科技部人文社會科學研究中心

學術研究群成果報告

貿易、產業與公共經濟理論學術研究群

學術研究群編號：**MOST107-2420-H-002-007-MY3-SG10710**

學術研究群執行期間：107 年 7 月 1 日至 108 年 6 月 30 日

學術研究群召集人：楊雅博

執行機構及系所：國立高雄大學經營管理研究所

中　華　民　國　108　年　7　月 29　日

補助學術研究群暨經典研讀班結案報告

貿易、產業與公共經濟理論學術研究群

計畫編號：**MOST107-2420-H-002-007-MY3-SG10710**
執行期間： 197 年 7 月 1 日至 108 年 6 月 30 日

執行機構及系所：國立高雄大學經營管理研究所

計畫召集人：楊雅博
計畫成員：楊雅博、吳世傑、蔡穎義、李仁耀、鄭義暉、許淑瑛、蔡建樹、佘志民
兼任助理：廖鈺琳

補助學術研究群暨經典研讀班成果自評表

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（簡要敘述成果是否具有政策應用參考價值及具影響公共利益之重大發現）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）

說明：

2. 研究成果在學術期刊發表或申請專利等情形(請於其他欄註明專利及技轉之證號、合約、申請及洽談等詳細資訊)

論文：□已發表□未發表之文稿 ■撰寫中 □無

專書：□已出版□尚未出版□撰寫中□無

其他： 研究群成員在補助期間共發表 10 篇論文。

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（敘述成果所代表之意義、價值、影響或進一步發展之可能性）。

本研究群在自 2014 年連續接受中央研究院人文社會科學研究中心補助經費四次以來，至今共發表或被接受 37 篇期刊論文，其中包含 24 篇 SSCI 期刊(包含經學門 **A 級：1 篇**，**B^+ 級：8 篇**，B 級：9 篇，其它：6 篇。)，TSSCI 經學門第一級：5 篇，其它期刊 8 篇。根據以上成果，足見研究群多年的努力已達到預期提升南部地區經濟學學術研究水準的效果。

補助學術研究群暨經典研讀班成果彙整表

計畫主持人:楊雅博	計畫編號：MOST107-2420-H-002-007-MY3-SG10710
計畫名稱：貿易、產業與公共經濟理論學術研究群	

成果項目			量化	單位	質化 （說明：各成果項目請附佐證資料或細項說明，如期刊名稱、年份、卷期、起訖頁數、證號...等）
國內	學術性論文	期刊論文	1	篇	請參考下方欄位第 1 篇。
		研討會論文	1		
		專書		本	
		專書論文		章	
		其他		篇	
國外	學術性論文	期刊論文	9	篇	請參考下方欄位第 2-10 篇
		研討會論文	2		
		專書		本	
		專書論文		章	
		其他		篇	
參與計畫人力	本國籍	教授	4	人次	
		副教授	3		
		助理教授	1		
		博士後研究員			
		專任助理			
	非本國籍	教授			
		副教授			
		助理教授			
		博士後研究員			
		專任助理			

其他成果	1. Hsu, Su-Ying and Chu-Ping Lo (2018), "Market Concentration and Licensing Royalty inAsymmetric Oligopoly," ***Academia Economic Papers***, 46(4), 637-670.**[TSSCI]** 2. Ku-ChuTsao,Shih-Jye Wu,Jin-Li Hu and Yan-Shu Lin (2019).Subcontracting Bargaining Power and the Trade Policy. ***The Journal of International Trade & Economic Development*** , 28(1), 82-100.(SSCI) 3. Sajal Lahiri, Yingyi Tsai (2018). Foreign Penetration and Domestic Competition. J***ournal of Economics. (Accepted).*** **(SSCI B).** 4. Jingjing Zhang, Riccardo Leoncini, Yingyi Tsai (2018). Intellectual property rights protection, labour mobility and wage inequality. ***Economic Modelling***, 70, 239-44. (SSCI,). 5. Cheng, K.F., C.S. Tsai, C.C. Hsu, S.C. Lin, T.C. Tsai, and J.Y. Lee, (2018), Emission Tax and Compensation Subsidy with Cross-Industry Pollution, Sustainability, 11, 998. 6. Chen, D., L.F.S. Wang, and J.Y. Lee, (2018), Foreign Ownership, Privatization and Subsidization with Shadow Cost of Public Funds, ***North American Journal of Economics and Finance.*****(SSCI)** 7. Tsai, Ting-Chung., Cheng, Kuang-Feng., Hsu, Chu-Chuan., Tsai, Chien-

	Shu., Chen, Chien-chih. and Lee, Jen-Yao. (2019), Does Uniform Wage Decline the Welfare in a Budget-Constraint Mixed Market? ***Modern Economy,*** 10, 474-483. (EconLit) 8. Tsung-Kai Chu, Han-Yu Liu and Su-Ying Hsu (2018), "A Comparative Study of CustomerBehaviors in Brand Image and Peer Pressure-the Case of S University," ***Journal of Advertising and Public Relations***, 1(2), 1-8. 9. Novak, Marko and Su-Ying Hsu (2018), "Profitability of Banks in the Serb Republic," ***Applied Science and Management Research*** 5(1). 10. Chiang-Ming Chen, Chih-Min She and Yu-Chen Lin (2018, Jul). The effect of travel experience on price-satisfaction link - evidence from group package tours. ***Current Issues in Tourism***. (Accepted). (SSCI).

摘　要

「貿易、產業與公共經濟理論」研究群原先是南部地區中山大學、高雄大學、南台科技大學、高苑科技大學四所大專院校貿易、產業與公共經濟理論等領域的師生所組成的經濟學跨校研究成長社群，於 100 年 5 月成立，迄今已有 8 年多的歷史。研究社群的主要目的是希望集結南部地區在國際貿易、產業經濟學、環境經濟學、公共經濟理論等相關領域的學者，齊聚於高雄大學，每週排定固定的時間，討論除了討論上述相關領域最新的研究成果外，也希望能邀請國內外在這些領域研究傑出的學者，到本社群來分享其最新的研究成果及其研究心得，提昇南部地區經濟學相關領域的研究質量，以期縮小南北經濟學研究的差距。

本研究群在自 2014 年連續接受中央研究院人文社會科學研究中心補助經費四次以來，至今共發表或被接受 37 篇期刊論文，其中包含 24 篇 SSCI 期刊 (包含經學門 **A 級：1 篇**，**B$^+$ 級：8 篇**，B 級：9 篇，其它：6 篇。)，TSSCI 經學門第一級：5 篇，其它期刊 8 篇。此外，研究群成員許淑嫕亦於今年 7 月申請升等教授，已獲審查通過。根據以上成果足見研究群的努力達到預期的成效，希望研究群能夠繼續獲得經費的補助，在更多及更好的期刊發表，以提升南部的研究水準。

關鍵詞：國際貿易、產業組織、公共經濟

Abstract

Trade、Industrial and Public Economic Theory Workshop was established in May 2011. Members in the Workshop includes the faculty members and students of National Sun Yat-Sen University, National University of Kaohsiung, Kao Yuan University, Southern Taiwan University of Science and Technology in south Taiwan. We discuss published Journal and working papers on trade、industrial and public economics every week. We also invited distinguished scholars in these fields to share their recently work. We expect the workshop can improve both the quantity and quality of economic research in south Taiwan.

Since 2014, we had published or been accepted 37 economic journal papers, including 24 in SSCI Journals (1 classified as level A, 8 classified as B^+, 9 classified as B and 6 others), 5 in TSSCI economic journals (classified as level A) and 8 in others.

Keywords：International Trade、Industrial Organization、Public Economics

目　　錄

一 前 言

本研究群的構想、目的及重要性如下：

(一)背景

自 1980 年代以 Brander and Spencer 為首的學者，發表一系列以不完全競爭市場及賽局理論為分析架構的國際貿易論文以來，此一領域的研究，不但在理論上獲得許多有趣的成果，在實務上，也提供了許多關於貿易自由化及區域經濟整合相當有價值的政策涵義，因此，「策略性貿易」儼然成為國際貿易理論最重要的一支。當前「策略性貿易」的研究也不因時間已久而退色，近年來與產業經濟學理論、環境經濟理論及公共經濟理論有更加緊密的結合趨勢，而且使得相關領域的研究論文更加豐富而有趣。職是之故，本研究社團擬結合南部地區有志於研究國際貿易、產業經濟學論、環境經濟理論及公共經濟理論等相關領域的年輕學者，每週齊聚一堂，探討相關議題，以期提升南部地區經濟學的研究能量。

(二)目的及重要性

「貿易、產業與公共經濟理論」研究群原先是南部地區中山大學、高雄大學、南台科技大學、高苑科技大學四所大專院校貿易、產業與公共經濟理論等領域的師生所組成的經濟學跨校研究成長社群，於 100 年 5 月成立，迄今已有 5 年多的歷史。研究社群的主要目的是希望集結南部地區在國際貿易、產業經濟學、環境經濟學、公共經濟理論等相關領域的學者，齊聚於高雄大學，每週排定固定的時間，討論除了討論上述相關領域最新的研究成果外，也希望能邀請國內外在這些領域研究傑出的學者，到本社群來分享其最新的研究成果及其研究心得，提昇南部地區經濟學相關領域的研究質量，以期縮小南北經濟學研究的差距。

南台灣的學術研究風氣及成果，一直被學術界公認為落後北部地區甚多，經濟學界也不例外。本研究社群的主要目的是希望集結南部地區在國際貿易、產業經濟學、環境經濟學、公共經濟理論等相關領域的學者，齊聚於高雄大學，每週排定固定的時間，討論除了討論上述相關領域最新的研究成果外，也希望能邀請國內外在這些領域研究傑出的學者，到本社團來分享其最新的研究成果及其研

究心得，提昇南部地區經濟學相關領域的研究質量，以期縮小南北經濟學研究的差距。

近年來國內外經濟學界的研究水準大幅提升，使得投稿於具水準的國內外期刊難度也愈來愈高，新進教師承受相當大的研究壓力。本研究社群由資深教授帶領，對資淺社團群成員提供研究的議題的建議，對紓緩升等壓力，提昇研究動能，可收事半功倍之效；對資深教授而言，也獲得教學相長的助益，共創「雙贏」的利益，使南部地區的經濟學研究質量更因此而獲得提升，可謂一舉多得。

二 研究群成員

「貿易與產業經濟理論」研究社群於 100 年 5 月成立，迄今已有 5 年多的歷史，是南部地區四所大專院校師生所組成的經濟學跨校研究成長社群。目前研究社群成員包括中山大學政治經濟系 1 位、高雄大學經營管理所 1 位、高雄大學應用經濟系 3 位、高雄大學應用科技大學 1 位、南台科技大學國際企業系 1 位、高苑科技大學國際商務系 1 位，共 8 位教師所組成，並邀請高雄大學經營管理所及應用經濟系幾位學生參與討論。本研究群如下表 1 所示：

表 1 研究群成員資料表

姓　名	服務單位	職　稱	社群 職　稱
楊雅博	高雄大學經營管理研究所	教授	召集人
吳世傑	中山大學政治經濟學系	教授	副召集人
李仁耀	高雄應用科技大學國際企業系	教授	社群成員
蔡穎義	高雄大學應用經濟學系	教授	社群成員
鄭義暉	高雄大學應用經濟學系	副教授	社群成員
蔡建樹	高苑科技大學國際商務系	副教授	社群成員
許淑媖	南台科技大學國際企業系	副教授	社群成員
佘志民	高雄大學應用經濟學系	助理教授	社群成員

三 研究群的執行方式

本研究群除春節連假期間外，不分寒暑假，原則上「每週」於週一下午一時至下午四時在高雄大學經營管理研究所之管 423 教室聚會一次，每次研討時間約三小時，運作模式包括下列五種方式：

(一) **由本研究群成員負責報告一至二篇重要文獻**：藉著研讀重要參考文獻，可增進成員對現有貿易、產業及公共經濟理論文獻及研究發展趨勢的了解，再透過彼此的腦力激盪，尋求可行的研究議題。

(二) **由本研究群成員報告其最新的研究成果**：透過演講者的報告，聽眾的詢問，可協助釐清論文的經濟涵義，或文中存在的缺陷，有助於尋找研究主題，改善論文品質以及日後投稿學術期刊的被接受率。

(三) **邀請國內經濟學者共同切磋並分享其最新的研究成果**：本計畫將不定期邀請國內研究表現優異的經濟學者演講，互相切磋，增進彼此的研究水準。

(四) **邀請國際知名的經濟學者交流訪問**：邀請國際知名的經濟學者交流訪問，探索貿易、產業經濟、環境經濟、公共經濟理論的熱門議題並分享其最新的研究成果，可促進本研究群成員對上述領域熱門議題的了解，也可提昇本研究群的國際觀與研究水準。

(五) 設立專屬網站推廣研究成果：本計畫預定將以上四種研討項目的演講資訊與成果定期公佈於本研究群之網站（路徑：至國立高雄大學經營管理研究所網頁 http://iem.nuk.edu.tw，點選「學術活動/貿易、產業與公共經濟理論研究社群」），期盼與國內經濟學界共同分享與成長。

四 研究群執行收穫及成果

本研究群計畫執行一年後主要成果如下：

(一) 本研究群成員及學生負責報告重要文獻

本研究群一年內共執行 46 週，報告 49 篇文章，歷次討論文章如表 2 所示。執行期間之會議記錄請參考附件一。

表 2　研究群歷次討論文章

項次	日期	報告人	篇名	出處
1	2018/07/02	陳力誠	Vertical licensing, input pricing, and entry	International Journal of Industrial Organization 59 (2018) 66–96
2	2018/07/16	廖鈺琳	Competition Intensity, R&D Investment and Vertical Contract	Working paper
3	2018/07/23	王智永	Export cartel and consumer welfare	Forthcoming in Review of International Economics
4	2018/07/30	陳力誠	Profit-sharing licensing	J Econ (2017) 121:267–278
5	2018/08/06	廖鈺琳	Market Power of the Input Supplier , Technology Tranfer and Consumer Welfare	The Manchester School Vol 85 No. 4 430–449 July 2017
6	2018/08/13	王智永	Negotiating a uniform emissions tax in international environmental agreements	Journal of Environmental Economics and Management 90 (2018) 217–231
7	2018/08/20	楊雅博	Strategic CSR and Trade Policies	Working paper
8	2018/08/27	廖鈺琳	Multiple Long-Run Equilibria in a Free-Entry Mixed Oligopoly	MPRA Paper No. 86704, posted 18 May 2018 13:36 UTC
9	2018/09/03	陳力誠	Per unit vs. ad valorem	Economics Letters 170

			royalty licensing	(2018) 71–75
10	2018/09/10	王智永	Corporate social responsibility and downstream price competition with retailer's effort	International Review of Economics and Finance 46 (2016) 36-54
11	2018/09/17	陳力誠	Interregional Mixed Duopoly, Location and Welfare	Regional Science and Urban Economics · March 2009
12	2018/10/01	王鳳生	Network Externalities, Subsidization and Privatization in Mixed Duopoly with Excess Taxation Burden	Working paper
13	2018/10/08	廖鈺琳	Taxation and the sustainability of collusion: ad valorem versus specific taxes	J Econ (2018) 125:173–188
14	2018/10/15	王智永	Targeted advertising, platform competition, and privacy	J Econ Manage Strat. 2017;26:557–570.
15	2018/10/22	陳力誠	Excess burden of taxation and environmental policy mix with a consumer-friendly rm	MPRA Paper No. 88256, posted 31 July 2018 03:44 UTC
16	2018/10/29	吳世傑	Exclusive contracts with complementary inputs	International Journal of Industrial Organization 56 (2018) 145–167
17	2018/11/05	許淑嫕	Social Responsibility and Market Concentration in an Oligopoly	Working paper
18	2018/11/12	李仁耀	Optimal privatization and uniform subsidy policies: A note	Journal of Public Economic Theory. 2018;1–8.

18	2018/11/19	楊雅博	Ad Valorem vs. Specific Tax/Subsidy, Privatization and Welfare	Working paper
20	2018/11/26	廖鈺琳	The superiority among specific, demand ad valorem and cost ad valorem subsidy regimes	J Econ (2018) 123:1–21
21	2018/12/03	蔡建樹	Dynamic Privatization Policy	The Manchester School Vol 00 No. 00 00–00 Month 2018
22	2018/12/10	高鈺凱 吳雨桓	1.Cartel stability under quality differentiation 2. Monopolistic competition, price discrimination and welfare	1. Economics Letters 174 (2019) 70–73 2. Economics Letters 174 (2019) 114–117
23	2018/12/17	賴孚權	Downs meets d'Aspremont and company: Convergence versus differentiation in politics and the media	International Journal of Industrial Organization 60 (2018) 96–125
24	2019/01/07	王俊凱 童佳媚 蕭稗涵	1. Profits Under Centralized Negotiations: The Efficient Bargaining Case 2. Pricing and market conduct in a vertical relationship 3. Commodity taxes and welfare under endogenous market conduct	1. The B.E. Journal of Theoretical Economics. 2018; 20170176 2. J Econ (2017) 121:239–253 3. J Econ (2017) 122:137–154
25	2019/01/14	張閔淳 陳逸軒	1.Effects of indirect taxation in a mixed oligopoly	1.Economics Letters 58 (1998) 199–204 2. J Econ (2017)

			2. International asymmetric R&D rivalry and industrial Strategy	122:267–278
26	2019/01/21	王智永	Manufacturer collusion: Strategic implications of the channel structure	J Econ Manage Strat. 2017;26:923–954.
27	2019/02/11	陳力誠	Bundling and joint marketing by rival firms	J Econ Manage Strat. 2017;26:571–589.
28	2019/02/18	廖鈺琳	Licensing Essential Patents: The Non-Discriminatory Commitment and Hold-Up	Working paper
29	2019/02/25	王智永	The efficiency of competing vertical chains with network externalities	Economics Letters 168 (2018) 1–5
30	2019/03/04	陳力誠	Piracy, Imitation, and Optimal Copyright Policy	Southern Economic Journal 2018, 84(3), 815–830
31	2019/03/11	廖鈺琳	Vertical integration and knowledge disclosure	Economics Letters 177 (2019) 9–13
32	2019/03/18	王智永	Entry License Tax: Stackelberg versus Cournot	Journal of Institutional and Theoretical Economics – ISSN 0932-4569
33	2019/03/25	楊雅博	Export Susbsdies and International Market Share Rivalry	Journal of International Economics 18 (1985). 83-100.
34	2019/04/01	洪子洋	Local content and emission taxes when the number of foreign firms is endogenous	J Econ (2017) 122:239–266
35	2019/04/08	許淑嫕	Selective penalization of	Economic Theory 25,

			polluters: an inf-convolution approach	421–454 (2005)
36	2019/04/15	吳世傑	Globalization and Market Structue	Journal of the European Economic Association April–May 2003 1(2–3):245–271
37	2019/04/22	蔡建樹	The strategic incentive of corporate social responsibility in a vertically related market	International Review of Economics and Finance 59 (2019) 88–97
38	2019/04/29	許峻瑋	Foreign direct investment as a signal	Rev Int Econ. 2018;26:60–83.
39	2019/05/06	李仁耀	Production externality and productivity of labor	Revista de Economía Pública, 196-(1/2011): 65-78
40	2019/05/13	佘志民	Multidivisional firms, internal competition, and comparative advantage: Baye et al. Meet Neary	Journal of International Economics 116 (2019) 50–57
41	2019/05/20	鄭義暉	Multi-dimensional price discrimina	International Journal of Industrial Organization 31 (2013) 417–428
42	2019/05/27	陳宏易	關稅簡化、垂直差異化產品和社會福利	Working paper
43	2019/06/03	王瑞升	On the revenue implications of trade liberalization under imperfect competition	Economics Letters 88 (2005) 27–31
44	2019/06/10	郭柔廷	Strategic corporate social responsibility, imperfect competition, and market concentration	Journal of Economics
45	2019/06/17	吳宜欣	Input pricing by an	Research in Economics 65

			upstream monopolist into imperfectly competitive downstream maekets	(2011) 144–151
46	2019/06/24	王瑞升	Optimal Production Tax In a Mixed Market with endogenous Market Structure	The Manchester School 1–13 March 2019

(二) 邀請國內、外經濟學者互動交流

研究群邀請之國內外講員如下表 3，過程中大家討論熱烈，也收獲許多。

表 3 研究群邀請支國內外講員

來訪日期	姓名	任職單位與職稱	報告題目
2018/10/01	王鳳生	國立高雄大學榮譽講座教授	Network Externalities, Subsidization and Privatization in Mixed Duopoly with Excess Taxation Burden
2018/12/17	賴孚權	中央研究院 人文社會科學研究中心 研究員	Downs meets d'Aspremont and company: Convergence versus differentiation in politics and the media
2019/05/27	陳宏易	東吳大學國際經營與貿易學系教授	關稅簡化、垂直差異化產品和社會福利

(三)究群成員一年來的研究成果

本研究群成員的學術研究成果如下：

(1) 五年來發表期刊論文共37篇，SSCI經學門24篇(含A 級：1篇，B^+ 級：8篇，B級：9篇，其它：6篇)，TSSCI經學門第A級：5篇，其它：8篇。研討會論文共8篇。進行中論文共9篇。碩士論文3篇。

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1. Ku-ChuTsao,Shih-Jye Wu,Jin-Li Hu and Yan-Shu Lin (2019).Subcontracting Bargaining Power and the Trade Policy. ***The Journal of International Trade & Economic Development*** , 28(1), 82-100.(SSCI)

2. Sajal Lahiri, Yingyi Tsai (2018). Foreign Penetration and Domestic Competition. J***ournal of Economics. (Accepted).*** **(SSCI B).**

3. Jingjing Zhang, Riccardo Leoncini, Yingyi Tsai (2018). Intellectual property rights protection, labour mobility and wage inequality. ***Economic Modelling***, 70, 239-44. (SSCI,).

4. Cheng, K.F., C.S. Tsai, C.C. Hsu, S.C. Lin, T.C. Tsai, and J.Y. Lee, (2018), Emission Tax and Compensation Subsidy with Cross-Industry Pollution, Sustainability, 11, 998.

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6. Tsai, Ting-Chung., Cheng, Kuang-Feng., Hsu, Chu-Chuan., Tsai, Chien-Shu., Chen, Chien-chih. and Lee, Jen-Yao. (2019), Does Uniform Wage Decline the Welfare in a Budget-Constraint Mixed Market? ***Modern Economy,*** 10, 474-483. (EconLit)

7. Hsu, Su-Ying and Chu-Ping Lo (2018), "Market Concentration and Licensing Royalty inAsymmetric Oligopoly," ***Academia Economic Papers***, 46(4), 637-670.**[TSSCI]**

8. Tsung-Kai Chu, Han-Yu Liu and Su-Ying Hsu (2018), "A Comparative Study of CustomerBehaviors in Brand Image and Peer Pressure-the Case of S University," ***Journal of Advertising and Public Relations***, 1(2), 1-8.

9. Novak, Marko and Su-Ying Hsu (2018), "Profitability of Banks in the Serb Republic," ***Applied Science and Management Research*** 5(1).

10. Chiang-Ming Chen, Chih-Min She and Yu-Chen Lin (2018, Jul). The effect of travel experience on price-satisfaction link - evidence from group package tours. ***Current Issues in Tourism***. (Accepted). (SSCI).

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1. **佘志民、楊雅博、吳世傑** (2017)，「啞鈴模型與風險趨避廠商的區位選擇」，***經濟論文***，45:4，頁 627-659。**(TSSCI一級)**

2. Hwang, Horn, Mai, Cho-Cheng, and **Wu, Shih-Jye** (2017), "Tariff escalation and vertical market structure", ***The World Economy,*** Vol. 40, 1597-1613. (**SSCI B+**)

3. **Lee, J.Y.,** and Leonard F.S. Wang (2017), "Foreign Competition and Optimal Privatization with Excess Burden of Taxation," ***Journal of Economics*****.** (Accepted) (**SSCI B**)

4. Hsu, C.C., **J.Y. Lee** and Leonard F.S. Wang, (2017), Consumers Awareness and Environmental Policy in Differentiated Mixed Oligopoly, ***International Review of Economics and Finance***, 51, 444-454. (**SSCI B+**)
5. Angela C. Chao, **Jen-yao Lee** and Leonard F.S. Wang (2017), "Stackelberg Competition, Innovation and Social Efficiency of Entry," ***The Manchester School.*** 85(1),1-12. (**SSCI, B**).

6. Alireza Naghavi, Shin-Kun Peng, Yingyi Tsai* (2017). Relationship-specific Investments and Intellectual Property Rights Enforcement with Heterogeneous Suppliers. ***Review of International Economics***, 25(3), 626-648. (**SSCI B+**)

7. 4. Yingyi Tsai* and Arijit Mukherjee (2017). Domestic patenting systems and foreign licensing choices. ***Journal of Economics,*** 121 (2); 173-191. (**SSCI B**).

8. Lei Yang, Yingyi Tsai*(蔡穎義) and Arijit Mukherjee (2016, Feb). Intellectual Property Rights and the Quality of Transferred Technology in Developing Countries. ***Review of Development Economics,*** 20(1), 239-249. (**SSCI B**). .

9. Lo, C. P. and Hsu, S. Y. (2016). International Outsourcing, FDI, and Middleman Strategy. ***Transylvanian Review ,*** Vol 14 (5), 421-431.

10. Yingyi Tsai, Arijit Mukherjee, Jong-Rong Chen (2016, Jan). Host market competition, foreign FDI and domestic welfare. ***International Review of Economics and Finance***, 42(1), 13-22. (**SSCI, B+**)..

11. 蔡明芳、楊雅博，(2016)。"技術授權與最適貿易政策"，***經濟論文叢刊***，44(4),641-658。(**TSSCI 一級)**。

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16. Hong Hwang and Chao-Cheng Mai and Ya-Po Yang (2015), “Specific vs. Ad Valorem Strategic Export Subsidies with Taxation Distortion”’ ***Review of Development Economic***s ,19,820-828.(**SSCI B**).

17. Leonard F.S. Wang, Angela C. Chao, Jen Yao Lee (2015). “R&D and Social Inefficiency of Entry.” Journal of Industry, Competition and Trade. 15(2) 181-187.

18. Chih-Min She (2015), “What Determines the Technology Adoption of Firms under Optimal Tax?” ***International Review of Economics and Finance,*** 37, 274-89. (**SSCI, B+**).

19. 楊雅博，許淑嫕, (2015) “開放經濟體系下之環境政策: 跨界污染與區域污染”, ***東吳經濟商學報*** 88期 45-72.

20. Arijit Mukherjee, Yingyi Tsai* (2014, Mar). Managerial delegation, cost asymmetry and social efficiency of entry. ***Economic Record***, 90(288), 90-97. (**SSCI, B**).

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27. 吳世傑、陳宏易（2014年）。代工出口與貿易政策。***經濟論文叢刊***，42(3), 333-361。(**TSSCI一級**)。

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1. Ya-Po Yang, Li-Cheng Chen (2019), Certification of Green goods and Export Policy : Tokyo 38th International Conference on “ Business, Economics, Social Science & Humanities- BESSH-2019”
2. Ya-Po Yang, Chih-Yung Wang, (2019), Trade Policies, Collusion and Welfare : Tokyo 38th International Conference on “ Business, Economics, Social Science & Humanities- BESSH-2019”
3. 楊雅博與廖鈺琳："混合寡占與進口政策", 2019 國際商務研討會 主辦單位: 淡江大學國際企業學系
4. 吳世傑、楊雅博與佘志民(2016)，啞鈴模型與風險趨避廠商的區位選擇，台灣經濟學會2016年年會暨當代經濟議題學術研討會。
5. 佘志民與楊雅博(2016)，Endogenous Location and Spatial Discrimination in Input Market with Fixed Cost，台灣經濟學會2016年年會暨當代經濟議題學術研討會。許竹筌、李仁耀與蔡建樹(2016)，Production Externality, Bargaining Wage, Pollution Tax and Compensation Schemes，台灣經濟學會2016年年會暨當代經濟議題學術研討會。
6. Chih-Min She (2016, Jul). Endogenous Location and Spatial Price Discrimination with Public Infrastructure. PET 2016 (Association of Public Economics Theory)
7. Chih-Min She and Ya Po Yang (2016)，Uniform vs Discriminatory Pricing in Spatially Separate Market. 2016 International Conference on Business and

Information.

8. Wu, Shih-Jye, Che-Wen Wu, and Hung-Yi Chen, (2015)Optimal import tariff rate toward a multinational firm with alternative channels of market entry, presented at the Bilateral International Meeting of WEAI, Wellington, New Zealand-.

