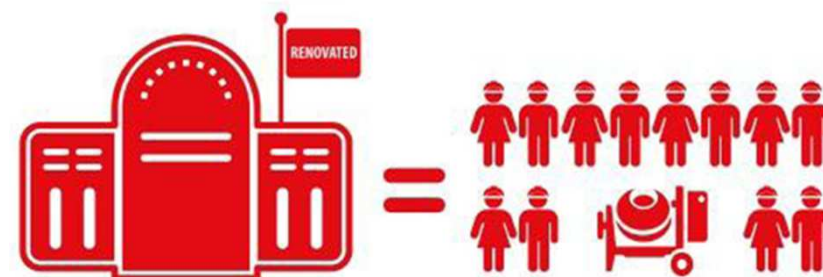




Sigurd Naess-Schmidt

Copenhagen Economics

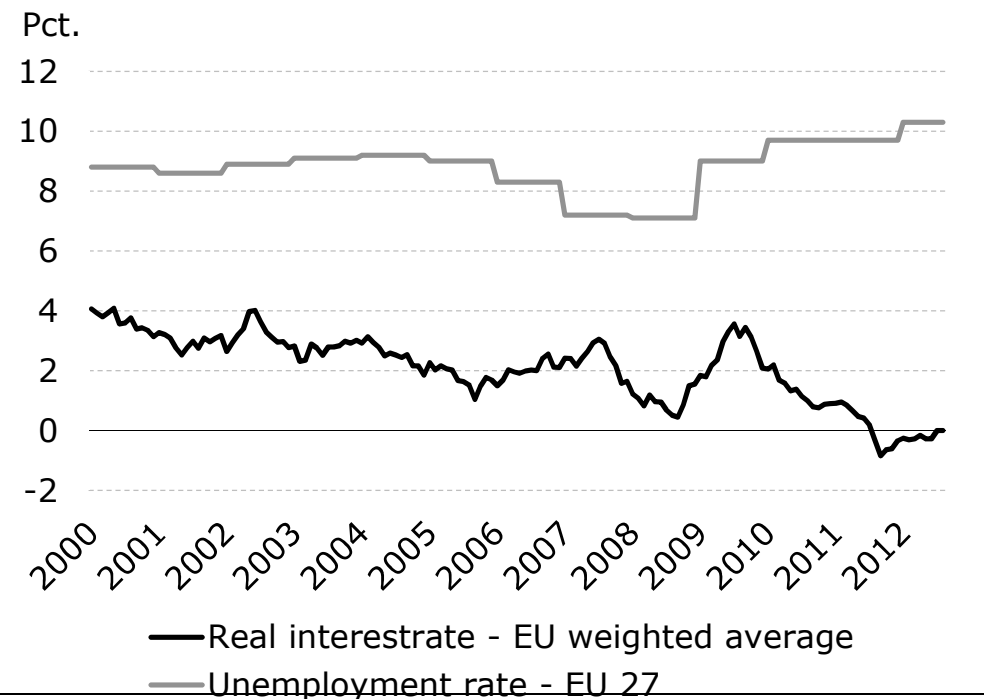
Multiple benefits of energy efficient renovation of buildings - Impact on public finances



Energy efficient buildings: why right now?

- Substantial evidence that energy efficiency of building is a no-regret option:
 - Cost of investments is lower than the value of benefits
 - This is true globally and also in the EU
- BUT
 - Energy efficiency can also bring substantial co-benefits
 - ...and improve public finances
- Now is the time to do it
 - Unemployment is (too) high, so the capacity is there
 - Borrowing costs for investments at record low levels

