

Ask: NUS Economists

Green Mark Awards and property prices

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For The Straits Times

Q *Does the Green Mark Award increase property prices?*

A As the planet warms, governments have debated how best to abate greenhouse emissions and mitigate climate change.

Residential buildings are a particular worry as they leave big environmental footprints. For example, in the United States in 2008, residential buildings accounted for over 20 per cent of total carbon dioxide emissions and building-related construction, while demolition debris totalled around 160 million tonnes.

Accordingly, some countries have implemented schemes that certify buildings as “green” in order to encourage the construction of more environmentally-friendly and energy-efficient buildings.

As these schemes are costly to run, it is important to ask whether they are effective. In particular, it is unclear whether certification provides buyers with information that is not already conveyed by developers.

In my recently published research, I test whether Singapore’s own scheme, the Green Mark Scheme, provides useful information to buyers by estimating the impact of a Green Mark Award on the price of new apartments and condominiums.

Launched by the Building and Construction Authority in 2005, the Green Mark Scheme certifies buildings according to five main criteria: energy efficiency, water efficiency, environmental protection, indoor environmental quality, and other green and innovative features.

Some of the features that earn points towards certification are more salient to buyers than others. For example, more greenery, more natural ventilation and light, and sleep-mode-capable lights and elevators all earn points.

Other features that may be less salient to buyers such as better energy managing and monitoring systems, low water use irrigation systems, and the use of recycled materials in construction also earn points.

Certification may signal the presence and importance of these less salient features. If so, certification should increase property prices and encourage investment in these features. If certification does not provide any information beyond what the developer already conveys to the buyer, then certification should not have any effect on prices.

The market for new property in Singapore provides a unique opportunity to measure the impact of green certification.

A developer typically takes several years to sell the properties in a development, starting from the time construction begins and typically not finishing until after the development has been approved for occupation.

With the long sales period, some properties are sold before certification and some after.

Out of 44,822 new sale transactions in Green Mark Awarded developments in my dataset, 15,512 occurred before the award announcement and 29,310 after.

I use regression analysis to control for differences in developments and properties in order to test whether price increases after certification.

I find that green certification causes price to increase by around 2.7 percent on average.

Additionally, I find the effect is biggest, 4.1 percent, for properties in developments that scored just enough points to win the Green Mark Award. Since they score lower, these are developments whose greenness is likely less obvious to buyers and in which certification is especially informative.

My results suggest that certification is an important policy tool to help mitigate the environmental impact of residential buildings by encouraging developers to invest in green features, including features that may not otherwise be valued by buyers.

To get a better sense of the size of the certification effect on property prices, a useful exercise is to compare utility bill savings associated with award-winning developments to the premium paid for a property in these developments.

According to a 2016 Building and Construction Authority report, a property in a 2015 Green Mark Awarded development is expected to enjoy energy savings of 7,383 kWh and water savings of 103 m³ per year.

Based on 2015 residential electricity and water prices, these savings amount to approximately \$156 per month, which likely appears in the form of a lower household utility bill and a lower maintenance fee.

The estimated effect of certification on the price of an apartment or condominium can be converted into a monthly figure of \$60 per month, which can be compared to the expected monthly energy and water savings.

Together, these figures indicate that at least part of the award premium may be due to buyers' willingness to pay more in expectation of lower utility bills.

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