

科技部補助專題研究計畫成果報告 期末報告

老人退休消費與全民健保醫療行為實證分析

計畫類別：個別型計畫
計畫編號：MOST 103-2410-H-004-095-
執行期間：103年08月01日至104年12月31日
執行單位：國立政治大學風險管理與保險學系

計畫主持人：王儷玲

計畫參與人員：博士班研究生-兼任助理人員：陳彥志

報告附件：出席國際會議研究心得報告及發表論文

處理方式：

1. 公開資訊：本計畫涉及專利或其他智慧財產權，2年後可公開查詢
2. 「本研究」是否已有嚴重損及公共利益之發現：否
3. 「本報告」是否建議提供政府單位施政參考：否

中華民國 105 年 03 月 31 日

中文摘要：保險市場是否存在資訊不對稱的現象，一直是保險研究文獻中一個重要的議題。雖然有許多學者提出不同的理論模型與實證結果來檢證這個問題，但由於無法區分資訊不對稱之現象與所造成的原因，因此始終沒有明確的定論。本研究藉由台灣實施全民健保的環境，重新檢驗是否存在事前道德危險(ex ante Moral hazard)的效果。本研究利用國民健康局1989年到2007年所提供的「中老年身心社會生活狀況長期追蹤調查資料」，利用差異中的差異(difference-in-difference)方法來分析全民健保實施前後，中老年人對預防健康檢查的需求是否受到影響，以及事前道德危險是否存在，並透過傾向配對(propensity score matching)的方法進一步了解相同特徵個人的行為是否有所不同。本研究結果顯示強制性健康保險並不會導致事前道德危險。實證結果發現在台灣全民健康保險實施後，相對原本就有健康保險的民眾，新加入全民健康保險的中老年人在健保實施前後，並沒有顯著增加危害健康之行為。此外也發現，全民健康保險實施後中老年人對預防性健康檢查有顯著增加的現象。本研究之分析結果，將提供學術界對於健康保險與道德危險議題新的實證資料，也對是否存有資訊不對稱的現象有更完備與正確的了解。

中文關鍵詞：全民健康保險，事前道德危險，健康檢查，中老年人

英文摘要：It has been an important issue that whether the health insurance would cause the ex ante moral hazard effect. Coverage of health insurance may reduce the prevention activities from basic economic theory, but empirical studies have yet to provide much evidence to support this prediction. This study attempted to reexamine the issue of ex ante moral hazard by analyzing the changes of the precautionary health care behaviors of the elderly before and after the implementation of the National Health Insurance. The empirical data are sourced from the Survey of Health and Living Status of the Elderly (SHLSE) from 1993 to 2006. We adopt the difference-in-differences (DID) models with propensity score matching (PSM) methods to test this issue. We find no evidence of ex ante moral hazard from precautionary health care behaviors. The implementation of NHI not results in the changing in the precautionary health care behaviors, but rather leads to significant increases in precautionary health examination. Our results provide new evidence and understanding of asymmetric information phenomenon in the health insurance market.

英文關鍵詞：National Health Insurance, Ex ante Moral Hazard, Precautionary Health Care, The Elderly

科技部補助專題研究計畫成果報告

(期中進度報告/期末報告)

老人退休消費與全民健保醫療行為實證分析

計畫類別：個別型計畫 整合型計畫

計畫編號：103-2410-H-004 -095 -

執行期間：2014 年 08 月 01 日至 2015 年 12 月 31 日

執行機構及系所：國立政治大學風險管理與保險學系

計畫主持人：王儷玲

本計畫除繳交成果報告外，另含下列出國報告，共 一 份：

執行國際合作與移地研究心得報告

出席國際學術會議心得報告

期末報告處理方式：

1. 公開方式：

非列管計畫亦不具下列情形，立即公開查詢

涉及專利或其他智慧財產權，一年二年後可公開查詢

2. 「本研究」是否已有嚴重損及公共利益之發現：否 是

3. 「本報告」是否建議提供政府單位施政參考 否 是，____ (請
列舉提供之單位；本部不經審議，依勾選逕予轉送)

