

GERMANY/HONG KONG JOINT RESEARCH SCHEME
THE PROJECT REPORT
(for Project Completion)

Project Number: G_HK012/10

Title

Semiparametric Quantile Regression and Variable Selection (半參數分位回歸分析與參數選擇)

Particulars

	Hong Kong team				German team	
Name of Project Co-ordinator (with title)	English: Prof. ZHU Lixing Chinese: 朱力行 讲座教授				Prof. Dr. HAERDLE Wolfgang	
Name of Co-Investigator (if any)					Dr. SONG Song Miss. WANG Weining	
Institution or Institutional affiliation	<input type="checkbox"/>	CityU	<input type="checkbox"/>	HKU	<input type="checkbox"/>	University of Humboldt at Berlin
	<input type="checkbox"/>	CUHK	<input type="checkbox"/>	HKUST	<input type="checkbox"/>	
	<input checked="" type="checkbox"/>	HKBU	<input type="checkbox"/>	LU	<input type="checkbox"/>	Others: _____
	<input type="checkbox"/>	HKIEd	<input type="checkbox"/>	PolyU	<input type="checkbox"/>	
Other project team members (if any)						

Funding Period

	1 st year	2 nd year (if applicable)
Start Date	1/1/2011	1/1/2012
Completion Date	31/12/2011	31/12/2012

Objective(s) as per original application

1. propose an estimation for the single-index model with variable selection
- 2.
- 3...

Details of Report [Please attach relevant document(s)]

i) Outline of proposed research and results obtained

In this project, we investigate estimation for the semiparametric quantile regression with single-index. When the number of predictors is large, variable selection is applied. To promote the estimation efficiency, we use composite quantile regression approach. The results have been used to analyse some economic data. The details are included in the manuscript attached.

ii) Significance of research results

As the single-index model is popularly used in economic research, the proposed method is a new input in the econometrics field.

iii) Research output

We have written up a manuscript entitled **COMPOSITE QUANTILE REGRESSION FOR THE SINGLE-INDEX MODEL** (enclosed) and are going to submit to a statistics or econometrics journal. Acknowledgement of RGC funding will be included.

iv) Potential for or impact on further research collaboration

As this new method has not yet been discussed in the literature, it may be useful for other semiparametric model estimations, particularly for multi-index models.