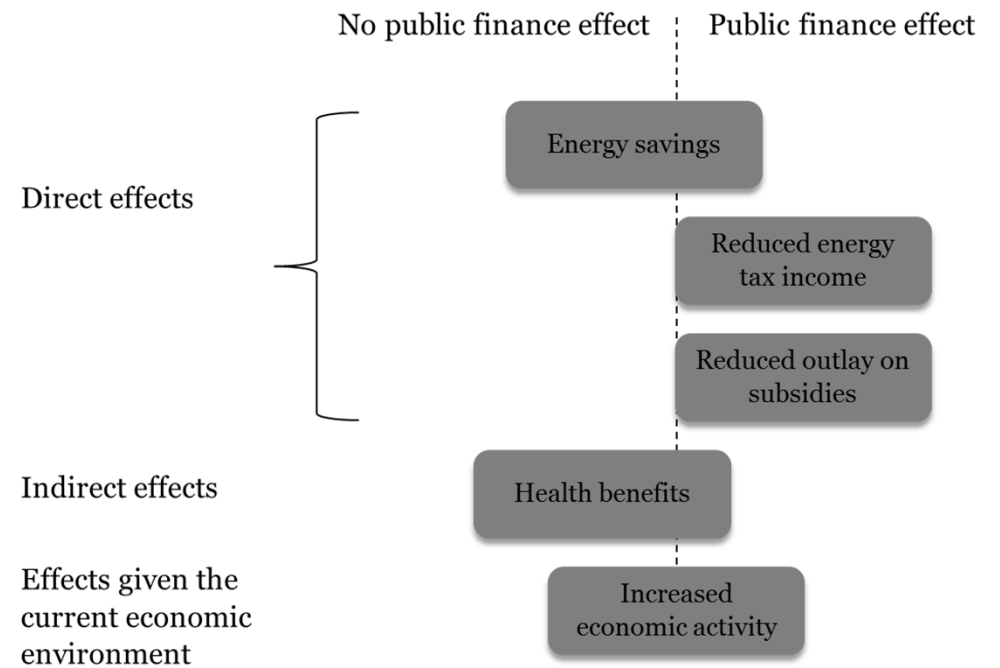
Unemployment high and rising, financing costs all time low



The multiple benefits of energy renovation in buildings

- Energy savings provide
 - Direct and indirect benefits to society at large
 - Value of energy savings exceed investment costs
 - Reduced air pollution and better indoor climate leads to better health outcomes, higher productivity and welfare
 - Improvement of public finances
 - Direct impact of energy savings leads to loss of tax revenues
 - This is however more than offset by:
 - Reduced costs of energy in government run and owned buildings
 - Lower costs of government subsidies to energy consumption and deployment which could help fund e.g. research in low carbon technologies including EE.
 - Higher taxes and lower social expenditure from higher activity: a temporary but important additional contribution in coming years

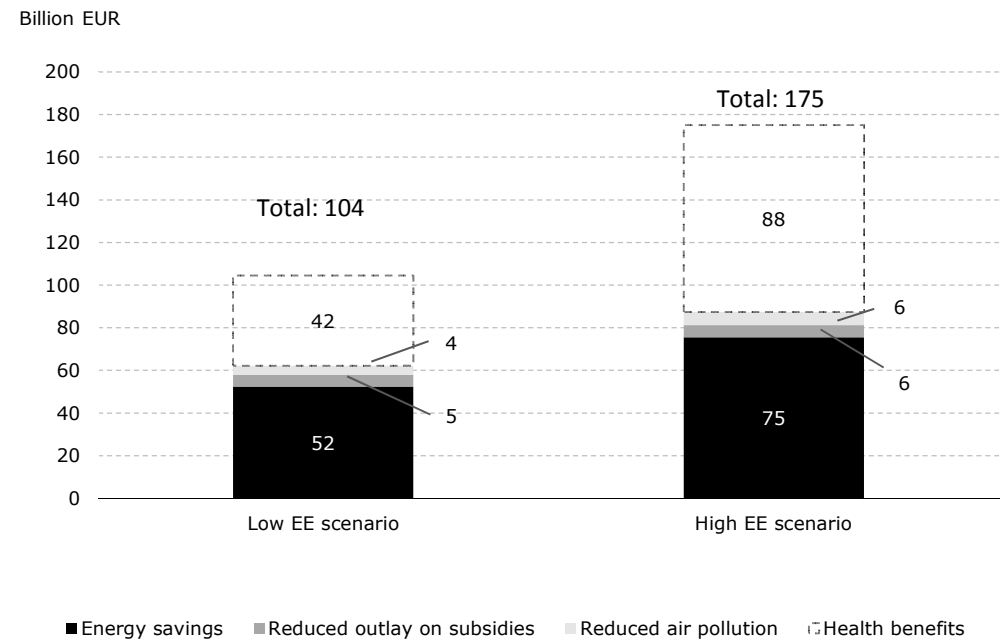
The benefits of energy renovation



Measuring the benefits by 2020

- The study looks at two scenarios for energy savings based on analysis done for EU Commission:
 - Conservative assessment of cost-effective emissions fully paying for themselves without any co-benefits (“Low EE”)
 - More optimistic scenario (“high EE”)
- Scenario results
 - Low EE:
 - Net benefits from energy saving around € 50 billion, other benefits adds up to a total plus € 100 billion
 - High EE
 - Up to € 175 billion.