中 華 民 國 1 0 5 年 3 月 1 5 日

關鍵詞：全民健康保險，事前道德危險，健康檢查，中老年人

中文摘要

保險市場是否存在資訊不對稱的現象，一直是保險研究文獻中一個重要的議題。雖然有許多學者提出不同的理論模型與實證結果來檢證這個問題，但由於無法區分資訊不對稱之現象與所造成的原因，因此始終沒有明確的定論。本研究藉由台灣實施全民健保的環境，重新檢驗是否存在事前道德危險(ex ante Moral hazard)的效果。本研究利用國民健康局1989年到2007年所提供的「中老年人身心社會生活狀況長期追蹤調查資料」，利用差異中的差異(difference-in-difference)方法來分析全民健保實施前後，中老年人對預防健康檢查的需求是否受到影響，以及事前道德危險是否存在，並透過傾向配對(propensity score matching)的方法進一步了解相同特徵個人的行為是否有所不同。本研究結果顯示強制性健康保險並不會導致事前道德危險。實證結果發現在台灣全民健康保險實施後，相對原本就有健康保險的民眾，新加入全民健康保險的中老年人在健保實施前後，並沒有顯著增加危害健康之行為。此外也發現，全民健康保險實施後中老年人對預防性健康檢查有顯著增加的現象。本研究之分析結果，將提供學術界對於健康保險與道德危險議題新的實證資料，也對是否存有資訊不對稱的現象有更完備與正確的了解。

Key Words: National Health Insurance, *Ex ante* Moral Hazard, Precautionary Health Care, The Elderly

Abstract

It has been an important issue that whether the health insurance would cause the ex ante moral hazard effect. Coverage of health insurance may reduce the prevention activities from basic economic theory, but empirical studies have yet to provide much evidence to support this prediction. This study attempted to reexamine the issue of ex ante moral hazard by analyzing the changes of the precautionary health care behaviors of the elderly before and after the implementation of the National Health Insurance. The empirical data are sourced from the Survey of Health and Living Status of the Elderly (SHLSE) from 1993 to 2006. We adopt the difference-in-differences (DID) models with propensity score matching (PSM) methods to test this issue. We find no evidence of ex ante moral hazard from precautionary health care behaviors. The implementation of NHI not results in the changing in the precautionary health care behaviors, but rather leads to significant increases in precautionary health examination. Our results provide new evidence and understanding of asymmetric information phenomenon in the health insurance market.

1. Introduction

It has been an important issue in the insurance literature that whether there exists a phenomenon of asymmetric information in the insurance market. Although most previous studies have proposed different theoretical models and empirical results to verify this issue, there have not been clear conclusions due to the difficulties in distinguishing the phenomenon of information symmetry and the reasons that cause it. This study attempted to reexamine the issue of whether there existed a phenomenon of ex ante moral hazard by exploring whether the self-health care behaviors of the elderly were affected by the implementation of the National Health Insurance.

Rothschild and Stiglitz (1976) and Shavell (1979) pioneered the studies on adverse selection and moral hazard for insurance, and inspired many researchers over the past three decades. More recently, several papers have used empirical data to investigate whether asymmetric information exists in insurance market. But this literature has found mixed results on whether the existence of moral hazard and adverse selection.

In Taiwan, the implementation of National Health Insurance (NHI) has provided a valuable natural experimental environment to this research topic. NHI is a compulsory form of social insurance and its main purpose is to offer equitable medical services to all citizens. In addition, the implementation of NHI also provides a rich empirical data for academic research. The implementation of the NHI is for all citizens, which not only avoids the problem of adverse selection, but also provides the opportunity of a natural experiment to examine the phenomenon of moral hazard.

