Employment effects of building retrofits in Hungary and Poland: A critical assessment

CENTER FOR CLIMATE CHANGE
AND SUSTAINABLE ENERGY POLICY

CENTRAL EUROPEAN UNIVERSITY

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Capturing the multiple benefits of energy efficiency

Roundtable on macroeconomic impacts

IEA (Paris). January 24 and 25, 2013.

BACKGROUND

The projects in a nutshell

- **Objective**: to gauge the **net employment impacts** of a large-scale deep building energy-efficiency renovation programme in Poland and Hungary
- **Time framework:**
  - **Hungary:** June 2010 / **Poland**: spring 2012
- **Scope of the research**:
  - Type of buildings: **residential** and **public buildings**
  - Type of renovation: reduce demand for **space and water heating** (no appliances, space heating only in Hungary)
  - Employment effects: **direct, indirect** and **induced**
- **Expected results**: bottom-up modelling + I/O analysis
  - **Net employment impacts and non-employment results**
  - **Assessment** and **quantification** of additional **CO-BENEFITS**
- **Impact** on **Hungary's policies**, unclear for Poland


SFH1992
SFH2010
Panel
MFH2010
Hist
TradMFH

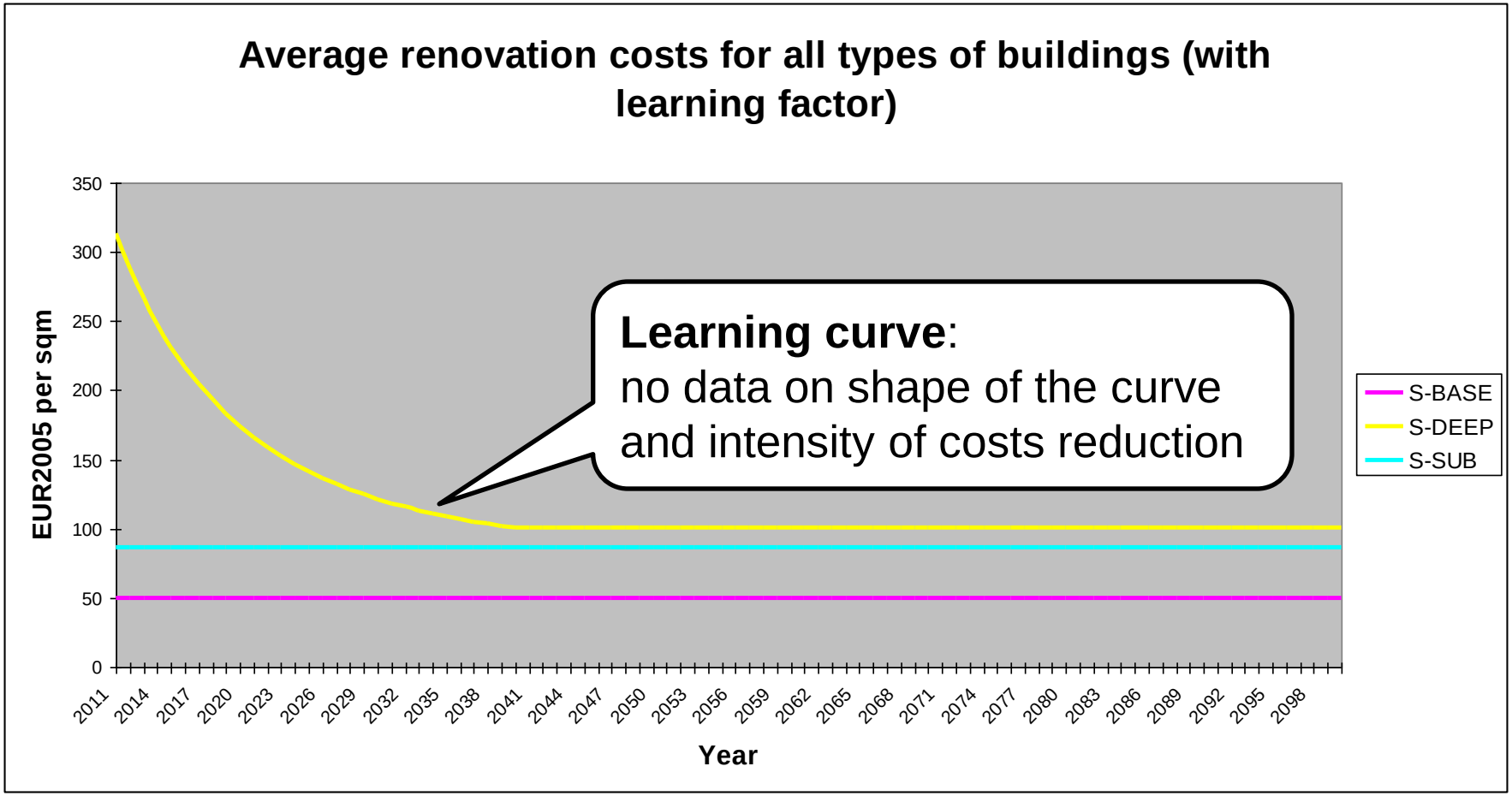

MID scenario = *faluház*
50% energy savings

DEEP scenarios = SOLANOVA

85% energy savings

CRITICAL ASSESSMENT OF KEY ASSUMPTIONS AND RESULTS

Cost of the retrofits



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Cost categories not considered

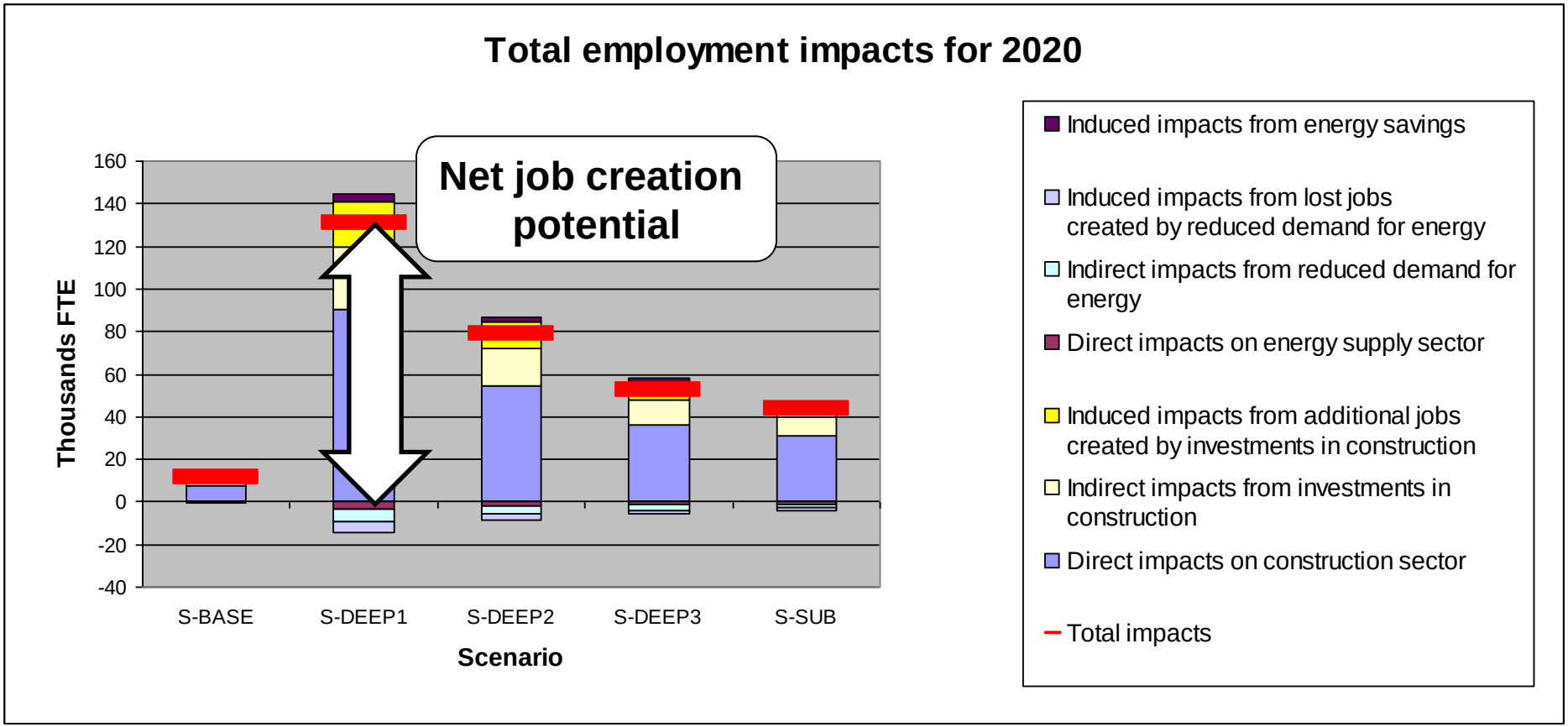
- **Transaction costs**
  - Informing/liasing with owners, facilitating agreements
    - 10% retrofit costs (Radian, 2010)
  - Quality checks, access to credit, temporary relocation during retrofit, administration costs
- **2nd round retrofit costs**
  - Elements of deep (*passive*) retrofits replaced after **15** (fans in air renewal systems) **to 50 years** (insulation)
- **Higher implementation costs** result in larger **employment creation potentials**

