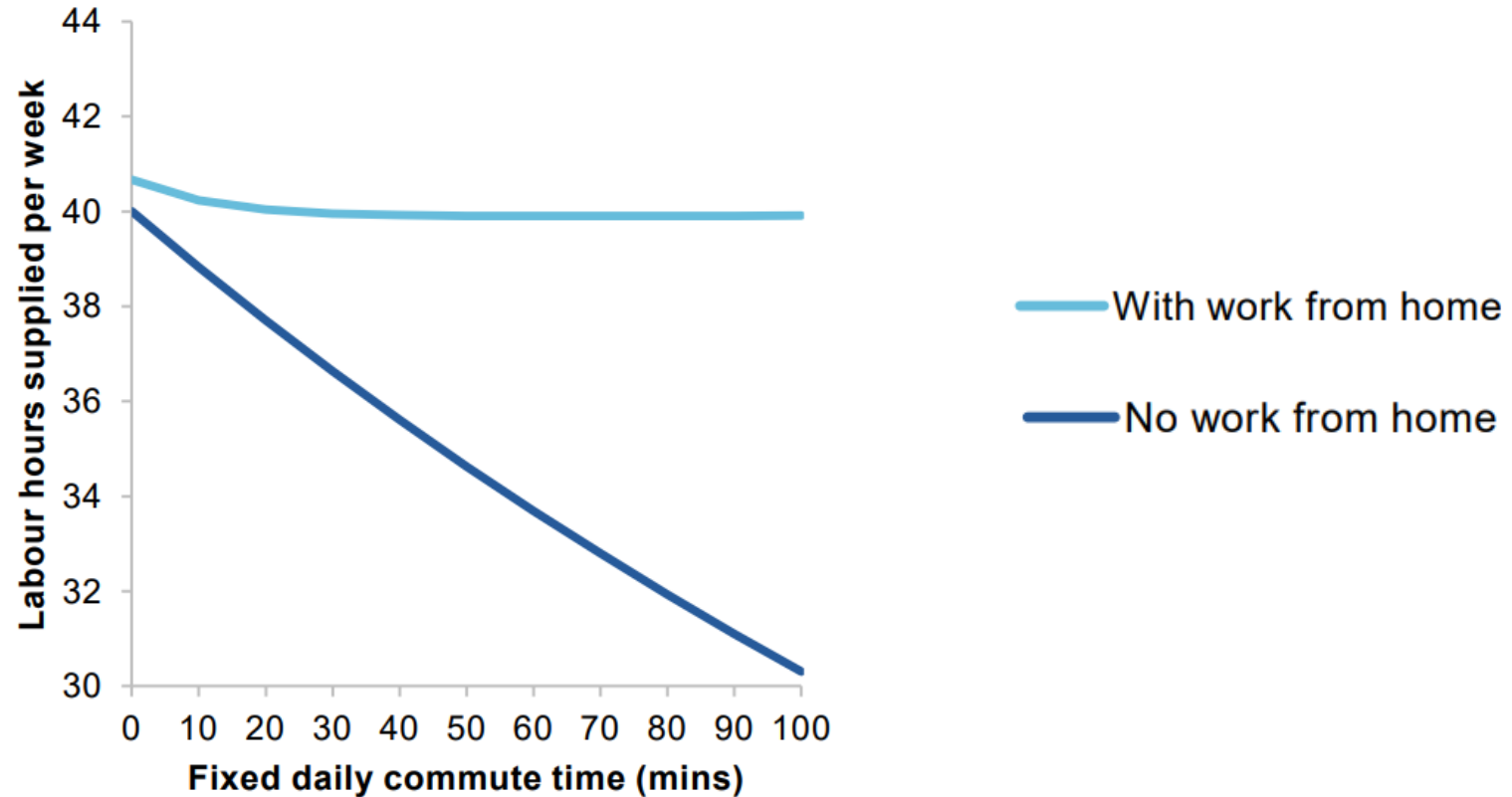
CES production function:

