## 中研院經濟所六十週年所慶

## 暨總體經濟計量模型研討會

The 60th Anniversary of IEAS and Macroeconometric Modelling Workshop

會議主題: 當前臺灣經濟的挑戰與對策

日期: 11月 28-29日(星期一,二)

會場: 中央研究院經濟研究所

## Organizing Committee:

許文泰(召集人), 許育進, 陳明郎, 陳恭平, 陳樂昱, 張俊仁, 楊子霆, 楊淑珺, 謝志昇.

## Program Committee:

紀鈞哲, 許文泰, 陳樂昱, 張俊仁, 張庭源, 楊子霆, 楊睿中, 楊淑珺, 鄭琬蓉, 謝志昇, 簡錦漢, 蘇俊華. (依據姓氏筆劃排序)

主辦單位: 中央研究院經濟研究所, 行政院主計總處

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- 全院禁菸
- 進入各會場空間, 敬請全程配戴口罩(自備)
- 無線網路

SSID: MMW2022 (無須密碼)

■ 線上同步直播頻道

YOUTUBE: 請搜尋「中研院經濟所」

FACEBOOK: 請搜尋「中央研究院經濟研究所」粉絲專頁

■ 投影片存置

請最晚於場次開始前 10 分鐘, 至會議室存置報告檔案

- 研討會晚宴 (BY INVITATION)
  - 11月29日(星期二)17:45-

地點: 欣葉小聚南港店

【臺北市南港區經貿二路 166 號 1 樓 (中國信託金融園區 A 棟 1 樓), 地圖請參考 P.68】

★ 接駁車於 17:15 自經濟所大門發車 ★

## 11月 28日, 星期一

08:30-09:00	報	到	B棟大廳
09:00-09:40	開幕致詞	許育進, 廖俊智, 朱澤民, 蔡瑞胸, 蘇建榮	慕寰廳
09:40-10:10	大 合 照 暨 茶 敘		B 棟大廳
10:10-11:00	<b>所慶暨專題演講 Ⅰ</b> 主持人: 朱敬一	林本堅【視訊】 最理想的半導體永續教育	慕寰廳 【同步直播】
11:00-11:20	茶		B 棟大廳
11:20-12:10	<b>所慶暨專題演講 Ⅱ</b> 主持人: 王汎森	<b>朱敬一</b> 一甲子中國經濟的崛起與蛻變	慕寰廳 【同步直播】
12:10-13:30	午 餐		B 棟大廳
13:30-15:00	A1 臺灣經濟議題:物價,投資與能源 主持人:葉俊顯	曹志弘 高志祥 劉哲良	慕寰廳
	<b>A2</b> 環境經濟實證 主持人: 蕭代基	石曜合 楊豐安 楊睿中	B110
	<b>A3</b> <b>產業與貿易</b> 主持人:楊建成	童永年 劉文獻 蕭秋銘	C101
	A4 Spatial Econometrics and Social Interactions *English Session* Chairman: Tzu-Ting Yang	Chih-Sheng Hsieh Hon Ho Kwok Yating Chuang	C103
15:00-15:30	茶		B 棟大廳
	B1 Labor Market and Taxation  *English Session*  Chairman: Been-Lon Chen	Been-Lon Chen Yunmin Chen Natsuki Arai	Mo-Huan Auditorium
<b>B2</b> 15:30-17:00 疫情下的臺灣供應鏈 主持人: 簡錦漢		葉國俊 林雅淇 陳馨蕙	B110
	B4 文字資料分析 主持人: 周雨田	盧信銘 胡聚男 黃裕烈	C103

## 11 月 29 日, 星期二

08:30-09:00	報	到	B 棟大廳
09:00-09:50	<b>專題演講 Ⅲ</b> 主持人: 林建甫	楊金龍 臺灣的通膨與貨幣政策: 回顧與展望	慕寰廳 【同步直播】
09:50-10:20	茶	叙	B 棟大廳
10:20-12:00	論壇:當前通膨的因果與對策 主持人:吳中書	引言人: 許嘉棟 當前通膨值得探討的議題 與談人: 林建甫, 楊淑珺, 劉憶如, 蔡鴻坤 (依據姓氏筆劃排序)	慕寰廳 【同步直播】
12:00-13:30	午	餐	B 棟大廳
13:30-15:00	C1 物價與總體經濟預測(中央銀行) 主持人:曹添旺	林依伶 余軒 朱浩榜	慕寰廳
	C2 Macroeconomics and Finance 主持人: 謝志昇	洪志清 廖志興 紀鈞哲	B110
	C3 創新,勞動市場與總體經濟 主持人:賴景昌	姚睿 林朕陞 陳冠任	C101
	C4 Heterogeneity in Macroeconomics *English Session* Chairman: Hung-Jen Wang	Yi-Fan Chen Chih-Han Hsueh T. Terry Cheung	C103
15:00-15:30	茶		
15:30-17:00	D1 Topics in International and Spatial Economics *English Session* Chairman: Wen-Tai Hsu	Han Yang Loretta Fung Wen-Tai Hsu	慕寰廳
	<b>D2</b> 個體經濟 主持人: 張靜貞	鄭宜玲 鄭義暉 林純如	B110
	<b>D3</b> 經濟實證研究 主持人: 張俊仁	施琇涵 俞欣榮 李文傑	C101
	<b>D4</b> 計量理論與方法 主持人: 郭炳伸	冼芻蕘 陳由常 陳宜廷	C103
18:00-	研討會晚宴 (B ★接駁車於 17:15 自		

#### 所慶暨專題演講 Ⅰ 【同步直播】

11月28日,星期一 10·10-11·00

#### 主講人:

林本堅 (國立清華大學半導體研究學院院長)【視訊】 最理想的半導體永續教育



#### 所慶暨專題演講 Ⅱ 【同步直播】

11月28日,星期一 11:30-12:10

#### 主講人:

朱敬一 (中央研究院院士)

一甲子中國經濟的崛起與蛻變



#### 專題演講 Ⅲ 【同步直播】

11月29日,星期二09:00-09:50

#### 主講人:

楊金龍 (中央銀行總裁)

臺灣的通膨與貨幣政策: 回顧與展望



「當前通膨的因果與對策」論壇 【同步直播】

11月29日,星期二10:20-12:00

引言人:

許嘉棟 (東吳大學商學院辜濂松先生紀念講座教授) 當前涌膨值得探討的議題



與談人: (依據姓氏筆劃排序)

林建甫 (中信金控首席經濟學家)

楊淑珺 (中央研究院經濟研究所研究員)

劉憶如 (國立臺灣大學財務金融學系教授)









## 11月28日,星期一

08:30 - 09:00 報到 B 棟大廳

許育進 (中央研究院經濟研究所)

廖俊智 (中央研究院)

朱澤民 (行政院主計總處)

蔡瑞胸 (美國芝加哥大學商學院)

蘇建榮 (財政部)

09:40 - 09:55 大合照

09:55 - 10:10 茶紋

主持人: 朱敬一 (中央研究院經濟研究所)

主講人: 林本堅 (國立清華大學半導體研究學院) 【視訊】

最理想的半導體永續教育

11:00 - 11:20 茶紋

主持人: 王汎森 (中央研究院歷史語言研究所)

主講人: 朱敬一 (中央研究院經濟研究所)

一甲子中國經濟的崛起與蛻變

12:10 - 13:30 午餐

#### 13:30 - 15:00 平行場次 A1~A4

## A1 臺灣經濟議題: 物價, 投資與能源

慕寰廳

主持人: 葉俊顯 (中華經濟研究院)

物價上漲與通貨膨脹的距離

作者: \*曹志弘 (行政院主計總處)

投資驅動國內經濟新風貌

作者: \*高志祥 (行政院主計總處)

淨零路徑下低碳運具策略的效益評估—以柴油公車低碳化 為例

作者: 葉俊顯,\*劉哲良 (中華經濟研究院), 楊晴雯, 留浩洋

#### A2 環境經濟實證

B110 會議室

主持人: 蕭代基 (中央研究院經濟研究所)

The Effect of Air Quality on Citizens' Preferences for Low-Carbon Energy

作者: Yi-Tien Liu, \*Yau-Huo (Jimmy) Shr (石曜合, 國立臺灣大學農業經濟學系)

Hog Production and Environmental Quality: Evidence from Taiwan's Foot-and-Mouth Disease Outbreak in 1997

作者: \*Feng-An Yang (楊豐安,國立臺灣大學農業經濟學系), Chen-Ti Chen

Climate Change and Economic Activity: Evidence from U.S. States

作者: Kamiar Mohaddes, Ryan N. C. Ng, M.
Hashem Pesaran, Mehdi Raissi, \*Jui-Chung
Yang (楊睿中, 國立臺灣大學經濟學系)

#### 13:30 - 15:00 平行場次 A1~A4

### A3 產業與貿易

C101 會議室

主持人: 楊建成 (中央研究院經濟研究所)

Signaling Endogenous Product Quality with Consumer Boycott

作者: Yi-Ling Cheng, \*Chris Y. Tung (童永年, 國立中山大學經濟學研究所)