(3)成員進行的works in progress(working paper共9篇)

1. Ya Po Yang, Nov 2019. “On the Certification of credence in an Oligopoly market,” *Working Paper.*
2. Chih-Min She, Aug 2018. “Effects of Spatial Price Discrimination with an Input Source.” *Working Paper.*
3. Yang, Y. P. Jul 2019. “Fixed Cost, Location and Social Welafre .” *Working Paper.*
4. Shih-Min She and Leonard F.S. Wang, 2019 “Market Structure, Private Goods and Public Goods”。
5. Leonard F.S. Wang. Yang, Y. P., Qidi Zhang. (2019). Ad Valorem vs. Specific Tariff, Privatization and Global Welfare
6. Leonard F.S. Wang. Yang, Y. P., Qidi Zhang. (2019), Ad Valorem vs. Specific Tax, Privatization with Social Cost of Public Funds
7. Yang, Y. P. Leonard F.S. Wang., (2019).. Strategic CSR and Trade Policies.
8. Lee, Jen-yao; Tsai, Chien-shu; Wang, Leonard,(2018), Foreign Ownership, Strategic Export Policy and Optimal Discriminatory Tariffs,
9. Su-Ying Hsu, Lo, Chu-Ping and Shih-Jye Wu, (2018) “Foreign Intermediate Market and Downstream Privatization,”。

(4)研究群培育的博碩士論文(共碩士論文3篇)

1. 廖鈺林，” 混合寡占與進口關 ”, 2019 國立高雄大學經營管理碩士，指導教授

楊雅博。

2. 王智永，”勾結，貿易政策與福利”，2019國立高雄大學經營管理碩士　論文指導教授楊雅博。

3. 陳力誠，”環境品質認證標準與出口補貼政策”， 2019國立高雄大學應用經濟系碩士　論文指導教授楊雅博。

(5)成員於研究群中發表的演講

研究群成員於研究群中發表的演講如下表4，過程中大家討論熱烈，也獲得許多有趣的研究題材。

表 4 研究群成員於研究群中發表的演講

項次	日期	報告人	篇名	出處
1	2018/08/20	楊雅博	Strategic CSR and Trade Policies	Working paper
2	2018/10/29	吳世傑	Exclusive contracts with complementary inputs	International Journal of Industrial Organization 56 (2018) 145–167
3	2018/11/05	許淑嫕	Social Responsibility and Market Concentration in an Oligopoly	Working paper
4	2018/11/12	李仁耀	Optimal privatization and uniform subsidy policies: A note	Journal of Public Economic Theory. 2018;1–8.
5	2018/11/19	楊雅博	Ad Valorem vs. Specific Tax/Subsidy, Privatization and Welfare	Working paper
6	2018/12/03	蔡建樹	Dynamic Privatization Policy	The Manchester School Vol 00 No. 00 00–00 Month 2018
7	2019/03/25	楊雅博	Export Susbsdies and International Market Share Rivalry	Journal of International Economics 18 (1985). 83-100.
8	2019/04/08	許淑嫕	Selective penalization of	Economic Theory 25,

			polluters: an inf-convolution approach	421–454 (2005)
9	2019/04/15	吳世傑	Globalization and Market Structue	Journal of the European Economic Association April–May 2003 1(2–3):245–271
10	2019/04/22	蔡建樹	The strategic incentive of corporate social responsibility in a vertically related market	International Review of Economics and Finance 59 (2019) 88–97
11	2019/05/06	李仁耀	Production externality and productivity of labor	Revista de Economía Pública, 196-(1/2011): 65-78
12	2019/05/13	余志民	Multidivisional firms, internal competition, and comparative advantage: Baye et al. Meet Neary	Journal of International Economics 116 (2019) 50–57
13	2019/05/20	鄭義暉	Multi-dimensional price discrimina	International Journal of Industrial Organization 31 (2013) 417–428

五　結　論

從本研究群成員在計畫執行期間，共報告 49 篇文章，自 2014 獲得人社中心研究群的經費補助以來，共有 37 篇文章刊登或接受刊登於經濟學專業期刊，其中 SSCI 期刊有 24 篇，包括一篇刊登於 ***Canadian Journl of Economics***，經濟學門列為 A 的期刊，以及經濟學門列為 B+的期刊 8 篇。在微薄的經費補下，可謂研究成果豐碩，也達到初步達到提升南部學術水準的目的。

附　件　一：研究群歷次討論簽到表及會議記錄

國立高雄大學貿易與產業經濟理論討論會　報告人：陳力誠　　2018/07/02

篇名	*Vertical licensing, input pricing, and entry*
作者	*Elpiniki Bakaouka [a], Chrysovalantou Milliou [b]* *a Department of International and European Economic Studies, Athens University of Economics and Business, Athens 10434, Greece*
出處	International Journal of Industrial Organization
摘要	This paper explore the incentives of a vertically integrated incumbent to license the production technology of its core input to an external firm, transforming the licensee into its input supplier. They find that the incumbent opts for licensing even when licensing also transforms the licensee into one of its direct competitors in the final products market. In fact, the licensee's entry into the final products market, although it increases the competition and the cost that the licensor faces, reinforces the licensing incentives. Furthermore, the licensee's entry augments the positive welfare implications of vertical licensing.
研究動機	Original brand manufacturers often license the production technology of their core inputs to external firms. Such a practice transforms the licensees into the licensors' input suppliers and potentially also into their direct competitors in the final products market. Does a firm license its input production technology to an external firm when licensing can cause the licensee's entry into its final product market? How does the transformation of the licensee into a rival affect the licensing incentives? What is the role of input pricing? Is vertical licensing welfare-improving?
模型	This paper consider a framework in which two competing incumbents produce two final goods using an input that they initially produce in-house. One incumbent considers licensing its input production technology to an external firm for a fixed licensing fee. When licensing takes place, the licensee produces the input for the licensor and the two firms trade through a two-part tariff contract whose terms are determined through bargaining. They consider what happens both when the licensee enters into the final goods market and competes with the incumbents in quantities - the 'entry case' - and when it does not enter - the 'no entry case'. They consider a market consisting initially of two firms, firm 1 and firm 2. Each firm i, with i = 1,2 , produces a differentiated final good using, in a one-to-one proportion, a core input that it produces in-house at marginal cost c . Both firms hold a patent for their input production technologies. One of them, without loss of generality firm 1, considers licensing its input production technology to an external firm, firm S, for a fixed licensing fee, $F \geq 0$. When licensing takes place, the licensee (firm S) is in the position to produce the licensor's (firm 1's) input at marginal cost c .

研究結果	This paper find that independently of whether the licensee enters into the final go o ds market or not, the incumbent always opts for licensing. The key drivers of licensing, however, differ substantially among the entry and the no entry case. In the no entry case, licensing is driven by input pricing. Specifically, just as under strategic delegation, the input producer - the licensee - subsidizes the licensor by setting the wholesale price below the input's marginal cost. They refer to this as the input pricing effect of licensing. The licensee does so because it can extract part of the resulting higher profits of the licensor through the fixed fee of the two-part tariff. Clearly then, in the no entry case, the licensor enjoys a cost-advantage relative to the other incumbent. In fact, due to this cost-advantage, it is willing to license its input production technology even for free when its bargaining power is sufficiently high. In contrast, in the entry case, the licensee sets the wholesale price above the input's marginal cost, increasing the licensor's cost. In addition, the number of downstream competitors increases and, thus, competition is intensified. They refer to this as the competition intensification effect of licensing.
研究貢獻	They have examined the incentives of a vertically integrated incumbent to license its input technology to an external firm. They have shown that licensing emerges in equilibrium not only when the licensee does not enter into direct competition with the licensor, but also when it enters. In fact, they have shown that when the licensee enters into the final products market, although competition becomes more intense, the licensing incentives are stronger.
未來研究方向	If they had assumed that the incumbent produces the input at a lower cost than the potential licensee (e.g., due to complementary skills), in-house production could also arise in equilibrium. In-house production could also arise if they had incorporated into the analysis factors such as unobservability of the input's quality and production cost, costly investments in input improvement and the use of incomplete contracts. The joint consideration of these factors is left for future research.

篇名	*Competition Intensity, R&D Investment and Vertical Contract*
作者	*Xingtang Wang , Leonard F.S. Wang , Jie Li* *a Institute of Industrial Economics, Jinan University, Guangzhou, P.R. China* *b Wenlan School of Business, Zhongnan University of Economics and Law, Wuhan, P.R. China* *c Institute of Industrial Organization and Regulation, Institute of Industrial Economics, Jinan University, Guangzhou, P.R. China*
出處	Working paper
摘要	This paper investigate the relationship between the competition intensity in downstream market and R&D expenditure when there is bargaining between downstream firms and upstream firms over a two-part-tariff. This paper find that: (i) the equilibrium R&D investment levels of downstream firms are increasing in competition intensity, which supports the pro-competitive view in the literature; (ii) if the degree of product differentiation is larger, R&D activities are insufficient relative to socially optimum; if the degree of product differentiation is lower，when the downstream market is not particularly competitive, R&D activities are insufficient relative to socially optimum, otherwise, R&D activities are excessive.
研究動機	Shubik and Levitan (1980) find that product differentiation does not affect the market size and the role of product differentiation is to reduce the intensity of product market competition. The degree of product differentiation will affect the R&D investments (Lin and Saggi, 2002; Rosenkranz, 2003; Lambertini & Mantovani, 2010; Mukherjee, 2014), motivation of this article introduce the product differentiation in the basic model.
模型	This paper consider an economy with two downstream firms, denoted by D_1 and D_2, producing perfectly substitutable commodities, for which the market demand function is given by $p = 1 - q_1 - q_2$. Downstream firm D_i' s marginal production cost c_i depends on R&D expenditure I_i. Each downstream firm i chooses its output q_i independently. The upstream firms, denoted by and U_1 and U_2, supply a homogeneous intermediate input to downstream firms, through two-part tariff contracts involving an up-front fixed-fee F_i, and a per-unit price w_i. The upstream firms produce the input at a constant marginal cost, which we normalize to be zero. We assume that one unit of input is required to produce one unit of output. The pay off $D_i(i = 1,2)$ is given by $\Omega_i = \pi_i - \alpha\pi_j(i \neq j)$, where π_i is profit of D_i and $\alpha \in (-1,1)$ indicates the severity of competition intensity. $D_i's$ profit π_i is given by $\pi_i = [p_i - c_i(I_i)]q_i - I_i - (w_i q_i + F_i)$. It is assumed that $c_i' \leq 0$ and that c_i'' is positive and sufficiently large so as to satisfy the

	second-order condition at the first stage. We consider a three stage game. At stage 1, $D_i(i=1,2)$ respectively chooses its R&D level, I_i, At stage 2, upstream firms are involved in decentralized bargaining with downstream firms to determine the terms of the two-part tariff contracts involving an up-front fixed-fee, F_i, and a per-unit price, w_i. At stage 3, the two downstream firms compete á la Cournot. We solve the game through backward induction.
研究結果	**Proposition 1**. The equilibrium R&D investment level I^* of downstream firm i is increasing in α. **Proposition 2** Suppose that two downstream firms make their R&D investments independently, then (i)The socially optimal R&D investment level I^{**} is decreasing in α. (ii) $I^* > I^{**}$ for $0 < \alpha < 1$ and $I^* < I^{**}$ for $-1 < \alpha < 0$. **Proposition 3.** When the downstream firms produce differentiated products, (i) the equilibrium R&D investment level $\tilde{I}$, of downstream firms is increasing in α, i.e., $\frac{\partial \tilde{I}}{\partial \alpha} > 0$, (ii) the relationship between the equilibrium R&D level and the degree of horizontal product differentiation is as follow: $\begin{cases} \frac{\partial \tilde{I}}{\partial \gamma} \le 0 \ \ if \ \ -1 < \alpha \le \bar{\bar{\alpha}}(\gamma) \\ \frac{\partial \tilde{I}}{\partial \gamma} > 0 \ \ if \ \ \bar{\bar{\alpha}}(\gamma) < \alpha < 1 \end{cases}$ **Proposition 4.** When the downstream firms produce differentiated product, (i) the socially optimal R&D investment level $\tilde{\tilde{I}}$ of downstream firms is decreasing in α i.e., $\frac{\partial \tilde{\tilde{I}}}{\partial \alpha} < 0$; (ii) the socially optimal R&D investment level $\tilde{\tilde{I}}$ of downstream firms is increasing in the degree of horizontal product differentiation i.e., $\frac{\partial \tilde{\tilde{I}}}{\partial \gamma} < 0$. **Proposition 5.** When the downstream firms produce differentiated products, we have the following When $0 < \gamma \le \frac{\sqrt{17}-3}{2}$, $I^{\Delta} \le I^{\Delta\Delta}$; When $\frac{\sqrt{17}-3}{2} < \gamma < 1$, $\begin{cases} I^{\Delta} \le I^{\Delta\Delta}, \ if \ 0 < \alpha \le \bar{\bar{\alpha}}(\gamma) \\ I^{\Delta} > I^{\Delta\Delta}, \ if \ \bar{\bar{\alpha}}(\gamma) < \alpha < 1 \end{cases}$
研究貢獻	This paper highlights the important role that intensity of competition may play in downstream firms' R&D decision under a vertical market structure. Similar to Matsumura et al. (2013), our paper proposes a tractable oligopoly model that incorporates both positive and negative reciprocal preferences of Firms.
未來	None

研究方向	

篇名	*Export cartel and consumer welfare*
作者	*Arijit Mukherjee , Uday Bhanu Sinha*
出處	Review of International Economics, 2018
摘要	The purpose of this paper is to show that export cartels are not necessarily harmful for consumers in the importing countries. Using the strategic trade policy model of Brander and Spencer (1985a), and show that, contrary to the harmful effect, product-market cooperation benefits consumers by affecting the trade policies. The paper further show that consumers in the importing countries are affected adversely if cooperation is among the governments of the exporting countries, instead of the exporting firms.
研究動機	During 1990s, both the USA and the European Union successfully prosecuted more than forty international export cartels (Levenstein et al., 2004). International export cartel is a serious concern for many developing countries. Many countries provide exemptions to export cartels either explicitly or implicitly. The prosecutions of such export cartels are rather limited due to the lack of international coordination between antitrust agencies. In this context, various scholars have expressed concerns about the impact of such international cartels on the importing countries. More generally, cooperation among the competing firms raises serious scepticism among economists, policy makers and legal experts. While there is controversy about the beneficial effects of product-market cooperation on innovation, recent works show that there exist other channels through which product-market cooperation create positive effects on the consumers. Symeonidis (2008) and Mukherjee (2010) show that product-market cooperation may benefit the consumers in the presence of input market imperfection. While the focus of Symeonidis (2008) was on firm-specific input suppliers, Mukherjee (2010) considered the situation where all firms need to buy some critical inputs, such as labour, from an industry-wide input supplier.
模型	Considering a model similar to Brander and Spencer (1985a). Assume that there are two foreign countries, country 1 and country 2. Each country has one firm. Call the firms in countries 1 and 2 as firm 1 and firm 2 respectively. Assume that the firms sell their products in another country, called domestic country. The inverse market demand function in the domestic country is $P = 1 – q$. The paper normalise the marginal costs of production of both firms to zero, for simplicity. Assume that the foreign countries are engaged in strategic trade policies and provide subsidies (taxes, if the variable is negative) to their own firms. The paper consider the following game. At stage 1, countries 1 and 2 simultaneously determine the per-unit export subsidies/taxes given to respective firms. At stage 2, both firms choose their outputs simultaneously, and the profits are realised. Solving the game through

	backward induction. Given the export subsidies $s_1$and s_2 provided by countries 1 and 2 to firms 1 and 2 respectively, firms 1 and 2 maximise the following expressions respectively to determine their outputs $\max_{q_1}(1-q+s_1)q_1+\alpha(1-q+s_2)q_2$ (1) $\max_{q_2}(1-q+s_2)q_2+\alpha(1-q+s_1)q_1$ (2) The term a Î[0,1] is the "coefficient of cooperation", as introduced by Cyert and deGroot (1973), and later used by others such as Symeonidis (2000 and 2008), Mukherjee (2010) and Escrihuela-Villar (2012). It captures firm's behaviour towards cooperation in the product market. If a = 0 , the maximisation problem reduces to the standard non-cooperative Cournot maximisation problem, while a =1 implies that the firms are interested in joint profit maximisation. The intermediate values of a show imperfect or partial cooperation among the firms.
研究結果	In this paper, showing a new beneficial effect of product-market cooperation on the consumers. The paper show that even if the firms are not engaged in innovation and there is no input market imperfection, product-market cooperation among the firms may make the consumers better off in the presence of strategic trade policies. Hence, the paper show that export cartel may create positive effects on the consumers in the importing country.
研究貢獻	The paper show that this conclusion may not hold true in a world with strategic trade policies. In a strategic trade model of Brander and Spencer (1985a), and show that, contrary to the traditional harmful effect, product-market cooperation among the firms increases consumer surplus through its favourable effect on the trade policies. Hence, cooperation among the exporters is not necessarily bad for the importing countries in the presence of strategic trade policies. Thus, their analysis raises some pertinent questions regarding the harmful effect of international export cartel, and also show that the consumers in the importing country are affected adversely if the cooperation is among the governments of the exporting countries, instead of the exporting firms. Their results hold under different types of product-market competition, viz., quantity and price competition.
未來研究方向	我們可考慮出口國政府勾結的提出出口補貼政策而進口國採取不同進口關稅政策下的情況。

篇名	*Profit-sharing licensing*
作者	*Shuai Niu* *School of Economics, Shandong University, Republic of China*
出處	Journal of Economics
摘要	Profit-sharing licensing is quite a common business practice. In a Cournot duopoly model, they showed that if not subject to any restrictions this kind of technology for equity deal would lead to a decline in industry output and hurt consumers. To avoid the industry output contraction and protect the interests of consumers, the government can intervene in licensing by requiring that the profit-sharing rate specified by a licensing contract should not exceed the percentage difference of involved firms' equilibrium outputs before licensing.
研究動機	Among all the licensing forms, the incidence of profit-sharing licensing is relatively high. In an empirical research based on a data set of licensing agreements between India manufacturing firms and multinationals between 1989 and 1993, Vishwasrao (2007) found that about one quarter of the agreements involve equity purchases. Although profit-sharing licensing is quite a common business practice, the theoretical analysis on this phenomenon, especially when it takes place between competing firms, is very few. To fill the gap between theory and reality is the motivation for this paper.
模型	Consider an industry comprised of two firms, firm 1 and firm 2. Suppose initially there is a difference in productivity between the two firms. Specifically, firm 1 owns a process innovation and she produces more efficiently than firm 2. Given the difference in productivity, the two firms may get together to negotiate on an innovation for equity deal. Once agreement is reached, firm 2 obtains the right to use firm 1's process innovation and firm 1 in return receives an equity stake in firm 2. Suppose that firm 1 and firm 2 produce homogeneous good and they engage in quantity competition. Without licensing, each firm sets quantity to maximize its own profit. A profit-sharing licensing arrangement affects the quantity decision in two ways. Firstly, by transferring the process innovation to firm 2 it raises firm 2's productivity and encourages her to increase production. Secondly, by creating a pecuniary correlation between firm 1 and firm 2 it reduces firm 1's incentives to increase output.
研究結果	In the duopoly structure of this paper, it is shown that the effect of the pecuniary correlation dominates and industry output declines after licensing. To avoid the industry output contraction and protect the interests of consumers, the government can intervene in licensing by setting an upper threshold for the profit-sharing rate of a licensing contract. Specifically, the government can require that the proportion of shares of the licensee transferred to the licensor should not exceed the percentage difference of these

	two firms' equilibrium outputs before licensing.
研究貢獻	In this paper, they analyzed the innovation for equity deal (known as profit-sharing licensing) between competing firms, explored the welfare implications of this business practice, and formulated some policy recommendations. In a Cournot duopoly model, they found that if not subject to any restrictions profit-sharing licensing would lead to a decline in industry output and hurt consumers. To protect the interests of consumers, the government can intervene in licensing by setting an upper bound for the profit-sharing rate of a licensing contract. Specifically, the government can require that the proportion of shares of the licensee transferred to the licensor should not exceed the percentage difference of these two firms' equilibrium outputs before licensing.
未來研究方向	None

篇名	*Market Power of the Input Supplier, Technology Ttamsfer and Consumer Welfare*
作者	*JIYUN CAO [a], ARIJIT MUKHERJEE [b]* *a The School of Economics, Nankai University and Collaborative Innovation Center for China Economy, China* *b Nottingham University Business School, UK, CESifo, Germany, INFER, Germany and GRU, City University of Hong Kong, Hong Kong*
出處	The Manchester School Vol 85 No. 4 430–449
摘要	It is believed that market power of the input supplier, charging a linear price, is detrimental for the consumers since it creates the double marginalization problem. They show that this view may not be true if the final goods producers can adopt strategies to reduce rent extraction by the input supplier. Market power of the input supplier may encourage a final goods producer either to license its technology to a competitor with a cost advantage or to adopt a less distortionary technology licensing contract. Both these effects may create higher consumer welfare under market power of the input supplier compared to a competitive input market.
研究動機	It is usually believed that market power of the input supplier, charging a linear price, is detrimental for the consumers, as it creates the 'double marginalisation problem', thus creating a concern for antitrust authorities. They show in this paper that the above view may not be true if the final goods producers can adopt strategies to reduce rent extraction by the input supplier.
模型	Consider two countries, called domestic and foreign. There is a world market consisting of these countries. There is a firm, firm 1, in the domestic country, which has a patented technology for the product. We assume that production requires only labour and firm 1 requires λ ($0 < \lambda < 1$) workers to produce one unit of the output. We assume that the competitive wage in the domestic country is c. 1. Competitive labour market: In this situation, the domestic labour market is perfectly competitive and the equilibrium domestic wage is equal to the competitive wage, c. 2. Unionised labour market: In this situation, a labour union in the domestic country sets the wage, w, to maximise its utility $U = (w-c)^{\alpha}L^{1-\alpha}$, where L is employment and α, $0 < \alpha < 1$, (resp.$(1-\alpha)$) shows the labour union's preference for wage (resp. employment). They consider a right-to-manage model of labour union, where the labour union has full bargaining power in determining the wage and the firm hires workers according to its requirement.

研究結果	Considering a monopolist final goods producer, we show that the presence of a labour union induces a monopolist producer to license its technology to a foreign firm, thus creating product-market competition and reducing the unionised wage. As a result, the presence of a labour union makes the consumers better off compared to the situation with no labour union (or a competitive labour market).
研究貢獻	It is generally believed that if the input supplier charges a linear price, market power of the input supplier increases the input price and the final goods price, thus making the consumers worse off compared to the situation with a competitive input market. We show in this paper that this view may not be correct if the final goods producers can adopt strategies to bypass market power of the input supplier.
未來研究方向	None.

篇名	*Negotiating a uniform emissions tax in international environmental agreements*
作者	*David M. McEvoy , Matthew McGinty*
出處	Journal of Environmental Economics and Management, 2018.
摘要	A consensus appears to be emerging that a global carbon tax is the best policy for managing greenhouse gas emissions. Emissions tax systems are relatively straightforward, cost effective and can generate revenues used to offset other distortionary taxes. Moreover, recent theoretical research (Weitzman, 2014) has demonstrated that under some conditions the globally efficient tax rate can be implemented through a majority voting rule. The paper extend this area of research by examining a uniform emissions tax system in the framework of an international environmental agreement in which only countries that voluntarily participate are subject to the tax. The paper show that in the simplest situation in which countries have identical marginal benefit and cost functions, the largest stable agreement consists of two countries and the tax system has little impact on abatement levels. Their analysis highlights that by ignoring the participation decision and assuming commitment by all parties, the efficiency gains from a uniform emissions tax system are overstated.
研究動機	None
模型	Begin by considering a world with m countries, each indexed by i = 1, 2,…,m that make decisions regarding emissions abatement levels. Country i's abatement level is denoted as xi and the aggregate abatement level is X=$\sum_{i=1}^{m} x_i$. The paper intentionally choose benefit and cost functions that lead to the marginal functional forms proposed by Weitzman (2014). It is important to note that the m players in their model are specified as countries while the m players in Weitzman (2014) are individuals. While there are no practical differences in the way the two models are analyzed, there are differences in the interpretations. The paper assume a country acts as a single player to maximize its individual payoff. Presumably the country is acting on behalf of it citizens and perfectly embodies their preferences. The benefit to country i from aggregate abatement X is $B_i(X)=b_iX-\frac{\beta}{2}X^2$ (1) and the marginal benefit of abatement, from Weitzman (2014), is $B_i'(X)=b_i-\beta X$ (2) The cost of abatement depends only on individual abatement *xi* and is $C_i(x_i)= c_ix_i+\frac{\gamma}{2}x_i^2$ (3) thus the marginal abatement cost, fromWeitzman (2014), is $C_i'(x_i)=c_i+\gamma x_i$ (4)

研究結果	With identical countries, the paper show that stable coalitions can be no larger than two members under a uniform tax regime. They also demonstrate that IEA members (of any agreement size) will propose a uniform emissions tax that maximizes both individual and collective welfare of the members. Indeed, when countries are identical quantity-based IEAs and price-based IEAs lead to the same outcome. The important implication is that when countries are identical, only a small fraction of countries will join an IEA and reduce their emissions regardless of whether the policy regime is quantity based or price based. The advantages of the "countervailing force" of an emissions tax system unravel when participation in the tax regime is voluntary. The problem of internalizing externalities through voluntary arrangements has also been introduced outside of the IEA literature, and their findings relate to that research as well. Their findings contribute to the ongoing discussion on how to design effective international environmental agreements. The promise of a uniform emissions tax as modeled in the literature has important implications for future treaties, and therefore the mechanism deserves close scrutiny. The remarkable result that a decentralized tax system can lead to efficient transboundary resource management is the product of a strong implicit assumption of reciprocity in a one-shot game; that is, each player is assumed to tax carbon at the globally determined price when others do so. They analyze the uniform emissions tax mechanism without making an assumption of full participation and obtain very different results.
研究貢獻	The paper combine the tax mechanism and functional forms from Weitzman (2014) with the participation decision and stability requirements from the IEA literature. They show that in the simplest scenario in which countries have identical marginal benefits of abatement (and therefore satisfying the efficiency criteria in Weitzman (2014)) agreements with more than two countries cannot be stable. With a global environmental problem like climate change this result suggests that an IEA based on a uniform emissions price is unlikely to improve efficiency compared to unilateral management. The countervailing force of an emissions tax is absent when only a small subset of countries participate.
未來研究方向	The paper modeling approach ignores a multitude of other incentives countries may have to join an international agreement. Research shows that a willingness to cooperate is not just based on evaluating own payoffs, but can be influenced by preferences toward equity and responsibility. There may also be positive reputation effects from cooperating on one global initiative that can spill over to other policy domains. In some cases countries cooperate in order to demonstrate a leadership role in the international community. Acknowledging the limitations of this model, however, does not dilute the fundamental result of the paper; that is, by ignoring the participation decision and assuming commitment by all parties, the efficiency gains from a uniform emissions tax system are likely overstated.

國立高雄大學貿易與產業經濟理論討論會　報告人：楊雅博　　2018/08/20

篇名	Strategic CSR and Trade Policies
作者	楊雅博 [a]，王鳳生 [b] a　高雄大學經營管理研究所 b　中南財經政法大學
出處	*Working paper*
摘要	本文建立一個三國兩廠商的進出口模型，以探討當兩出口廠商採取策略性CSR時，進口國的最適進口關稅政策及相關的福利效果。本文發現：(i)當進口國採取單一關稅時，兩出口廠商的策略性CSR隨著兩出口品的替代程度提高呈先遞減後遞增；當進口國採取差別關稅時，兩出口廠商的策略性CSR隨著兩出口品的替代程度遞減，而且當兩出口產品的替代性較小(大)時，單一關稅下的策略性CSR程度小(大)於差別關稅。(ii)當兩出口廠商採取策略性CSR時，兩出口產品的替代性較小(大)時，進口國會採取差別(單一)關稅，此結果與文獻的結果截然不同。(iii)當進口國採取單一關稅時，若兩出口產品的替代性較大或較小時，則兩出口廠商採取策略性CSR會帶給出口國、進口國及全球高於兩出口國採取策略性出口政策下福利，使得策略性CSR優於傳統的策略性出口政策。
研究動機	企業從事與企業社會責任(corporate social responsibility，以下簡稱CSR)有關的行為，無論在理論或實務上都受到愈來愈多學者的關注。企業採取CSR的行動愈來愈普遍，而且將CSR納入公司的經營政策。根據KPMG(2008)的調查報告顯示，世界前250大企業已從2005年的近50%增加到2008年的近80%公佈該企業的CSR報告(KPMG, 2008)。Vogel (2005)指出70%的CEO相信CSR行為對公司的獲利扮演重要角色，CSR行為是公司的整體策略及成功的關鍵。麥肯錫的CEO Ian Davis (2005)指出，CSR扮演公司經營的**策略**及**義務**的角色。因此，在文獻上也愈來愈重視企業採取策略性CSR經濟效果，但是，Kitzmueller and Shimshack (2012)的Survey指出，企業採取CSR行為的理論是有待開發的一塊。如前所述，世界前250大企業大部份都將CSR納入經營策略，而這些大多是多國籍企業，雖然已經有一些文獻開始在開放經濟體系分析多國際企業分析採取CSR的經濟效果，但是當進口國面對多國際企業採取CSR時，應採取甚麼樣的進口關稅政策尚未被探討過，因此，擬建立一個三國兩廠商的進出口模型，在模型中，兩外國廠商將產品出口到進口國，以探討當出口廠商採取關心消費者的策略性CSR時，進口國該採取甚麼樣的關稅政策?此外，在WTO規範的開放的經濟體系下，傳統的出口補貼政策變得不可行，此時，多國籍企業採取關心消費者的策略性CSR時，其能否取代傳統的策略貿易政策?