This study attempted to reexamine the issue of whether there existed a phenomenon of ex ante moral hazard. Using panel data from the elderly from the Survey of Health and Living Status of the Elderly (SHLSE) in Taiwan, we can explore whether the self-health care behaviors of the elderly were affected by the

implementation of the NHI. We use difference-in-difference methods to analyze the ex ante moral hazard effect under different models. We use Probit model, Random-effects Probit model and Probit model that combine propensity score matching (PSM). Following Spenkuch (2012), we further consider the local average treatment effect (LATE) to reexamine the issue of whether there existed the ex-ante moral hazard effect and then compared the empirical results of the two methods.

The remainder of this paper is organized as follows. A review of the extant related literature and hypothesis development is provided in Section 2, followed in Section 3 by a description of the data, methodology and variables adopted for our study. Regression analyses will be carried out in Section 4, which also includes the presentation of our empirical results and a subsequent discussion on their impacts. Finally, the conclusions drawn from this study will be presented in Section 5.

2. Hypothesis Development

In the context of insurance literature of asymmetric information, several literatures point the asymmetric information problem in insurance market. Chiappori and Salanie (2000) noted that there appears to be a significant reduction in prevention and an increase in accidents when the generosity of insurance is increased in the case of automobile insurance. More direct evidence offers little support for the ex ante moral hazard hypothesis. Courbage and Coulon (2004) found no evidence that private health insurance coverage reduced prevention (e.g.; smoking and exercise behaviors) activities among British Households. Card, Dobkin, and Maestas (2008) identified the obtaining insurance is not associated with changes in smoking, exercise and weight, nor is it strongly associated with use of preventive services by studying the effect of obtaining Medicare at age 65 on several health behaviors and the use of preventive services.

On the other hand, obtaining health insurance should reduce prevention because it lowers the cost of medical care. Koç (2011) suggested that the moral hazard effect varies considerably across disease-specific categories of specialist care. Seog (2012) demonstrated that a treatment increase following a coverage increase does not necessarily imply moral hazard. Bhattacharya and Packalen (2012) found that lower levels of self-protection and the associated chronic conditions and behavioral patterns such as obesity, smoking, and malnutrition increase the incidence of many diseases and consumption of treatments to those diseases. Spenkuch (2012) used the data from the Seguro Popular Experiment in Mexico and find that insurance coverage reduces the demand for self-protection in the form of preventive care.

Pope et al. (2014) discussed the tradeoff between ex ante moral hazard and insurance and challenges of multilateral contracting in practice. Ghislandi et al. (2015) recently investigated the impact of universal health coverage in Thailand Households and found no evidence of ex ante moral hazard, whilst Qin and Lu (2014) found the participating in the New Rural Cooperative Medical Scheme (NRCMS) encourages individuals to engage in risky health behaviors in rural China. All of these results are evidence inconsistent with a strong, ex ante moral hazard effect.

Our main research question is whether the self-health care behaviors of the elderly were affected by the implementation of the NHI. After the implementation of the NHI in Taiwan, free adult preventive care service have been provided once every three years for individuals aged 40 or above, and on an annual basis for those aged 65 or more as well as a free flu vaccination once a year. In summary, based on previous literature, two research hypotheses are proposed as follow:

Hypothesis 1: *After the implementation of the NHI, the elderly have changed certain behaviors that have impacts on health (e.g., smoking, drinking or*

exercise behavior).