專利權保護與金融發展對國際貿易之影響

作者: \*劉文獻 (國立中正大學經濟學系), 唐芝勻

Factors that Affect the Performance of NFTs Investment: Evidence from the Sports Industry NFTs

作者: \*Chiu-Ming Hsiao (蕭秋銘,國立雲林科技 大學財務金融系)

#### 13:30 - 15:00 平行場次 A1~A4

### A4 Spatial Econometrics and Social Interactions

Room C103

(English Session)

Chair: Tzu-Ting Yang (Institute of Economics, Academia Sinica/楊子霆,中央研究院經濟研究所)

Gender and Racial Disparities in Altruism in Social Networks

Authors: \*Chih-Sheng Hsieh (Department of Economics, National Taiwan University/謝志昇, 國立臺灣大學經濟學系), Xu Lin

#### **Econometrics of Social Interactions Models**

Author: \*Hon Ho Kwok (Department of Economics, National Taiwan University/郭漢豪,國立臺灣大學 經濟學系)

Self-Control or Social Control? Peer Effects on Temptation Consumption

Author: \*Yating Chuang (Institute of Economics, Academia Sinica/莊雅婷,中央研究院經濟研究所)

15:00 - 15:30 茶敘

#### 15:30 - 17:00 平行場次 B1~B4

#### **B1** Labor Market and Taxation

(English Session)

Mo-Huan

Chair: Been-Lon Chen (Institute of Economics, Academia Sinica/陳明郎, 中央研究院經濟研究所)

Technical Change, Wage Inequality, and Optimal Taxes in an Assignment Model

Authors: \*Been-Lon Chen (Institute of Economics, Academia Sinica/陳明郎,中央研究院經濟研究所), Fei-Chi Liang

Redistributibe Taxation in the Roy Model: Capital-Skill Complementarity vs. Trickle Down

Authors: \*Yunmin Chen (Department of Applied Economics, National Chiayi University/陳韻旻, 國立嘉義大學應用經濟學系), C.C. Yang

Does Working with a Future Executive Make Junior Employees More Likely to Be Promoted?

Authors: \*Natsuki Arai (Department of International Business, National ChengChi University/荒井夏來, 國立政治大學國際經營與貿易學系), Nobuhiko Nakazawa

#### 15:30 - 17:00 平行場次 B1~B4

#### B2 疫情下的臺灣供應鏈

B110 會議室

主持人: 簡錦漢 (中央研究院經濟研究所)

全球供應鏈重組對我國產業與金融業的可能影響: 問卷 實證分析

作者: 陳馨蕙, 簡錦漢, 林雅淇,\*葉國俊 (國立臺灣 大學國際發展研究所)

疫情與供應鏈變遷下電力需求之預測

作者: \*林雅淇 (逢甲大學經濟學系)

Taiwan's Semiconductor Supply Chain under the Geopolitical and Pandemic Uncertainties: An Analysis from Questionnaire Survey

作者: Thu-Ha Thi An, \*Shin-Hui Chen (陳馨蕙, 中華經濟研究院), Kai-Wei Liang, Wai-Ru Khoo, Chung-Cheng Pai

#### 15:30 - 17:00 平行場次 B1~B4

#### B4 文字資料分析

C103 會議室

主持人: 周雨田 (中央研究院經濟研究所)

Developing AI Models for Understanding the Coherence Structure of Earnings Conference Call Transcripts

作者: Sheng-Dian Lin, \*Hsin-Min Lu (盧信銘, 國立 臺灣大學資訊管理學系)

金融科技會提高銀行績效環是帶來風險?

作者: \*胡聚男 (天主教輔仁大學金融與國際企業學 系), 顏安

Semantics Matter: An Empirical Study on Economic Policy Uncertainty Index

作者: Chung-Chi Chen, \*Yu-Lieh Huang (黃裕烈,國立清華大學計量財務金融學系)

## 11月29日,星期二

08:30 - 09:00 報到

B 棟大廳

09:00 - 09:50 專題演講 Ⅲ 【同步直播】

慕寰廳

主持人: 林建甫 (中信金控) 主講人: 楊金龍 (中央銀行)

臺灣的涌膨與貨幣政策: 回顧與展望

09:50 - 10:20 茶敘

10:20 – 12:00 論壇: 當前通膨的因果與對策 【同步直播】

慕寰廳

主持人: 吳中書 (台灣經濟研究院) 引言人: 許嘉棟 (東吳大學商學院)

當前通膨值得探討的議題

與談人: 林建甫 (中信金控)

楊淑珺 (中央研究院經濟研究所)

劉憶如 (國立臺灣大學財務金融學系)

蔡鴻坤 (行政院主計總處)

(依據姓氏筆劃排序)

12:00 - 13:30 午餐

#### 13·30 - 15·00 平行場次 C1~C4

#### C1 物價與總體經濟預測 (中央銀行)

慕寰廳

主持人: 曹添旺 (中華經濟研究院)

CPI 與 PPI 之關係一臺灣與主要經濟體之比較

作者: \*林依伶 (中央銀行經濟研究處)

時變參數向量自我迴歸模型於臺灣通膨率與經濟成長率 預測之應用

作者:\*余軒(中央銀行經濟研究處)

從變數衡量的角度再探臺灣菲利浦曲線的平坦化

作者: \*朱浩榜 (中央銀行經濟研究處)

#### **C2** Macroeconomics and Finance

R110 會議室

主持人: 謝志昇 (國立臺灣大學經濟學系)

Does Social Connectedness Affect Stock Market Participation?

作者: \*Chih-Ching Hung (洪志清,國立臺灣大學財務 金融學系)

How Minimum Wages Affect Automation and Innovation in a Schumpeterian Economy

作者: Angus C. Chu, Guido Cozzi, Haichao Fan, Yuichi Furukawa, \*Chih-Hsing Liao (廖志興, 國立中央大學經濟學系)

Lender Concentration and Sudden Stops

作者: \*Chun-Che Chi (紀鈞哲, 中央研究院經濟研究所)

#### 13:30 - 15:00 平行場次 C1~C4

#### C3 創新, 勞動市場與總體經濟

C101 會議室

主持人: 賴景昌 (中央研究院經濟研究所)

臺灣低利率環境下的財政政策效果

作者: \*姚睿 (國立中央大學經濟學系), 游晴薇

臺灣 R&D 活動與經濟成長: 金融發展的角色

作者: \*林朕陞 (淡江大學經濟學系), 洪福聲

Innovation, Female Labor Force Participation, and the Gender Allocation of Sectoral Employment

作者: \*Kuan-Jen Chen (陳冠任, 國立中山大學經濟 學研究所), Juin-Jen Chang, Chun-Chieh Huang, Ching-Chong Lai

#### 13:30 - 15:00 平行場次 C1~C4

#### C4 Heterogeneity in Macroeconomics

Room C103

(English Session)

Chair: Hung-Jen Wang (Department of Economics, National Taiwan University/王泓仁,國立臺灣大學經濟學系)

Labor Market Implications of Taiwan's Accession to the WTO: A Dynamic Quantitative Analysis

Authors: Pao-Li Chang, \*Yi-Fan Chen (Department of Applied Economics, National University of Kaohsiung/陳奕帆,國立高雄大學應用經濟學系),Wen-Tai Hsu. Xin Yi

Animal Spirit in the HANK Model: How Does Cognitive Bias Affect Policy Making?

Authors: \*Chih-Han Hsueh (Institute of Economics, Academia Sinica/薛致涵,中央研究院經濟研究所), Hsuan-Chih (Luke) Lin

Transportation Network, Technology Adoption and Structural Transformation

Authors: \*T. Terry Cheung (Institute of Economics, Academia Sinica/張庭源, 中央研究院經濟研究所), Han Yang

15:00 - 15:30 茶敘

#### 15:30 - 17:00 平行場次 D1~D4

## D1 <u>Topics in International and Spatial Economics</u> (English Session)

Mo-Huan Auditorium

Chair: Wen-Tai Hsu (Institute of Economics, Academia Sinica/許文泰, 中央研究院經濟研究所)

The Tower of Babel: Localization, Translation, and International Trade

Authors: \*Han Yang (Institute of Economics, Academia Sinica/楊宗翰, 中央研究院經濟研究 所), Yuta Watabe, Eugene Kanasheuski

Export Price Elasticity and Firm Export Pricing Strategies under Dominant Currency Pricing

Authors: Wanyu Chung, Robert Elliot, \*Loretta Fung (Department of Economics, National Tsing Hua University/馮炳萱,國立清華大學 經濟學系), Jin-Tan Liu, Chun-Yen Wu

### Land Use Distortion in a Spatial Economy

Authors: \*Wen-Tai Hsu (Institute of Economics, Academia Sinica/許文泰, 中央研究院經濟研究 所), Zheng (Michael) Song, Xin Zou

#### 15:30 - 17:00 平行場次 D1~D4

#### D2 個體經濟

B110 會議室

主持人: 張靜貞 (中央研究院經濟研究所)

**Product Compatibility and Quality Competition** 

作者: \*Yi-Ling Cheng (鄭宜玲,國立中山大學經濟學研究所), Hsiang-Yun Huang

International Tax Differences, Trade Costs, and the Multinational's Tax Avoidance

