

9-24-2009

# A Study of Factors Impacting the Expenditures for National Health Insurance Program in Taiwan

Yen-Kuang Lin

*Indiana University of Pennsylvania*

Follow this and additional works at: <http://knowledge.library.iup.edu/etd>

---

## Recommended Citation

Lin, Yen-Kuang, "A Study of Factors Impacting the Expenditures for National Health Insurance Program in Taiwan" (2009). *Theses and Dissertations (All)*. 672.

<http://knowledge.library.iup.edu/etd/672>

This Dissertation is brought to you for free and open access by Knowledge Repository @ IUP. It has been accepted for inclusion in Theses and Dissertations (All) by an authorized administrator of Knowledge Repository @ IUP. For more information, please contact [cclouser@iup.edu](mailto:cclouser@iup.edu), [sara.parme@iup.edu](mailto:sara.parme@iup.edu).

STUDENT HAS RESTRICTED ACCESS TO FULL TEXT OF THE DISSERTATION.

ONLY COVER PAGES AND ABSTRACT ARE AVAILABLE AT THIS TIME

A STUDY OF FACTORS IMPACTING THE EXPENDITURES  
FOR NATIONAL HEALTH INSURANCE PROGRAM IN TAIWAN

A Dissertation

Submitted to the School of Graduate Studies and Research

in Partial Fulfillment of the

Requirements for the Degree

Doctor of Philosophy

Yen-Kuang Lin

Indiana University of Pennsylvania

December 2009

©2009 by Yen-Kuang Lin

All Rights Reserved

Indiana University of Pennsylvania  
The School of Graduate Studies and Research  
Department of Sociology

We hereby approve the dissertation of

Yen-Kuang Lin

Candidate for the degree of Doctor of Philosophy

<u>August 26, 2009</u>	<u>Signature on File</u> Thomas C. Nowak, Ph.D. Professor of Sociology, Advisor
<u>August 26, 2009</u>	<u>Signature on File</u> D. Alex Heckert, Ph.D. Professor of Sociology
<u>July 31, 2009</u>	<u>Signature on File</u> John A. Anderson, Ph.D. Professor of Sociology

ACCEPTED

<u>Signature on File</u>	_____
Michele S. Schwietz, Ph.D.	
Assistant Dean for Research	
The School of Graduate Studies and Research	

Title: A Study of Factors Impacting the Expenditures for National Health Insurance  
Program in Taiwan

Author: Yen-Kuang Lin

Dissertation Chairman: Dr. Thomas C. Nowak

Dissertation Committee Members: Dr. D. Alex Heckert

Dr. John A. Anderson

After the implementation of National Health Insurance (NHI) program in 1995, all residents in Taiwan became universally insured and had the right of access to the health care system. Nevertheless, according to statistics from Bureau of National Health Insurance (2004), the expenditures of the NHI have exceeded its revenue since 1998. Despite the persistent public debate on the fiscal conditions of NHI, little analysis has been done to identify the individual factors that cause rising expenditures. A key component of many recent health reform efforts is a system of risk-adjusted payments among health plans (Newhouse, 1998; Iezzoni, 2003). To provide a complete and balanced assessment of the NHI, it is necessary and pertinent to assess the consumers' medical utilizations in the NHI program. The purpose of this study is to identify the factors (i.e. demographic factors, diagnostic factors, etc.) that may explain rising expenditures in NHI program. Furthermore, this study will try to develop a risk adjustment model based on diagnostic and demographic information from NHI dataset. The risk adjusters will then be evaluated for their predictability.

This study was conducted as a secondary data analysis. All of the data used in this study were obtained from the National Health Insurance Research Database (NHIRD) provided by National Health Research Institutes in Taiwan. All of the individuals in the NHIRD are re-coded therefore they are anonymous. This study will first develop a Taiwanese version

diagnostic base risk adjustment model by using one of the most popular risk adjustment software on the market-diagnostic cost groups (DxCg) (Ellis & Ash, 1995; Iezzoni, 2003; Richardson, 2006). Second, by utilizing multiple regression and logistic regression, risk factors will be identified. Finally, ROC (receiver operating characteristic) curve analysis then will be used to evaluate the predictability of the risk factors. The results of this study may help produce health care reform for Taiwan toward a better system, as well as provide knowledge of Taiwan's health sector achievements and NHI experience for scholars and policy experts in the United States. Taiwan's Bureau of National Health Insurance (BNHI) may utilize this information to formulate a new payment system, with a focus on efforts to control health cost inflation.