Limitations: Input/Output analysis

- **I/O tables = *snapshot* of the economy** (2005)
  - Fixed coefficients in transaction tables
  - Uncertainty about the mid to long-term evolution of the structure of a national economy
- **Dynamic effects** not properly captured
  - e.g., **shortages** in the supply of labour and material costs may increase the price of production factors (cost of the retrofits)
- **Uncertainty** about **indirect employment effects**
  - Local production vs. import of retrofit materials

Results - net employment impacts

Snapshot in 2020 (Hungary)



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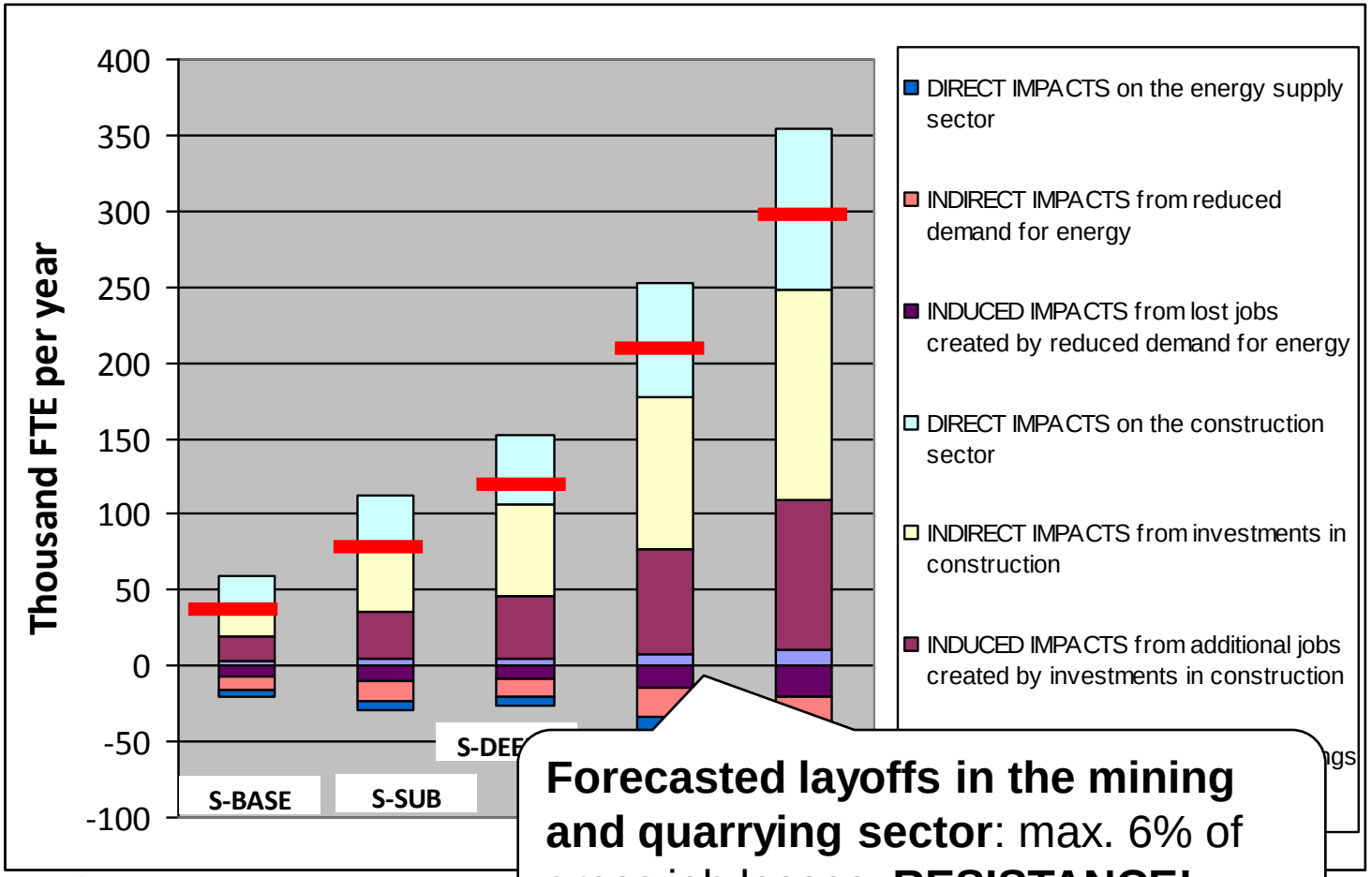
Results - net employment impacts