作者: \*I-Hui Cheng (鄭義暉, 國立高雄大學應用經濟學 系), Yi-Jie Lee, Shih-Jve Wu

越南個人金融壓力與貸款消費行為

作者: \*林純如 (國立臺北商業大學國際商務系), 江尚儒

#### D3 經濟實證研究

C101 會議室

主持人: 張俊仁 (中央研究院經濟研究所)

The Unintended Consequences of Discrimination at Birth on the Bargaining Power and Status of Women Later in Life

作者: Ming-Jen Lin, Estelle Jiun-Chi Fu, \*Hsiu-Han Shih (施琇涵, 國家教育研究院)

臺灣勞動份額與實質勞動報酬之研究:多因素生產模型之應用

作者:\*俞欣榮 (中央銀行經濟研究處)

Preferential Accounting Standard and Misallocation: Evidence from Taiwan's Electronics Industry

作者: Wei-Cheng Chen, \*Wen-Chieh Lee (李文傑, 國立 政治大學經濟學系), Wen-Cheng Lin

#### 15:30 - 17:00 平行場次 D1~D4

#### D4 計量理論與方法

C103 會議室

主持人: 郭炳伸 (國立政治大學國際貿易學系)

On Post-Regularized Inference with Two-Stage Least Squares (2SLS)

作者: \*CY (Chor-yiu) SIN (冼芻蕘, 國立清華大學經濟學系)

### Personalized Subsidy Rules

作者: \*Yu-Chang Chen (陳由常, 國立臺灣大學經濟學系), Haitian Xie

Bregman Model Averaging for Generalizing Asymptotically Optimal Combined Forecasts

作者: \*Yi-Ting Chen (陳宜廷,國立臺灣大學財務金融學系), Chu-An Liu

### 17:45 - 研討會晚宴 (BY INVITATION)

★接駁車於 17:15 自經濟所大門發車★

## 物價上漲與通貨膨脹的距離

\*曹志弘 (行政院主計總處)

主計總處按月編布消費者(CPI)、生產者、進口、出口及營造工程等物價指數統計‧用以觀察國內物價波動概況。由於 2021 年以來全球面臨物價上漲壓力升高‧與通貨膨脹高度連結的 CPI‧以及各種物價統計變得備受關注。其中 CPI 為衡量家庭購買消費性商品及服務的價格變動‧與民眾切身相關‧個人往往藉由日常消費的經驗‧檢視 CPI 是否與感受相符‧尤其高漲的房價更加劇民眾心中對通膨的預期及對 CPI 的想像。本報告將由物價統計編算實務與國際規範‧解析官方統計物價上漲幅度與民眾通膨預期存在落差的原因。

## 投資驅動國內經濟新風貌

\*高志祥 (行政院主計總處)

國內經濟高度依賴出口·但在 2018 年美中貿易戰開打及 2020 年初 Covid-19 疫情爆發·重創全球貿易情況下·國內經濟成長未如各界悲觀預期·反而繳出連續 3 年高於全球的好成績·半導體領導廠商持續擴增國內先進製程並帶動群聚效應;貿易戰及疫情催化全球供應鏈重組浪潮·加速海外臺商回臺投資;業者積極建置綠能設施等·致國內生產量能擴充·最為關鍵。

### 淨零路徑下低碳運具的效益評估—以柴油公車低碳化為例

葉俊顯,\*劉哲良 (中華經濟研究院), 楊晴雯, 留浩洋

我國現正進行《氣候變遷因應法》的修法工作·其中一項重點·即是將 2050 年達成淨零排放設定為國家整體目標。為令淨零排放目標具實務上之可行性·國家發展委員會於本年度彙集現有科研成果及各方代表意見·整理成《臺灣 2050 淨零排放路徑》。其中·「運具的電動化及無碳化」為該《路徑》所勾勒的 12 項關鍵戰略之一·亦已規劃至少將投入 1,683 億預算來推動相關工作。就成效角度來說·運具的電動化及無碳化除了減少溫室氣體排放之外·更重要的是它能夠帶來空氣污染降低之健康共伴效益;換言之·在評估相關措施之執行成效時·應採用合適的量化方法來進行估算·以得到完成的分析結果。職是之故·本研究的主旨在於應用跨領域整合的效益評估方法·選擇「柴油公車低碳化」做為分析標的·進行措施推動之潛在效益評估。依據初步估算結果·傳統市區柴油公車更替為油電公車時·每公里可帶來的效益為 5.07 元(溫室氣體減量效益為 1.32 元/公里、空污減量健康共伴效益為 3.75 元/公里);更替為電動公車時·每公里可帶來的效益則為 8.63 元(溫室氣體減量效益為 1.63 元/公里、空污減量健康共伴效益為 7.0 元/公里)。由結果可知·運具低碳化所帶來的空污健康共伴效益更甚於溫室氣體減量效益;因此後續在對外進行推動的說明上·亦可更為著重對於健康共伴效益的論述,以強化措施推動之合理性。

關鍵詞:淨零排放、運具低碳化、碳社會成本、均化單位效益、衝擊路徑法、價值移轉法

## The Effect of Air Quality on Citizens' Preferences for Low-Carbon Energy

Yi-Tien Liu (Department of Agricultural Economics, National Taiwan University)
\*Yau-Huo (Jimmy) Shr (Department of Agricultural Economics, National Taiwan University)

June 1st, 2022

Low-carbon energy brings immediate benefits to citizens by reducing air pollution. Does stronger demand for clean air lead to higher demand for low-carbon energy? We investigate whether experiencing air pollution increases public support for two pro-nuclear propositions in two separate national referendums in Taiwan. We overcome the endogeneity between air quality and electoral outcomes with a recentered treatment approach. We find that elevated levels of air pollution increase citizen support for nuclear energy, and the effect is more pronounced when the air quality benefit of nuclear energy is more intensively campaigned for. Moreover, such an effect varies with precincts' composition of political identity, indicating that partisan perceptual bias extends to realized political behavior.

Keywords: Air pollution, Energy transition, Motivated reasoning, Perceptual screen, Referendum

\* Indicates presenter

## Hog Production and Environmental Quality: Evidence from Taiwan's Foot-and-Mouth Disease Outbreak in 1997

\*Feng-An Yang Chen-Ti Chen

While the more efficient livestock production benefits the society with its economy of scale, it is also accompanied by increasing impact on the environment, which has been a public health concern for the past few decades. This study examines the effect of livestock production on environmental quality, using Taiwan's food-and-mouth disease outbreak in 1997 as a plausibly exogenous shock in hog production. We compile a panel dataset of water pollution readings and link hog production to monitoring sites. Our results show that the drastic decline in hog production is associated with declined water pollution. A reduction of 10,000 hogs leads to a decrease in ammonia, biochemical oxygen demand, and chemical oxygen demand concentration by 7%, 3%, and 2%, respectively. These findings are robust to different measures of hog production.

<sup>\*</sup> Indicates presenter

## Climate Change and Economic Activity: Evidence from U.S. States

Kamiar Mohaddes (Judge Business School and King's College, University of Cambridge)
Ryan N. C. Ng (Faculty of Economics, University of Cambridge)
M. Hashem Pesaran (Department of Economics, University of Southern California and Trinity
College, University of Cambridge)

Mehdi Raissi (International Monetary Fund, Washington DC)
\*Jui-Chung Yang (Department of Economics, National Taiwan University)

We investigate the long-term macroeconomic effects of climate change across 48 U.S. states over the period 1963—2016 using a novel econometric strategy that links deviations of temperature and precipitation (weather) from their long-term moving-average historical norms (climate) to various state-specific economic performance indicators at the aggregate and sectoral levels. We show that climate change has a long-lasting adverse impact on real output in various states and economic sectors, and on labour productivity and employment in the United States. Moreover, in contrast to most cross-country results, our within U.S. estimates tend to be asymmetrical with respect to deviations of climate variables (including precipitation) from their historical norms.

Keywords: Climate change, Economic growth, Adaptation, United States JEL Classification: C33, O40, O44, O51, Q51, Q54

<sup>\*</sup> Indicates presenter

# Signaling Endogenous Product Quality with Consumer Boycott

Yi-Ling Cheng (National Sun Yat-sen University)
\*Chris Y. Tung (National Sun Yat-sen University)

Consumers typically face information asymmetry regarding the production technology and product quality of a new product. It is well known that the firm that produces this new product may signal its quality level through pricing. However, we show that the effectiveness of price signaling is limited for a monopolist when the quality is endogenously determined because the price has a feedback effect on a firm's decision on quality. Separating equilibrium exists only if there is a sufficiently large proportion of consumers engaging in boycott when the actual quality is lower than the expected quality. A significant technology advantage or dissipative advertising does not warrant the emergence of the separating outcome.