Hypothesis 2: *After the implementation of the NHI, the elderly have increased the probability of using preventive care service.*

3. Research Data and Methodology

3.1. The dataset

The empirical data are sourced from the Survey of Health and Living Status of the Elderly (SHLSE) in Taiwan. SHLSE is a national representative panel study conducted by the Bureau of Health Promotion (BHP) and be created in cooperation with the University of Michigan. Six waves of surveys were conducted in 1989, 1993, 1996, 1999, 2003 and 2007. SHLSE provides rich information about older people's regarding demographics, medical care utilization, health status and behavior, daily activities and general attitudes, economic or financial well-being, and so on. There are three waves of surveys on different generations of the elderly have been conducted until 2007, serving as the extremely rare long-term follow-up data in Asia. The survey drew its first sample of 4,049 elderly people in 1989 which was subsequently repeated every 3 years or so. Since some respondents have died or are missing, BHP added 2,462 individuals in the survey in 1996 and third sample of 1,599 elderly people in 2003.

3.2 Methodology

Before the enforcement of NHI in Taiwan, only a few types of occupational insurance provided health insurance. The Government Employees' Insurance (GEI) comprised health insurance for government employees and their spouses. In addition,

Labor Insurance (LI) and Farmers' Insurance (FI) also offer health insurance, but the coverage of health insurance was only extended to the insured. We further categorize our sample with two different groups as follows: (1) The control group includes elderly people who were insured by GEI, LI or FI before NHI; (2) The treatment group includes elderly people who were uninsured before NHI.

It is necessary for us to further control the differences in basic characteristics between the control and treatment groups. For example, it is generally agreed that people with government and labor insurance are better educated, have higher income and live in urban areas. Hence, we should only look for individuals with similar characteristics in the two groups. As a result, this study uses the Propensity Score Matching (PSM) method (Rosenbaum and Rubin 1983, 1985a and 1985b) to resolve the issue that the observations are different.

Following Dave and Kaestner (2009) and DE Preux (2011), we begin with the probit model that combines propensity score matching (PSM) with the difference-in-difference (DID) method to test our related hypotheses. We adopt the DID approach, which crucially depends on the choice of a control group that nets out the impact of all other factors in the trends, and pools the samples of the control and treatment groups to estimate the following probit regression:

$$Y_{it} = \beta_0 + \beta_1 UNIN_i + \beta_2 Post_NHI_{it} + \beta_3 Post_NHI_{it} \times UNIN_i + \mathbf{Q}'_{i,t} \psi + \gamma \delta_t + \varepsilon_{it} \quad (1)$$

where Y_{it} is a binary indicator for whether the individual has received preventive care services in the two years before the previous year ($Y_{it} = 1$ if individual i has preventive care services and $Y_{it} = 0$ if individual i does not have any preventive care services). i denotes the individual and t denotes the year, $UNIN_i$ is a binary indicator ($UNIN_i = 1$ if individual i is in the treatment group and $UNIN_i = 0$ if

individual i is in the control group). $Post_NHI$ is a time indicator ($Post_NHI=1$ if individual i is in the period in which NHI has been enforced and $Post_NHI=0$ if individual i is in the period in which NHI has not been enforced). δ_t is a fixed year effect. $Q'_{i,t}$ is the vector of observable individual characteristics include: (1) personal characteristics, such as gender, marital status, ethnicity, age and educational levels; (2) general health status, such as very good, good, neutral, bad, very bad; (3) the presence of any chronic diseases, such as hypertension, diabetes, heart disease, stroke, cancer, lung, stomach, liver and kidney diseases; (4) limitations in activities of daily living (ADLs), such as raising arms, jogging, taking a shower and so on; (5) individual scale of depression(CES-D); (6) individual scale of life satisfaction; (7) individual self-assessed health status; (8) the number of people in the household (9) the region (Northern, Central, Southern, Eastern); (10) economic status.

The effect of NHI policy on the demand for preventive care services can be illustrated by the following formula:

$$\begin{aligned} \Delta^{NHI} &= (Y_{Treatment}^{after\ NHI} - Y_{Treatment}^{before\ NHI}) - (Y_{Control}^{after\ NHI} - Y_{Control}^{before\ NHI}) \\ &= [(\beta_1 + \beta_2 + \beta_3) - \beta_1] - [\beta_2 - 0] = \beta_3 \quad (2) \end{aligned}$$

where Δ^{NHI} denotes the effect of NHI on the outcome and $Y_{Treatment}$ and $Y_{Control}$ represent, respectively, the sample averages of the outcome for the treatment and control groups before and after the implementation of NHI. The coefficient β_3 for the interaction is our estimator of primary interest and measures the DID defined in Eq. (1) It shows the real main influence that NHI may have on the demand for preventive care services.