Snapshot in 2020 (Poland)



Forecasted layoffs in the mining and quarrying sector: max. 6% of gross job losses: **RESISTANCE!**

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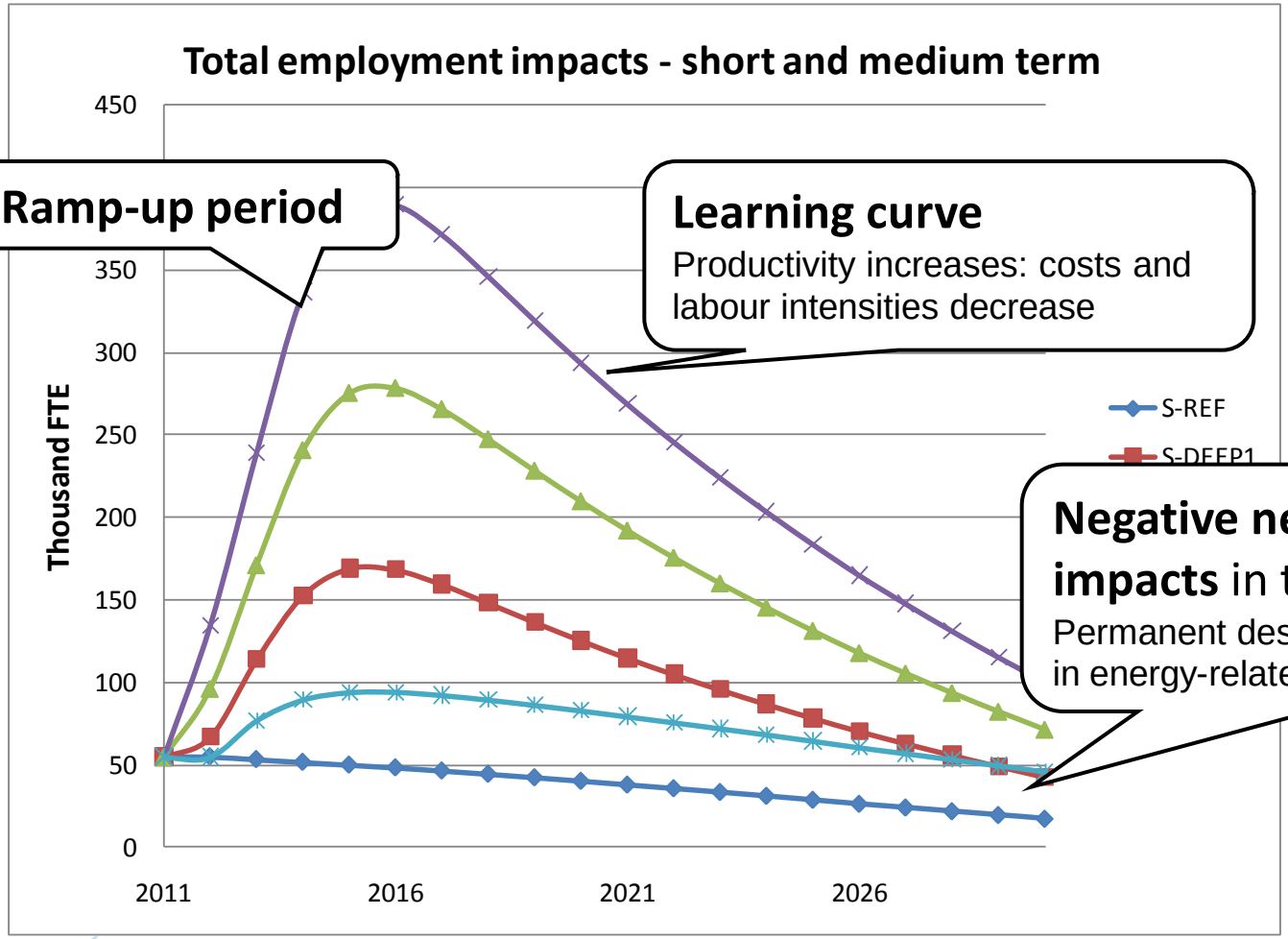
Results - net employment impacts