模型

假設有兩個來自不同國家的廠商 1 及廠商 2，將其產品全數出口進口國市場銷售並且從事 Cournot 競爭。進口國市場對此二廠商產品的需求函數分別為 $p_1 = a - rq_2 - q_1$、 $p_2 = a - rq_1 - q_2$，其中 $0 \le r \le 1$，代表兩產品的替代程度。兩廠商生產的邊際成本分別為 c_1 及 c_2。進口國對兩進口品課徵從量關稅，稅率分別為 t_1 及 t_2 因此，兩國廠商的利潤函數為：

$$\pi_1(q_1, q_2, t_1) = (a - rq_2 - q_1)q_1 - (c_1 + t_1)q_1 \quad (1)$$

$$\pi_2(q_1, q_2, t_2) = (a - rq_1 - q_2)q_2 - (c_2 + t_2)q_2 \quad (2)$$

假設出口廠商 $i(, i = 1,2)$ 雇用高階經理人負責經營管理公司業務，為了向進口國宣告其在意進口國消費者的福利，其訂定並公佈給予經理人的報酬為兩部訂價，一部份是固定的報酬 F_i，另一部份為變動報酬，變動報酬是依其利潤及該廠商所關心的進口國消費者剩餘之和的 $\lambda_i(\ge 0)$ 倍給付，此一代理誘因的薪資設計可見諸於 Bian et al (2016)。假設出口廠商 i 關心進口國消費者剩餘的程度(以下簡稱 CSR 程度)為 $\alpha_i \ge 0$，則兩出口廠商利潤及該廠商所關心的進口國消費者剩餘之和分別為下二式:

$$\phi_1(q_1, q_2, t_1, \alpha_1) = \pi_1(q_1, q_2, t_1) + \alpha_1 CS(q_1, q_2) \quad (3)$$

$$\phi_2(q_1, q_2, t_2, \alpha_2) = \pi_2(q_1, q_2, t_2) + \alpha_2 CS(q_1, q_2) \quad (4)$$

其中 $\phi_i, i = 1,2$ 可視為經理人的經營績效，$CS = \frac{(q_1^{\,2} + q_2^{\,2})}{2} + rq_1q_2$ 為進口國消費者剩餘。因此，兩出口廠商經理人的總報酬可寫為：$w_1 = F_1 + \lambda_1\phi_1$ 及 $w_2 = F_2 + \lambda_2\phi_2$。給定兩出口廠商訂定的報酬結構 (λ_1, F_1) 及 (λ_2, F_2)，兩出口廠商之經理人分別選擇 q_1 及 q_2 以極大化報酬 w_1 及 w_2，相當於分別選擇 q_1 及 q_2 以極大化 ϕ_1 及 ϕ_2。此外，假設兩廠商經理人的保留報酬分別定值 $\overline{w}_1$ 及 $\overline{w}_2$，兩出口廠商的終極目標為淨利潤極大，因此，兩出口廠商選擇 α_i、λ_i 及 F_i 以極大化下列的目標函數為：

$$\max_{\alpha_1, \lambda_1, F_1} \pi_1 - w_1 \qquad s.t \quad w_1 = F_1 + \lambda_1\phi_1 \ge \overline{w}_1$$

$$\max_{\alpha_2, \lambda_2, F_2} \pi_2 - w_2 \qquad s.t \quad w_2 = F_2 + \lambda_2\phi_2 \ge \overline{w}_2$$

上二式表示，當出口廠商 i $(i = 1,2)$ 選擇了 α_i 之後，廠商及其經理人即可預期以下各階段均衡的 ϕ_i，出口廠商 i 就有很多不同的 (λ_i, F_i) 組合可使得 $w_i = \overline{w}_i$，亦即使其經理人最終只獲得保留報酬，因此，上二式可改寫成：

$$\max_{\alpha_1} \pi_1 - \overline{w}_1$$

$$\max_{\alpha_2} \pi_2 - \overline{w}_2$$

這表示出口廠商 i 的最終目標是策略性的選擇 α_i 以極大化其利潤 π_i，之後再設計其經理人報酬 $w_i = F_i + \lambda_i\phi_i = \overline{w}_i$，以誘導經理人在給定的 (λ_i, F_i) 及 α_i 下，選擇 q_i 以極大化經營績效 ϕ_i。

進口國的社會福利如下：

$$\max_{t_1,t_2} W_0(q_1,q_2,t_1,t_2) = CS(q_1,q_2) + T(q_1,q_2,t_1,t_2) \quad (5)$$

其中 $T = t_1 q_1 + t_2 q_2$ 為進口國關稅收入。

上述模型為一四階段賽局：

第 0 階段，進口國政府宣告採取差別關稅或單一關稅

第 1 階段，兩出口廠商分別決定其利潤(π_1 及 π_2)極大的 α_1 及 α_2

第 2 階段，進口國政府決定進口國福利 SW_0 極大之 t_1 及 t_2

第 3 階段，兩廠商之經理人決定其目標 ϕ_1 及 ϕ_2 極大之產量 q_1 及 q_2

這樣的賽局階段順序同於 Liao and Wong(2006)與 Hashimzade et al. (2011)。利用後推法可求解出子賽局完美均衡。

研究結果

Lemma 1 : (i) $q_i^* = q_i(\alpha_i,\alpha_j,t) = \dfrac{[(2-\alpha_j)-r(1-\alpha_i)](a-c-t)}{(2-\alpha_i)(2-\alpha_j)-r^2(1-\alpha_i)(1-\alpha_j)}$ $i,j=1,2$ $i\neq j$ 。

(ii) $\dfrac{\partial q_i^*}{\partial t}<0$ ， $\dfrac{\partial q_i^*}{\partial \alpha_i}>0$ ， $\dfrac{\partial q_j^*}{\partial \alpha_i}<0$ ， $i,j=1,2$ $i\neq j$ 。

Lemma 2 : (i)

$$t^* = t(\alpha_i,\alpha_j) = \frac{\begin{array}{l}\{8-8(\alpha_i+\alpha_j)+(\alpha_i+\alpha_j)^2+\alpha_i\alpha_j(6-\alpha_i-\alpha_j)-r[8-6(\alpha_i+\alpha_j)-\alpha_i\alpha_j(\alpha_i+\alpha_j)+2(\alpha_i+\alpha_j)^2] \\ +r^2[2+\alpha_i+\alpha_j-(6-\alpha_i-\alpha_j)\alpha_i\alpha_j]-r^3(\alpha_i+\alpha_j)(1-\alpha_i)(1-\alpha_j)\}(a-c)\end{array}}{\begin{array}{l}(2-\alpha_i)^2(3-2\alpha_j)+(2-\alpha_j)^2(3-2\alpha_i)-r[(2-\alpha_i)(4-5\alpha_j+2\alpha_j{}^2)+(2-\alpha_j)(4-5\alpha_i+2\alpha_i{}^2)] \\ -r^2[(1-\alpha_i)(1-\alpha_i-4\alpha_j+2\alpha_i\alpha_j)+(1-\alpha_j)(1-\alpha_j-4\alpha_i+2\alpha_i\alpha_j)]+2r^3(1-\alpha_i)(1-\alpha_j)(1-\alpha_i-\alpha_j)\end{array}}$$ 。

(ii) $\dfrac{dt}{d\alpha_i}<0$ ， $i,j=1,2$ $i\neq j$ 。

Proposition 1：當進口國採取單一關稅政策時，兩國廠商的最適策略性 CSR

$\alpha_1=\alpha_2=\alpha^U=\dfrac{(4++3r+r^2-\sqrt{8+16r+9r^2-2r^3+r^4})}{4r+4}$ ，若 $r=0$ ，則 $\alpha^U=\dfrac{2-\sqrt{2}}{2}$ ；若 $0<r<\sqrt{2}-1$ ， $\dfrac{d\alpha^U}{dr}<0$ ；若 $\sqrt{2}-1<r<1$ ，則 $\dfrac{d\alpha^U}{dr}>0$ ；若 $r=1$ ，則 $\alpha^U=\dfrac{2-\sqrt{2}}{2}$ 。

Lemma 3:(i) $q_i^* = q_i(\alpha_i,\alpha_j,t_i,t_j) = \dfrac{(2-\alpha_j)(a-c-t_i)-r(1-\alpha_i)(a-c-t_j)}{(2-\alpha_i)(2-\alpha_j)-r^2(1-\alpha_i)(1-\alpha_j)}$ ， $i,j=1,2$ $i\neq j$ 。

(ii) $\dfrac{\partial q_i^*}{\partial \alpha_i}>0$ ， $\dfrac{\partial q_j^*}{\partial \alpha_i}<0$ ； $\dfrac{\partial q_i^*}{\partial t_i}<0$ ， $\dfrac{\partial q_j^*}{\partial t_i}>0$, for $i,j=1,2$ $i\neq j$ 。

Lemma 4：

	(i) $t_i^* = t_i(\alpha_i, \alpha_j) = \dfrac{[(1-\alpha_i)(3-2\alpha_j) - r(1-2\alpha_i+\alpha_i^2+2\alpha_j-\alpha_i\alpha_j) + r^2\alpha_j(1-\alpha_i-\alpha_j)](a-c)}{(3-2\alpha_i)(3-2\alpha_j) - r^2(1-\alpha_i-\alpha_j)^2}$, $i, j = 1,2 \ i \neq j$。 (ii) $\dfrac{\partial t_i^*}{\partial \alpha_i} \leq 0$，$\dfrac{\partial t_j^*}{\partial \alpha_i} \leq 0$ for $i, j = 1,2 \ i \neq j$。
研究貢獻	本文建立一個 B&S 的四階段賽局模型，以探討當兩出口廠商利用代理機制設計，使其經理人將關心進口國消費者剩餘的 CSR 納入決策目標時，進口國如何在單一或差別進口關稅制度之間作選擇，此外，我們也檢視在進口國的關稅制度下，出口廠商採取策略性 CSR 是否優於傳統的策略性出口政策。我們發現，(i)當進口國採取單一關稅時，兩出口廠商的策略性 CSR 隨著兩出口品的替代程度先遞減後遞增；當進口國採取差別關稅時，兩出口廠商的策略性 CSR 隨著兩出口品的替代程度遞減，而且當兩出口產品的替代性較小(大)時，單一關稅下的策略性 CSR 程度小(大)於差別關稅，此外，當產品替代性較小(大)時，兩個效果總和在差別(單一)關稅下較大，因此，差別(單一)關稅下的 CSR 較大，(ii)當兩出口廠商採取策略性 CSR 時，兩出口產品的替代性較小(大)時，差別關稅下的進口國福利大(小)於單一關稅。此一結果明顯的與 Liao and Wong(2006)及 Hashimzade et al. (2011)都得到，不論產品的替代性為何，進口國會偏好單一關的結果也明顯不同。(iii) 我們另一個有趣的發現是，當進口國採取單一關稅政策時，若兩出口產品的替代性較高或較低，出口國採取策略性 CSR 會使兩出口國及進口的福利皆優於傳統的策略性出口政策。此一結果在當前貿易自由化氛圍下，顯得有趣而重要，我們發現策，略性 CSR 在某些條件下確實可以被相關國家接受以取代出口補貼政策的角色。
未來研究方向	可考慮出口廠商在國際市場的 CSR 行為。

篇名	*Multiple Long-Run Equilibria in a Free-Entry Mixed Oligopoly*
作者	*Junichi Haraguchi [a], Toshihiro Matsumura [b]* *a Faculty of Economics, Kanagawa University, 3-27-1, Rokkakubashi, Kanagawa-ku, Yokohama, Kanagawa,* *b Institute of Social Science, The University of Tokyo, 7-3-1, Hongo, Bunkyo-ku, Tokyo 113-0033, Japan.*
出處	MPRA Paper No. 86704, posted 18
摘要	This paper investigate a free-entry mixed oligopoly with constant marginal costs. A privatization policy is implemented after private firms enter the market. They find that both full privatization and full nationalization are equilibrium policies, and the former is the worst privatization policy for welfare.
研究動機	One classical rationale for public enterprises is to prevent private monopolies in natural monopolies where significant economies of scale are prevalent. Thus, many public enterprises existed or still exist in such national monopoly markets. However, due to technological improvement, many markets that contain public enterprises are not always characterized by significant economies of scale. Indeed, a considerable number of public enterprises compete with private enterprises in a wide range of industries (mixed oligopolies).
模型	We consider a mixed oligopoly model in which one public firm (firm 0) competes with n private firms (firms 1, 2,...,n). These firms produce homogeneous products for which the inverse demand function is $p(Q) = a - Q$. where p denotes price, a is a positive constant, and Q=∑_(i=0)^n▒q_i is the total output. We assume that all private firms have an identical cost function and marginal costs are constant. Let c_0 be firm 0's marginal cost and c be the private firm's marginal cost. We assume that $c<c\_0$; that is, the public firm is less efficient than the private firm. Let q_i be firm i's output. When the private firm enters the market, it incurs an entry cost of F. Following Matsumura (1998), the public firm's objective Ω is a convex-combination of social surplus and their own profit, Ω=απ_0+(1−α)W. α∈[0,1] represents the degree of privatization. In the case of full nationalization (i.e., α=0), firm 0 maximizes social welfare. In the case of full privatization (i.e., α=1), firm 0 maximizes its profit. Each private firm's objective is its profit.
研究結果	**Proposition 1** (i) If the optimal privatization policy is not full privatization (i.e., α^s<1), private firm i's profit is increasing in n. (ii) If the optimal privatization policy is full privatization (i.e., α^s=1), private firm i's profit is decreasing in n. **Proposition 2** There are two locally stable equilibria. In one equilibrium, the degree of privatization is zero (full nationalization) and no private firm enters the market. In the other equilibrium, the degree of privatization is one and the number of private firms is strictly

	positive. **Proposition 3** *W^B* is non-increasing in α and strictly decreasing in α if *n^B*> 0 or α> 0.
研究貢獻	None.
未來研究方向	In this study, we assume that private firms are domestic. The literature on mixed oligopolies demonstrates that the nationality of the private firms often affects the behavior of a public firm and the optimal privatization policy. Extending our analysis in this direction is difficult work and remains for future research.

篇名	*Per unit vs. ad valorem royalty licensing*
作者	*Cuihong Fan [a], Byoung Heon Jun [b], Elmar G. Wolfstetter [c]* *a Shanghai University of Finance and Economics, School of Economics, China* *b Korea University, Department of Economics, Republic of Korea* *c Humboldt University at Berlin, Department of Economics, Germany*
出處	Economics Letters
摘要	They consider licensing of non-drastic innovations by a patent holder who interacts with a potential licensee in a downstream market. They compare two kinds of license contracts: per unit and ad valorem royalties, combined with fixed fees. Assuming that antitrust authorities apply the same principle to review ad valorem licensing which they apply to per unit licensing, they show that per unit licensing is more profitable if the licensor is more efficient in using the innovation, whereas ad valorem licensing is more profitable if the licensee is more efficient. This explains why and when these licensing schemes should be observed.
研究動機	The analysis of ad valorem royalties by an inside patent holder was initiated by San Martín and Saracho (2010) who consider a linear model and show that“Cournot duopoly an internal patentee will always prefer the ad valorem royalty to a per unit royalty”. However, their analysis does not assume that antitrust authorities. In the present paper they compare the profitability of per unit and ad valorem royalty licensing, assuming consistent antitrust constraints. Unlike the literature, the analysis is not restricted to the case of linear demand, and they allow for all possible cost profiles induced by the transfer of technology.
模型	Consider a dynamic licensing game between an incumbent patent holder who owns a cost reducing innovation and one competitor who operates in the same product market. In the first stage, the incumbent offers a license contract in the form of a two-part tariff that prescribes either a per unit royalty rate, r, or an ad valorem royalty rate, s, together with a fixed fee, f. In the second stage, after the license contract has been either accepted or rejected, firms play a Cournot duopoly game. Firms are indexed by $i \in \{0,1\}$ where firm 0 is the incumbent patent holder and firm 1 the potential licensee. Prior to the innovation firms' unit costs are $(c_0, c_1) = (d', c)$; after using the innovation, the unit cost of firm 0 is reduced to $0 < d < c$ and that of firm 1 to $0 < x < c$. Either the licensee or the licensor can make better use of the innovation, and they call firm 0 ''more efficient'' if $x > d$ and firm 1 ''more efficient'' if $x < d$. The innovation is non-drastic, i.e., the exclusive use of the innovation does not give rise to a monopoly. This requires that the monopoly price at unit cost d exceeds c and the monopoly price at unit cost x exceeds d' if licensing is exclusive and d if licensing is non-exclusive.

研究結果	They identify testable conditions that explain when either per unit or ad valorem royalties should be observed: Specifically, per unit licensing is more profitable if the licensor is more efficient in using the innovation, whereas ad valorem licensing is more profitable if the licensee is more efficient. These results have an intuitive explanation. Whereas per unit royalties serve the purpose to restrict the licensee's output, ad valorem royalties restrict the licensor's output. If the licensor is more efficient, it is in his interest to shift output to himself by increasing the licensee's marginal cost; if he is less efficient, it is in his interest to shift output to the licensee, which is achieved by ad valorem royalties.
研究貢獻	They have shown that per unit royalty licensing is more profitable if the licensor is more efficient in using the innovation, whereas ad valorem licensing is more profitable if the licensee is more efficient. These results may explain why both types of licensing are widely used and under which conditions one should observe either the one or the other. The literature that claimed that ad valorem licensing is unconditionally more profitable than per unit licensing failed to assume that antitrust authorities apply the same economic principle to review ad valorem royalty licensing which they apply to per unit royalty licensing and considered a linear model with a particular cost profile induced by the innovation.
未來研究方向	None

篇名	*Corporate social responsibility and downstream price competition with retailer's effort*
作者	*Charlie L. Chen , Qian Liu,* Jie Li, Leonard F.S. Wang
出處	InternationalReviewofEconomicsandFinance46(2016)36–54
摘要	This paper examines the optimal degree of upstream firms' concern over CSR and its influences in a vertically related market with imperfect substitute products. The setting is composed of two profit-maximizing downstream retailers and two upstream firms in which one of them or both may act consumer-friendly. It considers wholesale versus retail pricing strategy of upstream firms with retailers' effort in a simultaneous game under such setting. It shows that under different pricing rules, the impacts of a higher upstream firms' concern over CSR on market equilibrium outcomes either with symmetric case (two consumer-friendly upstream firms) or asymmetric case (one consumer-friendly upstream firm) are different. In particular, it finds that higher concern over CSR is beneficial to upstream consumer-friendly firm(s) both under wholesale pricing and retail pricing, ex- cept in the case of one consumer-friendly upstream firm with strategic leverage under retail pricing, who will benefit. It also compares the corresponding consumer and social welfare under different pricing rules and finds that the retailers' efforts play a key role.
研究動機	Downstream retailers don't directly concern over CSR, but they need to choose the optimal efforts to keep or even improve the sales quantity or quality of intermediate goods purchased from the upstream firms in order to achieve the goal of expanding market share and sharing the revenue. Thus, the downstream retailers may be viewed as the partners executing CSR strategically. In view of the above descriptions, it motivates us to extend Wirl's model setting exploring the optimal degree of upstream firms' concern over CSR with imperfect substitute products in a vertically related market composed of two profit-maximizing downstream retailers and two upstream firms in which one of them or both are consumer-friendly. They assume that the consumer-friendly firm maximizes the weighted sum of its own profit and consumer surplus, and examine wholesale versus retail pricing strategy with retailer's effort in a simultaneous game. It shows that under different pricing rules, the impacts of a higher upstream firms' concern over CSR on market equilibrium outcomes (firm's performance, consumer and social welfare) either with symmetric case (two consumer- friendly upstream firms) or asymmetric case (one consumer-friendly upstream firm) are different. When there is only one consumer-friendly upstream firm, the impacts of a higher upstream firm's concern over CSR on the consumer surplus and social welfare are ambiguous depending on the cross effects under wholesale pricing and retail pricing with strategic leverage for upstream firms.

模型	Considering a successive duopoly markets with two competing downstream retailers and two upstream firms including one or two consumer-friendly firms that concern about both the profits and CSR, all the firms move simultaneously in price competition with imperfect substitute goods. Contracts between upstream and downstream are limited to either linear wholesale or retail pricing arrangement. Assume that each upstream firm produces a single good , which it then distributes to both downstream retailers for subsequent reselling to final consumers . As shown in Wirl (2015) , the demand for the good of upstream firm i sold by retailer j is $\tilde{q}_i^j = \frac{a_i^j(1-\gamma)(1-\beta)-P_i^j+\gamma P_{-i}^j+\beta(P_i^{-j}-\gamma P_{-i}^{-j})}{(1-\gamma^2)(1-\beta^2)}$, i=1,2,j=a,b (1) where P_i^j is the final product price for the good of firm i sold by retailer j. This demand framework is simple but without loss of generality , which is based on Dobson and Waterson (2007) and used in Foros , Kind and Shaffer (2013) . In particular , it captures differences in the competition intensity between retailers and between products.
研究結果	This paper explores the optimal degree of upstream firms' concern over CSR with imperfect substitute products in a vertically related market composed of two profit-maximizing downstream and two upstream firms in which one of them or both are consumer-friendly .
研究貢獻	They examine whole sale versus retail pricing strategy with retailer's effort in a simultaneous game . When considering two consumer-friendly upstream firms , it shows that under whole sale pricing , a higher upstream firms' concern over CSR will synchronously improve consumer surplus and social welfare ; under retail pricing with strategic leverage for upstream firms , a higher upstream firms' concern over CSR can de facto realize the improvement of consumer surplus, but its impact on the social welfare is ambiguous depending on the cross effects ; under retail pricing with strategic leverage for downstream retailers , both consumer surplus and social welfare are independent of the degree of upstream firms concern over CSR . Moreover , they find that higher concern over CSR is beneficial to upstream consumer-friendly firms both under whole sale pricing and retail pricing except for the case of one consumer-friendly firm with strategic leverage for upstream firms under retail pricing , where the consumer-friendly upstream firm will choose to concern over partial consumer surplus . The paper also compare the corresponding consumer and social welfare under different pricing rules and finds that the retailers' efforts play a key role.
未來研究方向	None

篇名	*Interregional Mixed Duopoly, Location and Welfare*
作者	*Tomohiro Inoue [a], Yoshio Kamijo [b], Yoshihiro Tomaru [c]* *a Graduate School of Economics, Waseda University, Japan* *b Political Science and Economics, Waseda University, Japan* *c Political Science and Economics, Waseda University, Japan*
出處	Regional Science and Urban Economics
摘要	This paper investigates the effect of a local public enterprise on locations of firms and welfare in an interregional mixed duopoly. They employ a spatial model (linear city model) by dividing a linear city into two districts and assume that there are two firms each of which has different home district. One of them is a local public enterprise owned by the local government which reigns over one of the districts, while the other is a private firm. The local public enterprise is characterized as the one which maximizes welfare of its own district. They show that two-stage game composed of the location choice and the price competition has two types of equilibria. One is that the two firms are located in the different districts and the other is that they are in the same district whose local government owns the local public enterprise. They consider the equilibrium selection problem. Moreover, they examine the changes in ownership of firms as the central or local government policy.
研究動機	The seminal work of De Fraja and Delbono (1989) introduced game theory into the study and many researchers have taken into account the strategic interaction between public and private firms when they analyze the markets. However, little attention has been directed at local public enterprises. Although many local public enterprises exist in reality, most of the studies assume that public firms are state-owned.
模型	This paper employ a Hotelling (1929) type spatial model in order to explain clearly the difference in the region over which the central government and the local government reign. They divide the linear city into two symmetric districts, Region A and B, each of which is reigned over by a local government, and thus the firm owned by the government is regarded as a local public enterprise. They also assume that the public firm aims at maximizing local welfare in Region A and the local welfare does not include the profit of the private firm. Since the public firm and the private firm are related to a different region, they describe the situation as an interregional mixed duopoly. In this interregional mixed duopoly, they construct a two-stage game which consists of location choice stage and price setting stage.

研究結果	They show that there exist two types of equilibria in the game. In one equilibrium $E1$, each firm is located in its home region (i.e., the local public firm is in Region A and the private firm is in Region B) and, in the other equilibrium $E2$, both firms are located in Region A. They show that $E2$ payoff dominates $E1$ while social welfare in $E2$ is lower than in $E1$, viz., $E1$ is the socially desirable equilibrium whereas $E2$ is the payoff dominant equilibrium. Thus, they consider the equilibrium selection by means of risk dominance criterion. Under this criterion, $E1$ is more realized than $E2$ by the decisions of rational agents. In these two types of equilibria, three following incentives balance at the location point of Firm A. One is the incentive for departing from Firm B for avoiding the severe price competition. Second one is that the firm wishes to decrease the transportation costs of the residents in Region A. The last one is the inducement of capturing the demand of residents in Region B. Only the first one makes Firm A be located far from Firm B and the other two make Firm A get close to Firm B. On the other hand, the private firm B has only this incentive, and thus the firm is located in the corner point in both equilibria.
研究貢獻	They introduce a local public enterprise into the analysis of mixed markets while most of the literature on mixed oligopoly treat a public firm as state-owned. In addition to this, they analyze the strategic decisions of each government by considering multiple regions as B´arcena-Ruiz and Garz´on (2005). They setting can be applied in the context of an international relationships such as the location choice of multinationals. In that context, equilibrium E2 indicates a foreign firm's direct investment. As pointed by B´arcena-Ruiz and Garz´on (2005), particularly in the EU, although the Single Market was introduced, the decision whether to privatize firms or not is a national issue.
未來研究方向	They consider the privatization game between two governments of local districts in Section 5. In consequence, both governments does not privatize their own firms. This result goes against the recent privatization trend. If they take a cost improvement into account in the effect of the privatization, the trend might be shown. Accordingly, the analysis of the situation which both firms select the production costs endogenously such as Matsumura and Matsushima (2004) is a further subject for future research.

篇名	Network Externalities, Subsidization and Privatization in Mixed Duopoly with Excess Taxation Burden
作者	Xubei Lian [a] , Leonard F.S. Wang [b] a School of Finance, Zhongnan University of Economics and Law, Wuhan, China b Wenlan School of Business, Zhongnan University of Economics and Law, Wuhan, China
出處	*Working paper*
摘要	In this paper, They examine how the excess taxation burden will affect the privatization policy in the presence of strategic subsidy/tax policies in a mixed duopoly with network externalities. We consider two scenarios in which the government chooses the optimal privatization and subsidy policy with or without the consideration of excess taxation burden. We show that the privatization neutrality theorem holds if there is no excess taxation burden in the presence of network externalities. However, in the case in which excess taxation burden is taken into consideration, the optimal privatization policy may be full nationalization or partial privatization if the strength of network effects is not strong. The optimal output subsidy is positive if the shadow cost of public funds is small and the strength of network effects is relatively strong, while the production tax may be used when the strength of network effects is weak, irrespective of the degree of the shadow cost of public funds. The most important result is that, the case in which excess taxation burden is taken into consideration yields a higher social welfare. Our results have important implications on subsidy/tax and privatization policies.
研究動機	Since the rapid development of communication and network technology in the 21st century, some industries have shown that the value of a good/service is dependent on the number of others using it. This kind of network externalities recently has been at the center ofa growing number of researches. In this paper, we are aiming to examine the influence of demand-side network externalities on the optimal choices of firms in a Cournot mixed duopoly market, and further to see how the government will determine its privatization policy for a state-owned enterprise and subsidization with excess taxation burden. In this paper, they examine how the excess taxation burden will affect the privatization policy in the presence of strategic subsidy/tax policies in a mixed duopoly with network externalities.

模型	They consider a mixed duopolistic model in which homogeneous network goods are produced by two firms, one public firm and one private firm, represented by firm 0 and 1, respectively. Following Hoernig (2012), Battacharjee and Pal (2014), Chirco and Scrimitore (2013), Fanti and Buccella (2016, 2017, 2018), Song and Wang (2017), the inverse demand function is: $$p = a - q_0 - q_1 + n(y_0 + y_1) \quad (1)$$ Where p is the price of goods, q_0 and q_1 denote, respectively, firm 0 and firm 1 production. y_i is the consumer's expectation regarding firm i's total sales($i = 0,1$), and a is the market scale. The parameter $n \in [0,1)$ represents the strength of the network effects, a larger n indicates a larger network effect and a higher willing to pay for the product. We assume that firm 1 is fully private and firm 0 may be fully or partly owned by government. Let the degree of private ownership in firm 0 be denoted by $\theta \in [0,1]$. As in many existing studies on mixed duopoly, we assume that all firms use an identical technology and have the increasing marginal cost function: $q_0^2/2$, and $q_1^2/2$, respectively. The profit of firm i is given by $$\pi_i = \left(a - q_i - q_j + n(y_i + y_j) + s\right)q_j - q_i^2/2 \quad i = 0,1, i \neq j \quad (2)$$ where s is the unit subsidy rate. Social welfare is defined as, $$W = CS + \pi_1 - (1+\lambda)\left[s(q_0 + q_1) - \pi_0\right] \quad (3)$$ where the consumer surplus is given by $CS = \frac{1}{2}\left[(q_1 + q_0)^2 - n(y_1 + y_0)^2\right]$, λ signifies the social cost of public fund for representing administrative inefficiency of government bureaucracy. λ also reflects the social marginal value of one unit of

public resources. We assume $\lambda \in [0, \infty)$. As pointed out in Matsumura and Tomaru (2013), the welfare can be decomposed into the welfare without excess taxation burden (ETB) and the distortion due to taxation. Moreover, we can rewrite Eq. (3) to obtain

$$\begin{aligned} W(\lambda) &= CS + \pi_1 - (1+\lambda)\left[s(q_0 + q_1) - \pi_0 \right] \\ &= \left[CS + \pi_1 - s(q_0 + q_1) + \pi_0 \right] - \lambda\left[s(q_0 + q_1) - \pi_0 \right] \\ &= W(\lambda = 0) + \lambda\left[\pi_0 - s(q_0 + q_1) \right] \end{aligned}$$

The right-hand side of the equation states that the excess burden applies on the subsidy paid to the private firms. As easily inferred from this welfare, an increase in λ makes the official put greater emphasis on the profit of SOE.

The government sells all or a part of shares in firm 0 in the first stage (shares-selling stage). This means that the revenue from selling the shares is fixed in the later stage, where the output-setting stage follows the shares-selling stage. The government finances the subsidies for the firms from the partial profits of the privatized firm, and the revenue from selling the stocks of firms. Then, the government sets s and θ to maximize the following welfare:

$$W = CS + \pi_1 + \theta\pi_0 - V + (1+\lambda)[(1-\theta)\pi_0 + V - s(q_0 + q_1)] \qquad (4)$$

where V is the revenue from selling the shares in firm 0. Then, the government maximizes the welfare W, expecting (i) the equilibrium result in the subgames and (ii) $V = \theta\pi_0$ due to the private investors' rationality and the assumption of perfect stock markets.