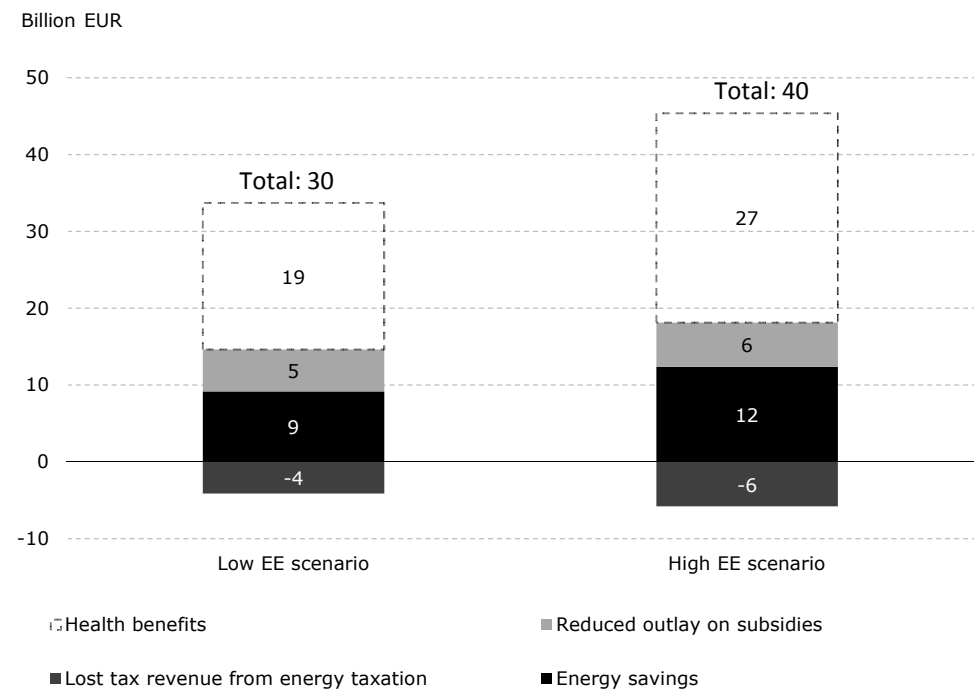
Quantified benefits to society 2020



Public finance benefits 2020

- Low EE
 - Reduced energy bill in public buildings, lower public spending on health care expenditure and less need to subsidise energy consumption and deployment may in total save nearly € 34 billion per year
 - The total revenue gain is close to € 30 billion per year
- High EE
 - The net effect may reach € 40 billion

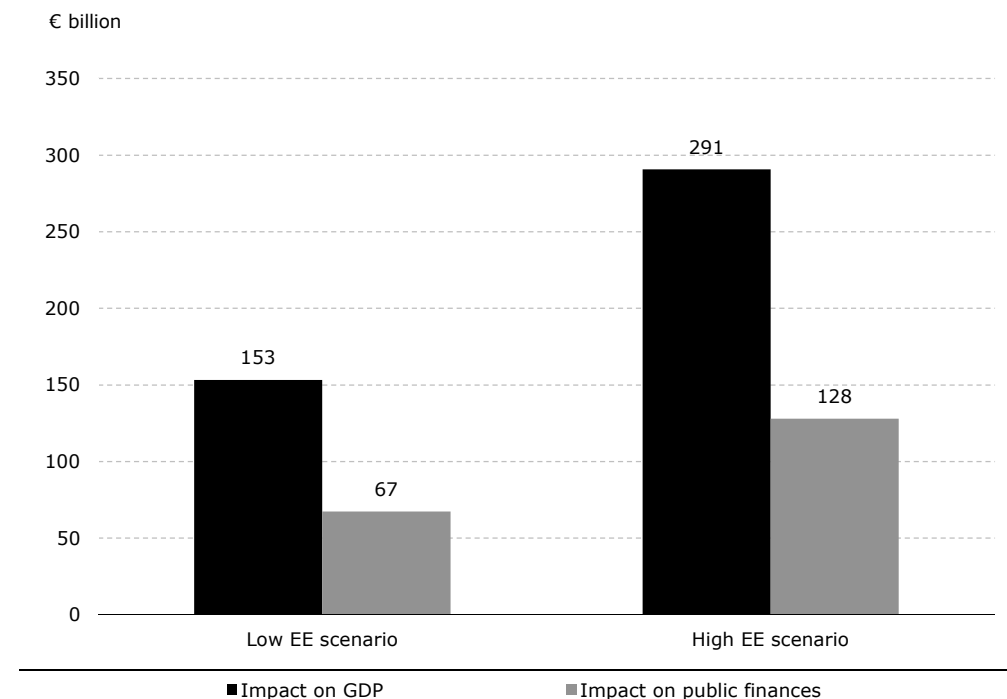
Benefits to public finances



Weak economy is background for additional benefits

- Boosting energy efficiency in buildings will require up front activities for long term gains
- Now is the perfect time given far too many idle hands and extremely low borrowing costs
- OECD and other estimates suggest that this may well continue to 2016-2018
 - Deep recessions takes time to unwind!
- Using standard economic multipliers based on OECD studies we conclude:
 - Accumulated GDP effect may attain € 150 to 300 billion range up 2017
 - Net public revenue gains may reach nearly € 70 to nearly € 130 billion range
 - This effects stops when economy is back on track: **jobs in energy renovation will continue to grow but will not then be net additions to total jobs**

