

## Report on Ph.D. Thesis Defence

Ph.D. Candidate	Jing Lan
Main referee	Alistair Munro
Referees	Roberto Leon-Gonzalez 田中 誠 園部 哲史 小谷 浩示 (国際大学)
Dissertation Title	Industrial Pollution Control in China: Human Capital, Environmental Regulation Stringency and the Development of Eco-firms

Result: Pass (subject to minor changes)

### 1. Abstract

The thesis consists of five chapters linked by the theme of industrial pollution control in the major cities of China.

Chapter one provides an introduction to the thesis. Chapter Two is a summary of the current situation with regard to pollution and its regulation within China. It summarizes the increasing level of emissions together with the major challenges for policy.

Chapters Three and Four are the main research chapters.

Chapter Three analyses the relationship between human capital (education levels) and compliance with pollution regulations in industrial cities in China. It is novel in the construction of a unique database and in the way the empirical model is able to distinguish between the impact on compliance of internal human capital (the education level of the workforce) and the impact of external human capital (the education level in the surrounding city). The chapter shows that both internal and external human capital have a strong and positive impact on compliance.

Pollution abatement services are often supplied by specialist firms. Chapter 4 examines the factors that determine the size of local abatement industries. Jing Lan builds a multi-equation model to trace through the direct and indirect impact of tighter regulations on the output of firms that supply abatement services. This chapter represents the first attempt to model empirically the impact of regulation stringency on the abatement industry in China. It shows that the indirect effects of regulations may

be as strong as direct effects.

Chapter Five offers conclusions and policy recommendations.

Jing Lan presented an overview of her research, with a focus on the two key chapters. After the one hour presentation, there followed 30 minutes of questions from the committee and members of the audience.

## **2. Result /Notes from the Examining meeting / Final Evaluation**

Collectively and individually, the Committee decided the contents of the dissertation and the defence were satisfactory for conferring the Phd. For instance, Chapter Three has already been accepted for publication in the respected academic journal *Resource and Energy Economics*,

It was also agreed that there were a number of minor changes that ought to be addressed. Principally these concerned the fact that,

- Chapter 4 was unclear in parts
- There was a lack of a reference section in chapters 1 & 2.
- There was only a limited discussion of the use of wastewater charges as a proxy for regulatory stringency.
- Some grammatical errors remained.

## **Final Evaluation**

Jing Lan has revised the thesis in line with the recommendations of the committee. She has supplied the committee members with a summary of the changes. I am satisfied that the revised version is satisfactory and meets the requirements of GRIPS.