When government privatizes the public firm partially, the optimization problem for the semi-public firm is:

	$$\Omega = \theta\pi_0 + (1-\theta)W \quad (5)$$ where θ is the weight assigned to the profits in the decision-making process of the firm, and $\theta \in [0,1]$. Following Matsumura (1998), the government can indirectly control θ through its shareholding. The fully privatized firm only seeks the profit if $\theta = 1$; contrarily, a fully nationalized firm maximizes the social welfare if $\theta = 0$. The larger the θ, the more public firm is concerned about its profit. The government chooses the subsidy rate and the degree of privatization to maximize social welfare. We construct a two-stage game. In the first stage of the game, the government decides the subsidy rate and the degree of privatization. In the second stage, the firms engage in Cournot competition. The backward induction is used to derive the sub-game perfect Nash equilibrium (SPNE).
研究結果	**Lemma 1**. *In the case in which there is no excess burden of taxation, the SPNE outcomes as*: **Lemma 2.** *In the case in which there is no excess taxation burden, the optimal subsidy rate, the profit of the privatized firm and private firm and social welfare is always increasing in the strength of network effects. The consumer surplus is increasing in the strength of network effects if the strength of network effects is relatively small.* **Proposition 1**: *In the case in which there is no excess burden of taxation, the optimal subsidy is always positive and yields the first-best outcome. Privatization does not matter.* **Lemma 4.** *The optimal subsidy rate is increasing in the strength of network effects, while the optimal degree of privatization is decreasing in the strength of network effects.*

Lemma 5. *In the case in which excess burden of taxation is taken into account, the SPNE outcomes as*:

$$p^{YE}=\frac{a\left(1+\lambda\left(7+9\lambda-n\left(2+5\lambda\right)\right)\right)}{3+14\lambda\left(1+\lambda\right)-n\left(1+2\lambda\right)\left(2+5\lambda\right)},\quad q_0^{YE}=\frac{a\left(1+\lambda\right)\left(1+4\lambda\right)}{3+14\lambda\left(1+\lambda\right)-n\left(1+2\lambda\right)\left(2+5\lambda\right)}$$

$$q_1^{YE}=\frac{a\left(1+\lambda\right)^2}{3+14\lambda\left(1+\lambda\right)-n\left(1+2\lambda\right)\left(2+5\lambda\right)},\quad Q^{YE}=\frac{a\left(2+7\lambda+5\lambda^2\right)}{3+14\lambda\left(1+\lambda\right)-n\left(1+2\lambda\right)\left(2+5\lambda\right)}$$

$$\pi_0^{YE}=\frac{3a^2\left(1+\lambda\right)^2\left(1+4\lambda\right)}{2\left(3+14\lambda+14\lambda^2-n\left(2+9\lambda+10\lambda^2\right)\right)^2},\quad \pi_1^{YE}=\frac{3a^2\left(1+\lambda\right)^4}{2\left(3+14\lambda+14\lambda^2-n\left(2+9\lambda+10\lambda^2\right)\right)^2}$$

$$CS^{YE}=\frac{\left(1-n\right)a^2\left(2+7\lambda+5\lambda^2\right)^2}{2\left(3+14\lambda+14\lambda^2-n\left(2+9\lambda+10\lambda^2\right)\right)^2},\quad W^{YE}=\frac{a^2\left(1+\lambda\right)^2\left(2+5\lambda\right)}{2\left(3+14\lambda+14\lambda^2\right)-2n\left(2+9\lambda+10\lambda^2\right)}$$

Lemma 6. *The profit of the privatized firm and private firm and the consumer surplus are decreasing in the excess taxation burden. Social welfare is increasing in the excess taxation burden.*

Lemma 7. *The profit of the privatized firm and private firm, the consumer surplus and social welfare are increasing in the strength of network effects.*

Proposition 2: *In the case in which excess taxation burden is taken into consideration, (i) the optimal privatization policy is full nationalization if* $n=\overline{n}_1$. *(ii) Partial privatization is another optimal privatization policy if the strength of network effects is relatively weak (less than* $\overline{n}_1$*). (iii) The optimal output subsidy is positive if the shadow cost of public funds is small and the strength of network effects is strong, while the production tax may be used when the strength of network effects is weak, irrespective of the degree of the shadow cost of public funds.*

	Proposition 3. *The case in which excess taxation burden is take into consideration yields a lower level of subsidy, a lower gross output production and also lower profits for both public firm and private firm. However, it yields higher social welfare.*
研究貢獻	In this paper, we have compared two scenarios in which the government chooses the optimal subsidy and privatization with or without the consideration of excess taxation burden in a mixed duopoly model with network effects. We show that in the case where there is no excess taxation burden, the privatization neutrality theorem (PNT) holds for all $\theta \in [0,1]$, and it yields the higher degree of optimal subsidy and the higher gross output and the higher profits. However, in the case in which excess taxation burden is taken into consideration, the optimal privatization policy may be full nationalization or partial privatization if the strength of network effects is not strong. The optimal output subsidy is positive if the shadow cost of public funds is small and the strength of network effects is strong, while the production tax may be used when the strength of network effects is weak, irrespective of the degree of the shadow cost of public funds. The most important result is that, the case in which excess taxation burden is taken into consideration is preferable from the social welfare standpoint. It is mainly

	because that an increase in the excess taxation burden may turn the production subsidy into production tax, and that in conjunction with the network effects will increase social welfare. Our results have important implications on subsidy/tax and privatization policies. The government may switch to use production tax coupled with full nationalization or partial privatization to improve the social welfare.
未來研究方向	未來可考慮在混合寡占下,將租稅扭曲成本納入考慮,以比較從量與從價的福利效果。

篇名	*Taxation and the sustainability of collusion: ad valorem versus specific taxes*
作者	*Helmuts Azacis1 [a], David R Collie [b]* *a Cardiff Business School, Cardiff University, Aberconway Building, Cardiff CF10 3EU, United Kingdom*
出處	J Econ (2018) 125:173–188
摘要	Assuming constant marginal cost, it is shown that a switch from specific to ad valorem taxation that results in the same collusive price has no effect on the critical discount factor required to sustain collusion. This result is shown to hold for Cournot oligopoly when collusion is sustained with Nash-reversion strategies or optimal-punishment strategies. In a Cournot duopoly model with linear demand and quadratic costs, it is shown that the critical discount factor is lower with an ad valorem tax than with a specific tax that results in the same collusive price. However, in contrast to Colombo and Labrecciosa (J Public Econ 97:196–205, 2013) it is shown that the revenue is always higher with an ad valorem tax than with a specific tax.
研究動機	In this paper, the sustainability of collusion with ad valorem and specific taxes will be reconsidered using a different approach. Rather than using the P-shift, the assumption of constant marginal cost will be used as in Anderson et al. (2001) so that it is possible to find a specific tax that results in the same consumer price as an ad valorem tax in each phase of the supergame with general demand functions under Cournot oligopoly.
模型	Consider an infinitely-repeated Cournot oligopoly where firms produce a homogeneous product, and the firms have identical and constant marginal cost. There are two or more firms, $n \geq 2$, in the industry. All firms have the same cost function: $c(q\_i) = \kappa q\_i$, where q_i is the output of the ith firm and its marginal cost is $c'(q\_i) = \kappa > 0$, which is constant. The inverse demand function is: $P = P(Q)$, where P is the consumer price and $Q = \sum_{i=1}^{n} q_j$ is the total output of the firms, and it is assumed to be downward sloping so $P'(Q) < 0$. The government imposes either an ad valorem consumption tax: (expressed as a proportion of the producer price), or a specific (per unit) consumption tax: t at the beginning of the game (stage zero), where $\tau \geq 0$ and $t \geq 0$.
研究結果	**Proposition 1** In the Cournot oligopoly supergame with collusion being supported by Nash-reversion strategies the critical discount factor is the same with an ad valorem tax as with a specific tax that results in the same price in the collusive phase. **Proposition 2** In the Cournot oligopoly supergame with collusion being supported by optimal symmetric punishment strategies the critical discount factor is the same with an ad valorem tax as with a specific tax that results in the same price in the collusive phase.

	Proposition 3 In the Cournot duopoly supergame with linear demand and quadratic costs where collusion is supported by Nash-reversion trigger strategies, tax revenue is higher with an ad valorem tax than with a specific tax that results in the same price in the collusive phase. **Proposition 4** In the Cournot duopoly supergame with linear demand and quadratic costs where collusion is supported by optimal-punishment strategies, tax revenue is higher with an ad valorem tax than with a specific tax that results in the same price in the collusive phase.
研究貢獻	A counterexample to the result of Colombo and Labrecciosa (2013) shows that it is possible that collusion is easier with a specific tax than with an ad valorem tax. This counterexample demonstrates the difficulty of obtaining general results in infinitely-repeated games.
未來研究方向	None.

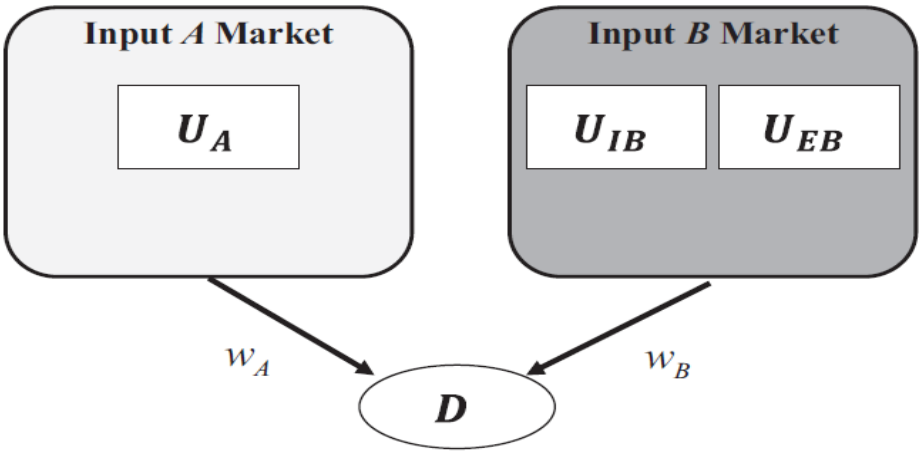
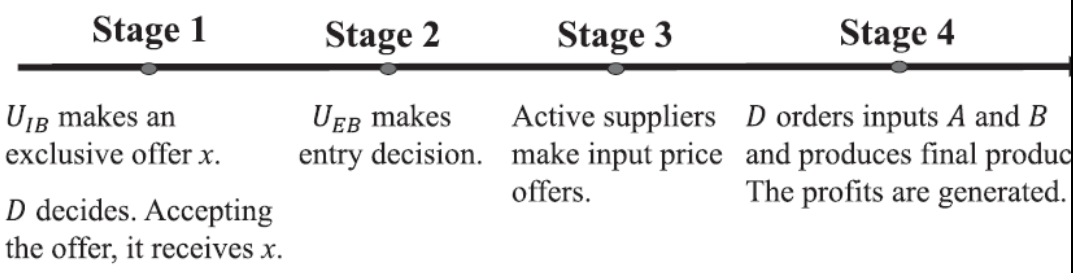
篇名	*Targeted advertising, platform competition, and privacy*
作者	*Henk Kox , Bas Straathof,* Gijsbert Zwart
出處	Journal of Economics & Management Strategy, 2017, 26.3: 557-570.
摘要	Targeted advertising can benefit consumers through lower prices for access to web sites. Yet, if consumers dislike that web sites collect their personal information, their welfare may go down. The paper study competition for consumers between web sites that can show targeted advertisements. The paper find that more targeting increases competition and reduces the web sites' profits, but yet in equilibrium web sites choose maximum targeting as they cannot credibly commit to low targeting. A privacy protection policy can be beneficial for both consumers and web sites. If consumers are heterogeneous in their concerns for privacy, a policy that allows choice between two levels of privacy will be better. Optimal privacy protection takes into account that the more intense competition on the high-targeting market segment also benefits consumers on the less competitive segment. Consumer surplus is maximized by allowing them a choice between a high-targeting regime and a low-targeting regime which affords more privacy.
研究動機	One response to such consumer uneasiness is for Web companies to offer consumers a choice on how much information can be collected on them. As an example, Internet provider AT&T offered customers a 29 dollar reduction on their monthly subscription bill if the firm can use their information on browsing behavior to better target the ads it shows them.5 Also, many web sites allow consumers either to opt for signing in to the site or to browse anonymously. Signing in may increase the quality the site can offer, at the expense of the site storing previous browsing history. Alternatively, consumers may choose not to accept cookies, or may join industry "do-not-track" registers. There may be a role for public intervention to protect online privacy. For one thing, many consumers may be ill-informed about web sites' information gathering activities and privacy policies. It is costly or impossible for consumers to verify whether the web sites they visit collect and use personal information. In the absence of verifiable contracts on the degree of privacy protection, these sites may have trouble committing to a strict privacy policy. Government intervention can help in providing a credible standard for privacy protection. Indeed, both in the EU and in the United States stricter online privacy laws are being put in place.
模型	The paper consider a model of n horizontally differentiated Internet firms ("web sites"), competing for consumers who can be homogeneously mapped to a preference space in the form of a circle, following Salop (1979). The utility consumers obtain from visiting a web site depends on the distance on the circle between the consumer and the web site, as well as on price and privacy policy. Web sites' revenues come from two sources. First, the web sites offer content to consumers and compete in prices to attract consumers to their sites. In

	addition, web sites also derive revenues from presenting advertisements to the consumers that visit their site. We consider a continuum of horizontally differentiated advertisers, uniformly distributed on the same Salop circle. Advertisers compete perfectly to have their advertisement shown to the web sites' consumers.
研究結果	In this paper, they explored the interaction between competition among Internet platforms and the degree of ad targeting they use. More targeting implies stronger competition. Yet, since web sites cannot commit to low targeting intensity, they are caught in a prisoners' dilemma: each firm individually benefits from increased targeting. In the equilibrium, web sites will therefore drive up targeting. On the one hand, this reduces consumer prices, because of improved matching of consumers with advertisers. However, if consumers dislike the loss of privacy that is a consequence of targeting, privacy policy can lead to better outcomes than the laissez-faire outcome. In that case, also web sites can benefit from the less intense competition that goes with this commitment to privacy protection.
研究貢獻	In practice, consumers are heterogeneous in the costs they associate with loss of privacy. By allowing web sites to offer multiple products, differing in the degree of targeting and price they offer, welfare can be increased. In this case, even those consumers that opt for the high-privacy (and low targeting) product benefit: their prices are reduced as a result of the endogenously higher competition on the low-privacy market segment. Their paper provides a general discussion of welfare trade-offs in the presence of heterogeneous privacy concerns among consumers and web sites with market power. Potential extensions could provide a more elaborate analysis of the welfare effects of private certification of targeting behavior, the impacts of scale effects in consumer targeting, and the public costs of enforcing privacy policies.
未來研究方向	None

篇名	*Excess burden of taxation and environmental policy mix with a consumer-friendly firm*
作者	*Mariel Leal [a], Arturo Garcia [b], Sang-Ho Lee [c]* *a Technologico de Monterrey, Mexico* *b Technologico de Monterrey, Mexico* *c Chonnam National University, South Korea*
出處	Munich Personal RePEc Archive
摘要	This study examines environmental policy mix of tradable emission permits and emission taxes in a duopoly model with a consumer-friendly firm. In the presence of excess burden of taxation, they analyze the interplay of the two policies in the non-equivalent conditions for welfare consequences. They show that emission tax can be redundant and thus policy mix is degenerated when both the excess burden of taxation and the degree of consumer-friendliness are insignificant. However, when the excess burden of taxation is significant, tradable permits policy with tax treatment should be accompany to enhance welfare in the presence of a consumer-friendly firm. Finally, under the tax revenue-neutral case where the excess burden of taxation does not matter, environmental policy mix is also efficient if the degree of consumer-friendliness is sufficiently high.
研究動機	Many economists have shown that governments can promote social welfare by implementing market allocation of tradable emission permits or equivalently emission tax since it can minimize abatement costs when they differ between the regulated firms. On the other hand, the widespread acceptance of permits trading program generates an ongoing debate among economists on the efficiency of environmental and climate change policy. If firms differ in both production and abatement technologies, the tradable permits cannot always assure efficiency. Hence, addressing the treatment of emission permits and offsets in both direct and indirect taxation is vital and practical. Failure to deal with potential tax obstacles could make the desired reductions in greenhouse gas emissions excessively costly and impede the global integration of carbon markets. This study analyzes the policy interplay between the tradable emission permits and emission tax policies.
模型	This paper examine a Cournot duopoly market with a consumer-friendly firm in which both firms have the same abatement technologies and emit the same pollutants in the presence of excess burden of taxation. They then investigate the efficiency of policy mix between tradable permits and emission taxes. In particular, they analyze the interplay between the two policies and find the equivalent conditions for welfare consequences.

研究結果	First, for the parameters under which the firm does not sell all its emission quota, the government chooses the significant policy mix if the excess burden of taxation is large, whereas it chooses the single policy with permits otherwise. Second, for the parameters under which the firm sells all its emission quota, the government always chooses the significant policy mix. It shows that emission tax can be redundant and thus policy mix is degenerated when both excess burden of taxation and the degree of consumer-friendliness are low. It also shows that when the excess burden of taxation is significant, tradable permits policy with tax treatment is efficient to enhance welfare in the presence of a consumer-friendly firm.
研究貢獻	This study considers an excess burden of taxation in a Cournot duopoly model with a consumer-friendly firm and examines environmental policy mix between tradable permits and emission taxes. They analyze the interplay between the two policies and find the equivalent conditions for welfare consequences. They show that emission tax can be redundant and thus policy mix is degenerated when both excess burden of taxation and the degree of consumer-friendliness are low. However, when the excess burden of taxation is significant, tradable permits policy with tax treatment is efficient to enhance welfare in the presence of a consumer-friendly firm. Finally, when the degree of consumer-friendliness is sufficiently high in which a consumer friendly firm is strongly aggressive in production, it consumes all emission permits and thus tradable permits policy with tax treatment is efficient even in the tax revenue-neutral case. Therefore, the mixture of the regulatory instruments matter for efficiency.
未來研究方向	This analysis shows that the CSR initiatives of the firms and the excess burden of taxation for the government can play significant roles in the design and implementation of environmental policy. However, it needs to be further examined in alternative settings under different market structures. This has to be left for future research.

篇名	Exclusive contracts with complementary inputs
作者	Hiroshi Kitamura, Noriaki Matsushima, and Misato Sato
出處	International Journal of Industrial Organization, 2018, vol 56, p145-167.
摘要	This study constructs a model of anticompetitive exclusive contracts in the presence of complementary inputs. A downstream firm transforms multiple complementary inputs into final products. When complementary input suppliers have market power, upstream competition within a given input market benefits not only the downstream firm, but also the complementary input suppliers, by raising complementary input prices. Thus, the downstream firm is unable to earn higher profits, even when socially efficient entry is allowed. Hence, the inefficient incumbent supplier can deter socially efficient entry by using exclusive contracts, even in the absence of scale economies, downstream competition, and relationship-specific investment.
研究動機	In vertical supply chain relationships, firms often engage in contracts including vertical restraints, such as exclusive contracts, loyalty rebates, slotting fees, resale price maintenance, quantity fixing, and tie-ins. Among vertical restraints, exclusive contracts have long been controversial. Once signed, exclusive contracts deter efficient entrants; thus, they may appear to be anticompetitive. However, scholars from the Chicago School oppose this view. Based on analytic models, they argue that rational economic agents do not sign contracts to deter more efficient entrants. In rebuttals of this argument, following Aghion and Bolton (1987), several researchers present market environments in which anticompetitive exclusive dealing occurs. The present study considers complementary inputs, and provides an economic environment within which anticompetitive exclusive dealing occurs.

模型	 **Fig. 1.** Market structures.  **Fig. 2.** Timeline.
研究結果	▪This study has explored the existence of anticompetitive exclusive dealing, extending the work of previous studies to consider the role of complementary inputs in the upstream market. ▪The authors' analysis showed that seemingly small differences in the model's setting can have crucial ramifications for the results. If the complementary input supplier has market power, then the inefficient incumbent supplier can deter socially efficient entry using exclusive contracts, even under the Chicago School's framework.
研究貢獻	This paper's results also have novel and important implications for antitrust agencies: it is necessary to consider the existence of complementary inputs when considering the possibility of anticompetitive exclusive dealing. If we discuss the anti-competitiveness of exclusive contracts, while ignoring the existence of complementary input suppliers with market power, we might over-emphasize the results of the Chicago School argument.
未來研	▪ The present study's analysis assumed Leontief production technology. But, the result might also remain valid under more general production technologies, such as CES production technology.

究方向	▪ This paper assumed that the complementary input supplier is a monopolist in this study. However, if otherwise assume that differentiated input suppliers compete in the complementary input market, the exclusion result would remain valid and extend to the real world.

篇名	*Corporate Social Responsibility and Market Concentration*
作者	Su-Ying Hsu, Arturo Garcia, Mariel A. Leal
出處	Working paper
摘要	The paper argues that whether an industry having a higher profit ought to shoulder a higher degree of social responsibility. We employ a theoretic model of oligopoly and make use of industry-cost-variance as a proxy of the industry profit to conduct the analysis. It shows that the relation between the industry profit and the degree of social responsibility depends crucially on the market demand.
研究動機	1. In Taiwan, government regulation says that listed companies with capital over US160 million dollars are supposed to make annual CSR report based on the Global Reporting Initiatives (GRI) guidelines. CSR in Taiwan connotes not only the image of benevolent companies but also a set of legitimate rules with which companies have to comply 2. Financial Supervisory Commission in Taiwan also shows that the EPS is higher on average with the company doing more CSR.
模型	This paper investigates the nexus of corporate social responsibility and market concentration index in an oligopoly where one socially responsible firm and *n* asymmetric for-profit firms compete in the final market. More precisely, we consider whether a higher degree of market concentration measured by the *Herfindahl-Hirschman* Index (HHI) should involve a higher degree of social responsibility

研究結果	This paper finds that the degree of social responsibility that government regulates is sensitive to the market demand, specifically, the curvature of the demand curve. If the market demand is convex (concave), then a higher (lower) degree of social responsibility is suggested in a market with a higher concentration ratio. In linear demand, the degree of social responsibility is independent of the concentration ratio.
研究貢獻	The topic of corporate social responsibility cannot be overemphasized in the complex business world. While a narrow view of corporate social responsibility for the big companies may involve the number of jobs created, a broad view can include thinking about the consequences of their actions on a wide range of stakeholders and take into account the norms and social regulations in mind.
未來研究方向	The working paper is an attempt to discuss the corporate social responsibility in its relation to market concentration which is one of the commonly discussed market concepts. It is merited to incorporate into the CSR discussion the supply chain relationship such as the vertical-related markets, the franchise system such as single or multiple licensing or the product difference such as Bertrand competition.

篇名	Optimal privatization and uniform subsidy policies:A note
作者	Ming Hsin Lin [1], Toshihiro Matsumura [2] 1 OsakaUniversity of Economics　2 TheUniversity of Tokyo
出處	Journal of Public Economic Theory. 2018;1–8.
摘要	The privatization neutrality theorem states that the share of public ownership in a firm does not affect welfare under an optimal uniform tax-subsidy policy. We revisit this neutrality result. First, we investigate the case in which the private firm is domestic. We show that this neutrality result does not hold unless public and private firms have the same cost function. Next, we investigate a case in which both domestic and foreign investors own the private firm. We show that the optimal degree of privatization is never zero, and thus, the neutrality result does not hold, even when there is no cost difference between public and private firms.
研究動機	In oligopolies, the firms' market power yields a positive price–cost margin, which is larger when demand elasticity is smaller. Consequently, production levels are often suboptimal for welfare, especially in the above-mentioned typical mixed oligopolies with low demand elasticity. Public firms might play an important role in making up for underproduction by private firms. In the literature on mixed oligopolies, most studies assumed that public firms maximize welfare (the sum of consumer surplus and firms' profits), whereas private firms maximize their own profits, and assumed that government cannot nationalize all firms. The most efficient outcome occurs through the nationalization of all firms if nationalization does not change the firms' costs and public firms maximize welfare. The need for an analysis of mixed oligopolies lies in the fact that it is impossible or undesirable, for political or economic reasons, to nationalize an entire sector. For example, without competitors, public firms might lose the incentive to improve their costs, resulting in a loss of welfare. Thus, the literature neglected the possibility of nationalizing all firms. Since Merrill and Schneider (1966), many studies on mixed oligopolies investigated cases where the government controls public firms inside the market as an instrument of regulation, instead of using industrial policies from outside the market. In many mixed markets, however, governments intervene using subsidies. Typical examples are medical care, education, energy, finance, and international trade. The subsidy policy might mitigate the problem of inefficient

	allocation of production among the public and private firms, as mentioned above. Thus, if we were to consider subsidy policy explicitly, the implication of the privatization policy might change drastically. White (1996) made an important contribution on this issue. He showed that a uniform production subsidy yields the first-best outcome in both mixed and private oligopolies. Many studies following White (1996) proved that this neutrality result is robust (Cato & Matsumura, 2013; Hashimzade, Khodavaisi, & Myles, 2007; Kato & Tomaru, 2007; Tomaru, 2006). In this study, we revisit this neutrality result. They adopt the partial privatization approach in Matsumura (1998) and investigate the conditions under which the privatization neutrality theorem (any degree of privatization is optimal under an optimal uniform subsidy policy) holds. They discuss the combination of optimal subsidy policy and privatization policy under fairly general demand and cost functions in a mixed duopoly. First, they consider the case in which domestic investors own the private firm. They show that privatization policy matters if there is a cost difference between public and private firms. Next, they consider the case in which both domestic and foreign investors own the private firm.1 They show that even when there is no cost difference between public and private firms, the optimal degree of privatization is never zero. This result again implies that the neutrality result does not hold, and that the nationality of the private firm affects the optimal privatization policy, even when the government uses a subsidy policy.
模型	1. Benchmark Firms 0 and 1 produce homogeneous products for which the (inverse) demand function is given by $p(Q):\mathbb{R}_+\mapsto\mathbb{R}_+$. We assume that $p(Q)$ is twice continuously differentiable and $p'(Q)<0$ for all Q as long as $p>0$. Firm 0 is a (semi) public firm jointly owned by both the public and private sectors, and firm 1 is a pure private firm. We assume that $p'+p''q_i<0$ as long as $p>0$, where q_i is firm i's $(i=0,1)$ output. Firm 1's cost is $c_1(q)=c(q):\mathbb{R}_+\mapsto\mathbb{R}_+$ and firm 0's cost is $c_0(q)=kc(q)$, where k is a positive constant. $k>(=,<)1$ implies that the public firm is less efficient than (as efficient as, more efficient than) the private firm. We assume that $c'\geq 0$ and $c''>0$. Firm i's profit π_i is $pq_i-c_i+sq_i$ where $q_i\,(i=0,1)\in\mathbb{R}_+$ is firm i's output quantity, $Q:=q_0+q_1$ is total output, and $s\in\mathbb{R}$ is the production subsidy (if s is negative, it is a production tax). Following a common assumption in the literature, we assume that the subsidy is financed from taxes imposed on industries unrelated to the industry under study. Welfare W is the sum of consumer surplus, producer surplus, and tax revenue. $$W(q_0,q_1)=\int_0^Q pdq-pQ+\pi_0+\pi_1-sQ$$ $$=\int_0^Q pdq-kc-c. \qquad (1)$$ Firm 1 maximizes its profit, while firm 0 maximizes the weighted average of welfare and its own profit, $\alpha\pi_0+(1-\alpha)W$, where $\alpha\in[0,1]$ indicates the degree of privatization. If $\alpha=0$, firm 0 is fully nationalized. If $\alpha=1$, firm 0 is fully privatized. This is a standard formulation of partial privatization in the literature (Matsumura, 1998).

The game proceeds as follows. In the first stage, the government chooses α and s to maximize W. In the second stage, two firms simultaneously choose their outputs. We use the subgame perfect Nash equilibrium as the equilibrium concept.

Before solving this game, we discuss what would happen if the government could control q_0 and q_1 directly. The first-order conditions are

$$p - kc' = 0, \qquad p - c' = 0. \tag{2}$$

The second-order conditions are satisfied. Let a pair of (q_0^*, q_1^*) be the first-best outputs. $q_0^* > (=, <)\, q_1^*$ if $k < (=, >)\, 1$. We assume that the solution is interior.

2. With foreign investors

In the previous section, we assume that the private firm is a domestic firm. In this section, we allow the private firm to be owned by both domestic and foreign investors. Henceforth, we assume $k = 1$.[4]

Let β denote the foreign ownership share in firm 1. Domestic welfare is given by

$$\begin{aligned} W(q_0, q_1) &= \int_0^Q p dq - pQ + \pi_0 + (1-\beta)\pi_1 - sQ \\ &= \int_0^Q p dq - c - (1-\beta)c - \beta(p+s)q_1. \end{aligned} \tag{5}$$

In contrast to (1), s appears in (5) because a part of the subsidy flows out to foreign investors.

We now solve the game by backward induction. We discuss the second-stage game given α and s. The first-order condition for firm 1 is given by (4), and that for firm 0 is given by

$$p + \alpha p' q_0 - (1-\alpha)\beta p' q_1 - c' + \alpha s = 0. \tag{6}$$

We assume that $|p'|$ is sufficiently large relative to $|p''|$ or c'' is sufficiently large. This ensures that the second-order and stability conditions are satisfied.

In the first stage, the government chooses α and s to maximizes W. We now present the nonneutrality result.

研究結果

Proposition 1. *Suppose $s = s^*$. Suppose $\alpha = \alpha^{**}$ is one of the optimal privatization policies. Then*

$$\left.\frac{dq_0^E}{d\alpha}\right|_{\alpha=\alpha^{**}} = 0$$

if and only if $k = 1$.

Proof. See the Appendix. ■

When the two firms have different cost functions, the neutrality result fails because the first best requires the two firms to produce different quantities, so that marginal costs are equal. The subsidy for the private firm to follow the marginal-cost pricing rule is not the correct one for the public firm. Thus, the degree of privatization matters.[2]

Proposition 2. *$\alpha = 0$ is optimal only when $\beta = 0$.*

Proof. See the Appendix. ■

Proposition 2 implies that the privatization neutrality theorem does not hold unless $\beta = 0$, which is in sharp contrast to the domestic private firm case. Note that when firm 1 is a domestic firm, $\alpha = 0$ is always optimal. This result has another important implication. Without a subsidy policy, the optimal degree of privatization is decreasing in β (Lin & Matsumura, 2012). Therefore, Proposition 2 suggests that introducing a subsidy policy significantly affects the relationship between β and the optimal degree of privatization.

研究貢獻	In this study, we revisit the privatization neutrality theorem. They find that the neutrality result does not hold unless there is no cost difference between public and private firms, and the private firm is owned by domestic investors only. In addition, they find that the optimal privatization policy is crucially dependent on the nationality of the private firm. When the private firm is domestic, the optimal degree of privatization is zero, while it is never zero if the private firm is even partially owned by foreign investors.
未來研究方向	We can apply the idea of model setting improvement to foreign ownership, privatization and subsidies.

篇名	Ad Valorem vs. Specific Tax, Privatization with Social Cost of Public Funds
作者	Leonard F.S. Wang a , Yapo Yang b , Qidi Zhang c a Wenlan School of Business, Zhongnan University of Economics and Law, Wuhan, China b Institute of Business Management，National University of Kaohsiung, Kaohsiung, Taiwan c Wenlan School of Business, Zhongnan University of Economics and Law, Wuhan, China
出處	*Working paper*
摘要	We adopt a mixed duopoly model, where a state-owned welfare-maximizing public firm competes with a profit-maximizing private firm, to compare the welfare effects of the specific and ad valorem tax/subsidy in the presence of the shadow cost of public funds. Following the assumption of most previous literature that total output is constant under specific and ad valorem taxation, we find that, when the shadow cost of public funds exists, the tax policy must be adjusted according to the privatization level of the public firm, if the privatization level is low (medium, high), the government needs to adopt ad valorem (specific, ad valorem) tax. Moreover, the private firm will earn a higher (lower) profit under ad valorem tax than under specific tax, if the public firm is not fully privatized and the shadow cost of public funds is high (low).
研究動機	This paper adopts a mixed duopoly model, where a state-owned welfare-maximizing public firm competes with a profit-maximizing private firm, to answer the question that whether the specific and ad valorem taxes/subsidies are equivalent under mixed oligopoly with shadow cost of public funds, and how the shadow cost of public funds will affect the tax revenue, profits and social welfare in the presence of strategic tax/subsidy policies.
模型	Consider in the mixed oligopoly market, the domestic market is served by a public firm (firm 0) and a private firm (firm 1), in which both produce the homogeneous goods, with q_0 and q_1 as the output of each firm, respectively. The total output of this goods in the domestic market is $Q = q_0 + q_1$, and its price is denoted by $p(Q)$. We assume that p is twice continuously differentiable and $p' < 0$ as long as $p > 0$. We also assume that the private and public firm's marginal costs are equal to c.[1] As in Matsumura (1998), the payoff of public firm 0 is given by $\Omega_0 = \theta\pi_0 + (1-\theta)W$, wher q_0 is the profit of firm 0, W is social welfare and $0 \le \theta \le 1$ represents the degree of privatization, which is determined by the welfare-maximizing benevolent government. $\theta = 0$ indicates that firm 0 is fully nationalized and maximizes social welfare, $\theta = 1$ indicates that firm 0 is fully privatized and maximizes its own profit, and $\theta \in (0,1)$ indicates partial privatization. The higher value of θ denotes a higher level of privatization.

[1] As in Bárcena-Ruiz (2012) and Wang and Han (2015), we assume that the public firm is as efficient as the private firms.