Following Oreopoulos (2006), Liu, Nestic, and Vukina (2012) and Spenkuch (2012), we further consider the average and local average treatment effect (ATE and LATE) to reexamine the issue of whether there existed the ex-ante moral hazard

effect. The simple regression of intent-to-treat (ITT) effect is:

$$y_{s,it} = \mu + \phi_s UNIN_{i,t} + \mathbf{Q}'_{i,t-1} \Psi + v_{i,T} \quad (3)$$

$y_{s,i,T}$ is a binary indicator for whether the elderly has preventive activities, s indexes the set of preventive activities. Therefore, each ϕ_s indicates by how much the treatment group mean changes relative to that of the control group; and the standardized treatment effect expresses the average change over all measures in standard deviation units. Naturally, negative values point towards ex ante moral hazard. We will try to find some instrumental variable (IV) to control the endogenous question.

4. Results and Conclusions

It has been an important issue that whether the health insurance would generate the ex ante moral hazard effect. The implementation of NHI and the panel database of the elderly in Taiwan provide an intriguing environment for an examination of the ex ante moral hazard. This paper contributes to the literatures by examining ex ante moral hazard of the elderly after the implementation of NHI. To our knowledge, this is the first paper that adopts the Difference-in -Difference method and propensity score matching method to analyze the demand of preventive care service of the elderly before and after the implementation of the NHI.

As the elderly do not quickly adjust their health behavior, the implementation of NHI not results in the changing in the precautionary health care behaviors, but rather leads to significant increases in precautionary health examination, especially in health examination advised by doctor. We believe that the respective empirical results of our paper provide new evidences whether there exists a phenomenon of information asymmetry in the insurance market

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科技部補助專題研究計畫出席國際學術會議心得報告

日期：2015年09月20日

計畫編號	103-2410-H-004 -095 -		
計畫名稱	老人退休消費與全民健保醫療行為實證分析		
出國人員姓名	王儷玲, Jennifer L. Wang	服務機構及職稱	國立政治大學風險管理與保險學系教授
會議時間	2015年9月7日至 2015年9月9日	會議地點	法國，里昂 Lyon, France
會議名稱	(中文)2015 國際長壽風險與金融市場研討會 (英文) Eleventh International Longevity Risk & Capital Markets Solutions Conference		
發表題目	(中文) (英文) " Valuation of Variable Long-term Care Annuities with Guaranteed Lifetime Withdrawal Benefit: A Variance Reduction Approach "		

一、參加會議經過

本人於2015年9月7日至9月9日於法國里昂參加國際長壽風險與金融市場研討會 (Eleventh International Longevity Risk & Capital Markets Solutions Conference)。長壽風險與金融市場研討會是國際風險管理與保險學術界非常重要的學術年會，該國際研討會正式創立於2005年，是退休金與長壽風險學術領域中非常重要的國際學術旗艦型會議。此國際研討會之設立目的，是為了提供一個國際性的學術界與實務界交流平台，使全世界的研究學者以及金融保險業界菁英，對於人口老化所造成之長壽風險相關議題（包括退休金制度改革、退休基金投資管理與退休理財教育與退休商品創新等議題），可以透過本國際研討會有更實質的瞭解與經驗分享回饋。此國際研討會第一屆（2005年）在英國倫敦舉行，第二屆（2006年）在美國芝加哥舉行，而第三屆（2007年）首次在亞洲台北舉行，之後每年定期於歐洲、美洲與亞洲等地區輪流舉辦，而2015年在法國里昂舉行，由里昂第一大學 (Université Lyon 1)主辦，約有二、三四百位來自世界各國的學者與產業界菁英參與此盛會。