Keywords: Signaling, Product quality, Consumer boycott, Technological advantage JEL Classification: C72, D21, D83, L15

<sup>\*</sup> Indicates presenter

## 專利權保護與金融發展對國際貿易之影響

\*劉文獻 (國立中正大學經濟學系暨國際經濟研究所) 唐芝勻 (國立中正大學國際經濟研究所)

2022年9月25日

本文旨在探討 2002 年至 2020 年間,進口國的專利權保護與金融發展程度對 22 個資訊通信科技製造業貿易的影響。我們將 105 個樣本國依所得水準分類為高、中與低所得三群子樣本,分析在不同子樣本下,專利權保護與金融發展程度的提升對進口貿易量的影響。在引力模型架構下,以卜瓦松擬最大概似估計法進行實證分析所得之結果顯示,控制進口國金融發展程度時,進口國專利權保護程度改善會提升進口貿易量,支持傳統文獻中的市場擴張效果的存在,而這個結果在進口國屬於低所得國家時尤為顯著。然而,當控制專利權保護程度時,進口國金融發展程度的提升對進口貿易量的影響卻無法達成一致的結論,似乎相當程度地受到所撰取的金融發展變數影響。

關鍵詞:專利權保護、金融發展、國際貿易、卜瓦松擬最大概似估計法

## Factors that Affect the Performance of NFTs Investment: Evidence from the Sports Industry NFTs

\*Chiu-Ming Hsiao (Department of Finance, National Yunlin University of Science of Technology)

Just as securities are to tangible assets and derivatives to underlying assets, NFTs can also be regarded as financial derivatives of intangible assets. Through the NFTs of the sports industry, this study intends to explore which factors will affect the investment performance of NFTs? How? Using the panel data analysis and multivariate regression analysis to investigate this problem. Empirical results reveal that the popularity of the market, the volatility of the market and the membership effect all have significant positive effects on the investment performance of sports NFTs. While market risk and illiquidity of NFT will have a negative impact, but is insignificant. The findings of this study not only provide a reference for investment strategies, but also provide decision makers, such as sports event broadcasting and professional sports clubs/teams in the sports industry to increase revenue and enhance the image of the industry during the development/minting of NFTs. Moreover, the development of the NFT markets can make up for the inadequacies of asset trading, and also allow the derivatives markets to expand into the field of cryptocurrencies and NFTs, and further improve the completeness of the financial market.

Keywords: Non-fungible token, Transaction cost, Information asymmetric, Membership effect
JEL Classification: Z23

<sup>\*</sup> Indicates presenter

## Gender and Racial Disparities in Altruism in Social Networks

\*Chih-Sheng Hsieh (National Taiwan University) Xu Lin (Virginia Tech)

We study gender and racial disparities in altruism among members in a social network. We specify group-specific (gender or race) altruistic interactions models, as well as intra- and inter-group altruistic interactions models, to capture the heterogeneous patterns of altruism associated with the characteristics of both individuals involved in a network link. We apply the models to the Add Health data to simultaneously identify altruism and social interaction effects on academic achievement and smoking behaviors among adolescents. The results indicate that females are generally more altruistic than males, and whites appear to be the most altruistic racial group. We also find that blacks exhibit spiteful effects towards other black students who are considered to be "acting white".

<sup>\*</sup> Indicates presenter

#### **Econometrics of Social Interactions Models**

\*Hon Ho Kwok (Department of Economics, National Taiwan University)

This paper is a general discussion of the econometrics of social interactions models. First, we consider what are social interactions models, and their motivations and microeconomic foundations. Second, we consider the development of the identification theory for linear social interactions models with observable and unobservable networks. We discuss the econometric and network meanings of the identification conditions. Third, we consider consistent estimators, shrinkage estimators, model selection methods for social interactions models. In particular, we consider nonlinear least squares estimators, L2 regularized estimators, Bayesian and empirical Bayes estimators, and Mallows-type model selection and averaging methods. Fourth, we consider the applications of social interactions models.

<sup>\*</sup> Indicates presenter

# Self-Control or Social Control? Peer Effects on Temptation Consumption

\*Yating Chuang (Institute of Economics, Academia Sinica)

December 4, 2018

This paper examines peer effects on self-control problems. I construct a theoretical model to describe how peer networks influence consumption behaviors through social norms. Using monthly survey data conducted in 16 Thai villages from 1999 through 2004, I found that peer's temptation consumption significantly impact individuals' temptation consumption such as alcohol, tobacco, and gambling. One baht increase in peer's temptation consumption leads to 1.5 increase in own temptation consumption. With the detailed household-level social network information defined by the actual transactions, this paper identifies peer effects using a friend of a friend (excluded network) as the instrument. The panel nature of this instrument overcomes various common identification challenges, such as reflection, correlated effects, and common unobservable shocks, in the literature. My findings suggest that these peer effects are driven primarily by social norms, rather than risk sharing.

<sup>\*</sup> Indicates presenter

# Technical Change, Wage Inequality, and Optimal Taxes in an Assignment Model

\*Been-Lon Chen (Academia Sinica) Fei-Chi Liang (Academia Sinica)

September 2022

The canonical model falls short of explaining the U-shaped growth of wage in skill and the pattern of job polarization. This paper considers R&D investments and varying capital-skill complementarity across tasks in a task-to-talent assignment model, and studies the implications for the pattern of job polarization and the optimal tax policy design. As capital is substitutable for labor at low-skilled routine tasks but complementary to labor at high-skilled nonroutine tasks, capital is allocated highly to low-skilled and high-skilled jobs relative to the middle. The polarization of capital allocation leads to the U-shaped technical change across tasks and U-shaped wage growth across talents. Moreover, varying capital-skill complementarity changes the cross relative-wage elasticity of capital, which in turn affects the capital tax thru the wage compression effect. Thus, the optimal capital tax formula is adjusted in accordance with the capital-labor elasticity of substitution. With R&D innovations, there is the Pigouvian effect which, jointly with the wage compression effect, yields a lower labor tax for all talents, and a negative capital tax, a positive R&D subsidy, and a negative R&D tax for all tasks except those with very high task-complexity.

Keywords: Optimal taxation, Subsidies, R&D, Technical change, Wage distribution, Assignment

JEL Classification: D31, H21, H23, H24, H32, J31, O33

<sup>\*</sup> Indicates presenter

# Redistributibe Taxation in the Roy Model: Capital-Skill Complementarity vs. Trickle Down

\*Yunmin Chen (National Chiayi University)
C.C. Yang (Academia Sinica, National Chengchi University, Feng Chia University)

October 27, 2022

This paper revisits redistributibe taxation in the Roy model as addressed by Rothschild and Scheuer(2013). To reconcile with Autor's (2019) observation that the "trickle down" effect is not important in data, we extend the model to incorporate the "capital-skill complementary" effect as exposed by Krusell et al. (2000). The trickle down effect implies a force toward less tax progressivity in the Pareto optimum relative to the standard Mirrlees model. In contrast, the introduction of the "capital-skill complementary" effect leads to more and more tax progressivity in the Pareto optimum as capital advances.

Keywords: Optimal taxation, Roy model, Trickle down, Capital-skill complementarity

<sup>\*</sup> Indicates presenter

# Does Working with a Future Executive Make Junior Employees More Likely to Be Promoted?

\*Natsuki Arai (Department of International Business, National Chengchi University) Nobuhiko Nakazawa (Department of Economics, Hitotsubashi University)

September 8, 2022

We estimate long-term peer effects in the workplace by investigating whether working with a future executive makes junior employees more likely to be promoted. Using the data on comprehensive career history at the Japanese central administration from 1946 to 2019, we find that long-term peer effects are substantial and persistent—junior employees who work with a future executive in the same division during the first five years of their employment are more likely to be promoted to the chief executive than employees who do not. The empirical results are consistent with increased accumulation of human capital, formation of social connections, and reduction in information asymmetry.

Keywords: Long-term peer effect, Promotion, Future executive, Junior employees JEL Classification: H83, J01, J24, M12, M51

<sup>\*</sup> Indicates presenter

### 全球供應鏈重組對我國產業與金融業的可能影響:問卷實證分析

陳馨蕙 (中華經濟研究院) 簡錦漢 (中央研究院經濟所) 林雅淇 (逢甲大學經濟學系) \*葉國俊 (臺灣大學國家發展研究所)

鑑於近年各國供應鏈自主與調整的國際政經變動,可能對於我國實體及金融產業的成本獲利產生重大深遠影響,本文使用問卷調查輔以實證模型分析,探索近二年 (2020-21) 美中貿易戰、新冠疫情、各國紛紛推出各種產業政策等國內外總體經濟衝擊,如何導致我國上市櫃與興櫃公司進行供應鏈調整,並推論對我國經濟的影響。結論簡述如次:

首先·2020 及 2021 年·新冠肺炎疫情走勢被認定是影響供應鏈調整最大的總體經濟情勢議題,接下來是能源及原物料價格:

其次·立即促使我國產業進行供應鏈調整的因素·2020 年是國際能源及原物料價格、匯率波動、美中貿易紛爭·而國內房地產走勢則可能造成阻礙;2021 年則是電力供應穩定性、美國經濟走勢、原物料及關鍵零組件短缺:

第三·若分別使用廠商採購價格、營業收入與利潤率等三項增加率為被解釋變數·衡量產業所受影響·與電子、半導體及其他製造業相較·資訊通訊產業應是近二年受供應鏈變化影響最為顯著的產業;