$$(\beta_{L_h} L_h^\rho + \beta_{L_o} L_o^\rho)^{\frac{1}{\rho}}$$

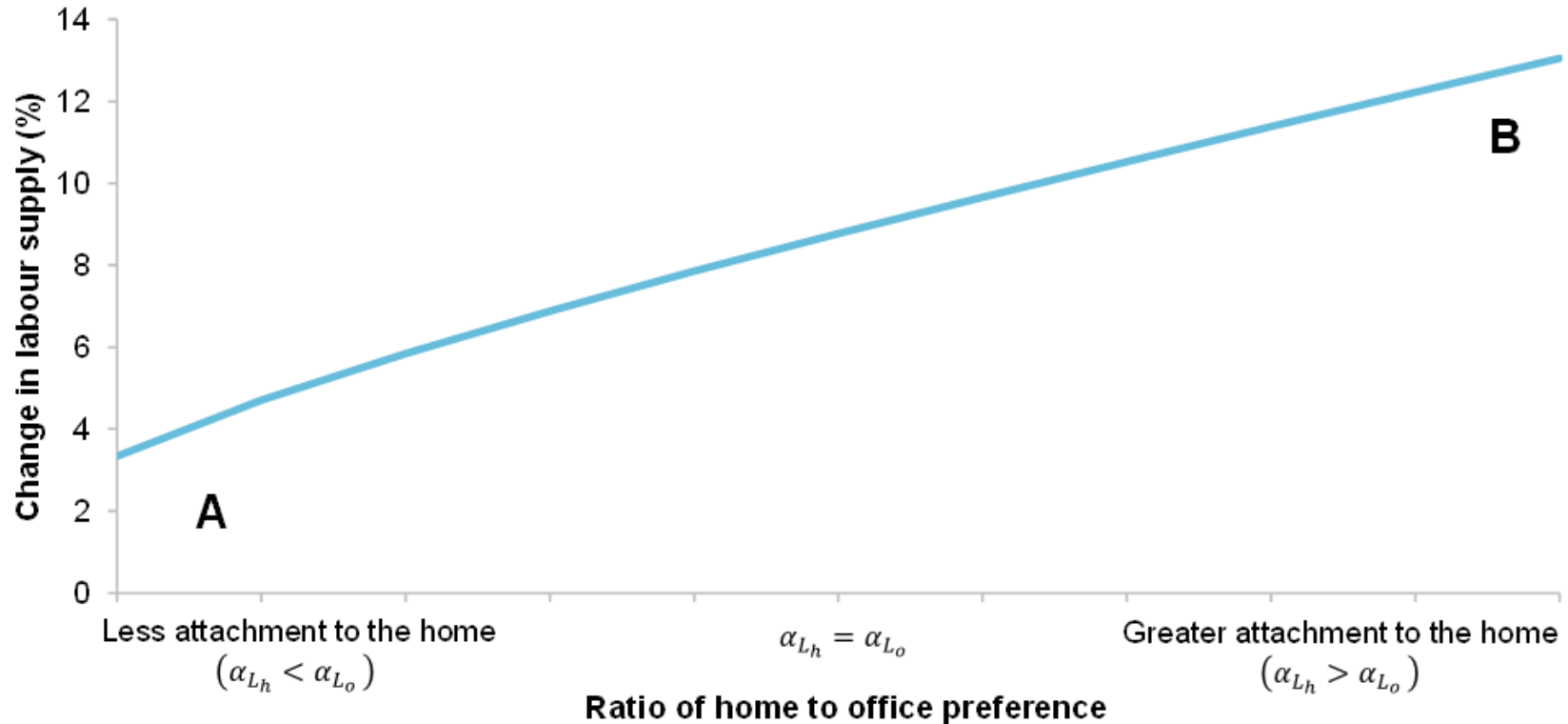
$$\sigma = \frac{1}{1-\rho}, \quad s = \frac{1}{1-r}$$

| Parameters | Default values |
|-----------------|----------------|
| α_C | 0.47 |
| α_H | 0.49 |
| α_{L_h} | 0.02 |
| α_{L_o} | 0.02 |
| t | 0.125 |
| β_{L_h} | 0.5 |
| β_{L_o} | 0.5 |
| s (individual) | 2 |
| σ (firm) | 2 |
| \bar{T} | 80 |