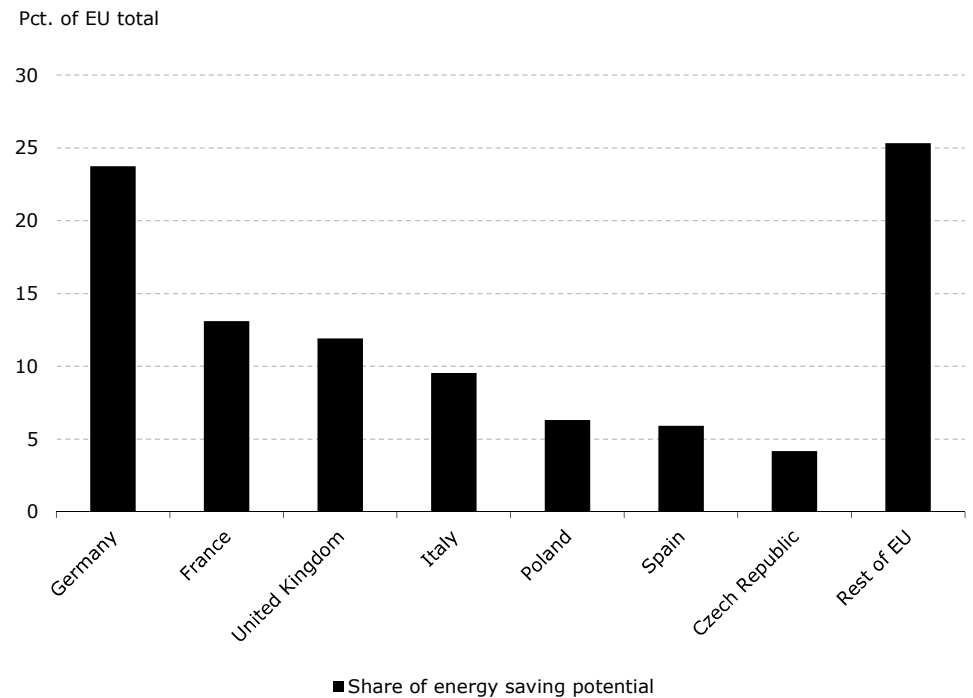
Accumulated GDP and public finance effects, 2012-2017



Medium/long term energy saving potential (2030)

- The study provides some insights into the distribution of energy savings potential across EU countries and associated benefits
- Potential across countries broadly follows shares of GDP
- However, the identified potential in Germany is larger than its relative size in the economy
- For health benefits and other co-benefits, distribution of benefits much more uncertain and issue to be pursued further

Potential for EE renovations



Dealing with key structural barriers: neutral or first round positive effects on public finances

● **Barrier 1:**

- Rent regulation (26% of building stock is rentals)
- *Action:* Modernise rent regulation to allow landlords and tenants to split the gains from energy efficient renovation of buildings.

● **Barrier 2:**

- Budget management of publicly owned buildings – do not take into account long term benefit from reduced running costs.
- Discount rates applied to assess public investments have not followed the general current trend towards lower market rates.
- *Action:* Reform budget management of publicly owned buildings to allow for a longer term focus in investments and renovation of buildings.

● **Barrier 3:**

- Favourable tax treatment of heating and electricity use in buildings
- *Action:* Remove/reduce tax advantages to make energy efficient renovation of buildings more attractive. Will provide direct net revenue gains to public budgets.

● **Barrier 4:**

- High up-front costs and challenges setting up, monitoring and evaluating performance contracts
- *Action:* Well-designed risk-sharing programmes can help government as well as private building owners to realise cost savings with very limited budget costs (e.g. Energy Service Companies (ESCO) and Energy Performance Contracts (EPC))

Conclusions

- Energy efficient renovation of existing buildings:
 - very attractive economic benefits in their own right
- Climate change and energy security
 - Energy efficiency is a “no-cost solution”
- Sizeable co-benefits to society
 - Improved health, productivity and other co-benefits
- Now is a perfect time to push for change and realise potential:
 - Low economic activity calls for government action to spur growth
 - EE is an option that can deliver and also boost public finances in a time of budget consolidation
 - Identified barriers require structural reform with no cost: tenants, landlords, tax payers and consumers will all benefit
 - Some countries have already started (examples in report), others recommended to follow