	Suppose that the domestic government has a unilateral incentive to set either a *specific tax t* or an *ad valorem tax rate* $\frac{v}{1+v}$ on both firms. Hence, both firms suffer the same tax level. If $t < 0$ or $v < 0$ represents the scenario that the government implements the subsidy measures. Given the above setting, the profit functions of the firm *i* under the *specific tax* and the *ad valorem* tax can be defined, respectively, as follows: $$\pi_i^s(q_0, q_1, t) = pq_i - (c+t)q_i \quad (1)$$ $$\pi_i^v(q_0, q_1, v) = (1 - \frac{v}{1+v})p(Q)q_i - cq_i = (\frac{1}{1+v})pq_i - cq_i \quad (2)$$ where the superscript *s* and *v* are used to denote the variables to be affiliated to the *specific* (*ad valorem*) tax and its value should not be too low or too high to cause a negative profit for either firm. The social welfare functions under the two taxations are therefore defined respectively by: $$W^s(q_0, q_1, t) = \pi_0^s(q_0, q_1, t) + \pi_1^s(q_0, q_1, t) + CS + (1+\lambda)T^s \quad (3)$$ $$W^v(q_0, q_1, v) = \pi_0^v(q_0, q_1, v) + \pi_1^v(q_0, q_1, v) + CS + (1+\lambda)T^v \quad (4)$$ where CS denotes total consumer surplus, $T^s = tQ$ and $T^v = \frac{v}{1+v}pQ$. As explained in Capuano and De Feo. (2010), the public firm maximizes a utilitarian measure of welfare taking into account the shadow cost of public funds, $\lambda > 0$ which is a measure of the gain due to the tax revenue used to reduce the distortion of other sectors. The game in the model consists of two stages. In the first stage, the government determines either a specific or an ad valorem tax/subsidy to maximize its social welfare by keeping equal total output under the two tax regimes. In the second stage, the firms compete in a Cournot fashion, taking the taxation /subsidization set by the governments
研究結果	***Lemma 1*****:** *If the government taxes the two firms, under ad valorem taxation,* $\frac{\partial Q^v}{\partial v} \gtrless 0$, $\frac{\partial Q^v}{\partial \lambda} > 0, \frac{\partial Q^v}{\partial \theta} < 0$*; under specific taxation* $\frac{\partial Q^s}{\partial t} \gtrless 0$, $\frac{\partial Q^s}{\partial \lambda} > 0, \frac{\partial Q^v}{\partial \theta} < 0$ ***Lemma 2:*** $\frac{v}{1+v}p - t = \frac{1-\frac{1-\theta}{\theta}\lambda}{2-\frac{1-\theta}{\theta}\lambda}\frac{v}{1+v}(-p'Q)$

Proposition 1:

(i) *The difference of social welfare of the two regimes depends on the difference of total tax (subsidy), i.e.* $W^v - W^s = \lambda\left(\frac{v}{1+v}pQ - tQ\right) = \lambda\left(\frac{1-\frac{1-\theta}{\theta}\lambda}{2-\frac{1-\theta}{\theta}\lambda}\frac{v}{1+v}\right)(-p'Q)$;

(ii) *When government taxes (subsidizes) the two firms ,if* $v > (<)0$ *and* $\frac{1-\frac{1-\theta}{\theta}\lambda}{2-\frac{1-\theta}{\theta}\lambda} \gtrless 0$, *then* $\frac{v}{1+v}p \gtrless (=)t$ *and* $W^v \gtrless (=)W^s$.

Proposition 2*: In mixed oligopoly market,*

(i) When $\lambda = 0$, $W^v = W^s$; and $v \gtrless 0$, then $W^v \gtrless W^s$;

(ii) When $\lambda > 0$, if $0 < \frac{1-\theta}{\theta}\lambda < 1$ and $v \gtrless 0$, then $W^v \gtrless W^s$; if $\frac{1-\theta}{\theta}\lambda = 1$, then $W^v = W^s$; if $1 < \frac{1-\theta}{\theta}\lambda < 2$ and $v \gtrless 0$, then $W^v \lessgtr W^s$; if $\frac{1-\theta}{\theta}\lambda > 2$, and $v \gtrless 0$, then $W^v \gtrless W^s$.

Proposition 3:

(i) $When\ \theta = 1,\ for\ any\ \lambda, q_0^v = q_1^v = q_0^s = q_1^s;$

(ii) $When\ \theta < 1\ if\ \lambda =$;

if $\lambda > 0$ and $\left(1 - \frac{1-\theta}{\theta}\lambda\right) q_0^v \gtrless q_1^v,\ then\ q_1^s \gtrless q_1^v.$

Proposition 4: *In mixed oligopoly with shadow cost of public funds,*

$\pi_0^v + \pi_1^v > (<)\pi_0^s + \pi_1^s,\ if\ \frac{v}{1+v}pQ < (>)tQ.$

Proposition 5: If $q_1^s > (<)\sqrt{\frac{1}{1+v}}q_1^v\ then\ \pi_1^s > (<)\pi_1^v.$

Proposition 6:

(i). $W^v - W^s = \lambda\left(\frac{1-\frac{1-\theta}{\theta}\lambda}{(n+1)-\frac{1-\theta}{\theta}\lambda}\frac{v}{1+v}\right)(-p'Q)$

	(ii) $q^s - q^v = \frac{v}{1+v} \frac{\left(1-\frac{1-\theta}{\theta}\lambda\right)q_0^v - (1+(n-1)^{\frac{1-\theta}{\theta}}\lambda)q^v}{2-\frac{1-\theta}{\theta}\lambda}$
研究貢獻	We adopted a mixed duopoly model, where a state-owned welfare-maximizing public firm competes with a profit-maximizing private firm, to compare the welfare effects of the specific and ad valorem tax/subsidy in the presence of the shadow cost of public funds. Following the assumption of most previous literature that total output is constant under specific and ad valorem taxation, we find that, when the shadow cost of public funds exists, the tax policy must be adjusted according to the privatization level of the public firm, if the privatization level is low (medium, high), the government needs to adopt ad valorem (specific, as valorem) tax. Moreover, the private firm will earn a higher (lower) profit under ad valorem tax than under specific tax, if the public firm is not fully privatized and the shadow cost of public funds is high (low). t
未來研究方向	可考慮混合寡占下從量與從價關稅的比較。

篇名	*The superiority among specific, demand ad valorem and cost ad valorem subsidy regimes*
作者	*Wen-Jung Liang [a], Kuang Cheng Andy Wang [b], Ping-Yao Chou3 [c]* *a National Dong Hwa University, Hualien, Taiwan* *b Chang Gung University, Chang Gung Memorial Hospital, Taoyuan, Taiwan* *c National Central University, Taoyuan, Taiwan*
出處	J Econ (2018) 123:1–21
摘要	This paper analyze the superiority of the specific, demand and cost ad valorem subsidies in industrial and export policies. The criterion employed to measure the ranking of the superiority of the subsidy policies in this paper is that, given an identical total output, the smaller the amount of the subsidy, the superior the subsidy policy. They show that the demand ad valorem subsidy is the least efficient policy, regardless of whether it is measured in regard to the industrial or export subsidy policies. The superiority related to the specific and cost ad valorem subsidies hinges upon the production technology. We can thus provide a theoretical explanation to the real world phenomenon as to why governments usually offer a specific or cost ad valorem subsidy policy to agricultural products and exports.
研究動機	This paper consists of two parts. The first part examines the superiority of the industrial subsidy policies including specific, demand and cost ad valorem subsidies, in which all firms are domestic firms. The second part explores the superiority of the export subsidy policies among the same three policies, in which domestic firms compete with foreign firms in the third-country market as developed by Brander and Spencer (1985).
模型	Consider $n \geq 1$ firms producing a homogeneous good. Each firm has an identical cost function expressed as $c(q_i)$, where q_i denotes firm i's output. The market demand function is $p = p(Q)$, $p_Q < 0$, where $Q = \sum_{i=1}^{n} q_i$ is the total (industry) output. The government provides a subsidy to the firms in the form of a specific, demand ad valorem, or cost ad valorem subsidy, represented by t, v^d or v^c, respectively. The amount of the subsidy provided to firm i is denoted by S_i^k, where the superscript "k" is associated with the form of the subsidy policy, $k \in \{t, d, c\}$. The amount of this subsidy equals $S_i^t = tq_i^t$ under the specific subsidy, $S_i^d = v^d p\left(\sum_{i=1}^{n} q_i^d\right) q_i^d$ under the demand ad valorem subsidy, and $S_i^c = v^c c\left(q_i^c\right)$ under the cost ad valorem subsidy. Thus, firm i's profit function can be expressed as:

研究結果	**Proposition 1** Given a fixed number of firms, the specific subsidy is superior, equivalent, or inferior to the cost ad valorem subsidy while the demand ad valorem subsidy is always the least efficient policy under imperfect competition, if the production technology exhibits increasing, constant or decreasing returns to scale. **Proposition 2** Provided that firms can freely enter and exit the market and that the production technology exhibits increasing returns to scale, the number of firms under the specific subsidy regime is the lowest while the numbers of firms under the demand and cost ad valorem subsidy regimes are identical. Moreover, the adoption of the specific subsidy is the most efficient policy while the demand and cost ad valorem subsidy policies are equivalent . **Proposition 3** Supposing that the domestic government imposes a unilateral export subsidy policy, the superiority of the export subsidy policy is irrespective of the number of firms in the domestic and foreign countries. Moreover, the specific export subsidy is superior, equivalent, or inferior to the cost ad valorem export subsidy, when the production technology exhibits increasing, constant, or decreasing returns to scale. **Proposition 4** By taking into account both the domestic and the third-country markets, the specific export subsidy is superior, equivalent, or inferior to the cost ad valorem export subsidy, if the production technology exhibits increasing, constant or decreasing returns to scale.
研究貢獻	This paper can provide theoretical support for the real world phenomenon, in which the superior subsidy policy for biofuels is the specific or cost ad valorem subsidy in the cases of the U.S., the EU, and Brazil.
未來研究方向	None.

篇名	*DYNAMIC PRIVATIZATION POLICY*
作者	SUSUMU SATO, Graduate School of Economics, The University of Tokyo and TOSHIHIRO MATSUMURA, Institute of Social Science, The University of Tokyo
出處	The Manchester School, volume 87, issue 1
摘要	This study formulates a two-period model of mixed oligopoly in which the government privatizes a state-owned public firm over multiple periods. We introduce the shadow cost of public funding (i.e., the excess burden of taxation). The government is concerned about both the total surplus and the revenue obtained from the privatization of the public firm. We find that the government may or may not increase the degree of privatization over time depending on the competitiveness of the product market and nationality of private competitors. The government increases the degree of privatization over time if the product market is competitive and the foreign ownership share in private firms is low. Although it adjusts its privatization policy over time, this harms welfare. In addition, this distortion in the ex post incentive leads to too low a degree of privatization in the first period.
研究動機	To formulate a simple model to analyze the dynamics of privatization policies.
模型	Consider a two-period model in which one domestic state-owned public firm, firm 0, competes against n private firms. Each period is indexed by t (=1, 2). We assume that every agent has the same discount factor $\delta \in (0, 1)$. At the beginning of the game, the government owns all the shares in firm 0 and sells them over two periods. The government sells α_1 shares at the beginning of period 1 and α_2-α_1 shares at the beginning of period 2. We assume that the investors of firm 0 are domestic. α_t is a measure of the degree of privatization in period t. If α_2-$\alpha_1 < 0$, this implies that the government buys back the shares in firm 0 and renationalizes it. And assume that firm 0 maximizes the weighted average of social welfare (discounted sum of social surplus over two periods) and its own profit (discounted sum of profits over two periods) and that the weight depends on α_t, whereas private firms maximize their own profits (discounted sum of profits over two periods). In each period, firms produce perfectly substitutable commodities for which the stationary inverse demand function. Firm 0's cost function is $c_0(q_{0.t})$, where $q_{0.t}$ is the output of firm 0 in period t. Each private firm i (=1,…..n) has an identical cost function, $c(q_{i.t})$, where $q_{i.t}$ is the output of private firm i in period t and $c(q_{i.t})$ is the cost. We assume that the functions c_0 and c are twice continuously differentiable as well as the interior solution in the output competition stages.

研究結果	1. The government changes its privatization policy over time even when external circumstances (e.g., demand and cost conditions) remain unchanged. 2. The government increases or decreases the public ownership share in the public firm depends on the competitiveness of the product market and nationality of private competitors. 3. An ex post change in the degree of privatization harms social welfare, and this distortion in the ex post incentive leads to too low a degree of privatization in the first period.
研究貢獻	To formulate a two-period model of privatization and investigate the welfare implications of privatization policies across two periods.
未來研究方向	1. To solve a general n period model. 2. An analysis of price competition. 3. Extending this analysis to free entry markets.

篇名	*Cartel stability under quality differentiation*
作者	Iwan Bos a, Marco A. Marini b a Department of Organization & Strategy, School of Business and Economics, Maastricht University, Netherlands b Department of Social and Economic Sciences, University of Rome La Sapienza, Italy
出處	Economics Letters 174 (2019) 70–73
摘要	This note considers cartel stability when the cartelized products are vertically differentiated. If market shares are maintained at pre-collusive levels, then the firm with the lowest competitive price-cost margin has the strongest incentive to deviate from the collusive agreement. The lowest-quality supplier has the tightest incentive constraint when the difference in unit production costs is sufficiently small.
研究動機	One implication of this price-quality dispersion is that firms that consider colluding typically face heterogeneous incentive constraints. The fact that firms are induced to charge different prices, for example, affects both collusive and noncollusive profits. From a supply-side perspective, there commonly exists a positive relationship between the quality of a good and its production costs. This, too, impacts both sides of the constraint. It is therefore a priori unclear how quality differentiation impacts the sustainability of collusion. The scarce literature on this topic provides mixed results and, moreover, does not consider the potential impact of cost heterogeneity.
模型	There is a given set of suppliers, denoted $N = \{1, \ldots, n\}$, who repeatedly interact over an infinite, discrete time horizon. In every period $t \in \mathrm{N}$, they simultaneously make price decisions with the aim to maximize the expected discounted sum of their profit stream. Firms face a common discount factor $\delta \in (0, 1)$ and all prices set up until $t - 1$ are assumed public knowledge. Each firm $i \in \mathbb{N}$ sells a single variant of the product with quality v_i. We assume $\infty > v_n > v_{n-1} > \cdots > v_1 > 0$ and refer to firm *n* as the *top firm*, firm 1 as the *bottom firm* and all others as intermediate firms. Unit production costs of firm $i \in N$ are given by the constant c_i and we suppose these costs to be positive and (weakly) increasing in quality, *i.e.*,$c_n \geq c_{n-1} \geq \cdots \geq c_1 > 0$. Consumers have a valuation for the various product types of θ, which is uniformly distributed

on $[\overline{\theta}, \underline{\theta}] \subset \mathbb{R}_{++}$ with mass normalized to one. A higher θ corresponds to a higher gross utility when consuming variant v_i. Buyers purchase no more than one item so that someone 'located' at θ obtains the following utility

$$U(\theta) = \begin{cases} \theta v_i - p_i \text{ when buying from firm } i \\ 0 \text{ when not buying,} \end{cases} \quad (2.1)$$

where $p_i \in [0, \overline{\theta}_{v_n}]$ is the price set by firm *i*. Using (2.1), it can be easily verified that a consumer at $\theta_i \in [\overline{\theta}, \underline{\theta}]$ is indifferent between buying from, say, firm i + 1 and firm i when

$$\theta_i(p_i, p_{i+1}) = \frac{p_{i+1} - p_i}{v_{i+1} - v_i} \quad (2.2)$$

for every *i* = 1, 2, . . . , n − 1. In the ensuing analysis, we further assume that the market is and remains *covered* (*i.e.*, all consumers buy a product).

Current profit of the bottom firm (*i* = 1) is therefore given by

$$\pi_1(p_1, p_2) = (p_1 - c_1) \cdot (\theta_1 - \underline{\theta}) \quad (2.3)$$

where $\theta_1 = \theta_1(p_1, p_2)$ is as specified by (2.2). For each intermediate firm (*i* = 2, 3, . . . , n − 1) profit is

$$\pi_i(p_{i-1}, p_i, p_{i+1}) = (p_i - c_i) \cdot (\theta_i - \theta_{i-1}) \quad (2.4)$$

and for the top firm (*i* = n) it is

$$\pi_n(p_{n-1}, p_n) = (p_n - c_n) \cdot (\overline{\theta} - \theta_{n-1}) \quad (2.5)$$

Before analyzing the infinitely repeated version of the above game, let us first consider the one-shot case in more detail. In this setting, each firm simultaneously picks a price to maximize its profit as specified in (2.3)–(2.5). Following the first-order conditions, this yields three types of best-response functions:

$$\widehat{p_1}(p_2) = \frac{1}{2}\left(p_2 + c_1 - \underline{\theta}(v_2 - v_1)\right) \quad (2.6)$$

for the bottom firm (*i* = 1). For each intermediate firm (*i* = 2, 3, . . . , n − 1), the best-reply is given by

$$\widehat{p_i}(p_{i-1}, p_{i+1},) = \frac{1}{2}\frac{p_{i-1}(v_{i+1} - v_i) + p_{i+1}(v_i - v_{i-1})}{(v_{i+1} - v_{i-1})} + \frac{1}{2}c_i \quad (2.7)$$

The best-response function of the top firm (*i* = n) is

$$\widehat{p_n}(p_{n-1}) = \frac{1}{2}\left(p_{n-1} + c_n - \overline{\theta}(v_n - v_{n-1})\right) \quad (2.8)$$

Since the action sets are compact and convex and the above best reply functions are contractions, there exists a unique static Nash equilibrium price vector p^* for any finite number of firms. Finally, we impose two more conditions to ensure that the equilibrium solution is interior (*i.e.*, all firms have a positive output at p^*) and that the market is indeed covered at the single-shot Nash equilibrium:

	$$\overline{\theta} > \theta_{n-1}^* > \theta_{n-2}^* > \cdots > \theta_i^* > \cdots > \theta_1^* > \underline{\theta} > \frac{p_1^*}{v_1} > 0 \qquad (2.9)$$ where $\theta_i^* \equiv \theta_i(p_i^*, p_{i+1}^*)$ and $p_i^* \geq c_i$, for all $i \in N$.
研究結果	**Proposition 1.** *For any $i, j \in N$ and $j \neq i$, if $p_i^* - c_i > p_j^* - c_j$, then $\Omega_i > \Omega_j$.* **Proof**. Consider the ICC of an intermediate firm *i* = 2, 3, . . . , n−1: $\Omega_i \equiv \pi_i^c - (1-\delta) \cdot \pi_i^d - \delta \cdot \pi_i^* \geq 0 \Leftrightarrow \delta \geq \overline{\delta_i} \equiv \frac{\pi_i^d - \pi_i^c}{\pi_i^d - \pi_i^*}$. **Corollary 1.** *For any firm $i, j \in N$ and $j \neq i$, $\exists \mu \in \mathbb{R}_{++}$ such that if $\Delta c_{ij} < \mu$ and $v_i > v_j$, then $\Omega_i > \Omega_j$.*
研究貢獻	In this note, we considered how cartel stability is affected when unit costs are increasing in product quality. Under the assumption that colluding firms maintain their pre-collusive market shares, we found that the incentive to deviate from the collusive agreement is monotonic in the noncollusive price-cost margin. Specifically, the supplier with the lowest competitive mark-up is ceteris paribus most inclined to leave the cartel. Moreover, it is the lowest-quality seller who has the tightest incentive constraint when differences in unit costs are sufficiently small.

篇名	壟斷性競爭,歧視定價與福利 Monopolistic competition, price discrimination and welfare
作者	Youping Li a, Jie Shuai b,* a School of Business, East China University of Science and Technology, 130 Meilong Road, Shanghai 200237, PR China b Wenlan School of Business, Zhongnan University of Economics and Law, 182 Nanhu Avenue, East Lake High-Tech Development Zone, Wuhan 430073, PR China
出處	Economics Letters
摘要	This paper studies third degree price discrimination in a monopolistically competitive market.When the number of firms is fixed, price discrimination raises firm profit and reduces consumer welfare relative to uniform pricing. When entry is endogenized, the equilibrium product variety under price discrimination is always excessive compared with the social optimum, whereas under uniform pricing variety may be too much or too little. Except when entry is far below the welfare optimum under uniform pricing, a ban on price discrimination leads to enhanced consumer and social welfare.
研究動機	Charging different prices to different groups of consumers allows a firm with market power to further extract consumer surplus and has been widely adopted in many industries. However, with competition, if all firms use it, third degree price discrimination may or may not raise firm profit (e.g., Holmes, 1989; Corts, 1998).Moreover, its effect on social welfare is generally more complicated compared with monopoly price discrimination, as there may be inter-firm misallocations (e.g., Stole, 2007).While a rich literature has been developed to help us understand these issues, an under investigated question is how such practice affects the equilibrium number of firms in an industry and the long run welfare.
模型	Consider a monopolistically competitive market that is represented by a circle with circumference equal to one. There are N firms supplying a homogeneous good (or N product varieties in the alternative interpretation) in the market. In this section, we treat the number of firms as exogenous. These firms are equally-spaced and have identical constant marginal cost, which is normalized to zero. There are two groups of consumers, A and B, who both are uniformly distributed along the circle but have different transportation cost. Normalize the total consumer size to 1, and denote the fraction of group A consumers as α, $0 < \alpha < 1$, and the fraction of group B as $1-\alpha$. We consider and compare two pricing schemes used by the firms. Under uniform pricing, firm i, i = 1, 2, . . . , N, charges the same price to the two groups of consumers. Under price discrimination, it can charge different prices. For a consumer in group j, for j = A, B, located at x, if she buys the product from firm i, her indirect utility is $U_{ij} = V - p_{ij} - t_j d_i$ where V is her reservation utility from consuming the product, pij is the price charged to consumers in group j by firm i, tj is the unit transportation cost for group j consumers and di is the distance between

the consumer and firm i. Without loss of generality, we assume that group A consumers have higher transportation cost than group B consumers, i.e., tA > tB. Following the literature, we assume that each consumer buys at most one unit of the product from the firm that makes her utility maximized, and the reservation utility is sufficiently large so that the market is fully covered.Under uniform pricing, each firm chooses the same price for both groups of consumers. For firm i, if it charges pi, and its adjacent firms charges ¯p,the consumers within the following distance purchases from firm i:

$$\hat{X}_j = \frac{1}{2N} + \frac{\bar{p} - p_i}{2t_j}$$

for j = A, B. We can then write firm i's profit as

$$\pi_i = P_i\left(a\left(\frac{1}{N} + \frac{\bar{p} - p_i}{t_A}\right) + (1-a)\left(\frac{1}{N} + \frac{\bar{p} - p_i}{t_B}\right)\right)$$

with the following first order condition:

$$\frac{\partial \pi_i}{\partial p_i} = \frac{1}{N} - \frac{1}{t_A t_B}\left((2p_i - \bar{p})(t_A + \alpha t_B - \alpha t_A)\right) = 0$$

Impose symmetry and we obtain the equilibrium price and profit earned by each firm (with superscript U indicating the case of uniform pricing) as

$$P_i^U = \frac{t_A t_B}{N((1-a)t_A + \alpha t_B)}$$

and

$$\pi_i^U = \frac{t_A t_B}{N^2((1-a)t_A + \alpha t_B)}$$

As the number of firms increases, prices fall and profits decrease due to enhanced competition. Since tA > tB, if the fraction of group A consumers (who have higher transportation cost) increases, equilibrium prices and profits both increase as competition becomes less intensified. Consumer surplus under uniform pricing can be calculated as

$$CS^U = 2N\left(\alpha\int_0^{\frac{1}{2n}}(V - P - t_A X)dx + (1-a)\times\int_0^{\frac{1}{2n}}(V - P - t_B X)dx\right)$$

$$= V - \frac{\alpha(1-\alpha)\ \ (t_A - t_B)^2 + 5t_A t_B}{4N\left((1-\alpha)t_A + \alpha t_B\right)}$$

and total social welfare is

$$SW^U = V - \frac{\alpha t_A + (1-\alpha)t_B}{4N}$$

Higher competition (higher N) increases both consumer and social welfare in the short run when the cost of entry is not considered.

Also, an increased size of group A consumers (higher α) reduces competition, and reduces both consumer and total surplus. We move next to the case of price discrimination. Under this pricing

	scheme, firm i charges a price piA to group A consumers and a price piB to group B consumers. Similarly, we calculate firm i's equilibrium price under price discrimination as $P_{tj}^{D} = \frac{t_j}{N}$ for j = A, B, and the associated profit as $\pi_i^D = \frac{\alpha t_A + (1-\alpha) t_B}{N^2}$ where the superscript D stands for discriminatory pricing. As we an see, the firms charge higher prices to group A consumers. Consistent with the literature on third degree price discrimination, a lower elasticity of demand, due to a higher transportation cost (lower sensitivity to product variety), leads to higher prices being charged. Since the firms charge more to and earn more from group A consumers, their profit increases as α becomes larger. The consumer surplus under price discrimination is then $CS^D = V - \frac{5(\alpha t_A + (1-\alpha) t_B)}{4N}$ and total social welfare is $SW^D = V - \frac{\alpha t_A + (1-\alpha) t_B}{4N}$ Similar to the case of uniform pricing, an increased number of firms causes both consumer and total welfare to increase. And an increased fraction of group A consumers reduces both consumer and total surplus.By comparing the equilibrium outcomes under the two pricing schemes, we have the following proposition.
研究結果	Proposition 1. When the number of firms is fixed, firm profit is higher and consumer surplus is lower under price discrimination than under uniform pricing. Proposition 2. In the long run equilibrium, there is more entry under price discrimination than under uniform pricing. Under price discrimination, entry is excessive compared with the social optimum. Under uniform pricing, entry is excessive. Proposition 3. In the long run, consumer and social welfare are higher under uniform pricing than under price discrimination.
研究貢獻	In this paper, we study third degree price discrimination in an imperfectly competitive market and focus on its long run effect on entry and welfare. We find that charging different prices to consumers with different sensitivity to product characteristics induces too much entry relative to the socially optimal level. However, when the firms are constrained to charge uniform prices, depending on consumer heterogeneity and the relative size of the groups, the equilibrium product variety may be excessive, optimal, or insufficient. Except when uniform pricing causes too little entry, a ban on price

	discrimination raises consumer and social welfare. These are in contrast to what have been found in the literature on price discrimination under monopolistic competition.
未來研究方向	How Technology Readiness Influence Consumer Behavior of Using the Multiple Media Kiosk

篇名	Downs meets d'Aspremont and company: Convergence versus differentiation in politics and the media
作者	Wen-Chung Guo a , Fu-Chuan Lai b , Wing Suen c a *Department of Economics, National Taipei University, New Taipei, Taiwan* b *Research Center for Humanities and Social Sciences, Academia Sinica, Taipei, Taiwan* c *Faculty of Business and Economics, University of Hong Kong, Hong Kong*
出處	*International Journal of Industrial Organization 60 (2018) 96–125*
摘要	Media firms have incentives to differentiate their news products to soften price competition. When consumers value cognitive consistency between the news they read and the policies they support, politicians are induced to propose more polarized policies to conform to a polarized media landscape. A stronger commercial motive or a weaker preference for editorial neutrality in the media exacerbates this effect and causes party policies to become more extreme. We find that prices for news products are higher when consumers have a demand for cognitive consistency, despite the fact that maximal product differentiation does not hold for media firms.
研究動機	The logic of electoral competition is different from that of market competition. In a two-party system, a party needs to secure a majority of the votes cast to win an election. When voters have single-peaked preferences over a one-dimensional policy space, competition to win a majority induces both parties to choose a policy platform that appeals to the median voter. Such policy convergence is the centerpiece of the theory of democracy proposed by Downs (1957) , and of much subsequent work in political economy. In a market setting, however, winning a fifty percent market share is not everything. Firms care about price as well as quantity. Indeed, many firms deliberately target niche markets because they can charge high prices in those markets. In a pioneering contribution, d'Aspremont et al. (1979) point out that firms can gain from softer price competition by product differentiation. In a one-dimensional product space with quadratic transport costs, they show that the equilibrium product locations of a duopoly exhibit maximal product differentiation. When markets and politics do not mix, the minimal differentiation result of Downs (1957) can sit comfortably together with the maximal differentiation result of d'Aspremont et al. (1979) . In the news media market, however, the editorial positions chosen by media firms can potentially influence, and are potentially influenced by, the policy positions chosen by political parties. What happens when Downs meets d'Aspremont and company? In other words, how does polarization in the media and in politics interact? Does media polarization drive political polarization?

模型

2. The model

There are two political parties (indexed by $i = r, \ell$) and two media firms (indexe $j = 1, 2$). Each party chooses a policy position such that $\alpha_r \in [0, 1]$ and $\alpha_\ell \in [-1, 0]$, each media firm advocates a policy position such that $\beta_1 \in [0, 1]$ and $\beta_2 \in [-1, 0]$.[6] follow the duopoly assumption employed in Mullainathan and Shleifer (2005) and m other models in the spirit of Hotelling (1929). This setting provides the simplest oligo framework which incorporates locations, prices, and strategic interactions.[7]

A fraction q of the citizens chooses their media consumption and vote for a poli party based on the policy positions adopted by these media firms and political par For a citizen with ideological position x, his utility from voting for party i and get news from media outlet j is:

$$U(i, j, x) = u - a(\alpha_i - x)^2 - b(\beta_j - x)^2 - c(\alpha_i - \beta_j)^2 - p_j, \quad i = r, \ell, \quad j = 1, 2.$$

where p_j is the price charged by media firm j. The term $-a(\alpha_i - x)^2$ describes the d tility from voting for platforms far away from one's ideal point. The term $-b(\beta_j -$ measures the disutility from reading news far away from one's ideal point. The t $-c(\alpha_i - \beta_j)^2$ reflects the demand for cognitive consistency: a citizen bears a utility if the party he chooses takes a position far away from that advocated by the news editorials he reads. This is stronger than the usual assumption of cognitive dissona (i.e., that a citizen does not like reading news from media that do not agree with l and he does not like voting for a party that disagrees with him). We are assuming people get lower utility if the news they consume and the party they vote for disa with each other. We believe that the assumption is reasonable because people do want to be reminded about uncomfortable discrepancies. Any time the media outlet the political party chosen by a citizen disagree, he has to spend scarce mental resource reconcile their discrepancies, which he dislikes doing.[8] The parameters a, b, and c ar positive.[9] The ideological position x among this group of citizens is uniformly distribu on $[-1, 1]$.[10]

A citizen who does not consume news gets utility $U(i, \emptyset, x) = v - a(\alpha_i - x)^2$, $i =$ We assume that v is sufficiently large so that a citizen with any ideological position x vote for one of the parties. Furthermore, we assume that the parameter u in equa (1) is sufficiently larger than v so that we can focus on an equilibrium in which a cit with any ideological position x will buy news from one of the media firms.[11]

The remaining fraction $1 - q$ of citizens make their voting decisions based on timents. These sentiments are summarized by a random variable Z, representing fraction of these citizens who will vote for Party r when election time comes. We sume that Z is uniformly distributed on [0,1].[12] For simplicity, we also assume that t citizens do not consume any news.

for simplicity. With this normalization, t represents the weight of the preference editorial neutrality related to commercial motives. Throughout this paper, we assu that t is small so that the media are primarily commercially motivated. Our resul robust when media firms only maximize profits and do not care about their locati which is the special case $t = 0$.