Short and medium-term view (Poland)



Ramp-up period

Learning curve

Productivity increases: costs and labour intensities decrease

Negative net employment impacts in the mid term

Permanent destruction of employment in energy-related sectors

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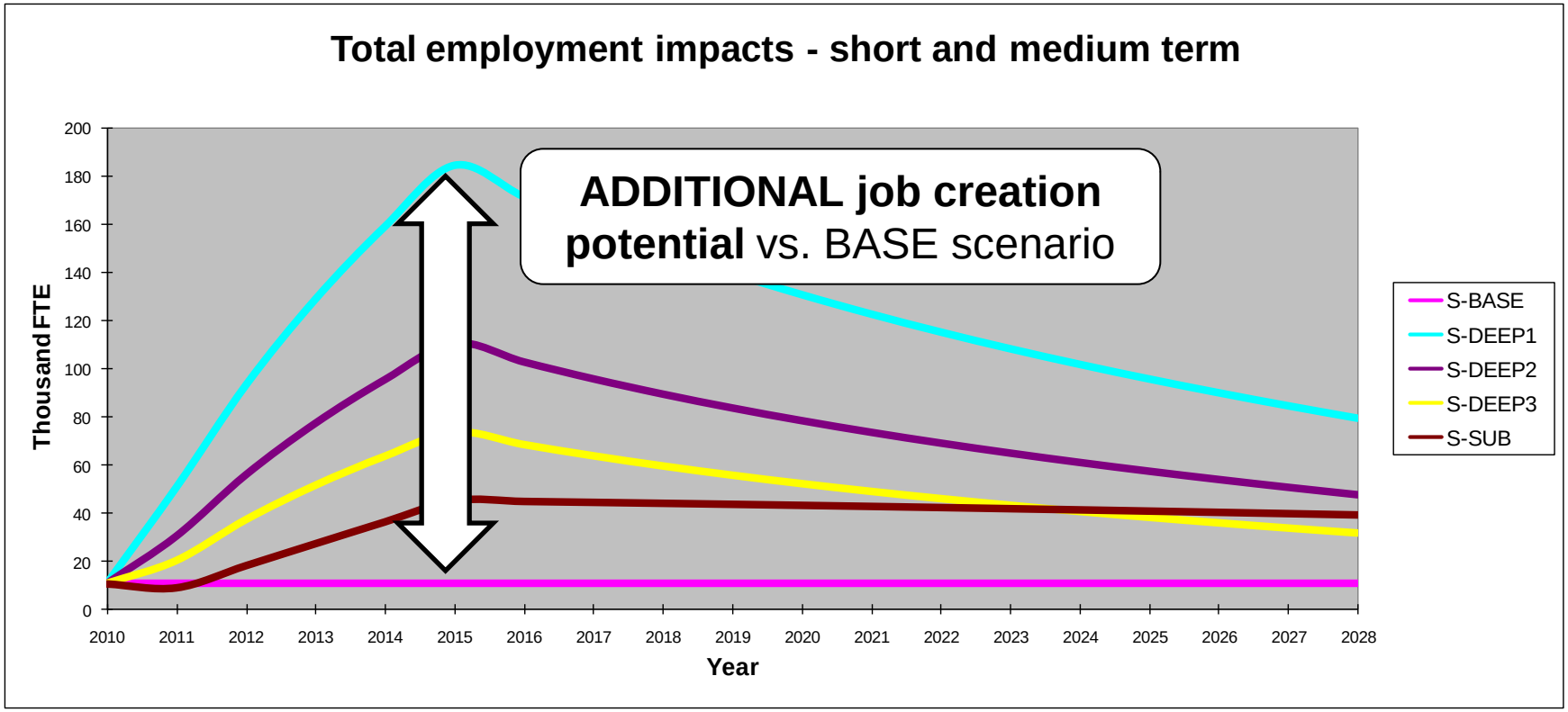
Results - net employment impacts