最後·金融業雖囿於問卷樣本與受訪業者回應狀況·仍發現 2021 年間的國際重大政策與事件·尚未導致營業成本增率上升·而供應鏈重組顯著提高營業收入。但投資遷移策略·則使得年度營業收入增率與營業淨利增率下降。惟近期國內外貨幣環境與政策瞬息萬變·或將改變前述局面。

面對歐美與俄國衝突·以及中國大陸嚴格防疫措施與廿大後的政經局勢·我國主要製造業與金融業·仍可能逐漸受到影響·且作出更多與幅度更大的回應·實有持續 追蹤精進的必要。

關鍵詞:供應鏈重組、製造業、金融業、二元對數模型 (Binary Logit Model)

#### 疫情與供應鏈變遷下電力需求之預測

\*林雅淇 (逢甲大學經濟學系)

電力需求牽涉變數繁多,除產出、電價之外,電力需求對氣溫及濕度等氣象資料有敏感的反應。電力需求預測之準確度,長期攸關國家未來電源開發計畫;短期在再生能源發電占比提升趨勢下,也攸關電力穩定供應,因此電力需求預測的重要性日益增加。

本研究探討疫情與供應鏈變遷下·預測電力需求之準確度更是受到挑戰。探討問題如下:一、本文發現電力需求與產出間的相關係數逐年變化·故以門檻自我回歸模型·檢視電力需求與產出·在不同外銷訂單海外生產占比下是否有不對稱的關係。二、探討在台商回流及供應鏈重組趨勢·將如何影響電力需求與產出間的關係。三、新冠疫情下·國際對電子業及半導體產業需求增加·對長期國內生產毛額以及我國用電需求有何影響。

結果發現電力需求與產出有不對稱的關係,當外銷訂單海外生產占比高於門檻值時,產出增加對電力需求的增加幅度較大。基於上述結果,本研究成功預測 2022 年度電力需求。

關鍵詞:供應鏈重組、電力需求預測、門檻自我回歸模型

# Taiwan's Semiconductor Supply Chain under the Geopolitical and Pandemic Uncertainties: An Analysis from Questionnaire Survey

Thu-Ha Thi An, \*Shin-Hui Chen, Kai-Wei Liang, Wai-Ru Khoo, Chung-Cheng Pai

The U.S.-China tariff war and the COVID-19 pandemic are straining the global semiconductor value chains, causing technological fragmentation and severe chain disruptions. As the essential part of the world semiconductor complex ecosystem. Taiwan's semiconductor supply chain has become a geopolitical focal point and has been caught between the global superpowers' tensions. This paper attempts to give fresh quantitative evidence of the supply chain disruption, short-chain issues, restructuring plans, challenges, opportunities, and strategies of Taiwan's manufacturing and semiconductor supply chain under geopolitical and pandemic uncertainties. Adopting the questionnaire survey method with stratified sampling and in-depth interviews with firms' executives, we collect the semi-annually primary data from a representative and persistent sample of Taiwan's manufacturing and semiconductor firms from 2018 to 2021. The results show that Taiwan's manufacturers are still driven by low-cost competition, while the supply-chain risk management has become a top priority for Taiwan semiconductors after the U.S.-China tariff war. Despite the "de-Sinicization" movement of Taiwan's manufacturing sector, Taiwan's semiconductor supply chain still intends to expand production in China and bring capacity closer to market demand by moving to the U.S., Japan, ASEAN, and Europe. Without Taiwan's closely knitted semiconductor ecosystem, balancing resilience with cost reduction challenges most of Taiwan's semiconductor firms. This paper also provides relevant information for Taiwan's authorities and the alobal superpowers for conducting industrial policies. To mitigate the supply chain disruptions and guarantee economic and national security, foreign governments' initial funding and subsidy may be inadequate to court investment by Taiwan's semiconductor manufacturers. Forming joint-venture with the local supply chain and entering the new product market may be more critical to Taiwan semiconductor overseas investment.

Keywords: Semiconductor supply chain, Geopolitical uncertainties, Pandemic, Short supply chain, Resilience

<sup>\*</sup> Indicates presenter

### Developing AI Models for Understanding the Coherence Structure of Earnings Conference Call Transcripts

Sheng-Dian Lin
\*Hsin-Min Lu (Information Management, National Taiwan University)

Earnings conference calls are one of the essential channels for investors to obtain first-hand information about a company. Investors are concerned about the management's explanation of the current business status, the financial performance of the quarter, and the questions raised by the invited analysts. Our study focuses on the coherence (i.e., the semantic gap) between the management's prepared narrative (MPN) and the questions raised by analysts based on the assumption that the level of coherence may reflect the level of information asymmetry between the management and investors. To facilitate large-scale analysis, we developed deep learning-based models using the RoBERTa transformer to analyze the level of coherence in earnings conference call transcripts. We compiled a research testbed by manually annotating the level of coherence between MPN and analysts' questions (Q), and the level of coherence between Q and managers' answers (A). Our proposed models adopted the RoBERTa transformer and the pooling strategy to convert paragraphs of text into vector representations and pass them through fully connected layers to predict coherence. We designed an auxiliary task to improve the model performance by distinguishing the relative similarity between positive and negative data points using the triplet loss. The goal of the auxiliary task is to provide a better starting point for the final run of the RoBERTa transformer. Our experimental results show that the RoBERTa model pre-trained on auxiliary tasks performs better than other settings without auxiliary tasks. Our study has three main contributions: (1) developed a research testbed with manually annotated coherence labels, and (2) proposed a RoBERTa-based model architecture combining self-supervised and fewshot learning approaches and reached good performances. In the future, we hope to confirm through empirical research that the level of coherence in earnings conference calls is indeed crucial for investors.

<sup>\*</sup> Indicates presenter

### 金融科技會提高銀行績效還是帶來風險?

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金融科技是銀行業發展的重要趨勢,然而少有文獻探討其對於銀行表現的影響。本研究蒐集美國商業銀行專利權·並利用潛在狄雷克配置演算法加以分類·探討 2011-2019 年 47 家美國商業銀行專利權對於不同表現指標之影響。實證結果顯示,金融科技對於銀行有正面影響,尤其是「行動支付」、「物腦網」、「資料分析」等領域最為明顯。

關鍵詞:金融科技、專利權、成本效率、獲利穩定性、市場力量、潛在狄雷克配置

# Semantics Matter: An Empirical Study on Economic Policy Uncertainty Index

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November 5, 2021

When dealing with textual data, previous studies mainly use the keyword-based matching method to construct indices. The EPU index proposed by Baker et al. (2016) is one example. However, in this paper, we argue that due to its neglect of semantics, such keyword matching generates excessive noise, which affects index quality and further leads to incorrect inferences. We address this shortcoming by adopting the EPU index as an example. We investigate several neural network models and select the best-performing classifier to remove the noise caused by keyword matching. Our empirical results show that the de-noised EPU index is useful in predicting economic variables and generating superior out-of-sample forecasts. Furthermore, the effects of policy uncertainty shocks on core macro variables of interest are consistent with the predictions of macroeconomic theory. Because the proposed approach is a general framework, in the future all keyword matching-based indexes can be improved under the same approach.

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### CPI 與 PPI 之關係 一臺灣與主要經濟體之比較

\*林依伶 (中央銀行經濟研究處)

自 2021 年 8 月以來·受上年基期較低、全球經濟活動重啟帶動原油等原物料進口價格高漲等因素影響·我國各月 CPI 年增率均高於 2%·惟仍明顯低於生產者物價指數 (PPI)年增率(自 2021 年 4 月起均逾 10%)。PPI 屬商品的出廠價格·而 CPI 則屬消費端的零售價格·臺灣 PPI 漲幅與 CPI 漲幅兩者間存在大幅的「剪刀差」,且此現象亦同樣發生於美國、歐元區、日本、南韓及新加坡等經濟體·引發國人擔憂供給面成本上漲的壓力,未來可能轉嫁給消費者。

因此·本文嘗試分析 2001~2021 年小型開放經濟體(包括臺、韓、星)及大型經濟體(美、歐、日)的 CPI 與 PPI 走勢·並進一步採用模型估計六個經濟體的 PPI 與 CPI 之關係。實證結果顯示·臺灣因生產品項主要集中於以外銷為主的電子資通訊產品·其次為石化產品·故 PPI 年增率對當期通膨率有略微影響但不具持續性·而剔除外銷品後的國產內銷 PPI 或核心國產內銷 PPI ·對不含食物之商品類 CPI 及核心 CPI 均具顯著及持續性的影響·惟反應幅度仍低。此外·美、歐等大型經濟體之生產品項則較為分散·致其 PPI 年增率對 CPI 年增率具持續性且較大之影響;韓、星則因生產品項同樣集中於石化及電子資通訊產品·故實證結果與臺灣相似。

### 時變參數向量自我迴歸模型於 臺灣涌膨率與經濟成長率預測之應用

\*余軒 (中央銀行經濟研究處)

