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Market response to the public display of energy performance rating at property sales



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HIGHLIGHTS

- Energy performance ratings of buildings have an impact on property sales prices.
- A statistical examination shows that since 2010 sales prices reflect energy performance.
- Mandatory display of the rating prescribed by EU Directive was decisive.
- The positive market response will be an incentive for energy upgrading of the property.

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ABSTRACT

Energy labels have generally received positive response from consumers and have moved the market for white goods and cars in the direction of more energy-efficient products. On the real estate market, it was expected that an energy label, rating the energy performance of a property based on a national energy performance certificate (EPC) might receive similar response. However, in Denmark no response to the energy performance rating was observed for 15 years. This was a surprise considering that Denmark was the first country to implement an A to G rating of the energy performance of buildings. A statistical examination of data on property sales prices and energy performance ratings was carried out. All relevant property transaction data from 2007 till 2012 were examined and they showed that energy performance ratings had an impact on property sales prices. However, before June 2010, the impact was modest, whereas after June 2010 the impact of energy performance ratings on property sales prices increased significantly as a result of an EU requirement to display the energy performance rating in connection with property sales. On this background, it was concluded that a public display of the energy performance rating is fundamental for market response.

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1. Introduction

Whether highlighting the energy efficiency of refrigerators, cars or properties, the idea behind energy labels is that such labels should increase the transparency through reliable information on energy efficiency and hence enhance the purchasers' inclination to choose goods and products with high energy efficiency. Today, it is clear that such energy labels have received a significant positive response from consumers, and consequently, the demand especially for white goods and cars has moved in the direction of more energy-efficient products. Accordingly, it was expected that an energy label displaying the energy performance of buildings would have a similar impact on property sales and enhance the

purchasers' inclination to choose the most energy-efficient buildings on the real estate market.

In 1997, an energy performance certificate (EPC) was introduced in Denmark. With this tentative step launched by the Danish Energy Agency, Denmark became one of the first European Union Member States to adopt an EPC encompassing benchmarking, energy performance rating as well as an energy label. Although an energy performance rating for buildings was introduced as early as 1997 in Denmark, an impact on the real estate market was not observed until 2011. That year, real estate agents for the first time claimed that properties rated with indicators of high energy efficiency were the easiest properties to sell (Klejsgård Hansen, 2011). Actually, the early energy performance rating from A to G is almost similar to that in force today. Therefore, to most market and energy performance experts, it has been a mystery that 15 years elapsed, before any market response appeared.

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The thesis of this paper is that the lack of knowledge and awareness of an energy performance rating can generate considerable bias in both the adoption of energy labels and the inclination for sales of highly energy-efficient properties, exactly as it applies to appliances (Mills and Sleich, 2009). In other words, without branding of the current energy performance of buildings, there will be no market penetration. Two key elements of branding the energy performance rating are on one hand that it relies on a trustworthy EPC scheme and on the other hand the dissemination of the knowledge of the energy performance rating among purchasers and sellers of properties.

After the introduction of the EPC in 1997, there was no requirement to making the energy performance public, neither in commercial nor in non-commercial advertisements. Put otherwise, it was the thesis that the lack of commercial advertisements had been crucial for the non-dissemination of general knowledge on the energy performance rating of buildings and hence no market response was observed.

This thesis was substantiated by the statistical examination of data on property sales prices and energy performance ratings carried out in this paper. It was significant for this examination that only a modest sales price impact was observed until July 2010. At that time however, properties with a high energy performance rating started to separate from properties with a lower rating regarding the prices achieved on the real estate market. On this background, it was concluded that the national adoption of the mandatory advertisement of energy performance rating prescribed by Article 13 in the EU Directive on the energy performance of buildings was decisive (EU, 2010).