自 9 月 7 日起，主辦單位安排所有與會者參與共計 21 場的專題演講，以及三大場次共計 16 個主題的論文發表會。本人於 9 月 9 日論文發表會中，於「年金保險」(Annuity) 論文發表會，發表近期完成有關當保證終身給付變額年金結合長期照顧保險評價相關之著作 "Valuation of Variable Long-term Care Annuities with Guaranteed Lifetime Withdrawal Benefit: A Variance Reduction Approach"。此次發表與報告，得到許多學界先進寶貴的修改意見，許多實務界專家也對此商品以及評價方式與本人進行深入探討，此篇論文未來的發展也在發表過程中獲得啟發，可說受益匪淺。在彙整諸位先進之意見後，期待可提高此篇論文投稿於國際期刊被接受的可能性。

二、與會心得

本次會議是風險管理與保險學界相當重視的一次研討會，參與本次研討會除了獲得來自國外頂尖學者所給與研究論文之意見，從研討會各場專題演講中也收穫良多。國際頂級期刊 *Insurance: Mathematics and Economics* 也預定自會議中的發表論文擇優刊登於特刊中，本次投稿之論文也獲得邀請投稿於本次特刊。此外，本次研討會也開啟了未來與這些國外頂尖學者共同合作的機會，延續以往參加此研討會與他國學者互助的精神，提升本人著作水平，增加研究成果在國際學術期刊發表的可能性。期望能透過未來的持續合作，提高我國學者在風險管理與保險研究領域之國際學術地位，本人爭取到下一年度長壽風險與金融市場研討會於台灣舉辦，也期望本人透過每年參與此研討會，更加精進本人及研究團隊的發表和研究實力。

三、發表論文摘要

This paper proposes an efficient valuation algorithm for a variable Long-term Care Annuity with Guaranteed Lifelong Withdrawal Benefits (GLWB). This innovative product provides retirement solutions for both the longevity risk and long-term care protections. The product includes the benefits of the guaranteed income streams and long term care expenses for the retirees. However, the valuation of this type of product is very complicated and time consuming. In this paper, we propose a Monte Carlo valuation algorithm by using the techniques of variance reduction. The numerical results indicate that the proposed valuation algorithm is very efficient and time-saving. The proposed algorithm provides a better way for product valuation and pricing and can help life insurance companies to offer this innovative product more efficiently.

四、建議

透過每次參與此研討會，不但可以與國外頂尖學者和國際保險實務界經驗豐富的高階主管共同討論長壽風險與金融市場之相關議題，更是一次將自身研究結果帶往更高殿堂，以獲取更加寶貴的修正建議，強化本人與研究團隊研究實力之契機。也因每年自我鞭策，使得研究水平可以持續提升，並獲取新知，更重要的是可以透過三天的研討會，獲得更多研究創作靈感和最新的保險學術研究新知，並能對當前學術與實務界所重視議題有更進一步的了解，建議我國學者後進應多加參與是類研討會，提升我國整體研究水平，創造與國外頂尖學者共同研究之契機。

科技部補助計畫衍生研發成果推廣資料表

日期:2016/03/31

科技部補助計畫	計畫名稱: 老人退休消費與全民健保醫療行為實證分析
	計畫主持人: 王儷玲
	計畫編號: 103-2410-H-004-095- 學門領域: 財務
無研發成果推廣資料	