總體經濟變數之間的連動關係可能受到經濟結構變動的影響而改變,造成以向量自我 迴歸模型預測關鍵經濟變數的難題。本研究將探討時變參數向量自我迴歸模型應用於 臺灣經濟成長率與通膨率之預測績效。文獻指出,時變參數向量自我迴歸模型運用在 總體變數時應考慮誤差項的隨機波動性,其原因是,若為求簡化而假設模型誤差項具 有變異數齊一性,則當誤差項波動值發生改變時,模型易將其錯誤地歸因於變數間的 跨期連動關係改變,從而使迴歸係數的估計產生偏誤。基於此,本研究使用 Koop and Korobilis (2013) 的模型設定,考慮殘差項的隨機波動性,並以該文的估計方法,加入 較多的總體變數至 TVP-VAR-SV 模型中,以減輕遺漏變數偏誤,並評估時變參數設定 及動態模型選擇是否改善 CPI 涌膨率與 GDP 成長率的預測績效。

本文將 TVP-VAR-SV 模型的預測結果與固定參數的遞迴式 VAR 模型比較·發現 TVP-VAR-SV 模型對四項總體變數的預測績效皆顯著地優於遞迴式 VAR 模型·雖然遞迴式 VAR 計算速度極快·但較難 達到理想的預測準確度。若將 TVP-VAR-SV 模型預測績效與固定參數的貝氏 VAR 模型相比較·則整體而言 TVP-VAR-SV 模型的預測績效較 BVAR 模型為佳·對 CPI 通膨率與實質固定資本形成成長率的預測具有顯著優勢·對 GDP 與民間消費成長率的預測績效則與貝氏 VAR 模型相當。

### 從變數衡量的角度再探臺灣菲利浦曲線的平坦化

\*朱浩榜 (中央銀行經濟研究處)

菲利浦曲線 (Phillips curve) 的平坦化顯示經濟活動與通膨之間的關係脫鉤·常見的解釋包括貨幣政策、全球化等原因。惟另有文獻認為·平坦化係因在估計菲利浦曲線時·使用的變數存在某些衡量上的錯誤 (mismeasurement)·以致無法觀察到經濟活動與通膨之間的關係。Stock and Watson (2020) 即認為·不同商品或服務之間的異質性甚大,彼此價格與景氣循環的關係亦不相同。

臺灣經濟長期以來歷經變遷,不僅各項商品或服務價格與國內經濟活動的關係可能有所差異,亦可能隨時間而改變。參照 Stock and Watson (2020),本文先從勞動市場或景氣指標等方面建構缺口或年增率等不同的經濟活動指標,以盡量涵蓋不同的面向或衡量方式,再利用 CPI 組成項目編製臺灣的「循環敏感通膨」(cyclically sensitive inflation, CSI) 指標。CSI 指標係對國內經濟活動關聯較大的 CPI 組成項目賦予較大的權重,同時排除較為無關的項目,藉此衡量景氣循環產生的通膨壓力。結果發現,在不同的樣本期間下,經濟活動對不同的商品或服務價格亦產生不同的壓力。最後,在排除與景氣循環較為無關的項目後,經濟活動與 CSI 指標的抵換關係仍有下降,但相較於菲利浦曲線常用的衡量變數,降幅較少且仍呈統計顯著,菲利浦曲線並未全面失效。

### **Does Social Connectedness Affect Stock Market Participation?**

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September 24, 2022

Using IRS tax filing data, I show that social network and word-of-mouth communications play an important role in stock market participation decisions. Using a novel dataset from Facebook, I construct a measure of socially-connected friends' participation for US counties and find that a one-percentage point increase in friends' participation increases the focal county participation by 14 to 25 basis points in the following year. For identification strategy, I employ the revelation of financial advisory misconducts as an exogenous negative shock to local participation rate and confirm the causal relationship. In addition, the increase in participation rates among the low-income households induced by friends' participation decreases the Gini coefficients in metropolitan counties in the following two years. The evidence suggests that social influences and peer effects contribute to the cross-sectional differences in the stock market participation rates across US counties and may lead to lower income inequality.

Keywords: Household finance, Social connectedness, Peer effect, Non-participation puzzle

<sup>\*</sup> Indicates presenter

# How Minimum Wages Affect Automation and Innovation in a Schumpeterian Economy

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#### September 2022

This study explores the effects of minimum wage on automation and innovation in a Schumpeterian growth model. We find that raising the minimum wage decreases low-skilled workers' employment and has an ambiguous impact on innovation and automation. Specifically, suppose the substitution elasticity between low-skilled workers and high-skilled workers in production is less (greater) than unity. In that case, raising the minimum wage leads to an increase (a decrease) in automation and innovation. We also provide a quantitative analysis by simulating the effects of minimum wage on the macroeconomy. Finally, we test our theoretical results by estimating the elasticity of substitution between low-skilled and high-skilled workers and the minimum wage impact on automation and innovation in China.

Keywords: Minimum wage, Unemployment, Innovation, Automation JEL Classification: E24, O30, O40

<sup>\*</sup> Indicates presenter

### **Lender Concentration and Sudden Stops**

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October, 2022

This paper studies how lender structure affects credit conditions in open economies via a model with lenders of different sizes. Unlike atomic lenders who foreclose on all collateral when borrowers default, large lenders internalize the pecuniary externality whereby selling seized collateral injects supply and reduces the collateral price. Thus, a more concentrated lender structure alleviates the severity of sudden stops via a higher collateral price, thus demanding less precautionary saving by decentralized borrowers and increasing overborrowing. I document that the lender structure of the external debt of emerging countries is more concentrated than that of advanced countries, and thus emerging countries tend to overborrow. This explains overborrowing alternative to the pecuniary externality of borrowers often highlighted in the literature. Under plausible parameterization, the size of the pecuniary externality internalized by lenders is one-third of that internalized by borrowers. Finally, allowing lender countries to choose lender structure optimally will increase lender concentration, raising debts and lowering borrowers' consumption by 3.5%.

<sup>\*</sup> Indicates presenter

### 臺灣低利率環境下的財政政策效果

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#### 2022年8月

本文旨在探討臺灣低利率環境下的財政政策有效性·我們將臺灣 1981:Q1 至 2021:Q3 的樣本資料切割成正常時期與低利率時期·根據 Blanchard and Perotti(2002)方法認定未預期的臺灣政府支出衝擊·運用平滑局部投射模型估計各總體變數對政府支出衝擊的反應·本研究所關心的變數有:實質 GDP、民間消費、民間投資、名目利率以及物價、研究發現兩種不同時期的臺灣財政政策效果會有所不同。第一。低利率時期的產出乘數會顯著大於正常時期,但兩種時期的乘數值皆小於一。第二,低利率時期的產出乘數會顯著大於正常時期,但兩種時期的乘數值皆小於一。第二,低利率時期擴張性的政府支出衝擊會刺激民間消費增加,但排擠民間投資、導致產出乘數顯著為正;相反的,正常時期擴張性的政府支出衝擊會刺激民間消費增加,但排擠民間投資、導致產出乘數顯著為負。面對政府支出增加的衝擊,低利率時期的名目利率會大幅下降,通膨率則並不會受到影響,導致實質利率的下跌;相反的,正常時期的名目利率及通膨率皆會顯著上升,實質利率反應方向則未定,上述結果顯示臺灣近期低利率環境下的擴張性財政政策會較正常時期更有效。

關鍵詞:財政政策、流動性陷阱、平滑局部投射模型

# 臺灣 R&D 活動與經濟成長: 金融發展的角色

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First draft: September 2022

國外眾多的文獻發現‧廠商的研究發展 (R&D) 活動與金融發展對於該國的技術進步與經濟成長‧扮演重要的角色。然而‧有關於臺灣的文獻‧焦點大多只放在金融發展的效果上;有關於廠商 R&D 活動所扮演的角色都被忽略。如果廠商 R&D 活動與金融發展及兩者的互動對臺灣的技術進步與經濟成長扮演重要角色‧那麼忽略廠商 R&D 活動除了可能導致內生性的問題外‧也將無法真正瞭解影響臺灣技術進步與經濟成長的關鍵因素。為彌補文獻的不足‧本研究以臺灣自 1987 年第 1 季至 2021 年第 4 季的本國人專利權申請量作為 R&D 活動投入的指標‧探討我國 R&D 活動對經濟成長的產出效率是否受到金融發展的影響而有所不同。我們運用門檻迴歸模型並採用多種面向的金融發展指標‧也進行穩健性檢測‧再將實證結果與現有文獻的推論做一比較。我們發現 R&D 活動與經濟成長之間存在金融發展的門檻效果‧因此國外文獻支持 R&D 活動可以促進經濟成長的結論‧只有在金融發展程度較高的狀態才成立;在金融發展程度較低的狀態‧R&D 活動與經濟成長的關係會消失或甚至呈現顯著負向的關係。

關鍵詞:研究發展、專利權數、金融發展、經濟成長

JEL 分類代號: E44, O32, O40

### Innovation, Female Labor Force Participation, and the Gender Allocation of Sectoral Employment

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Chun-Chieh Huang (Department of Economics, Fu Jen Catholic University)
Ching-Chong Lai (Institute of Economics, Academia Sinica)

This Version: August 29, 2022

This paper investigates how technological improvements driven by R&D activities can boost the marketization of home production. From the data for the U.S., we find that the marketization is accompanied with an increase in female labor force participation and a decrease in the gender wage gap. A particularly novel finding is that the rise in female labor force participation results from the boom of female employment in the consumption-good sector, rather than the investment-good counterpart. We develop a R&D-based growth model to discover that advances in technology lower the price of consumer durables, which decreases the gender wage gap and increases female labor participation associated with a significant employment share of female allocated in the consumption-good sector. With a full calibration, we proposes a theoretical explanation to the empirical observations.

