



# ESRI Research Bulletin

*The Value of Domestic Building Energy  
Efficiency – Evidence from Ireland*

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# The Value of Domestic Building Energy Efficiency – Evidence from Ireland<sup>1</sup>

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Increasing the energy efficiency of the residential housing stock can, according to the European Commission, make a significant contribution to the overall reduction of CO<sub>2</sub> emissions in Europe; in fact the European Commission estimates that by 2050 emissions from the residential building stock may have decreased by 90% (European Commission, 2011). Achieving such a reduction in CO<sub>2</sub> emissions from buildings will require significant monetary investments. Given the costs associated with improving the energy efficiency of the housing stock, an important question, addressed by our research, is whether homeowners and renters are willing to pay for this increased energy efficiency.

Our research estimates the effect of improved energy efficiency on the sale and rental prices of properties in the Republic of Ireland using data on over 1.2 million property listings on property website daft.ie. Of these listings, approximately 36,000 give information on the energy efficiency of the property, as revealed by its building energy rating (BER) certificate. As of January 2009, any property offered for sale or to let is obliged to have a BER. Our analysis shows what types of properties are more likely to have, and to advertise, a BER certificate, and the effect of these certificates on the sales price and rental rates of Irish properties.

Three main results emerge from our analysis: We find that across both the sales and rental segments of the property market, there is a price premium associated with improved energy efficiency. We also find that homeowners place a greater value on energy efficiency than renters. And we find that the positive impact of the energy efficiency rating is stronger when sales conditions are worse.

Looking at the estimated impacts of the BER certificates we find that, relative to D-rated properties, otherwise comparable A-rated properties receive a sales price premium of 9.3% and a rental price premium of 1.8%. Indeed, we find that each

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<sup>1</sup> Hyland, M., Lyons, R. C. and Lyons, S. The value of domestic building energy efficiency – evidence from Ireland, 2013, *Energy Economics*, 40, 943-952. <http://dx.doi.org/10.1016/j.eneco.2013.07.020>

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improvement along the 15-point BER scale (from G to A1) is associated with an increased sales price of 1.3% and an increased rental rate of 0.5%.

The above estimates are for the full sample of properties listed on the daft.ie website from January 2008 to March 2012. In the next part of the analysis we divide this data into a number of subsamples to investigate whether the impact of energy efficiency was stronger under more difficult market conditions. We first compare the relative impact of energy efficiency across time by dividing the data into an earlier and later time period. We find that in the later period, when selling conditions were worse, the premium associated with improved energy efficiency increased. Each improvement along the BER scale is associated with a 2% increase in the sales prices in the later period, compared to a 1.5% increase in the earlier period.

The positive effect of energy efficiency under tougher selling conditions is confirmed by looking at other sub samples. We find that the price premium associated with increased energy efficiency is greater in the rural market (where it is 2.3%), compared to the urban market (where the premium is 1.2%), and greater for smaller, relative to larger, properties.

According to the Sustainable Energy Authority of Ireland (SEAI), energy efficiency certificates will “allow buyers and tenants to take energy performance into consideration in their decision to purchase or rent a home” (from FAQs on BER certificates); in this paper we have confirmed that buyers and tenants do place a positive and significant value on increased energy efficiency. However, our research also showed that, for the time period analysed, compliance with mandatory BER labelling appeared to be low – this may now have improved since new BER legislation came into effect in January 2013. The new legislation states that not only must properties offered for sale or to let have a BER, but that the BER grade must be stated in the property advertisement.

Much international research has focused on what is known as the energy-efficiency gap; this is a phenomenon whereby people appear to under-invest in energy-efficiency measures that would, in the long run, save them money. The effects that we estimated in our research could be used by policymakers to encourage homeowners to improve the energy efficiency of their properties, in the knowledge that increased energy efficiency will boost the market value of their property. However, more precise estimates of the energy cost savings associated with more efficient properties would be useful to tell whether or not the increased energy savings are fully capitalised in property values.

## REFERENCES

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