Assumption 1. $t \in [0,\ qb/6]$.

We use this assumption to sufficiently ensure the existence of subgame perfect equi rium. This assumption allows us to focus on the set of parameter values that is relev

We consider a three-stage game in which (1) media firms and political parties cho their positions (α_r, α_ℓ, β_1, β_2) simultaneously; (2) media firms then choose their pr (p_1, p_2) simultaneously; and (3) citizens make their news consumption and voting d sions.

Party r wins the election if at least half of the electorate vote for it, i.e., $q\Pr[\text{choosesParty } r] + (1-q)Z \geq 1/2$. Because Z is uniformly distributed,

$$\Pr[r \text{ wins}] = \frac{1}{2} + \frac{q}{1-q}\left(\Pr[\text{chooses Party } r] - \frac{1}{2}\right).$$

If Party r wins, it obtains an office rent of $\rho - \delta(\alpha_r - 1)^2$. To ensure the above probabil is within 0 and 1, we assume $q \leq 1/2$.[13] Note that the office rent is increasing in the pol α_r it proposes, and reaches a maximum at $\alpha_r = 1$. This reflects the fact that Party r l policy preferences in addition to a pure office-winning motive. Its payoff from winn office is higher when the policy it adopts is closer to its ideal point at 1. Party r choo α_r to maximize

$$\Phi_r = \Pr[r \text{ wins}]\big(\rho - \delta(\alpha_r - 1)^2\big).$$

Party ℓ has an opposite policy preference with the ideal point at -1. Its rent from winn the election is $\rho - \delta(\alpha_\ell + 1)^2$. Party ℓ chooses α_ℓ to maximize

$$\Phi_\ell = (1 - \Pr[r \text{ wins}])\big(\rho - \delta(\alpha_\ell + 1)^2\big).$$

Here we assume for simplicity that the party simply gets a payoff of zero when it lo the elections. This setting is a generalized form of Downs (1957), which allows us to h a direct comparison.[14]

The media firms have an ideal policy position equal to that of the median citi ($x = 0$); they suffer a utility loss if they advocate a policy away from the ideal positi One may interpret this ideal position at 0 as a preference for unbiased reporting However, they are also motivated by profits. Because we assume that all citizens w vote according to policy preferences (instead of sentiments) buy news products, the s of total readership for Firm j is $q\Pr[\text{chooses Firm } j]$. Media firm j wants to maximiz

$$\Pi_j = wq\Pr[\text{chooses Firm } j]p_j - t\beta_j^2, \quad j = 1, 2,$$

where w is the weight that the firm puts on profits, and t is the weight on the utility l from advocating biased policy positions. Without loss of generality, we normalize w =

	for simplicity. With this normalization, t represents the weight of the preference editorial neutrality related to commercial motives. Throughout this paper, we assu that t is small so that the media are primarily commercially motivated. Our resul robust when media firms only maximize profits and do not care about their locati which is the special case $t = 0$. **Assumption 1.** $t \in [0,\ qb/6]$. We use this assumption to sufficiently ensure the existence of subgame perfect equi rium. This assumption allows us to focus on the set of parameter values that is releva We consider a three-stage game in which (1) media firms and political parties cho their positions $(\alpha_r,\ \alpha_\ell,\ \beta_1,\ \beta_2)$ simultaneously; (2) media firms then choose their pr $(p_1,\ p_2)$ simultaneously; and (3) citizens make their news consumption and voting d sions.
研究結果	**Proposition 1.** *A solution to Eqs. (10) and (11) exists and is unique. Moreover, in su a symmetric solution,* $$0 \le \alpha^P < \alpha^* < \beta^* \le \beta^M = 1.$$ **Proposition 2.** *Suppose $a \le c \le 3b$. Then the symmetric solution identified in Propositio 1 is the only symmetric subgame perfect equilibrium of the three-stage game.* **Proposition 3.** *In a symmetric equilibrium, prices under media and politics are high than prices with media only.* **Proposition 4.** *In a symmetric equilibrium, the locations of political parties become m extreme (α^* increases) while the locations of media firms become less extreme (β^* creases) as the demand for cognitive consistency c rises.*
研究貢獻	The demand for cognitive consistency brings d'Aspremont and company and Downs closer to each other. They show that product differentiation is less effective as a means of softening competition when politics matters. As a result, media firms are induced to choose editorial positions closer to the mainstream. Despite tougher price competition due to less product differentiation, media firms charge higher prices in equilibrium because their demand for media products becomes more inelastic due to the demand for cognitive consistency with the parties they support. On the other hand, voters become less sensitive to extreme policies when the media are highly polarized to target niche markets. In response, political parties are induced to choose policies farther away from the median voter's ideal point. The comparative statics analysis suggests that the tendency for media polarization is stronger when media firms have strong commercial profit motives (or a weaker preference for editorial neutrality). The complementarity between media location

	and policy location in the model introduces the possibility that a more commercial media market may bring about more polarized politics.
未來研究方向	可考慮利用 Barbell model 解此一問題。

篇名	*Profits Under Centralized Negotiations: The Efficient Bargaining Case*
作者	Domenico Buccella/ Luciano Fanti Department of Economics, Kozminski University/ Department of Economics and Management, University of Pisa
出處	The B.E. Journal of Theoretical Economics. 2018; 20170176
摘要	Making use of a Conjectural Variation model, the present note re-examines the subject of the firms profits ranking under different degrees of market competition in a unionized duopoly with industry-wide Efficient Bargaining (EB). It is shown that, while Cournot-like competition profits are always larger than Bertrand-like ones with separated wage negotiations, an uniform wage bargaining can lead to the appearance of the reversal.
研究動機	In a decentralized wage (price) bargaining model with a monopolist input supplier and two final goods pro- ducers, Correa-López and Naylor (2004) find that the standard result with regard to profits of Singh and Vives (1984) can be reversed if the union (input supplier) is adequately wage (input price) oriented.1 In a different context, Alipranti, Milliou, and Petrakis (2014) compare the exogenously given Bertrand and Cournot equilib- ria under decentralized bargaining, and confirms the results of Correa-López and Naylor (2004): in fact, those authors use a two-part tariff vertical pricing contract model in which the input supplier and the final goods producers negotiate at decentralized level a wholesale price and a fixed fee. By contrast, Correa-López (2007) shows that, under centralized bargaining on the input price, not only profits remain higher under Cournot than under Bertrand but also it is a dominant strategy for the downstream firm to choose the quantity contract when final goods are substitutes. If the input price is the result of centralized bargaining, the reversal of the Cournot-Bertrand profits ranking is prevented because the crucial ingredient represented by the inter-union competition in the decentralized bargaining is absent.2 However, Fanti and Meccheri (2012) show that, while the preceding literature assumes linear costs, under the assumption of convex costs the reversal of the Cournot-Bertrand profits ranking may occur even under centralized bargaining. Recently, Basak (2017) and Basak and Wang (2016) reconsider the Cournot and Bertrand profit comparison issue in a vertically related upstream market for labor

(inputs) in the presence of centralized Nash bargaining. Basak and Wang (2016) revisit the endogenous choice of price (Bertrand) and quantity (Cournot) contracts in the presence of a vertically related upstream input market. They show that, in the case of centralized Nash bargaining with two-part tariff pricing, the price contract endogenously emerges as the dominant strategy for downstream firms.

In contrast to the results obtained in similar vertical pricing models with decentralized negotiations, Basak (2017) finds that, in a centralized industry-wide wage bargaining (input pricing contract), the producers of the final goods get higher (lower) profits under Cournot competition than under Bertrand competition if the goods are substitutes (complements), so confirming the above mentioned results (e. g. Correa-López 2007; Fanti and Meccheri 2012).

As Basak (2017) remarks, an analysis of centralized wage (input price) bargaining is relevant because, despite the decentralization trend that has taken place in the OECD countries, and in particular in the European Union, industry-wide negotiations represent a central labor market institution in continental Europe. When the upstream firm is interpreted as a labor union, the above-mentioned literature mainly refers to the Right-to- Manage model in which the firms choose the output levels, and once the output has been fixed, then firms and union bargain over the wage level (e. g. Nickell and Andrews 1983). By contrast, the analysis of the Efficient Bargaining (EB) institution, whereby the union and the management of the firms simultaneously negotiate wages and employment (McDonald and Solow 1981) lags behind. However, Kraft (2006) remarks that several empirical works have shown that, as a matter of fact, the EB model is in practice and not a simple theoreti- cal prospect (Bughin 1993; Dobbalaere and Mairesse 2011; MaCurdy and Pencavel 1986). Therefore, using a Conjectural Variation (CV) model, this note further develops the analysis with regard to industry-wide wage negotiation to verify if the validity of the result in Basak s (2017) can be extended/modified to union-firm ne- gotiations under the EB model. As known, the CV model presents some theoretical limitations such as the lack of direct link to observable primitives like the share of cross participation (Mukherjee 2010; Symeonidis 2008, 2010)3 and the involvement of pseudo-dynamics on intrinsically static models (e. g. Varian 1992, 302). However, the main reason for the choice of adopting the CV model resides in the key quality of this analytical tool, i. e. its flexibility in incorporating the study of different market structures. In fact, the CV parameter allows the analysis of an extensive range of degrees of competition in a simple way, from Bertrand competition to joint profit maximization.

	Therefore, the research question is: is the classical result with regard to the profit ranking of Singh and Vives(1984) re-established also under EB negotiations, or is there the case for a reversal of the profit ranking in the Cournot-like/Betrand-like competition comparison? The answer is that if the union bargains on a uniform wage then the established literature on the effects of a centralized union is modified and firms may prefer Bertrand- like competition (and, more in general, a level of competition higher than the Cournot one), especially when the unions are sufficiently strong and the product sufficiently differentiated.
模型	**2 The Model and Results** Let us consider a duopoly industry in which firms 1 and 2 operate. Each firm produces differentiated goods using only labor, l, as factor of production with a constant returns-to-scale technology. For simplicity, let us assume that each worker produces one unit of the goods, i. e. $l = q$; therefore, output and employment levels are equal. The linear (inverse) demand schedules for goods are $$p_i = 1 - q_i - cq_j, i, j = 1, 2 \quad i \neq j, \tag{1}$$ where q_i and q_j are the two firms' production levels, and $c \in (-1, 1)$ defines the degree of product differentiation: when $c = 0$, the goods are independent; as $c \to 1(-1)$, the goods tend to be substitutes (complements). To capture different degrees of market competition, the model assumes that firms decide their production levels according to a CV model (Buccella 2011, 2014; 2015; De Fraja 1993; Dowrick 1989). Defining $\lambda \in (-1, 1)$ as $\lambda = dq_j(q_i)/dq_i$, it follows that when $\lambda = 0$, the model collapses in the Cournot model, while for values of λ above zero, the firms adopt a more collusive behavior, whereas for λ below zero, the industry is more competitive. Consequently, the firm's profits are $$\pi_i = [1 - q_i - cq_j(q_i) - w_i]q_i, i, j = 1, 2 \quad i \neq j. \tag{2}$$ As in Basak (2017) and Mukherjee (2010), it is considered the presence of an industry-wide union. The union bargains simultaneously, though separately, at each firm. One may think as a situation in which the industry-wide union negotiates via delegates that represent the overall union interest simultaneously at each firm. This assumption wishes to catch the idea that the union has the incentive to adopt "opportunism in bargaining" during negotiations with each firm (McAfee and Schwartz 1994; Milliou and Petrakis 2007). The analysis considers two different wage settings: (1) the separate wage setting, in which the union's delegates are instructed to negotiate autonomously at each unit the wage level; and (2) the case of an uniform wage setting, in which the union's delegates are instructed to negotiate the same wage level in the two firms, internalizing both the positive externalities created by an increase in wage rates when unions operate independently (Davidson 1988; Horn and Wolinsky 1988), and the effects of product differentiation on wage and employment levels. In the former case, the union utility takes the following form: $$\Omega = (w_i - w_0)q_i + (w_j - w_0)q_j, i, j = 1, 2 \quad i \neq j. \tag{3}$$ while, with uniform wage $$\Omega = (w - w_0)(q_i + q_j), \; i, j = 1, 2 \tag{4}$$

The union is assumed to be neutrally oriented in its preferences over wages and employment (or, an alternative interpretation is that it is risk neutral). The positive utility derives from the fact that the bargained wage lies above the reservation wage (or unemployment benefits), w_0, set without loss of generality, equal to zero.

The following generalized Nash Product models the bargaining solution

$$NP_i = (\Omega - D_j)^{\alpha}\{\pi_i\}^{(1-\alpha)} \quad i,j = 1,2 \quad i \neq j \tag{5}$$

The parameter $\alpha \in (0,1)$ is the bargaining parties' relative power, and D_j is the industry-wide union's outside option. On the other hand, each firm's outside option is zero. As known (e. g. Horn and Wolinsky 1988), the outside option of the bargaining parties can have different characterizations. In this context, differently from Basak (2017) and as in Mukherjee (2010), if the industry-wide union and firm i experience a breakdown in negotiations, firm j produces the anticipated duopoly equilibrium output q_j^*, at the equilibrium wage, w_j^*. That is, the union disagreement utility is $D_j = w_j^* q_j^* = w_j q_j$ under eq. (3) and $D_j = w^* q_j^* = w q_j$ under eq. (4). Put differently, the industry-wide union delegate who negotiates with firm i supposes that the delegate at firm j believes that, during the bargaining process, an agreement is achieved at firm i at the duopoly wage and employment equilibrium levels.

2.1 Separate Wage Setting under EB

Let us start with the case of the separate wage negotiations. Maximizing the Nash Product in eq. (5) with respect to wages and employment (recalling that $D_j = w_j^* q_j^* = w_j q_j$), one gets (see Buccella 2014)

$$w_i = \alpha(1 - q_i - cq_j) \quad (rent - sharing\ curve) \tag{6}$$

$$w_i = 1 - [2 - \alpha + c\lambda(1-\alpha)]q_i - cq_j \quad (contract\ curve) \tag{7}$$

$i,j = 1,2, \quad i \neq j$, and solving the system of FOCs eqs (6) and (7), one obtains that the firm i's output as a function of the rival's output is

$$q_i = \frac{1 - cq_j}{2 + c\lambda}, \; i,j = 1,2 \quad i \neq j. \tag{8}$$

Thus, in equilibrium, the output (and employment) at each firm is

$$q_i^* = \frac{1}{2 + (1+\lambda)c}, \; i = 1,2, \tag{9}$$

with $\frac{\partial q_i^*}{\partial \lambda} \lesseqgtr 0$ for $c \gtreqless 0$, and $\frac{\partial q_i^*}{\partial c} < 0$ for $\forall \lambda \in (-1,1) \wedge c \in (-1,1)$. The economic intuition behind these comparative statics is immediate: the former simply shows that a decrease in the market competitiveness implies a fall (rise) in production if goods are substitutes (complements); the latter reveals that, as long as the goods are close substitutes, the strategic market interactions yield lower production levels. Subsequent substitutions into eq. (6) yield

$$w_i^* = \frac{\alpha(1 + c\lambda)}{2 + (1+\lambda)c}, .i = 1,2, \tag{10}$$

with $\frac{\partial w_i^*}{\partial \lambda} > 0$ and $\frac{\partial w_i^*}{\partial c} < 0$: as the degree of competition among firms in the market decreases (more collusive behavior, $\lambda \to 1$; goods more complements, $c \to -1$), the duopoly rents enlarge and, consequently, the union can capture a higher share of those rents. Further substitution of eqs (9) and (10) into eq. (2) allows to obtain

$$\pi_i = \frac{(1-\alpha)(1+c\lambda)}{[2 + c(1+\lambda)]^2}, \tag{11}$$

with $\frac{\partial \pi_i}{\partial c} < 0$, i. e. the market interactions lead to higher profits in the presence of differentiated goods, so that each firm can easily expand its output and market share. Differentiation of eq. (11) with respect to λ leads to

$$\frac{\partial \pi_i}{\partial \lambda} = \frac{(1-\lambda)c^2(1+\alpha)}{[2+c(1+\lambda)]^3} \geq 0 \Rightarrow \lambda \leq 1 \tag{12}$$

From eq. (12), the next proposition follows.

2.2 Uniform Wage Setting under EB

Let us finally analyze the case of a uniform bargained wage under EB. Maximization of the Nash Product in eq. (5) with respect to wages and employment yields (recall that $D_j = w^* q_j^* = w q_j$)

$$w = \frac{\alpha(1-q_i-cq_j)(q_i+q_j)}{q_i+\alpha q_j} \ (rent-sharing\ curve) \tag{13}$$

$$w = 1-[2-\alpha+c\lambda(1-\alpha)]q_i - cq_j \ (contract\ curve) \tag{14}$$

$i, j = 1, 2, \quad i \neq j$. The solution of the system of FOCs eqs (13) and (14) gives the firm i's output as a function of the rival's output

$$q_i = \frac{1-[\alpha(1+c\lambda)+c]q_j}{2+c\lambda}, \ i, j = 1, 2 \quad i \neq j. \tag{15}$$

The equilibrium output of each firm is

$$q_i^* = \frac{1}{2+c+\alpha+(1+\alpha)c\lambda}, \ i = 1, 2, \tag{16}$$

with $\frac{\partial q_i^*}{\partial \lambda} \lessgtr 0$ for $c \gtrless 0$, and $\frac{\partial q_i^*}{\partial c} \gtrless 0$ for $\lambda \gtrless -\frac{1}{1+\alpha}$. The economic intuition behind the latter comparative statics is as follows: if the market is characterized by an almost Bertrand-like competition, firms can find advantageous output expansion in the presence of complement goods to capture larger market shares.

Substitution of eq. (16) into eq. (13) gives

$$w^* = \frac{2\alpha(1+c\lambda)}{2+c+\alpha+(1+\alpha)c\lambda} \tag{17}$$

with $\frac{\partial w^*}{\partial \lambda} > 0$ and $\frac{\partial w^*}{\partial c} < 0$. Further substitution of eqs (16) and (17) into eq. (2) leads to

$$\pi_i = \frac{(1-\alpha)(1+c\lambda)}{[2+c+\alpha+(1+\alpha)c\lambda]^2} \tag{18}$$

研究結果

Proposition 1.

Profits under separate industry-wide union wage setting are always increasing in the relevant range of $\lambda, \lambda \in (-1, 1)$, independent of the bargaining power of the parties and degree of product differentiation: the more the firms behave in a collusive way, the higher their profits are.

Corollary 1.

Given that $\lambda = 0$ corresponds to Cournot competition while $\lambda \to -1$ represents Bertrand-like competition, under EB with separate wage setting the standard result that Cournot profits are higher than Bertrand profits is unequivocally established.

	Proposition 2. *In a duopoly with CV and industry-wide union setting an uniform wage under EB: (1) if goods are complements, the collusive behavior maximizes profits; and (2) if goods are substitutes: (a) for a given level of product differentiation, the higher the union bargaining power is, the higher the degree of competition that ensures the maximum profits; (b) for a given level of the union bargaining power, the higher the degree of substitutability is, the less competitive the market has to be to maximize profits.* **Corollary 2.** *When goods are substitutes, the profits are maximized by the quantity-setting competition à la Cournot ($\lambda = 0$) if $c = \alpha$.*
研究貢獻	Making use of a CV model in a unionized duopoly with industry-wide negotiations, this note has shown that the validity of Basak s (2017) result that Cournot profits are larger than Bertrand ones under RTM can be easily extended to the case of EB when there are separate negotiations with an outside option in case of breaking negotiations different from zero. However, the case of a uniform wage bargaining under EB can lead to the appearance of the result of a profit ranking reversal between different modes of competition. More in detail, the note has shown that, under EB with uniform wage, more Bertrand-like competition maximizes the firms profits in the presence of not close substitute goods and high union bargaining power. This finding modifies the established literature on the effects of a centralized union on the market competition, so far focused only on the wage bargaining and the wage rigidity result (Dhillon and Petrakis 2002).
未來研究方向	A further step would be to check the robust- ness of the present results in an extended game framework where externalities in consumption and production, managerial delegation and capacity choices are considered.

篇名	*Pricing and market conduct in a vertical relationship*
作者	*Henrik Vetter*
出處	J Econ (2017) 121:239–253 DOI 10.1007/s00712-017-0529-5
摘要	We consider a vertical relationship where an upstream monopolist supplies input to downstream duopolistic firms. Under the assumption that downstream firms produce under a soft capacity restriction, we show that the balance between price and quantity in downstream firms' strategy is endogenous. In this way, the monopolist's charge for input co-determines downstream market conduct. We spell out some consequences of this, for example, that an increase of downstream capacity costs can result in increased output. We discuss other implications in relation to pass-through and incidence of cost changes.
研究動機	The finding that market conduct in the downstream sector in a vertical relationship is endogenous has, to our knowledge, not been studied before. In particular, down-stream market conduct is determined by the relationship between the marginal cost increase when producing beyond capacity on the one hand, and parameters including the marginal production cost for output within capacity and the input price on the other hand. It turns out that the welfare effects of cost changes are opaque when downstream market conduct is endogenously determined. For example, because an increase of the cost of capacity in downstream firms is conducive to Bertrand competition, a change from Cournot to Bertrand behavior following higher capacity cost benefits consumers (as a result of higher output at a lower price). Standard results suggest that higher capacity costs in downstream firms harm all involved parties: the upstream firm, downstream firms, and consumers.
模型	We consider a supply chain where a monopolist supplies an input that is used by two downstream firms that serve final consumers. The downstream market is a symmetrically differentiated products market, where demand for final consumption is described by a linear demand system given by: $p^i = a - q^i - dq^j$, or $q^i = D^{-1}\left((1-d)a - p^i + dp^j\right)$ With respect to production in the downstream sector, we assume that each firm converts one unit of input to one unit of the final product under a constant marginal cost of $\psi + \omega$ as long as that output is within or equal to capacity. Here ψ is the price of one unit of capacity and the cost is thus $(\psi + \omega)\, q^i$ when $q^i \leq k^i$, where k^i denotes capacity. When firms decide on production and capacity simultaneously, we have $k^i = q^i$ and the cost function $(\psi + \omega)\, q^i$ applies for all output. Now consider production costs when the decision to build capacity and produce is separated in time. As long as the firm produces within capacity, the marginal cost is $\psi + \omega$, but under a soft capacity, the firm can produce beyond capacity at an additional cost. More precisely, when the firm produces beyond capacity the marginal cost increases to $\theta + \omega$, where $\theta > \psi$.

	For future reference notice that, when the monopolist charges a price of ω, and downstream firms decide simultaneously on capacity and price, the profit-maximizing price set by downstream firms is $p^i(\omega) = (2-d)^{-1}((1-d)a + (\psi + \omega))$. Combining the price set by downstream firms with the demand functions, we can rewrite the monopolist's revenue, ωQ, in terms of final sale to see that marginal revenue is $MR^v = a - \psi - (2-d)(1+d)Q$. Equality between marginal revenue and the monopolist's marginal cost gives $Q^v = ((2-d)(1+d))^{-1}(a-(\psi + v))$. Following the argument used initially by Spengler (1950), the upstream monopolist commits to a price of the input before downstream firms make decisions on price and capacity.3 In the downstream market, we assume that capacity decisions occur first and that they occur simultaneously, and that they are public knowledge. In a subsequent stage, firms engage in Bertrand competition and because production is flexible, output in the second stage is determined by a market-clearing condition. Under these assumptions, there is an equilibrium in pure strategies in the market stage, and, applying the findings in Maggi (1996), we have Proposition1 (proof in "Appendix").
研究結果	Proposition 1 Let $\hat{\theta}(\omega, \psi) > \theta$. In a unique symmetric sub-game-perfect equilibrium, price and quantity are $\{p_i^b(\theta); q_i^b(\theta)\}for\psi \le \theta \le \hat{\theta}(\omega, \psi)$. Equilibrium price and quantity are $\{p_i^c(\psi)\ ;\ q_i^c(\psi)\}$for $\theta > \hat{\theta}(\omega, \psi)$. Moreover , in equilibrium , each firm's production is equal to the firm's capacity: $k^i = q^i$, i = b, c. The critical value of the additional cost of producing beyond capacity,$\hat{\theta}(\omega, \psi)$, is defined by $p_i^b\left(\hat{\theta}(\omega, \psi)\right) = p_i^c(\psi)$. When the capacity restriction makes it possible to sustain a price at least equal to the Cournot price, firms set this price. In this way, the critical cost differential is determined by equality between the sustainable Bertrand price at the critical value of the stringency of the capacity restriction and the Cournot price that obtains when firms produce within capacity.The monopolist's sale is restricted by demand in the downstream market, and the expressions for total output under Cournot and Bertrand competition show that sales change negatively when the monopolist charges a higher price. But in addition, when the monopolist changes the input price, she can affect the nature of competition between downstream firms. To see this use $p^b\left(\hat{\theta}(\omega, \psi)\right) = p^c(\psi)$ to define the critical input price,$\hat{\omega}$, by: $\hat{\omega} = a + d^{-2}\left((1+d)(2-d)\psi - (2+d)\theta\right)$ (1) This makes clear that downstream firms have Bertrand behavior when the monopolist charges a price less than or equal to $\hat{\omega}$. In parallel, when the input price is higher than $\hat{\omega}$,

downstream firms behave as if they are in a Cournot duopoly.

When Proposition1 applies, it is easy to verify that $Q^c(\omega) = Q^b(\omega) = \hat{Q}$ where $\hat{Q}$ =2/ $d^2 \cdot (\theta - \psi)$ for $\omega = \hat{\omega}$. The monopolist's revenue, given by $R^c = \omega Q^c(\omega)\ and\ R^b = \omega Q^b(\omega)$, respectively, is also a continuous function of the input price. However, the elasticity of demand for input is discontinuous in the input price at $\omega = \hat{\omega}$ because of the change in market conduct. The monopolist's revenue as a function of the quantity, marginal revenue is:

$$MR\begin{cases} MR^C(Q) = a - \psi - (2+d)Q, Q < \hat{Q} \\ MR^b(Q) = a - \theta - (2-d)(1+d)Q, Q \geq \hat{Q} \end{cases}$$

Finally, when the marginal cost satisfies $\omega\hat{}-(\theta-\psi)\leq v\leq\omega\hat{}$, the marginal-cost curve intersects the marginal-revenue curve twice.

Proposition 2

There exists a critical value of the monopolist's marginal cost, called $\tilde{v}$, that satisfies $\hat{\omega} - (\theta - \psi) \leq \tilde{v} \leq \hat{\omega}$ so that the profit-maximizing in put price induces downstream Cournot equilibrium for $v > \tilde{v}$, and downstream Bertrand equilibrium for $v \leq \tilde{v}$. Proof To find the monopolist's profit-maximizing decision, define $\tilde{Q}_c$ and $\tilde{Q}_b$ by the intersection of $\tilde{v}$ and $MR^c(Q)$, and $\tilde{v}$ and $MR^b(Q)$, respectively, where $\tilde{v}$ solves $L(\tilde{v}) = G(\tilde{v})$, and

$$L(\tilde{v}) = \int_{\tilde{Q}_c}^{\hat{Q}} \left(\tilde{v} - MR^c(Q)\right) dQ$$

$$G(\tilde{v}) = \int_{\hat{Q}}^{\tilde{Q}_b} \left(MR^b(Q) - \tilde{v}\right) dQ$$

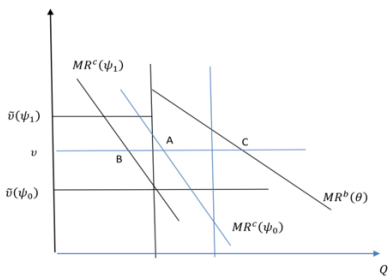
Using the result in Proposition 2 together with the expressions for marginal revenue when downstream firms exercise Cournot and Bertrand behavior, respectively, we have:

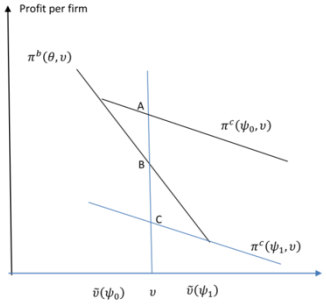
$$\omega = \begin{cases} \omega^c = 1/2(a + v - \psi), v > \tilde{v} \\ \omega^b = 1/2(a + v - \theta), v \leq \tilde{v} \end{cases}$$

When the monopolist sets an input price that implies Bertrand competition, the maximum price is $\omega^b_{max} = 1/2(a + \tilde{v} - \theta)$. When the price results in Cournot competition, the minimum price is $\omega^c_{min} = \omega^b_{max} + 1/2(\theta - \psi)$.

Proposition3:

$\tilde{v}$ is increasing in the cost of capacity, ψ, and decreasing in stringency of the capacity restriction, θ.





	$\pi = \pi^c(\psi, v) = 1/2(2+d)^{-1}(a-\psi-v)^2$ $\pi = \pi^b(\theta, v) = 1/2\big((2-d)(1+d)\big)^{-1}(a-\theta-v)^2$ The results in the preceding sections show that the standard assumption of fixed market power is replaced by endogenous market conduct when the downstream sector is made up of firms that produce under a soft capacity restriction. As is familiar, the difference between the change in duopolistic firms' mark-up and the price that consumers pay owes to the existence of an increase in deadweight loss. When competition in the downstream market is endogenously determined, we notice, with respect to mark-ups, that an increase of the capacity cost has the expected effects even if the change results in changed market conduct from Cournot to Bertrand. With respect to a change in the stringency of the capacity restriction, if there is Bertrand competition before and after the change, downstream firms' mark-up goes up while the monopolist's mark-up goes down. The increase of downstream firms' mark-up is an example of cost amplification; that is, the price increases more than one-for-one with respect to a cost change. The results in the preceding sections show that the standard assumption of fixed market power is replaced by endogenous market conduct when the downstream sector is made up of firms that produce under a soft capacity restriction. Figure 2 shows that the upstream monopolist suffers a profit loss although, as noted, the change of market conduct lessens the fall in profits. It is easy to see that downstream firms are harmed. If there were Cournot competition after the change, profits go down. By construction, for any given set of parameters, the Cournot price is the price that maximizes downstream firms' profit. Because of the change in market conduct to Bertrand com- petition, the price goes down and we know that profits go down in downstream firms. When the capacity restriction becomes more binding and there is Bertrand competition before and after the change, downstream firms' profit increases. This is explained by the fact that the Bertrand price moves towards the Cournot price. The change in consumer price explains why consumers are harmed, and Eq. (5) shows that the upstream monopolist's profits are harmed. If the change of capacity restriction implies that market conduct changes to Cournot competition, consumers are worse off due to the increase in the price for the final product. An upward finite change of v around $\bar{v}$ gives rise to some non-standard effects. More precisely, the monopolist's mark-up increases in turn, leading to a discrete upward change of the price that the monopolist charges. Nevertheless, even though the monopolist passes through more than the cost increase to downstream firms, the monopolist's profit does not increase. The increase in the input price changes competition in the downstream sector from being of the Bertrand type to being of the Cournot type. Nevertheless, the downward change of final output shows that consumers are harmed.
研究貢獻	In this paper, we have analyzed how the price charged by an upstream monopolist selling an essential input to downstream duopolistic firms affects downstream market conduct. In particular, when downstream firms compete in prices under the restriction set by a soft

	capacity constraint, downstream market conduct is endogenously deter- mined somewhere in between the polar extremes of pure Bertrand and pure Cournot competition. We have discussed some implications with a focus on pass-through and incidence of cost changes. We showed that endogenous market conduct gives rise to non-standard results, for example that the upstream monopolist passes through more than the cost increase to downstream firms and simultaneously suffers a profit decrease. The observation that the pricing of the upstream monopolist co-determines down- stream market conduct seems to be novel as, conventionally, the kind of imperfect competition in each layer of a vertical relationship is taken as exogenous.
未來研究方向	Insofar as the assumption of a soft capacity constraint being an adequate description of production processes, it appears relevant to re-examine results on mergers, the consequences of price discrimination, and similar questions that are often the subject of analyses of industries with strong vertical ties.