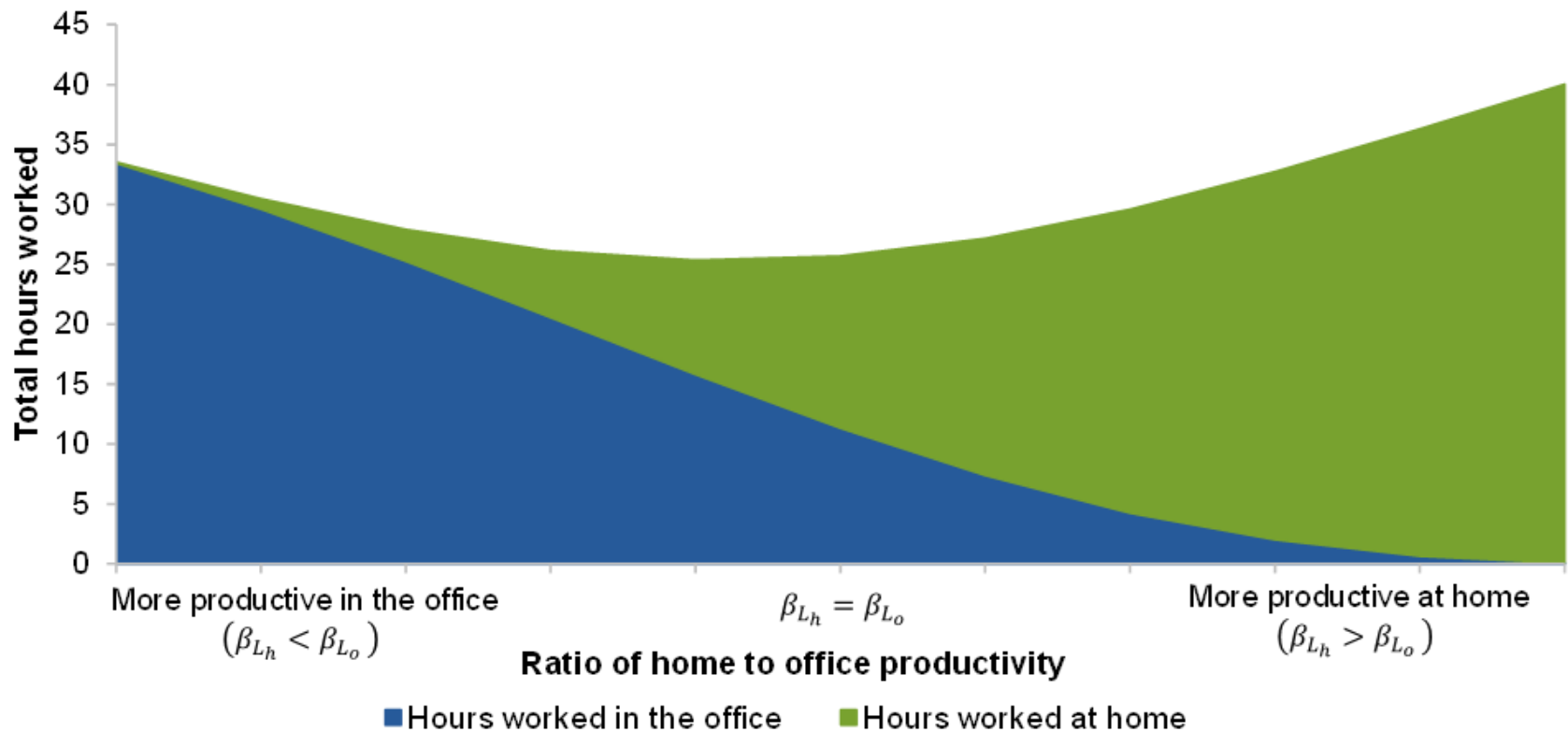
Commute is a tax → WFH increases labour supply



People who like working at home, work more



Productivity and the market for labour



Without flexible wages

Short run

Some **tension** between workers and firms

Medium term

Offer non-pecuniary rewards:

- Transport subsidies
- Satellite offices
- Increase preference for office socialisation

Find ways to improve **at-home productivity**

Long run

Firms post job offers that include wages, conditions, and the norms on working from home (which days etc)

Workers will **sort** across firms

Probably less variation inside a firm than is optimal.

Reflections on the model

1

Valuable output of
the model

2

Thinking through
inputs and
structure very
insightful

3

Recommend
approach to policy
makers and
researchers



Thank you!

Working from Home Report:
www.pc.gov.au/working-from-home



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