

PLACEHOLDER THESIS TITLE
A VERY MEANINGFUL THESIS

by

LIM JIEW PENG

DEPARTMENT OF ECONOMICS
NATIONAL UNIVERSITY OF SINGAPORE

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ABSTRACT

Here is some filler text.

FOREWORD

Acknowledgements blah blah blah

ABBREVIATIONS

GM: Green Mark. Environmental certification in Singapore. The Green Mark scheme was launched in January 2005 to encourage the construction of more environmentally friendly buildings. Buildings which apply for the Green Mark certification would be assessed on their energy efficiency, environmental impact and indoor environmental quality. They would be scored on a points basis, and then these scores would be converted to an award type (Certified, Gold, Gold Plus, Platinum) based on the scores. For more information, see https://www.bca.gov.sg/GreenMark/green_mark_buildings.html.

DID: Difference-in-difference

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1 INTRODUCTION

The aim of this paper is to explore the signalling effects of a certification or award. The signalling effects of environmental certifications are important because these certifications are meant to incentivise certain behaviour, in this case, constructing energy efficient buildings. In order for certifications to incentivise private companies to adopt certain practices, they need to act as credible signals, i.e. provide a price premium to offset the cost premium associated with “good behaviour”. Certifications provide a price premium through information as well as signalling unobservable quality; this paper uses a difference-in-difference (DID) approach to isolate the signalling effect from the information provided by the award.

The property market can be thought of as a combination of two sub-markets - the market for assets, and the market for space. Geltner et al. (2001) describe a stylised four quadrant model where these markets interact in a circular fashion. Demand (tenants) and supply (landlords) in the market for space determine rental rates of properties. Rental rates then determine the value of properties in the asset market by affecting the cash flow that can be generated from properties. The value of the property, which in equilibrium is the price of the property, determines construction of properties because prices influence the profit that can be made by constructing properties. Construction influences the future supply of properties in the market for space. This cycle continues indefinitely.

The reason why certification is required to incentivise the construction of green buildings is well explained by Heinzle, Yip and Xing (2013). Citing Cadman (2000), RICS (2008) and Falkenback *et al.* (2010), they explain that there is a “vicious circle of blame”. The argument is that there is a lack of demand in the asset market for green buildings because investors mistakenly believe that there is no demand for such properties among buyers in the market for space (owner-occupiers). Because of this, developers do not want to construct green buildings, even when constructors have the ability to do so, because investors do not pay for the additional costs involved in designing and constructing green buildings. A certification can solve this problem, as long as it provides a credible signal.

Essentially, the problem stems from a lack of investor demand, leading to the lack of price premium for green buildings, which in turn leads to a lack of supply from developers, due to the inability to justify the cost premium to construct them.

A credible certification solves the lack of supply of green buildings in two ways.

Firstly, if there is a lack of demand for green buildings among owner-occupiers due to the difficulty of observing building attributes (see Matisoff, Noonan, and Flowers 2016), a credible certification can act as a

signal to potential buyers about the green features and quality of the building. This will lead to an increase in demand for green buildings in the market for space, and hence a corresponding increase in the market for housing assets.

Secondly,

2 LITERATURE REVIEW

There is a fair amount of literature showing the price effects of environmental certifications on property prices. However, there are fewer publications on why certifications have an effect on prices. Certifications can have an impact on prices in the market through the information that they provide to the market (information effect), and also by signalling unobservable quality (signalling effect).

Heinzle, Yip and Xing (2013), citing

3 DATA AND METHODOLOGY

4 EMPIRICAL RESULTS

5 CONCLUSION

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