2. Background

Fifteen years have elapsed, since EU policy first argued in favour of an energy performance certificate (EPC) to promote a European energy performance rating that highlights the energy efficiency classes of properties. Actually these efforts originate from Article 2 of the European Council Directive to limit carbon dioxide emissions (EU, 1993). The purpose of the 1993 Directive was to limit carbon dioxide emissions by improving energy efficiency in general and energy-efficient buildings in particular. Article 2 prescribes that Member States should “draw up and implement programmes on the energy certification of buildings”. The “carbon directive” was non-mandatory and also full of ambiguities. That resulted in low implementation and consequently poor impact of its requirements across Member States (Pérez-Lombard et al., 2009, p. 273). Nonetheless, Denmark was the first Member State to draw up a complete building certification scheme including an energy performance rating from A to G. At that time, the success of the early 1990s’ energy labels for devices served as encouragement. Accordingly, the Danish Energy Agency judged that an early implementation of the EU Directive concerning an energy performance rating would have an impact on the market formation and promote the sale of the most energy-efficient buildings. Moreover, Danish decision-makers dealt with the EU idea that using an energy performance rating for buildings would improve the energy efficiency of buildings and be an important incentive for the overall carbon reduction of society. In 1996, the political opinion was positive which led to the first act to promote energy savings in buildings (Danish Government, 1996). Consequently, all buildings for sale since 1 January 1997 were required to have an energy performance rating so that all purchasers of real estates were met with a label indicating the energy performance of the building. From the very beginning, the act was not firmly enforced and the Danish EPC experienced no success in market penetration. Notwithstanding, the number of certificates reported

to the Danish energy Agency indicate that since early 00s a majority of property transactions were equipped with an energy performance rating from A to G. Still no market response and no price impact related to energy performance rating of the building were noticed.

At that time, the EU body acknowledged the need for a new regulatory instrument and introduced the Directive on the energy performance of buildings (EU, 2002). This directive was ambitious and succeeded on three counts: 1. How to define energy performance, 2. How to measure buildings’ energy efficiency, and 3. How to calculate the energy performance of buildings. In this way the EU Commission stressed the gravity of energy saving in buildings (Pérez-Lombard et al., 2009, p. 273). Moreover, Article 7 in this directive deals with the idea of “reference values such as current legal standards and benchmarks in order to make it possible for consumers to compare and assess the energy performance of the building”. The Directive on the energy performance of buildings came into force on 4 January 2003, although the Member States were granted respite by the latest on 4 January 2006 to implement the EPC requirements.

At that same time, a new European CEN standard described the methods for expressing energy efficiency and certification of buildings including a rating system (CEN, 2006). The thresholds of the CEN system in which buildings are categorised in seven ratings from A to G was on one hand based on the average energy rating of the existing building stock and on the other hand on the national limit for new buildings (Roulet and Anderson, 2006).

In 2005, the Danish Government pre-empted the standard by adopting a new Act to Promote Energy Savings in Buildings (Danish Government, 2005). In this act, an A to G rating was acknowledged, and it was emphasised at the same time that “It is the seller’s responsibility to ensure that the purchaser has received the energy labelling for the building or owner-occupied flat concerned before agreement on the sale is concluded”. Despite this clear signal to purchasers of property, no market response and no price impact related to energy performance rating of the building were noted.

In 2010, in a recast of the EU Directive on the energy performance of buildings, it was for the first time imposed on Member States that they should require that “an energy performance indicator of the energy performance certificate of the building” was stated in the advertisements in commercial media (EU, 2010). Put otherwise, an energy label reflecting the energy performance indicator i.e. the energy performance rating from A to G must be included in real estate advertisements in commercial media. In Denmark, this advertising obligation came into force by a recast of the Danish Act on Communication, Supply and Advice by Property Deal (Danish Government, 2010). Notably, the recast was adopted instantly, so that real estate agents were obliged to display the energy label showing the energy performance rating of properties in advertisements by date of commencement 1 July, less than two weeks after the date of passing the EU Directive on the energy performance of buildings.

Then, in 2011 for the first time, a market response was noted. In that year, Danish real estate agents claimed that properties with higher energy performance rating were the easiest properties to sell (Klejsgård Hansen, 2011).

In 2011, the observation of a new market response was seen in the Netherlands and in the UK as well. In the Netherlands, analyses showed that from a certain point in time, consumers started to capitalise the EPC information about energy efficiency into the price of their prospective homes, i.e. made calculations about the value of investment in energy efficiency measures (Bounen and Kok, 2011). The Dutch findings are supported by a report issued by the UK Department of Energy & Climate Change (Fuerst et al., 2013). Here, an empirical investigation of the relationship between

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