103年度專題研究計畫研究成果彙整表

計畫主持人：王儷玲		計畫編號：103-2410-H-004-095-				計畫名稱：老人退休消費與全民健保醫療行為實證分析	
成果項目		量化			單位	備註（質化說明： 如數個計畫共同成果、成果列為該期刊之封面故事...等）	
		實際已達成數（被接受或已發表）	預期總達成數（含實際已達成數）	本計畫實際貢獻百分比			
國內	論文著作	期刊論文	0	0	100%	篇	
		研究報告/技術報告	0	0	100%		
		研討會論文	0	0	100%		
		專書	0	0	100%	章/本	
	專利	申請中件數	0	0	100%	件	
		已獲得件數	0	0	100%		
	技術移轉	件數	0	0	100%	件	
		權利金	0	0	100%	千元	
	參與計畫人力（本國籍）	碩士生	0	0	100%	人次	
		博士生	1	1	100%		
博士後研究員		0	0	100%			
專任助理		0	0	100%			
國外	論文著作	期刊論文	0	0	100%	篇	
		研究報告/技術報告	0	0	100%		
		研討會論文	0	0	100%		
		專書	0	0	100%	章/本	
	專利	申請中件數	0	0	100%	件	
		已獲得件數	0	0	100%		
	技術移轉	件數	0	0	100%	件	
		權利金	0	0	100%	千元	
	參與計畫人力（外國籍）	碩士生	0	0	100%	人次	
		博士生	0	0	100%		
博士後研究員		0	0	100%			
專任助理		0	0	100%			
其他成果 （無法以量化表達之 成果如辦理學術活動 、獲得獎項、重要國 際合作、研究成果國 際影響力及其他協助 產業技術發展之具體 效益事項等，請以文 字敘述填列。）		無					

	成果項目	量化	名稱或內容性質簡述
科教處計畫加填項目	測驗工具(含質性與量性)	0	
	課程/模組	0	
	電腦及網路系統或工具	0	
	教材	0	
	舉辦之活動/競賽	0	
	研討會/工作坊	0	
	電子報、網站	0	
	計畫成果推廣之參與(閱聽)人數	0	

科技部補助專題研究計畫成果報告自評表

請就研究內容與原計畫相符程度、達成預期目標情況、研究成果之學術或應用價值（簡要敘述成果所代表之意義、價值、影響或進一步發展之可能性）、是否適合在學術期刊發表或申請專利、主要發現或其他有關價值等，作一綜合評估。

1. 請就研究內容與原計畫相符程度、達成預期目標情況作一綜合評估

達成目標

未達成目標（請說明，以100字為限）

實驗失敗

因故實驗中斷

其他原因

說明：

2. 研究成果在學術期刊發表或申請專利等情形：

論文： 已發表 未發表之文稿 撰寫中 無

專利： 已獲得 申請中 無

技轉： 已技轉 洽談中 無

其他：（以100字為限）

3. 請依學術成就、技術創新、社會影響等方面，評估研究成果之學術或應用價值（簡要敘述成果所代表之意義、價值、影響或進一步發展之可能性）（以500字為限）

本研究使用「中老年身心社會生活狀況長期追蹤調查資料」探討全民健保實施是否會導致事前道德危險(ex ante Moral hazard)。過去國外文獻認為強制性健康保險會導致民眾風險意識降低，增加危害健康行為，因而造成事前道德危險。不同於過去文獻發現，本研究實證結果支持強制性健康保險並不會導致事前道德危險。本研究利用差異中的差異(Difference-in-Difference)方法分析全民健保實施前後，中老年人對預防健康檢查的需求是否受到影響，以及事前道德危險是否存在，並透過傾向配對(propensity score matching)的方法進一步了解相同特徵個人的行為是否有所不同。實證結果發現在台灣全民健康保險實施後，相對原本就有健康保險的民眾，新加入全民健康保險的中老年人在健保實施前後，並沒有顯著增加危害健康之行為。此外也發現，全民健康保險實施後中老年人對預防性健康檢查有顯著增加的現象。本研究之分析結果，將提供學術界對於健康保險與道德危險議題新的實證資料，也對是否存有資訊不對稱的現象有更完備與正確的了解。