Keywords: Innovation, Home production, Female labor force participation, Gender wage gap, Female employment share by sectors

<sup>\*</sup> Indicates presenter

## Labor Market Implications of Taiwan's Accession to the WTO: A Dynamic Quantitative Analysis

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Wen-Tai Hsu (Institute of Economics, Academia Sinica)

Xin Yi (School of Economics, Singapore Management University)

August 22, 2022

This paper studies the effects of Taiwan's accession to the WTO in 2002 on the labor market dynamics in Taiwan during 1995-2020. Our dynamic quantitative framework builds on that of Caliendo, Dvorkin and Parra (2019) but allows for differently skilled labor inputs (low, middle, high) and sector-skill dynamic choice by workers. We map the model to the labor-market transition data in Taiwan, the country-sector-specific skill shares in production, and the bilateral trade flows and import tariffs, of 61 economies and 22 sectors for the period 1995-2007. We study the counterfactual dynamics if the bilateral tariffs related to Taiwan's imports and exports are rolled back to their 1995 levels, and calculate the cumulative effects on the employment shares and welfare of workers by sector and skill level. We find that the tariff reductions during this period help explain the phenomenal expansion of certain star sectors in Taiwan and the growing share of high-skilled workers in Taiwan's labor composition. Bilateral tariff concessions between China and Taiwan account for the bulk of the effects of Taiwan's WTO accession, illustrating the importance of China to Taiwan in the latter's trade structure. The skill-upgrade mechanism is critical in explaining the large employment effects of its WTO accession.

Keywords: WTO, Dynamic quantitative analysis, Labor market dynamics, Welfare effects, Mobility frictions, Skill upgrade

<sup>\*</sup> Indicates presenter

### Animal Spirit in the HANK Model: How Does Cognitive Bias Affect Policy Making?

\*Chih-Han Hsueh (Institute of Economics, Academia Sinica) Hsuan-Chih (Luke) Lin (Institute of Economics, Academia Sinica)

The impact of the monetary and the fiscal policies on households with different characteristics has been well-observed and it is also well-known that this impact might vary across different states of the economy. To rationalize these empirical evidence, we develop a general equilibrium model with two agents embodied with heterogeneous behavioral bias. We show that the policy impacts the households through behavioral and distributional channels and the effect of the monetary and the fiscal policies vary across business cycles. Furthermore, we provide additional explanations on why economy is less likely to be stable with expansionary fiscal and monetary policy during the contraction than in the expansion. Last, this paper analyzes the interactions between monetary and fiscal policies, stressing the importance of policy coordination.

<sup>\*</sup> Indicates presenter

### Transportation Network, Technology Adoption and Structural Transformation

\*T. Terry Cheung (Academia Sinica) Han Yang (Academia Sinica)

September 23, 2022

We study the role of transportation in modern technology adoption in agriculture. Using instrumental variable on highway location, we find that the improvement in market access lowers price of modern input. This encourages modern technology adoption that enhances labor productivity. A calibrated version of multi-region multi-sector model featuring internal trade shows that a reduction in trade cost increases modern input usage, advances labor productivity, reduces agricultural employment, and promotes gains from integration. The effect is diminished when the farmers are not allowed to choose types of technology.

Keywords: Market integration, Technological adoption, Agricultural productivity,

Structural transformation

JEL Classification: O11, O18, R11, Q16

<sup>\*</sup> Indicates presenter

### The Tower of Babel: Localization, Translation, and International Trade

\*Han Yang (Institute of Economics, Academia Sinica)
Yuta Watabe (Xiamen University)
Eugene Kanasheuski (Solsten)

June. 2022

Localization is the preparation of products for sale in another region. Using cross-country sales of PC games on the digital platform, Steam, this paper provides the first estimation of the effects of localization on trade and consumer welfare. We find considerable positive effects of localization on sales in destination markets, and quantify the welfare effects of localization under CES preferences. Our counterfactual exercises suggest that, compared to zero localization, existing localization is associated with large consumer welfare gains across countries. Furthermore, moving toward universal localization for all games also leads to substantial increases in consumer welfare gains.

JEL Classification: F14, P33, L81, L82, L86

\* Indicates presenter

# **Export Price Elasticity and Firm Export Pricing Strategies under Dominant Currency Pricing**

Wanyu Chung (Department of Economics, University of Birmingham)
Robert Elliot (Department of Economics, University of Birmingham)
\*Loretta Fung (Department of Economics, National Tsing Hua University and CRETA)
Jin-Tan Liu (Department of Economics, National Taiwan University)
Chun-Yen Wu (Chung-Hua Institution for Economic Research)

This paper sets out to estimate export price elasticities under dominant currency pricing. Using Taiwan's export data at the transaction level, we find that 90 percent of Taiwan's exports are invoiced in the US dollars, which is significantly above the share of exports to the United States. This pattern suggests that the US dollar is the dominant vehicle currency for Taiwan's exports. Under dominant currency pricing (DCP) framework, we estimate the effects of US dollar exchange rate on Taiwan's export price. Using 2010-2021 transaction-level export data from Taiwan's customs, our results show that the export price elasticity with respect to the US dollar exchange rate is close to 0.6 in the short-run and reduced to 0.4 after two years; however, the effects of bilateral exchange rate is much smaller. We also investigate asymmetric effects of home currency appreciations and depreciations. Our findings suggest that the degree of asymmetry depends on the magnitude of exchange rate changes. We find full asymmetry for small exchange rate movements and partial asymmetry for large exchange rate movements. The exchange rate elasticity is close to 1 when facing small appreciation of the Taiwan dollar and close to 0 when encountering small depreciation. With large exchange rate movements, the effects of currency appreciation on export price are larger than those of currency depreciations. These findings seem to suggest that firms use pricing strategy to maintain market shares in foreign markets when experiencing exchange rate movements.

<sup>\*</sup> Indicates presenter

### **Land Use Distortion in a Spatial Economy**

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Zheng (Michael) Song (Department of Economics, Chinese University of Hong Kong)

Xin Zou (Institute for Advanced Economics, Dongbei University of Finance and Economics)

This paper studies the extent and implications of urban land use distortion in China. We first document that there exists a substantial residential land price premium over industrial land even when conditioned on the same location and/or land characteristics. Such a premium is one order of magnitude higher than those observed in other countries. We develop a three-sector cross-city quantitative spatial model with a within-city urban structure to account for the Chinese spatial economy with a focus on the effects of land use allocation within each city. In this model, higher average prices for residential land than the industrial land is a joint outcome of the within-city urban structure and the land use distortion. Our quantitative results show that the national welfare increases by 3.26% were the land use allocation determined by the market rather than the government.

Keywords: Land use distortion, Land price premium, Welfare

<sup>\*</sup> Indicates presenter

### **Product Compatibility and Quality Competition**

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This paper examines the quality competition of network goods together with the issue of product compatibility. Specifically, we consider a three-stage game where two firms determine whether to provide product compatibility before competing in product quality and then price. Our main results show that, if both firms have veto power on the provision of product compatibility, the compatible outcome emerges in the equilibrium for a sufficiently small extent of externalities, while the incompatible outcome emerges for a large external of externalities. However, if neither firm has veto power, only the compatible outcome may emerge in the equilibrium. Moreover, in response to an increase in network externalities, vertical product differentiation enlarges in both the compatible and incompatible outcomes. However, the intrinsic qualities of both products raise in the compatible outcome. but both the intrinsic qualities reduce in the incompatible outcome. Furthermore, compared with the incompatible case, in the case of compatible goods, the intrinsic qualities of both the high- and low-quality products are higher; meanwhile, the vertical product differentiation is smaller. Moreover, the high-quality (low-quality) firm obtains lower profits while both the consumer surplus and welfare are higher.

Keywords: Product compatibility, Quality competition, Network externalities, Vertical product differentiation

JEL Classification: D43, L13, L15

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### International Tax Differences, Trade Costs, and the Multinational's Tax Avoidance

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Focusing on the MNEs that provides essential inputs both to its affiliates and market rivals, this paper aims to investigate how cross-border tax difference and trade cost influence an MNE's transfer pricing and location decision making. Apart from the intra-firm profit-shifting and strategic competition via transfer pricing, we identify there exists the channel substitution effect through that an MNE can manipulate its transfer price to substitute partially the input sale for the output sales such that it can alleviate the burden of tax payments. We demonstrate that the channel substitution effect is more prominent when the MNE separates its vertically related affiliates, if there existing a significant difference in corporate taxes across countries. When guided by the ALP principle, the MNE is more willing to move its upstream division or affiliate in a low tax country.