Short and medium-term view (Hungary)



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The issue of additionality

- Are retrofits simply **reallocating** existing labour?
  - **Financing** as a key element – *pay-as-you-save*
    - **Reallocation** of existing subsidies and EU funds
    - **Additional external funds** (Green Investment Scheme)
- If the **same amount of resources** would have been **directed** to an **alternative investment**, how many jobs would have been created?
  - … or are **additional jobs being created** vs. a best-case alternative (e.g., transport infrastructure, renewables)?

CONCLUSIONS

Conclusions

- To what extent retrofits **create additional jobs**?
  - Financing from external resources (GIS)
- Are building retrofits **job creation strategies**?
  - **Key policy motivations**: energy savings, reduced GHG and non-GHG emissions, energy security, fuel poverty, etc.
  - …plus they create **more jobs** than what **they destroy**
- **Stable implementation framework** and **public involvement** required
  - for the **learning curve** to deliver cost reductions;
  - for **avoiding the export** of manufacturing jobs;
  - to minimise **transaction** and **ancillary costs.**

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Thank you for your attention

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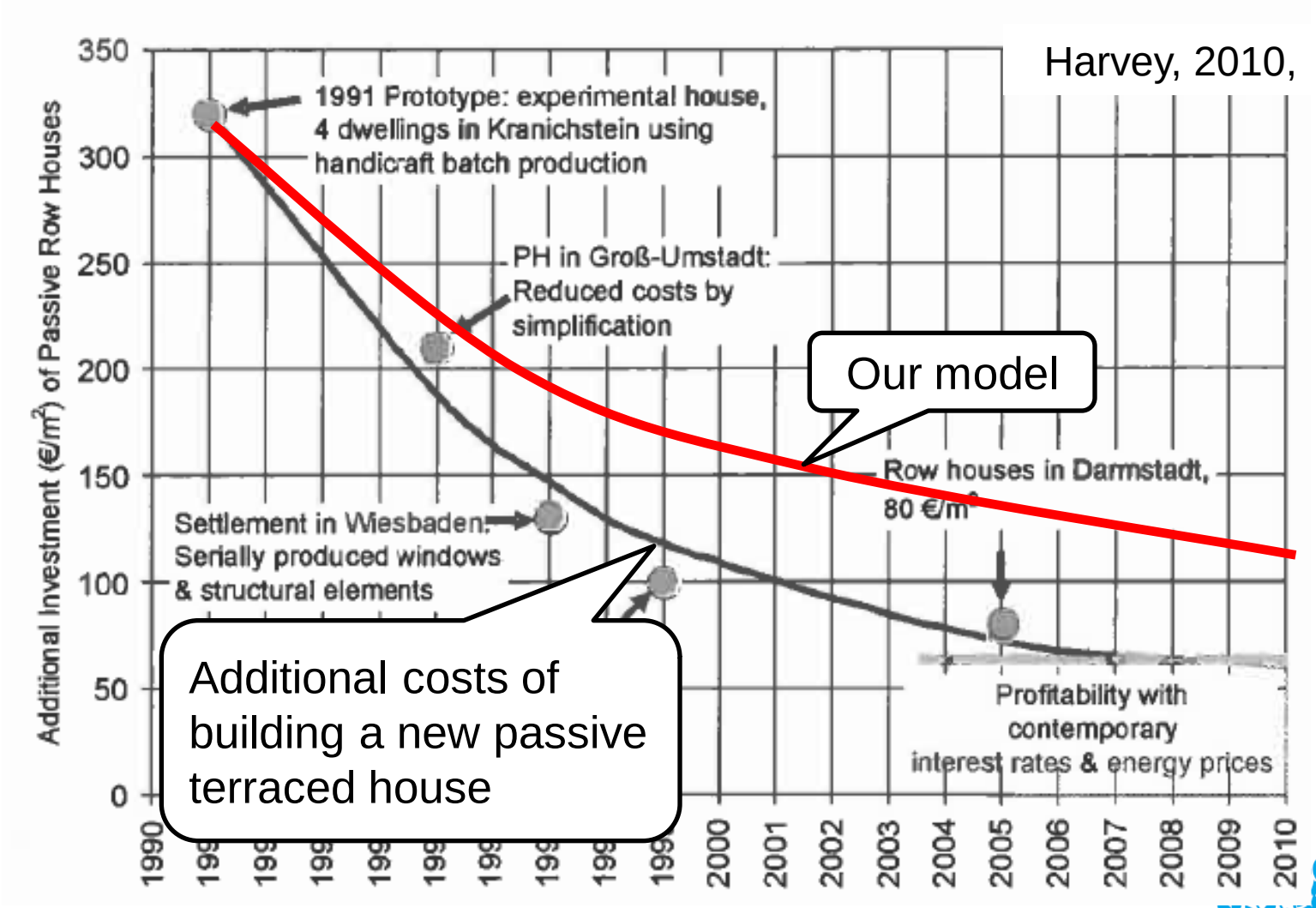
Learning curve – reality check