篇名	Commodity taxes and welfare under endogenous market conduct
作者	Henrik Vetter
出處	J Econ (2017) 122:137–154
摘要	We consider consumption taxes in a model of endogenous Cournot versus Bertrand competition. It is argued that when the choice of unit versus ad valorem taxes affects longer-term decisions beyond the customary price or quantity decisions, the mix of the two taxes co-determines market conduct. This gives ad valorem taxes an anti-competitive effect that harms ad valorem taxes' efficiency in comparison with unit taxes. We show that a mix of the taxes—or a unit tax alone if we compare one or the other of the taxes—is sometimes welfare superior on account of consumer-price and tax revenue effects. A practical implication of our findings is that pass-through rates are only sometimes useful guides for policy. In fact, we show when the proper response to demand for higher revenue is a higher unit tax rate and a lower ad valorem tax rate.
研究動機	Comparison of incidence speaks in favor of ad valorem over unit taxes in monopoly markets (Suits and Musgrave 1953), and more broadly in a homogenous-product market where fixed market conduct ranges from situations of monopoly to perfect competition (Delipalla and Keen1992). With respect to policy conclusions, the preference for ad valorem taxation is largely upheld in symmetric Bertrand–Nash equilibrium in a differentiated-products market as shown by Anderson et al. (2001) and recently, in terms of pass-through rates, by Häckner and Herzing (2016). Existing analyses of ad valorem and unit taxes under oligopoly are based on the assumption that it is possible to change taxes without changing market conduct. Speaking to this point, established results mightbe a poor guide to policy because, as pointed out by Milgrom and Roberts (1990,p.515), modern manufacturing technology is characterized by non-convexities. Thus, in capacity-then-price competition—when firms produce under one marginal cost within capacity and marginal cost jumps discontinuously when they exceed the capacity restriction—Maggi (1996) shows that market conduct is endogenous. The purpose of this paper is to discuss the efficiency of ad valorem and unit taxes when the taxes affect market conduct. The Bertrand–Edgeworth model with soft capacity constraints, as noted, is introduced in Maggi (1996), and in-house production versus external production, procurement of extra intermediate input at higher costs, and paying workers for overtime motivate the significance of soft capacity restrictions. In this setting, equilibrium is somewhere in between the Bertrand and Cournot outcomes, moving gradually towards the Cournot equilibrium as the significance of the capacity constraint increases. The significance of the capacity restriction is a function of demand conditions and production costs. Formally, taxes affect demand as well as costs because an ad valorem tax rotates demand, and the unit tax implies a shift of marginal costs. In this way, the taxes co-determine how the capacity restriction affects competition and

this results in a relationship between taxes and endogenous market conduct. Recently, in differentiated oligopoly, Häckner and Herzing (2016) suggest that we analyze taxes and welfare in terms of pass through. Building on work by Weyl and Fabinger (2013), they discuss how tax incidence gives policymakers information in situations where the marginal cost of public funds is difficult or impossible to access. In particular, Häckner and Herzing (2016) demonstrate that the tax's pass-through rate and the cost of public funds are inversely related. Based on this, pass-through rates for ad valorem and unit taxes suggest that it is always best to raise more revenue by adjusting the ad valorem tax rate (leaving the unit tax rate unchanged). Our results demonstrate that this conclusion holds only if market conduct is unaffected by the mix of the taxes. In fact, we show when it is best to reduce the ad valorem tax rate and increase the unit tax rate to provide more tax revenue.

In public finance, the comparison of taxes is a recurring theme, and for oligopoly most analyses confirm the initial finding of Delipalla and Keen (1992), that ad valorem taxes are welfare superior to unit taxes. Some exceptions are Hamilton (2009), Wang and Zhao (2009), and Lapan and Hennessy (2011). In two-good multiproduct oligopoly, Lapan and Hennessy (2011) show that the welfare ranking of the two taxes is uncertain if goods are complements. Similarly, Hamilton (2009) shows the importance of consumer preferences by using theDixit–Stiglitz (1977) approach for taste for variety in a model where multiproduct oligopolistic retailers are positioned (equally spaced) around a circle. Even with symmetric preferences, we cannot exclude that a revenue-neutral shift from ad valorem to unit taxes increases welfare. With respect to costs, Wang and Zhao (2009) and Lapan and Hennessy (2011) show that cost asymmetries can reverse the welfare ranking, which is not that surprising given the findings by Salant and Shaffer (1999) on cost minimization in duopoly. Using an approach that is very different from the aforementioned analyses because we model competition endogenously through firms' capacity choice, we show when unit taxes are the best choice even under symmetry. The issue of taxes and market conduct is discussed in Vetter (2014) in a model of homogenous-good duopoly. In that analysis, the taxes have different competitive effects because the equilibrium is a consistent-conjectures equilibrium, and taxes affect equilibrium conjectures. Thus, the explanation for the taxes' different effects is based on unobservable variables. Moreover, at least some literature views consistent conjectures as a poor explanation for behavior (see for example Lindh (1992)). In contrast, in this paper, the different effects of the two taxes are attributable to a cost parameter that is, in principle, observable. Furthermore, modeling capacity choice, we explicitly account for the mechanism whereby the tax structure affects firms' longer-term decisions beyond the customary price or quantity decisions that have been analyzed previously in the literature on consumption taxes and welfare. Finally, a differentiated-products setting is arguably more realistic than the homogenous products case discussed in Vetter (2014).

模型	With respect to demand, following Dixit (1979) and Singh and Vives (1984) , we use a simplified version of Häckner and Herzing (2016) so that consumers' utility is quasilinear and given by $u(q_i, q_j) = aq_i - 1/2{q_i}^2 - bq_iq_j + \Psi, i, j = 1, 2, j \neq i$. That is, utility is quadratic in the consumption of the differentiated product and linear in consumption of other goods. Maximizing utility subject to the expenses being equal to income (called I), demand is given by $p_i = a - q_i - bq_j$ or $q_i = D^{-1}((1+b)a - p_i - bp_j),\ D = 1 - b^2 > 0,$ where qi is the sale of firm i, and pi is the price set by firm i = 1,2. The constant a is assumed to be sufficiently large to allow for meaningful solutions and parameter b satisfies 0 ≤ b ≤ 1. Monopoly obtains for b = 0, and as b increases, the goods become closer substitutes. Firms compete in two-stages. In the first stage, they pre-commit to capacity. Capacity choices are made simultaneously and capacity decisions are public knowledge. In the second stage, firms engage in price competition under the assumption that they produce under a soft capacity constraint. That is, each firm produces in the second stage under a fixed marginal cost, called z, as long as a ctual output is within the capacity decided upon in the first stage. Marginal cost for output in excess of capacity is constant and given by z+θ. The capacity restriction is determined by investment in ki,i = 1,2, units of capacity which are available at a fixed cost per unit, called c. Hence, the firm's capacity cost is given by cki. Plainly, should θ fall short of c, firms will not invest; hence, it is assumed that θ>c. The difference between θ and c, the extracost when producing beyond capacity, determines thestringency of thecapacity cost. In the second stage, where firms' capacities are given, the Bertrand response functions are the solutions to $argmax_{p_i}((1-\tau)p_i - x_i)q_i$, where τ and t are the ad valorem and unit taxes rates, respectively, and the marginal cost is xi = z+t when qi ≤ ki and xi = z +θ +t when qi > ki. Let us define the following symmetric Bertrand prices and quantities by: $p^b(\omega) = (2-b)^{-1}((1-b)a + \omega)$ $q^b(\omega) = ((2-b)(1+b))^{-1}(a-\omega),$ (1) where ω = (1−τ)−1 (z+θ +t), and symmetric Cournot prices and quantities by: $p^c(\psi) = (2+b)^{-1}(a + (1+b)\psi)$ $q^c(\psi) = (2+b)^{-1}(a-\psi),$ (2) where $\psi = (1-\tau)^{-1}(z+c+t)$. We restrict attention to parameter configurations where prices and quantities are strictly positive and where marginal tax revenues are also strictly positive.
研究結果	**Proposition1** With respect to the Bertrand equilibrium notice that firms produce within capacity so that the marginal cost is z+c+t. However, because of the capacity restriction, it is possible to sustain a higher price than what is dictated by this marginal cost even when there is Bertrand competition. Moreover, the Bertrand price is increasing in the extra cost of producing beyond capacity. When the stringency of the capacity restriction makes it possible to sustain a price at least equal to the Cournot price, i.e., pb (ω) = pc (ψ), this price prevails because it is the profit-maximizing price.

Proposition 2 Together, the results show when the pure unit tax is preferable to pure ad valorem taxation on the two accounts, that it produces more tax revenue and imposes lesser harm on consumers. Proposition 2 shows that substitution between the two products must be sufficiently strong. Notice in passing, that when substitution is weak, each firm enjoys more monopoly, and we know that, in a monopoly, ad valorem taxation welfare-dominates unit taxation (cf. Suits and Musgrave 1953). With respect to the cost of public funds notice that the results imply that $Cc\tilde{}\tau,0 > Cb\ 0,\tilde{}\ t$. Proposition2 shows that $R^b_{0,\tilde{t}} > R^c_{\tilde{\tau},0}$ and $p^b\left(\omega_{0,\tilde{t}}\right) < p^c\left(\psi_{\tilde{\tau},0}\right)$. The latter, in turn, implies that the unit tax is the least harmful of the two taxes, that is, $\left|\Delta W^b_{0,\tilde{t}}\right| < \left|\Delta W^c_{\tilde{\tau},0}\right\|$.

Proposition 3 Under Propositions 2 and 3, the tax-triggered change from Bertrand to Cournot competition is an inferior change be cause tax revenue decreases and the price increases. To observe this, denote by τ∗ and t∗ the tax policy that is found by the intersection of Φ and $\tilde{\Phi}_{\tilde{t}}$. First, notice that the tax combination $(0,\tilde{t})$ is better than $(\tilde{\tau},0)$ under Proposition 2. Moreover, in the Cournot regime, $(\tilde{\tau},0)$ is the best combination under fixed-price tax combinations, that is, $\tilde{t}q^b\left(\omega_{0,\tilde{t}}\right) > \tilde{\tau}\,p^c\left(\psi_{\tilde{\tau},0}\right)q^c\left(\psi_{\tilde{\tau},0}\right)$. Next, under fixed market conduct, the results by Delipalla and Keen(1992) imply that a move from $(0,\tilde{t})$ along $\tilde{\Phi}_{\tilde{t}}$, but no further than intersection of $\tilde{\Phi}_{\tilde{t}}$ and Φ, means that the price is fixed, while more ad valorem taxation and less unit taxation increase tax revenue.

Thus, $\tau^* p^b\left(\omega_{\tau^*,t^*}\right)q^b\left(\omega_{\tau^*,t^*}\right)+t^*q^b\left(\omega_{\tau^*,t^*}\right) > \tilde{t}q^b\left(\omega_{0,\tilde{t}}\right) > \tilde{\tau}\,p^c\left(\psi_{\tilde{\tau},0}\right)q^c\left(\psi_{\tilde{\tau},0}\right)$. That is, when Propositions 2 and 3 apply, a mix of the two taxes is better than a pure ad valorem tax:

Proposition 4 For a range of combinations of tax rates, that pure ad valorem taxation is inefficient relative to a mix of the taxes. Contrary to existing analyses of unit and ad valorem taxes in oligopoly, a mix of the taxes welfare-dominates pure ad valorem taxation because of the taxes' different competitive effects.

Proposition 5 also adds to the conclusion in Häckner and Herzing (2016), that pass through shows how policymakers ideally adjust taxes. To be more precise, under Proposition 5, it is optimal to acquire the desired tax revenue by a pair of taxes (τ^*,t^*) that are in Φ. Because the taxes are in Φ, we have $p^c\left(\psi_{\tau^*,t^*}\right) = p^b\left(\omega_{\tau^*,t^*}\right)$. An increase in either of the taxes implies the Cournot outcome. Thus, the pass through is defined by $lim_{\epsilon\to 0}\epsilon^{-1}\left(p^c\left(\psi_{\tau^*,t^*+\epsilon}\right)-p^c\left(\psi_{\tau^*,t^*}\right)\right)$ for the unit tax, and for the ad valorem tax by $lim_{\epsilon\to 0}\epsilon^{-1}\left(p^c\left(\psi_{\tau^*+\epsilon,t_0}\right)-p^c\left(\psi_{\tau^*,t^*}\right)\right)$. Hence, thepass-through rates follow the ranking in Häckner and Herzing [2016, equations (11) and (12)]. When there is a need to increase revenue, pass through suggests an increase in the ad valorem tax rate alone. The next result (proved in the "Appendix") shows when this is false.

Proposition 6 Consider the consequences of the proposition. In order to increase tax revenue, the tax policy is changed from that of (τ^*,t^*) to $(\tau^*+\epsilon,t^*)$ where ϵ satisfies the restriction in the proposition. By the proposition, the tax policy $(0,t^*_\epsilon)$ is better than $(\tau^*+\epsilon,t^*)$ on the

	two accounts that price is more favorable, that is $p^b\left(\omega_{0,t_\epsilon^*}\right) < p^c\left(\psi_{\tau^*,t^*+\epsilon}\right)$, and tax revenue is higher, that is $R_{0,t_\epsilon^*} > R_{\tau^*,t^*+\epsilon}$.Thus, choosing how to adjust taxes based on pass through gives a welfare-inferior adjustment. Moreover, an argument that goes parallel to Proposition 3 shows that the intersection of $\tilde{\Phi}_{t_\epsilon^*} = \left\{(\tau,t)\middle| p^b\left(\omega_{\tau,t}\right) = p^b\left(\omega_{0,t_\epsilon^*}\right)\right\}$ and Φ is non-empty. The intersection defines taxes, called $\left(\tau_\Phi^*, t_\Phi^*\right)$, that are superior to $\left(0, t_\epsilon^*\right)$ because $p^b\left(\omega_{\tau_\Phi^*,t_\Phi^*}\right) = p^b\left(\omega_{0,t_\epsilon^*}\right)$ and $R_{\tau_\Phi^*,t_\Phi^*} > R_{0,t_\epsilon^*}$. **Proposition 7** Thus, rather than an increase of the ad valorem tax rate and no adjustment of the unit tax rate (as suggested by pass-through rates), the ideal is to increase the unit tax rate and lower the ad valorem tax rate. In terms of the marginal cost of public funds, the extra tax revenue generated by a change of taxes from (τ^*, t^*) to $(\tau^* + \epsilon, t^*)$ can be generated by a change from (τ^*, t^*)a combination of a higher unit tax rate and a lower ad valorem tax rate. The latter option will increase the price less than the price increase generated by the move from (τ^*, t^*) to $(\tau^* + \epsilon, t^*)$. Therefore, the marginal welfare cost is least when, simultaneously, the ad valorem tax is reduced and the unit tax is increased.
研究貢獻	With respect to consumption taxes, most results tell us that when firms have strategic concerns about quantities only, or when duopoly equilibrium is described by a fixed conjecturalvariationsomewhereinbetweentheBertrandandCournotconjectures,ad valorem taxes are superior to unit taxes. In this paper we re-examine unit versus ad valorem taxes in a two-stage differentiated-product duopoly. In the first stage, firms commit to a soft capacity restriction and compete in prices in the second stage. This application of a Bertrand–Edgeworth duopoly model admits a precise description of firms' strategic choice through capacity decisions. In this way, it is possible to relate taxes to market conduct through the relationship between taxes and firms' longer-term decisions. For fixed-market conduct, existing results highlight that the ad valorem tax has a pro-competitive element, that being a tax on the mark-up. This explains why the ad valorem tax is to be preferred over the unit tax. In contrast, our results show that it is sometimes best to use a mix of the two tax rates, and if the policymaker is to choose between one or the other, it is sometimes best to use the unit tax. These results rely upon a previously unobserved implication of the two taxes. As explained in Häckner and Herzing (2016), the harmful effects of consumption taxes are co-determined by the competitive pressure. We show that a change of taxes away from an ad valorem and towards a unit tax increases the competitive pressure, bringing market conduct closer to that of pure Bertrand competition. This may give the unit tax a preference over the ad valorem tax. From a practical point of view, our results suggest that the pass-through rates of taxes are a guide to how to adjust taxes when the mode of competition is exogenous. To see this, suppose that a mix of the two taxes is the best choice. In this situation, comparison of pass-through rates tells us that it is best to increase revenue by a higher ad valorem tax rate and leave the unit tax unchanged. This is the effect of ad valorem taxes being a tax on mark-up. However, if market conduct changes from the Bertrand type to being of the Cournot type, and, given

	parameter conditions, we have the opposite conclusion, that it is in fact best to adjust taxes so that there is Bertrand competition under an increased unit tax rate and a lower ad valorem tax rate.
未來研究方向	With respect to generalizations, we can think of linear demand functions as approximations of more general functions so that our results are reasonably broad. Alternatively, Maggi (1996) proves Proposition 1 for more general demand functions but without the possibility of taxation. However, because of the simple structure of unit and ad valorem taxes, that result applies to the situation we analyze. Hence, for more general demand functions, we can expect that the mix of the taxes co-determines market conduct. Under the assumption that the (redefined) $\Phi, \tilde{\Phi}_{\tilde{t}}$ and $\tilde{\Phi}_{t_z^*}$ sets still have non-empty intersections for strictly positive tax rates, one can then find conditions on demand elasticities that parallel the condition in Proposition 2. In turn, the subsequent propositions apply.

篇名	Effects of indirect taxation in a mixed oligopoly
作者	Sudesh Mujumdar*, Debashis Pal Department of Economics, University of Cincinnati, Cincinnati, OH 45221-0371, USA Received 23 July 1997; accepted 22 October 1997
出處	Economics Letters
摘要	In a mixed oligopoly, an increase in tax (ad valorem or specific) does not change total output, but increases the output of the public firm and the tax revenue. Also, privatization may increase both tax revenue and welfare.
研究動機	It is well recognized that the impact of taxation policies critically hinges on the market or industry structure to which they apply. Taxation has been extensively studied in models of perfect competition and monopoly. Recently, increasing attention has been accorded to the study of taxation in oligopolistic settings (e.g., Katz and Rosen, 1985; Dierickx et al., 1988; Delipalla and Keen, 1992; Tanaka, 1992). However, to the best of our knowledge, there has been no analysis of taxation in the context of mixed oligopolies, where private and state-owned public firms coexist in the same market and maximize different objective functions. This is rather surprising given the fact that there has been an outpouring of research on mixed oligopoly in recent years (e.g., DeFraja and Delbono, 1989; Cremer et al., 1989, 1991; Fershtman, 1990; Ireland, 1990; Fjell and Pal, 1996; White, 1996. For an excellent survey, see DeFraja and Delbono, 1990). In this paper, we analyze the revenue and welfare implications of ad valorem and specific taxes in the context of a mixed oligopoly. In addition, the effects of privatization on revenue and welfare are examined. It is shown that the results obtained in the case of a mixed oligopoly model with taxes are often strikingly different from those obtained in a corresponding Cournot model with taxes or a mixed oligopoly model without taxes.
模型	Without loss of generality, we consider a mixed oligopoly, with one public firm and one private firm, producing a homogeneous commodity. The aggregate demand for this commodity is represented by the (inverse) demand curve $P \equiv P(Q)$, where $Q=q_1+q_2$. Q denotes the aggregate output and, q_1 and q_2 are the outputs of the public and private firm, respectively. We assume that $P'(Q)<0$. Let c_1 and c_2 denote the marginal costs of the public and the private firm, respectively. We assume that $c_1>c_2$, that is, the public firm is assumed to be less efficient than the private firm. For simplicity, fixed costs are assumed to be zero. The firms compete in quantities. The objective of the public firm is to maximize social welfare (W), defined as the sum of consumers' surplus, producers' surplus and tax revenue. The private firm maximizes its profits.

研究結果	**Proposition 1.** *An imposition of or a change in the ad valorem tax has no effect on total output, irrespective of whether it is levied on the consumers or the producers. However, the output of the less efficient public firm rises and that of the more efficient private firm falls with an imposition of or increase in tax. Consequently, welfare declines.* **Proposition 2.** *Suppose an ad valorem tax of the same rate is imposed on either the consumers or the producers* (*that is,* $t_c^A=t_p^A$), *then welfare is higher but tax revenue is lower if the tax is imposed on* c p *consumers.* **Proposition 3.** *The ad valorem taxes* t_c^A *and* t_p^A *yield an identical amount of revenue, if and only if, they generate an identical level of welfare.* **Proposition 4.** *Imposing a specific tax on the producers is equivalent to imposing a similar tax of the same amount on the consumers. Moreover, an imposition of or a change in the specific tax does not alter total output. However, an imposition of or an increase in the specific tax reduces the output of the more efficient private firm and increases the output of the less efficient public firm. Consequently, welfare declines.* **Proposition 5.** *Suppose ad valorem and specific taxes are selected such that they yield the same amount of revenue, then the ad valorem tax generates a higher level of welfare. Conversely, if ad valorem and specific taxes are selected such that they yield an identical level of welfare, then the ad valorem tax generates a higher amount of revenue.* **Proposition 6.** *For a fixed level of a specific tax, privatization lowers tax revenue. For a fixed ad valorem tax level, revenue may either increase, decrease or remain unchanged with privatization.* **Proposition 7.** *For a fixed specific or ad valorem tax level, welfare may increase or decrease with privatization. In the event that welfare falls with privatization, it may be possible to raise both welfare and tax revenue above their respective preprivatization levels, through a lower tax.*
研究貢獻	The analysis of the effects of ad valorem and specific taxes in a mixed oligopoly yields some significantly different results in comparison to those that obtain in a corresponding Cournot oligopoly. First, total output is unaffected by the imposition of or change in either tax. Second, with an increase in tax the less efficient (public) firm gains market share over the more efficient (private) firm. Third, tax revenue always rises with a tax increase. Also, by introducing taxes in a mixed oligopoly model we show that privatization can increase welfare—something that was not possible in a corresponding model without taxes. Interestingly, privatization can increase both welfare and tax revenue.

篇名	International asymmetric R&D rivalry and industrial strategy
作者	Yasunori Ishii
出處	J Econ (2017) 122:267–27
摘要	This study models an international duopoly under “asymmetrical” R&D investment rivalry, in which a firm from a cost-reducing country (CRC) conducts process R&D investment, a firm from a quality-improving country (QIC) makes product R&D investment, and the governments in the respective countries implement R&D policies for their own firms. We analyze the relationship between firms’ R&D investment-price decisions and governments’ R&D policies. We find that an increase in the process (product) R&D investment subsidy of the CRC (QIC) raises the process (product) R&D investment of its firm, but reduces the product (process) R&D investment of its rival firm, and vice versa. We also show that, while an increase in the process (product) R&D investment of the CRC’s (QIC’s) firm increases its output, it decreases its rival’s output, and vice versa. Furthermore, we demonstrate that, while an increase in the process R&D investment of the CRC’s firm reduces the prices of both firms, an increase in the product R&D investment of the QIC’s firm raises its own price, but reduces its rival’s, and vice versa. Finally, we find that the optimal R&D investment policies of both countries are subsidy policies, when their firms act under asymmetrical R&D investment rivalry.
研究動機	Existing theoretical studies focusing on the R&D decisions of firms mostly analyze symmetrical R&D rivalry, in which all firms in the industry undertake the same type of R&D, and do not consider asymmetrical R&D rivalry. For example, Spencer and Brander (1983) and Bagwell and Staiger (1994) assume that all firms conduct process R&D investments, while Park (2001), Zhou et al. (2002), Jinji and Toshimitsu (2006), Ishii (2014), and Taba and Ishii (2016) assume that all firms execute product R&D investments. Clearly, these assumptions of symmetrical R&D rivalry are in contrast with the asymmetrical R&D rivalry empirically observed in the real world. Then, it is not prudent to suggest optimal behaviors of firms and optimal R&D policies of governments in the real world by considering the findings of the studies assuming symmetrical R&D rivalry. Therefore, the present study considers asymmetrical R&D rivalry as original and meaningful from both theoretical and empirical viewpoints. These arguments constitute our motivation for the present study.

模型	In this study, similar to existing studies on product R&D investments of firms (see Park 2001; Zhou et al. 2002; Jinji and Toshimitsu 2006; Ishii 2014; Taba and Ishii 2016), we adopt a third-country trade model of an international duopoly, where two firms from different countries produce goods in their own countries and export them to a third country. The firms act under asymmetrical R&D investment rivalry, and, thus, incur costs for performing such R&D investments in the form of extra costs in addition to their production costs. Moreover, the governments of these countries subsidize (or tax) R&D investments of their own firms to boost their international competitive position. However, in the present model, to avoid explanatory and analytical confusions, we refer to a country whose firm executes process R&D investment as a cost reducing country (CRC), and to a country whose firm conducts product R&D investment as a quality improving country (QIC). On the other hand, consumers in the third country can buy goods imported from the CRC and QIC in addition to other goods, and they explicitly appreciate the qualities of these goods. To capture these features, following the quasi-linear utility function exploited by Ottaviano et al. (2002) and Ishii (2013, 2014), we define the utility function of the representative consumer in the third country as: $U = e(x + x^*) + k(qx + q^* x^*) - m(x^2 + x^{*2})/2 - nxx^* + z, (n < m)$ (1) where $x(x^*)$ and $q(q^*)$ are the output and quality of the CRC's (QIC's) firm, respectively, z is the demand for the aggregated good (e.g., numéraire), and e, k,m, and n are positive exogenous parameters[1] (in this study, superscripted symbols * denote variables associated with the QIC). Then, the utility maximization subject to a budget constraint yields the following inverse demand functions: $p = e + kq - mx - nx^*$, $p^* = e + kq^* - mx^* - nx$, (2) where p and p^* are the prices of the CRC's and QIC's firms, respectively. When the CRC's and QIC's firms engage in asymmetrical R&D investment rivalry, while the product quality q of the CRC's firm is given, the quality q^* of the QIC's firm is endogenously determined by choosing its product R&D investment, I^*. Typically, since the product quality of the QIC's firm is regarded as an increasing function of its product R&D investment, we assume that the relationship between q^* and I^* is given by the quality function $q^* = q^*(I^*)$, which has the following plausible features: $0 < q^*(0) = q^*_0$, $\partial q^*(I^*)/\partial I^* = q^*_-(I^*) > 0$, and $\partial^2 q^*(I^*)/\partial I^{*2} = q^*_{--}(I^*) < 0$. Here, q^*_0 is the quality level of the QIC's firm when it does not conduct product R&D investment. Alternatively, while the unit production cost c^* of the QIC's firm is given, the unit production cost c of the CRC's firm is endogenously determined by choosing its process R&D investment, V. It is assumed that the relationship between c and V is given by the production cost reducing function $c = c(V)$ with plausible features: $c(0) = c_0$, $\partial c(V)/\partial V = c_-(V) < 0$ and $\partial^2 c(V)/\partial V^2 = c_{--}(V) > 0$, which implies that the production cost of the CRC'S firm is decreasing in V, but its absolute value

	reduces as V increases. The CRC's firm must incur the highest unit production cast c_0 when it does not undertake process R&D investment. Moreover, we assume that both firms of the CRC and QIC are price makers on their output market in the third country, but they act as price takers in all markets for inputs, including the R&D investment market, because many firms from other industries also participate in these markets. Therefore, the prices p_{*q} and p_c of product and process R&D investments, and unit production costs, c_* and c are taken as given by these two firms, although c varies only when V changes. However, we assume that there are no cooperative agreements, no technological spillovers, and no other corporation policies, although these are important issues, to focus on R&D policies in a primitive international duopoly.2 Now, considering the inverse demand functions expressed in (2) and the conditions mentioned above, the profits of CRC's and QIC's firms are defined as
研究結果	**Proposition 1** While an increase in the process (product) R&D investment of the firm in the cost-reducing (quality improving) country increases its own output (= export), it decreases that of its rival firm, and vice versa. **Proposition 2** (a) When the process R&D investment of the cost-reducing country's firm increases, the prices of both firms fall, and vice versa. (b) An increase in the product R&D investment of the quality improving country's firm raises its own price, but reduces its rival's, and vice versa. **Proposition 3** An increase in the R&D investment subsidy rate of each country increases the R&D investment of the firm in its own country, but decreases that of the firm in the rival country. **Proposition 4** Both optimal process and product R&D investment policies of the cost reducing and quality improving countries are subsidies, even when their firms choose R&D investments and outputs under asymmetrical R&D investment rivalry.
研究貢獻	In this study, we first model an international duopoly under asymmetrical R&D investment rivalry, where the CRC's firm undertakes process R&D investment, the QIC's firm executes product R&D investment, and their governments implement R&D investment policies. Subsequently, we analyze the optimal output and R&D investment choices of firms, and the optimal R&D investment policies of governments. Notable results are derived from the proposed model of the international industry and summarized as propositions and corollaries. They clarify the optimal output and R&D investment decisions of firms and the optimal R&D policies of governments in an international industry under asymmetrical R&D rivalry. Although almost all results are consistent with our intuitive explanations, it is quite thoughtless and risky to provide suggestions without conducting a theoretical analysis with an appropriate model. The present study adopts such a rigorous analysis and presents robust results.

未來研究方向	This study can be extended in several ways. We did not consider any other R&D policies implemented by governments, such as R&D regulation and R&D permits. Moreover, it would be interesting to examine optimal output and R&D investment choices of firms and optimal R&D policies of governments by modeling a reciprocal trade international industry under asymmetrical R&D rivalry.