Keywords: International tax differences, Trade costs, Internal transfer price, Location choice, Arm-length principle (ALP)
JEL Classification: F12, F23, H25, H26

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### 越南個人金融壓力與貸款消費行為

\*林純如、江尚儒 (國立臺北商業大學國際商務系)

越南循中國經濟發展模式進行改革開放吸引外國直接投資、帶動貿易與經濟成長,所得與消費上升,使金融業有良好的獲利。越南銀行業整體淨利潤、總資產快速成長等潛力已吸引 15 家台灣金融機構前往投資,高占台灣在新南向國家金融投資的 25%,居首位。研究文獻對越南外資研究多偏向外資對經濟成長的貢獻 (Nguyen, 2020),或是外資進入模式與文化距離的關係 (Nguyen, Quan & Pham, 2020; Nguyen, Binh, 2018); 在金融業的研究文獻則多以金融機構的效率面向為主; 另針對越南金融市場不足的農業金融、普惠金融、創業金融等需求有較多的研究 (Loo, 2019; Nizam, Karim, Sarmidi, 2020; Pham, Ho, Vuong, 2020)。Lainez (2021) 分析胡志明市街頭充斥著非法貸款廣告,主張越南民眾對消費貸款需求的迫切性; 然而文獻鮮少以金融市場的供需雙方同時進行研究。本文以問卷調查法,研究越南民眾的貸款需求,以及自銀行、社會、個人、經濟等面向的壓力所形成的金融服務瓶頸。針對消費金融問卷調查結果,建議臺資金融機構未來在越南設計產品時,需考量貸款者的「年齡大小」、「教育程度高低」、「收入高低」、分別設計不同的貸款計畫,讓越南消費者可以依據自身的條件,選擇不同的貸款產品。

關鍵詞:越南、金融市場、金融壓力、金融服務瓶頸、個人金融

### The Unintended Consequences of Discrimination at Birth on the Bargaining Power and Status of Women Later in Life

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The augmentation of discrimination against women through the implementation of sex-selection technologies in the early 1970s has resulted in an immense sex-ratio imbalance in countries with strong son preference. However, the effects on girls that survived this ordeal can be positive later in the marriage market because there are more men than women in the cohort. We used the data from India to identify the improvement of the bargaining power and status of women born during/in higher sex-ratio (males to females) imbalance periods/locations later in life: These women have fewer children, and their children have lower mortality rates. Moreover, they are less likely to experience physical and emotional violence. Although the endogeneity issue biases the estimate downward, we used the rainfall deviation as an instrumental variable to perform the two stage least square of instrument variable method (2SLS). The strong first stage and larger 2SLS estimates confirm our premise. Overall, our results show that the scarcity of women caused by a strong discrimination against women might increase women's bargaining power and status later in life.

Keywords: Marriage market, Sex-ratio imbalance, Women's bargaining power, Women's status, Number of children, Mortality of children, Child-related outcomes, Rainfall, Violence against women

JEL Classification: J12, J13, J16

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### 臺灣勞動份額與實質勞動報酬之研究:多因素生產模型之應用

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本文嘗試以總體經濟多因素生產模型·估算勞動與資本間的替代彈性·探討在相同的物價水準平減下·資本存量變動、勞動運用效率與總要素生產力對勞動份額與實質勞動報酬的長期影響。本文主要發現如下:

- (一) 透過固定替代彈性 (CES) 生產函數的設定進行估算,我國勞動與資本之替代彈性約介於 1.25~1.37 之間。透過此生產函數的設定,能同時解釋近 40 年勞動份額下降與實質勞動報酬的長期走勢。
- (二) 臺灣於 1981 至 2002 年期間·資本存量因投資價格下跌而快速累積·在勞動與 資本不完全替代的影響下·致使在該期間內勞動份額顯著下降;另一方面·同一 期間因總要素生產力、勞動運用效率與投資成長快速·帶動實質勞動報酬的成長。
- (三) 上述的生產特性亦解釋了我國自 2000 年後勞動報酬成長趨緩的現象。自 2000 年起資本成長、總要素生產力、勞動運用效率與投資成長同步下降,是造成近二 十年國內勞動報酬成長停滯的主因。
- (四)資本成長自2000年起大幅下滑的原因,主要是受全球化的影響。由於中國於2001年12月加入WTO,當時臺灣的工資水準遠高於中國,使國內投資報酬率自2000年初顯著下跌,企業經營多採「臺灣接單、海外生產」的模式,導致國內研發與投資成長遠低於2000年以前,連帶影響資本生產技術與總要素生產力的發展。
- (五) 透過多因素生產函數拆解實質勞動報酬的變動成因·本文發現:勞動運用效率成長率的下跌是近二十年勞動報酬成長趨緩的主因·其次為資本存量的變動與總要素生產力。勞動運用效率成長率的下跌·可能係反映我國勞動市場的就業需求與教育體系出 現學用落差的現象。

關鍵詞・薪資停滯、投資、技術進步

JEL 分類代號: B22, D22, D24, E22, E24, J31

### Preferential Accounting Standard and Misallocation: Evidence from Taiwan's Electronics Industry

Wei-Cheng Chen \*Wen-Chieh Lee Wen-Cheng Lin

We examine how expensing employees' stock bonuses (ESBs) in Taiwan after 2008 affected the production efficiency of its electronics industry. Before the expensing of ESBs, Taiwan's electronics firms had commonly utilized stock bonuses to reward workers, which could cause labor distortions. Adapting the distortion measurement in Hsieh and Klenow (2009), we analyze publicly listed companies in Taiwan's electronics industry and show that companies with a higher share price had confronted a lower labor cost before 2008. Expensing ESBs has improved production efficiency in the electronics industry compared with the counterfactual where the non-expensed ESBs persist.

Keywords: Resource misallocation, Distortions, Expensing employee stock bonus

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### On Post-Regularized Inference with Two-Stage Least Squares (2SLS)

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In a whole series of papers, Belloni, Chen, Chernozhukov and Hansen (2012, Ec.), Chernozhukov, Hansen and Spindler (2015a, AER; 2015b, ARE), and Belloni, Chernozhukov, Fernandez-Val and Hansen (2017, Ec.), the authors show, when the high-dimensional IVs are regularized with least absolute shrinkage and selection operator (Lasso), the fixed-dimensional two-stage least squares (2SLS) estimator is (i) asymptotically normal; (ii) semi-parametrically efficient when the structural error is homoscedastic; and (iii) with a rate of convergence  $s_n(logn)/n^{1/2}$ , where  $s_n$  is the number of non-zero (or substantial) coefficients and n is the number of observations. In this paper, we consider 2SLS which IVs are selected with orthogonal greedy algorithm plus high-dimensional information criterion (OGA+HDAIC), where the IVs are considerably dependent. As a result, many time-series data are allowed in which all coefficients are possibly be non-zero. We will show the 2SLS is (a) also asymptotically normal: (b) semi-parametrically efficient when the structural error is homoscedastic; and more importantly, (c) with a rate of convergence no slower than those via Lasso. The last property suggests its superior performance in Monte-Carlo studies in terms of mean squared error (or even mean absolute error).

Keywords: Concentration inequality, High-dimensional, Lasso, OGA+HDAIC, Rate of convergence

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### **Personalized Subsidy Rules**

\*Yu-Chang Chen Haitian Xie

March 18, 2022

Subsidies are commonly used to encourage behaviors that can lead to short- or longterm benefits. Typical examples include subsidized job training programs and provisions of preventive health products, in which both behavioral responses and associated gains can exhibit heterogeneity. This study uses the marginal treatment effect (MTE) framework to study personalized assignments of subsidies based on individual characteristics. First, we derive the optimality condition for a welfaremaximizing subsidy rule by showing that the welfare can be represented as a function of the MTE. Next, we show that subsidies generally result in better welfare than directly mandating the encouraged behavior because subsidy rules implicitly target individuals through unobserved heterogeneity in the behavioral response. When there is positive selection, that is, when individuals with higher returns are more likely to select the encouraged behavior, the optimal subsidy rule achieves the first-best welfare, which is the optimal welfare if a policy-maker can observe individuals' private information. We then provide methods to (partially) identify the optimal subsidy rule when the MTE is identified and unidentified. Particularly, positive selection allows for the point identification of the optimal subsidy rule even when the MTE curve is not. As an empirical application, we study the optimal wage subsidy using the experimental data from the Jordan New Opportunities for Women pilot study.

Keywords: Heterogeneous treatment effects, Marginal treatment effect, Partial identification, Point identification, Positive selection, Shape restrictions, Welfare maximization

<sup>\*</sup> Indicates presenter

# Bregman Model Averaging for Generalizing Asymptotically Optimal Combined Forecasts

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We propose a unified model averaging (MA) approach for establishing a wide class of asymptotically optimal combined forecasts. In this approach, the asymptotic optimality is established by minimizing an asymptotic risk based on the expected Bregman divergence of a combined forecast generated from a generalized forecasting target under the local (to-zero) asymptotics. This approach is flexibly applicable to various forecasting contexts. We illustrate the main ideas and properties of this approach, provide illustrative examples, and assess the forecasting performance of our method using simulation data and real data.

Keywords: Bregman divergence, Forecast combination, Loss function, Model averaging

JEL Classification: C18, C41, C54

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- 捷 運 → ★ 【板南線】南港展覽館站下1號出口步行約5分鐘; 【文湖線】南港軟體園區站往中信金融園區出口。