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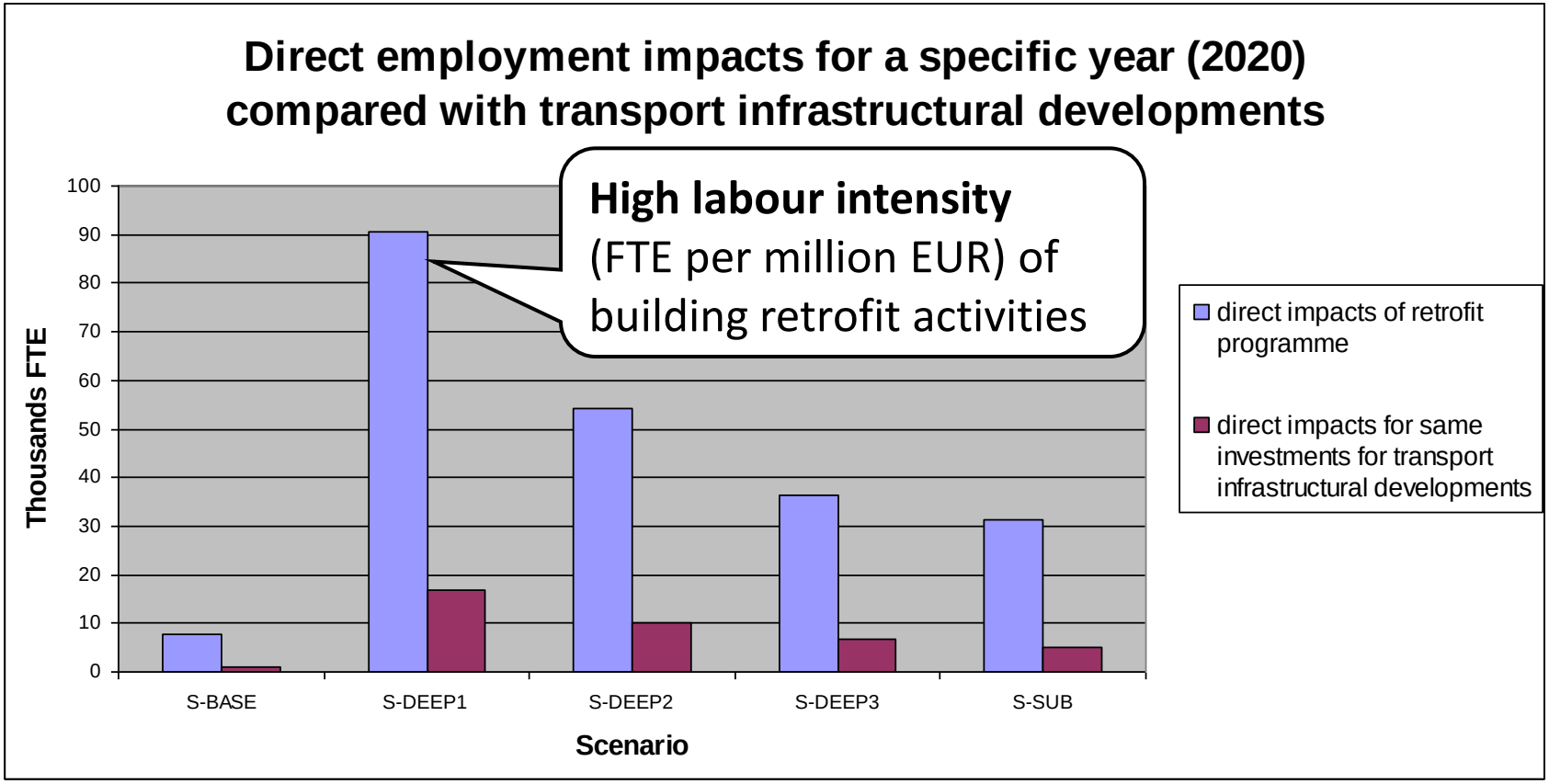
Comparison with transport infrastructure investments



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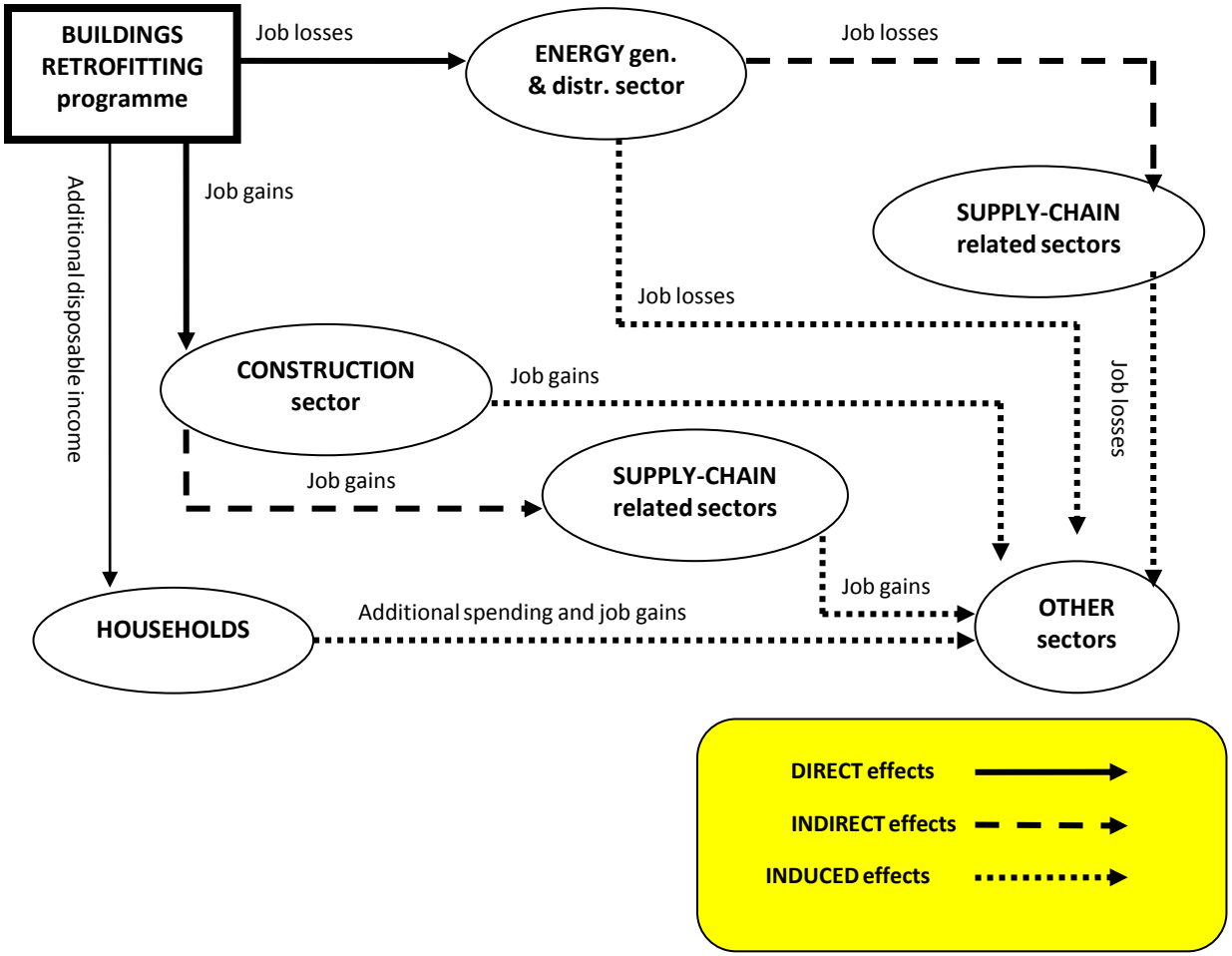
Employment effects: overview



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