篇名	*Manufacturer collusion: Strategic implications of the channel structure*
作者	*Markus Reisinger, Tim Paul Thomes*
出處	Journal of Economics & Management Strategy, 2017, 26.4: 923-954.
摘要	The paper investigate how the structure of the distribution channel affects tacit collusion between manufacturers. When selling through a common retailer, they find—in contrast to the conventional understanding of tacit collusion that firms act to maximize industry profits—that colluding manufacturers strategically induce double marginalization so that retail prices are above the monopoly level. This lowers industry profits but increases the profit share that manufacturers appropriate from the retailer. Comparing common distribution with independent (exclusive) distribution, they show that the latter facilitates collusion. Despite this result, common retailing leads to lower welfare because a common retailer monopolizes the downstream market. For the case of independent retailing, they also demonstrate that contract offers that are observable to the rival retailer are not necessarily beneficial for collusive purposes.
研究動機	Building on these considerations, the objective of this paper is to examine how the structure of the distribution channel affects the strategic choices of manufacturers aiming to achieve cooperative outcomes. The paper seek to address the following questions on the channel structure in a dynamic setting. *How does the channel structure affect collusive behavior between manufactures? Are cooperation strategies under common retailing fundamentally different from those under independent retailing? How does contract observability affect tacit collusion between competing manufacturers? Which channel structure leads to a higher welfare? Are the findings robust to changes in the contractual form?*
模型	Consider competition between two manufacturers, M_1 and M_2, which sell imperfect substitute products. They distinguish between two channel structures: (*i*) the goods are sold through a common retailer and (*ii*) the goods are sold through independent retailers. The two structures are displayed in Figure 1. The retailing technology is one-to-one, and the final demand for manufacturerM_i's product is $D^i(p_i, p_j)$, where p_i and p_j are the retail prices, with $i, j = 1, 2$ and $i \neq j$. The cost functions of manufacturers and retailers are linear with marginal cost normalized to zero.
研究結果	In this paper, they explored the interaction between competition among Internet platforms and the degree of ad targeting they use. More targeting implies stronger competition. Yet, since web sites cannot commit to low targeting intensity, they are caught in a prisoners' dilemma: each firm individually benefits from increased targeting. In the equilibrium, web sites will therefore drive up targeting. On the one hand, this reduces consumer prices, because of

	improved matching of consumers with advertisers. However, if consumers dislike the loss of privacy that is a consequence of targeting, privacy policy can lead to better outcomes than the laissez-faire outcome. In that case, also web sites can benefit from the less intense competition that goes with this commitment to privacy protection.
研究貢獻	The paper analyzed the effects of different channel structures on the ability of manufacturers to tacitly collude. They demonstrated that tacit collusion between manufacturers under common retailing works in a fundamentally different way than in case they sell directly to final consumers. In the latter case, manufacturers maximize industry profits under collusion. By contrast, with a common retailer, manufacturers willingly accept industry profits below the static ones. They set higher wholesale prices to increase their profit share at the expense of the retailer, thereby obtaining a larger piece of a smaller pie. In their analysis, they restricted attention to punishments involving infinite reversion of the stage game outcome. A natural question is therefore if their main results still hold with optimal punishment. Characterizing optimal penal codes is difficult in models with differentiated products because manufacturers' profits are positive even during the punishment phase (see, e.g., Wernerfelt, 1989 or Hackner, 1996). Determining the punishment profit then involves the calculation of the optimal punishment length, which cannot be done in closed form. However, with homogeneous goods, optimal penal codes are equivalent to infinite reversion of the stage game because the latter already implies that manufacturers obtain zero profits. Therefore, optimal punishment cannot inflict lower profits on the deviant manufacturer (see, e.g., Belleflamme & Peitz, 2010). It follows that for homogeneous products, their results hold even under consideration of optimal penal codes. In addition, the intuition of their main result rested on the finding that colluding manufacturers do not maximize industry profits when distributing through a common retailer. This effect is independent of the form of the punishment because it does not affect the punishment phase. This hints to the fact that a similar effect as the one identified in their analysis drives the critical discount factor when considering optimal punishments.
未來研究方向	None

篇名	*Bundling and joint marketing by rival firms*
作者	*Thomas D. Jeitschko[1] Yeonjei Jung[2] Jaesoo Kim[3]* *1 Department of Economics, Michigan State University, USA* *2 Electricity Policy Research Group, Korea Energy Economics Institute, Korea* *3 Department of Economics, IUPUI, Indianapolis, USA*
出處	Journal of Economic and Management Strategy
摘要	This article study joint marketing by firms who price discriminate between consumers who patronize only one firm (single purchasers) and those who purchase from both (bundle purchasers). Firms either set the price of the bundle and then compete along side the bundle; or they determine a rebate that is applied to joint purchasers and then set prices. Even though the pricing structure in the joint marketing scheme is determined noncooperatively, the commitment to the joint marketing agreement allows firms to leverage their stand-alone prices—leading to higher profits and lower consumer surplus in either case, compared to both uniform pricing and independent price discrimination without a joint marketing agreement. Nevertheless the two schemes differ dramatically, in that rebates increase joint purchasing, whereas bundle pricing diminishes bundle purchases.
研究動機	In recent years, similar joint marketing arrangements involving separate firms have been on the rise. What differentiates these joint marketing agreements from rewards programs of retailers who also cater to joint purchasers is that the pricing decisions in the joint marketing agreement are retained by the firms. In this paper, they investigate the pricing incentives when companies choose pricing strategies that target consumers who make purchase decisions across firms. Consumers have unit demands for any given firm's product. However, each firm's product has unique features and attributes that give a consumer who has already purchased a unit an added utility from buying the other product as well. The products can be either substitutes or complements, but each product also has idiosyncratic features, which differentiate it from other products in the consumers' eyes. And so, consumers are endogenously divided into two groups: Whereas some consumers purchase a single product from either firm, others purchase both products. They consider two kinds of joint marketing schemes: firms set a price for their contribution to the bundle (bundle pricing) or firms set a rebate offer that is applied to the stand-alone price when a consumer makes a joint purchase (rebate).

模型	Two firms whose constant marginal costs of production are normalized to zero offer distinct products. Consumers have unit demands for a firm's product, but a consumer may purchase a unit from each firm (i.e., make a joint purchase). A consumer who consumes (only) the good produced by firm $i \in \{1,2\}$ has a gross utility of w_i, whereas consuming both firms' products together yields a gross utility of $w_1 + w_2 - V$, where V captures cross-effects of joint consumption. If $V=0$ then consuming one good has no marginal effect on the utility from consuming the second good. If $V>0$, then the two goods are partial substitutes in that some utility is associated with consuming either of the products and the added utility of consuming the second good is diminished. Finally, if $V<0$, the goods exhibit complementarities in consumption: having purchased the first good augments the utility of adding the second good. They assume that all consumers value the bundle of goods the same. However, for there to be scope for price discrimination, they introduce consumer heterogeneity in terms of individuals' preferences between the two goods. Specifically, they assume that the two products are horizontally differentiated, which they capture through an extension of the Hotelling (1929) model.
研究結果	This paper onsider two kinds of joint marketing schemes: firms set a price for their contribution to the bundle (bundle pricing) or firms set a rebate offer that is applied to the stand-alone price when a consumer makes a joint purchase (rebate). In both cases, joint marketing necessitates the communication and agreement across parties, which is not needed for the stand-alone pricing decisions that are made, and so firms are able to leverage their commitment to a joint marketing agreement into higher prices and higher profits compared to both uniform pricing and independent price discrimination. The mechanism through which prices and profits are raised depend on the nature of the joint marketing scheme used. With bundle pricing, an increase in one firm's price for its contribution to the bundle increases the stand-alone demand for the rival's product. Consumers are drawn to single purchasing, and thus the rival firm is able to raise its stand-alone price. This enables the firms to capture more surplus from single-purchasing customers. In contrast, an increase in the rebate leads to fewer single-purchasing consumers of one's own good. This draws consumers into joint purchasing. The increased demand for the bundle is reinforced by charging high stand-alone prices, which yields higher profits because the fixed rebate then applies to a high price.
研究貢獻	They have studied joint marketing arrangements that target consumers who purchase across multiple firms with special prices. Because the arrangements concern prices, these joint marketing arrangements are implemented by a third-party marketer in an arms-length relationships between the participating firms to mitigate antitrust price-fixing concerns. An implication of this type of arrangement is that although prices are set noncooperatively, commitments to the pricing policy of the joint-marketing scheme can be used to leverage the prices set by the firms when compared to uniform pricing or independent price discrimination in which there is no joint marketing.

未來研究方向	None

篇名	*Licensing Essential Patents: The Non-Discriminatory Commitment and Hold-Up*
作者	*Youping Li [a], Jie Shuai [b]* *School of Business, East China University of Science and Technology, 130 Meilong Road, Shanghai [a], Wenlan School of Business, Zhongnan University of Economics and Law [b]*
出處	J Econ (2018) 125:173–188
摘要	Licensors of patents essential to a standard are often required to license on reasonable and non-discriminatory (RAND) terms. Using a model with owners of essential patents and licensees who invest into standard-conforming technologies, this paper demonstrates that the non-discriminatory commitment alleviates the hold-up problem. Moreover, it improves consumer and social welfare, and promotes upstream innovation as licensing revenue is increased. In an extended model with each licensor independently choosing whether to make the commitment, all licensors voluntarily commit in the unique equilibrium.
研究動機	Standard setting organizations (SSOs) often require owners of standard-essential patents (SEPs) to commit to license under reasonable and non-discriminatory (RAND) terms.1 One of the main objectives for implementing the RAND policy is to reduce the hold-up problem. Once included into a standard, a patent becomes a necessary input for any downstream manufacturer that wishes to adopt the standard. Fearing that the value of its investment into the production technology will be extracted by SEP owners, a downstream manufacturer chooses to invest at a suboptimal level.
模型	There are N patents that are essential to a standard. They are respectively owned by N different licensors denoted by $1,2,\ldots.N$. Two licensees in the downstream, a and b, use a technology in accordance with the standard to produce the final good, which is homogeneous. The marginal cost of producing the final good for licensee i, $i = a; b$, is initially at c and can be lowered to $c - x_i$, where xi measures the intensity of investment made by the licensee to improve the production technology. The cost of investment is $R(x_i)$, which is increasing and sufficiently convex.

研究結果	**Proposition 1** The licensees invest more in the production technology when the owners of SEPs are committed to non-discriminatory licensing than when they are not committed. **Proposition 2** The owners of SEPs earn higher prot (licensing revenue), when they are committed to non-discriminatory licensing than when they are not committed. **Proposition 3** Consumer surplus, producer surplus and total social surplus are higher, although the licensees' profits are lower, when the owners of SEPs are committed to non-discriminatory licensing than when they are not committed**.** **Proposition 4** It is a dominant strategy for an SEP owner to commit to non-discriminatory licensing. The unique equilibrium is for all SEP owners to make the non-discriminatory commitment. **Proposition 5** When the licensees engage in Bertrand price competition in a market with demand specificed by (6), the level of investment made by the licensees, licensing revenue, consumer surplus and social welfare are higher when the owners of SEPs are committed to non-discriminatory licensing than when they are not committed. **Proposition 6** Given that the SEP owners are constrained to charge reasonable royalty rates, the level of investment made by the licensees, licensing revenue, consumer surplus and social welfare are weakly higher when the owners of SEPs are committed to non-discriminatory licensing than when they are not committed. **Proposition 7** When the licensees are asymmetric in the cost of investment as specificfied by (8), the level of investment made by the licensees, licensing revenue, consumer surplus and social welfare are higher when the owners of SEPs are committed to non-discriminatory licensing than when they are not committed.
研究貢獻	They find that when the SEP owners are committed to non-discriminatory licensing, the downstream licensees have a higher incentive, than when they are not committed, to invest in the production technology that is used to make the final consumer product, suggesting that the ND commitment is e effective in alleviating the hold-up problem.
未來研究方向	

篇名	*The efficiency of competing vertical chains with network externalities*
作者	*DongJoon Lee, Kangsik Choi*
出處	Economics Letters, 168, 1-5
摘要	This paper compares vertical integration and vertical separation with network externalities. Contrary to conventional wisdom, if network effects are stronger than the threshold level of the network externality parameter, manufacturers′ strategic choices of wholesale prices move in opposite directions (i.e., wholesale prices may be strategic substitutes under Bertrand competition). Second, if the strength of network effects is strong enough, both profits and outputs are larger under vertical separation than under integration. Finally, if network effects are strong (weak), outputs (wholesale prices, retail prices), consumer surplus, and social welfare are higher (lower) under separation than integration.
研究動機	None
模型	Consider a manufacturing duopoly in which each manufacturer sells its network product to its own retailer. Following Hoernig(2012), they consider that the utility function of the representative consumer is as follows. $U = a(q_i + q_j) - \frac{(q_i^2+q_j^2+2dq_iq_j)}{2} + n\left[(y_i + dy_j)q_i + (y_j + dy_i)q_j - \frac{(y_i^2+y_j^2+2dy_iy_j)}{2}\right] + m$; $i, j = 1,2 \ , i \neq j$ where m denotes the consumption of all other goods, measured in terms of money; q_i denotes the quantity of final product i; y_i denotes consumers' expectations about final product i's quantity; d ∈ (0, 1) represents the degree of product differentiation; and n ∈ (0, 1) measures the strength of the network externalities.
研究結果	This paper examines the efficiency of vertical integration and separation in a vertical structure with network externalities when two-part tariffs pricing can be used to extract the retailers' profits, as studied in Bonanno and Vickers (1988). From the viewpoint of manufacturers, they show that competition and network effects play important roles in efficiency. Conventional wisdom shows that wholesale prices are strategic complements under Bertrand competition. This paper show that wholesale prices are strategic substitutes when network effect is strong. Second, if network effect is sufficiently strong, both profits and outputs are larger under separation than under integration. Common wisdom suggests that stronger competition (or more output) reduces profit (or lower prices). On the contrary, their result shows that greater the output, larger the profit. Third, if the network effect is stronger (weaker) than the degree of product differentiation, outputs (wholesale prices and retail prices), consumer surplus, and social welfare are higher (lower) under separation than under integration. Their conclusions are markedly different from the conventional results of Bonanno and Vickers.

研究貢獻	This paper revisited Bonanno and Vickers (1988) with network externalities. This paper compare vertical integration and separation. From the viewpoint of manufacturers, we show that competition and network effect play important roles in manufacturers' profits as well as social welfare. The main findings of the present paper are as follows. In contrast to conventional wisdom, when network effect is sufficiently strong, both profits and social welfare are larger under separation than under integration. We conclude by discussing the limitations. They focused on the linear demand function in a vertical structure. For further research, it will be interesting to investigate whether their results will hold with non-linear demand as well.
未來研究方向	It will also be interesting to study what would happen if vertically integrated and separated distribution channels coexist. The extension of their model in these directions has been left for future research.

篇名	*Piracy, Imitation, and Optimal Copyright Policy*
作者	*T. Randolph Beard,[a] George S. Ford,[b] Gilad Sorek,[c] and Lawrence J. Spiwak[d]* *a Department of Economics, Auburn University, USA* *b Department of Economics, Auburn University, USA* *c Department of Economics, Auburn University, USA* *d Department of Economics, Auburn University, USA*
出處	Southern Economic Journal
摘要	This article presents a model of optimal copyright policy which incorporates several realistic features which have hitherto been largely ignored. First, although copyright is understood as a means of encouraging the creation of new works, the optimal number of such works is generally not considered. Second, copyright infringement encompasses two different activities subsumed under the same legal umbrella: One might either "pirate" (i.e., illegally copy) a work or one might create a "new" work which is a close imitation of an existing one. The mutual recognition of these two features leads to some surprising conclusions relevant to current debate over copyright reform. In particular, while strong piracy protection encourages overproduction of intellectual property, enhanced protection against imitation can mitigate the associated inefficiencies, benefitting society.
研究動機	The U.S. Congress has strengthened some aspects of copyright law in recent years, most strikingly, recent years have seen the emergence of sustained efforts in many countries to use the judicial process to take down popular websites and platforms, and block offending ISPs. Every year in the United States, the Motion Picture Association of America ("MPAA") provides ratings for around 725 films, more than 2 a day, which are added to the existing stocks of tens of thousands of theatrical movies. The quantity of media competing for the consumers attention is extremely large and, although a copyright provides the owner with an "exclusive right," the value of that right is determined in a very competitive marketplace. Despite the highly competitive nature of most markets for creative works, relatively little formal analysis of optimal copyright policy has been conducted using models of differentiated goods competition. They work here seeks to fill this void. In particular, they will consider the welfare effects of copyright regimes when there is free entry into the production of creative works, and a competitive market for the production of "pirated" copies of protected intellectual property. Further, unlike many earlier analyses, they will consider copyright regimes which encompass both a degree of enforcement against naked piracy and some measure of protection from excessively derivative works (i.e., overly imitative of existing protected property).

模型	This paper analysis uses the circular model of Salop (1979). In Salop's original model, firms incur a sunk cost to enter a market, and the firms/goods on offer are represented as points on a unit circle. Location on the circle indicates "quality" (in a nonvertical sense), and goods located close together are highly similar. A unit mass continuum of consumers is located uniformly on the circle and each buy at most one unit of the good on offer, preferring goods located close by to those farther away, ceteris paribus. Consumers benefit more when they obtain goods close to their ideal preferences, or buy goods at lower prices. Conversely, sellers, and thus society, incur the sunk costs associated with entry.
研究結果	This paper show that in this monopolistically competitive market, piracy, or the mere threat of piracy, can improve welfare by intensifying competition and, thereby, deterring excessive entry. This result is similar to the one obtained in the aforementioned models with a single creator: There, piracy can improve welfare by limiting the monopolistic dead weight loss due to underproduction and utilization. Hence, they finding generalizes the potential of piracy to improve welfare, by providing fringe competition, to monopolistically competitive markets. They consider penalties for both vertical and horizontal infringement. This paper show that, while very severe penalties for vertical infringement can suppress piracy, the resulting equilibrium will have inefficiently high entry, that is, too many of society's resources are dedicated to the production of intellectual property. However, by selecting appropriate levels of penalty for horizontal infringement, this defect can be corrected and efficiency can generally be obtained. Optimal copyright policy, then, necessitates the balancing of these two competing, yet ultimately complimentary, aspects of the law.
研究貢獻	None
未來研究方向	This paper remark also that they assumption of an inelastic demand for intellectual property skirts the issue of inefficient pricing on the part of the rights holder. In they analysis, rights owners prices are driven by competitive forces but, since all consumers buy one-unit, marginalized pricing does not lead to deadweight welfare losses. The level of prices is significant for welfare, though this happens through the channel of "entry." A generalization of the analysis to encompass variable (rather than unit) consumer demands is probably feasible, but they leave this for future research.

篇名	*Vertical integration and knowledge disclosure*
作者	*Chrysovalantou Milliou [a], Emmanuel Petrakis [b]* *Department of International and European Economic Studies, Athens University of Economics and Business, Athens 10434, Greece, Department of Economics, University of Crete, Rethymnon 74100, Greece*
出處	Economics Letters 177 (2019) 9–13
摘要	We explore the incentives of a vertically integrated firm to disclose its advanced downstream technology to its downstream customer-rival. We show that such incentives are present under both price and quantity competition. We also show that knowledge disclosure can discourage foreclosure.
研究動機	When upstream firms integrate forward, they often gain knowledge regarding their downstream partner's technology. This knowledge, besides being potentially useful for the own production, could also be of value to their non-integrated downstream customers-rivals. In this paper, we study the vertically integrated firm's intention to share this knowledge and revisit the welfare effects of vertical integration in this light.
模型	They consider a two-tier market consisting of an upstream monopolist, U, and two downstream firms, D_1 and D_2. Downstream firms produce imperfectly substitute goods, using, in an one-to-one proportion, an essential input produced by U, and face symmetric inverse and direct demands for their final goods: p_i=$p(q_i, q_j)$ and q_i=$q(p_i, p_j)$, with i, j=1, 2 and $i \neq j$. We assume that $p(\cdot)$ is twice continuously differentiable and $\partial_1 p(\cdot) < \partial_2 p(\cdot) < 0$. U produces the input at zero marginal cost. Under vertical separation, D_1 and D_2 produce their final goods facing marginal costs $c_1 = w_1 + c - \Delta$ and $c_2 = w_2 + c$, respectively, where w_i, with $i = 1,2$, is a per unit of input wholesale price that D_i pays to U, $c > 0$ is an exogenous marginal production cost, and Δ, with $c > \Delta > 0$, is a cost-reduction induced by a proprietary technology of D_1
研究結果	**Proposition 1.** The vertically integrated firm fully discloses its knowledge to its downstream customer-rival, $k^* = 1$, when it does not foreclose it. Otherwise, it is indifferent between disclosing its knowledge or not. **Proposition 2.** Knowledge disclosure (weakly) decreases the vertically integrated firm's incentives to foreclose its downstream rival-customer. **Proposition 3**. Under a linear demand system and vertical integration, foreclosure never arises in equilibrium under competition in quantities, while under competition in prices it arises if and only if $\gamma \geq 0.646$.

	Proposition 4. Under a linear demand system and competition both in quantities and prices, (i) there are always incentives for vertical integration, (ii) D_2 benefits from vertical integration without foreclosure unless Δ is sufficiently low, and (iii) the impact of vertical integration on consumer surplus and total welfare is positive and increases with Δ.
研究貢獻	We have shown that a vertically integrated firm has incentives to disclose its advanced downstream technology to its downstream customer-rivals and that knowledge disclosure can prevent the foreclosure of inefficient downstream firms.
未來研究方向	None.

篇名	*Entry License Tax: Stackelberg versus Cournot*
作者	*Susumu Cato, Toshihiro Matsumura*
出處	Journal of Institutional and Theoretical Economics – ISSN 0932-4569
摘要	This study investigates how leadership affects the optimal public policies that impact entry barriers in markets in which the number of firms is endogenously determined. Specifically, this study focus on the relationship between the relative efficiency of an incumbent firm and optimal entry tax (entry barrier). This paper find that this relationship depends on whether the incumbent can commit to its output level before the entries of new firms. The optimal entry tax decreases (increases) with the productivity of the incumbent when it takes (does not take) leadership. This paper find that the optimal entry barrier occurring when the incumbent takes leadership is lower than that when it does not.
研究動機	The entry costs imposed by governments globally differ significantly by industry and country for several reasons. For example, the degree of corruption that affects regulation policies differs among countries (Djankov et al., 2002; Djankov, 2009). Even when the government is clean and efficient, it may impose different entry costs among industries because the optimal degree of regulation is dependent on the market structure (Cato and Matsumura, 2013).
模型	None.
研究結果	In this study, they discussed the relationship between public policies and market structure by examining how leadership affects the optimal entry tax in a free-entry market. When an incumbent cannot commit to its output before new entry, the welfare-improving effect of the entry tax is strong and the technological improvement of the incumbent raises the optimal tax rate. This result changes in the presence of leadership. When the incumbent takes leadership, the welfare-improving effect of the entry tax is weak, and the technological improvement of the incumbent thus reduces the tax rate. These results can be extended to multiple incumbent situations.
研究貢獻	Their results are derived from two properties. One is the aggressive behavior of the incumbent with leadership, which appears in significantly more situations than those discussed in this study and is shown to be robust by Etro (2004, 2006, 2007, 2008). The other property is excessive entry. A positive entry tax mitigates this problem and can improve welfare, and this property holds under a broader class of models with quantity competition if the strategies are strategic substitutes. Thus, they believe that their results do not depend on the specifications of their analysis. However, entry can be either excessive or insufficient if firms face Bertrand competition, and thus the optimal entry tax can be either positive or negative. Their results might then depend on the assumption of quantity competition, and this robustness check

	remains for future research. Finally, this study comment on the robustness of their results. Throughout this study, the demand function is assumed to be linear. It is not easy to extend our results to the case with nonlinear demand functions. However, if we consider a demand function that is sufficiently close to the linear demand function, their propositions continue to hold. Let us consider a demand function such that $P(Q)=\alpha - Q^{\gamma}$. If γ is sufficiently close to one, their propositions are true because of the continuity of the equilibrium.
未來研究方向	Under more general demand function, if they consider any sequence $\{P_s\}$ of demand functions converging to the linear demand function, they obtain that our propositions hold for sufficiently large s. In this sense, their results may be extended to broader settings. A more generalized analysis is a task for future research.

篇名	Export Subsidies and International Market Share Rivalry
作者	James A. Brander [a], Barbara J. Spencer [b] a Faculty of Commerce and Business Administration, University of British Columbia, Vancouver, British Columbia V6T I X3, Canada b Boston College, Chesnut Hill, MA 02167, USA
出處	*Journal of International Economics* 18 (1985). 83-100.
摘要	Countries often perceive themselves as being in competition with each other for profitable international markets. In such a world export subsidies can appear as attractive policy tools because they improve the relative position of a domestic firm in noncooperative rivalries with foreign firms, enabling it to expand its market share and earn greater profits. In elect, subsidies change the initial conditions of the game that firms play. The terms of trade move against the subsidizing country, but its welfare can increase because, with imperfect competition, price exceeds the marginal cost of exports. International noncooperative equilibrium involves such subsidies by producing nations, even though they are jointly suboptimal.
研究動機	Considerable recent attention has been focused on the role of export subsidies in international trade policy. Effective subsidization of firms engaged in international rivalry has been a common practice in Westerneconomies for some time, and there seems to be a growing belief that foreignsubsidization of exports is 'unfair' and merits some sort of retaliation. Such policies do not appear to make much sense from the standpoint of two-good competitive models of international trade. Even in markets wherethe domestic country can exercise some influence over world prices, the domestic interest is served by trade restriction, not by subsidization of trade.'If foreigners wish to subsidize us to consume the goods they produce, so much the better for us. How then are we to understand arguments in favor of export subsidization and in favor of retaliation against foreign subsidization. Rather obviously, domestic producers who stand to gain from protection or subsidization would be strong proponents of such arguments. Still, the alleged success of Japanese policies, for example, suggests that there may be more to the issue than just this. In this paper they present an analysis based on imperfect competition to explain why export subsidies might be attractive policies from a domestic point of view. The central idea is that it is to the advantage of a country to capture a large share of the production of profit-earning imperfectly competitive industries.2 Export subsidies can be used to carry out such 'profit-shifting' policies. Such a motive for subsidization requires the presence of (at least) two exporting countries. We also assume a third country which imports the imperfectly competitive good.

模型	We use the simplest possible structure capable of bringing out the main points. As mentioned, firm behaviour is modelled as a simple Nash quantity (or Cournot) duopoly, with one domestic firm and one foreign firm, who produce identical products.[6] We assume (for this section) that both firms produce only for third markets: there is no consumption in the producing countries. An important assumption is that the government understands the structure of the industry and is able to set a credible subsidy on exports in advance of the quantity decision by firms. The domestic firm produces quantity x and the foreign firm produces y. The domestic firm maximizes variable profit π: $$\pi(x, y; s) = xp(x+y) - c(x) + sx, \quad (1)$$ where c is variable cost, s is a per unit subsidy, and $p(x+y)$ is the (inverse)

world demand (or price) for the good. There may be some additional sunk cost which explains the existence of imperfect competition in this industry. It is omitted since it plays no role in our analysis. The first-order condition for profit maximization is then:

$$\pi_x = xp' + p - c_x + s = 0, \tag{2}$$

with second-order condition:

$$\pi_{xx} = 2p' + xp'' - c_{xx} < 0, \tag{3}$$

where derivatives are denoted by subscripts except for p', the derivative of inverse demand.

Similarly, the variable profit of the foreign firm, π^*, is given by:

$$\pi^* = yp(x+y) - c^*(y), \tag{1*}$$

leading to first- and second-order conditions:

$$\pi^*_y = yp' + p - c^*_y = 0, \tag{2*}$$

$$\pi^*_{yy} = 2p' + yp'' - c^*_{yy} < 0. \tag{3*}$$

We also use the following conditions:

$$\pi_{xy} \equiv p' + xp'' < 0; \qquad \pi^*_{yx} \equiv p' + yp'' < 0, \tag{4}$$

$$\pi_{xx} < \pi_{xy}; \qquad \pi^*_{yy} < \pi^*_{yx}. \tag{5}$$

Condition (4) means that own marginal revenue declines with an increase in the output of the other firm. This is equivalent, given satisfaction of the second-order conditions, to reaction functions being downward sloping. This is a fairly standard regularity condition in noncooperative models, but it can be violated by feasible demand structures, in particular if demand is very convex. From second order conditions (3) and (3*) and from (4), condition (5) always holds if marginal cost is nondecreasing. Only if marginal cost falls more steeply than demand can it be violated. Condition (5) means that own effects of output on marginal profit dominate cross effects.

Conditions (4) and (5) imply:

$$D \equiv \pi_{xx}\pi^*_{yy} - \pi_{xy}\pi^*_{yx} > 0. \tag{6}$$

If conditions (3), (3*) and (6) hold globally, they imply global uniqueness of the equilibrium [see Nikaido (1968, ch. 7)]. Condition (6) is also the Routh–Hurwitz condition for reaction function stability.

研究結果	*Proposition 1. An increase in the domestic subsidy* (i) *lowers the world price of the good;* (ii) *increases domestic profit; and* (iii) *reduces foreign profit.* ***Proposition 2. The domestic country has a unilateral incentive to offer an export subsidy to the domestic firm.*** ***Proposition 3. The optimal export subsidy, s, moves the industry equilibrium to what would, in the absence of a subsidy, be the Stackelberg leader-follower position in output space with the domestic firm as leader.*** *Proposition 4. The noncooperative Nash subsidy equilibrium is characterized by positive production subsidies in both exporting countries.* *Proposition 5. At the noncooperative Nash subsidy equilibrium given by* (25) *and* (27), *joint welfare of the producing nations would rise if subsidy levels were reduced.*
研究貢獻	The paper is built around what seems to us an important part of the modern international environment: countries perceive themselves as being in competition with each other for profitable international markets. In such a world the credibility of governments can confer strategic advantages on domestic firms. In particular, export subsidies can appear as attractive weapons because they improve the relative position of the domestic firm in noncooperative rivalries with other firms, and allow it to expand its market share. The terms of trade will move against the subsidizing country but price still exceeds the marginal resource cost of exports so that the resulting expansion of exports can actually raise domestic welfare. Producing countries have cooperative incentives to get together to agree not to use such subsidies, but they also have an incentive to cheat on any resulting agreements, suggesting that international regulations which attempt to discourage subsidization, such as GATT regulations, are likely to require regular reinforcement if they are to survive.
未來研究方向	此一模型可用來探討國際間合作或競爭的貿易政策

篇名	Local content and emission taxes when the number of foreign firms is endogenous
作者	Luis Gautier Department of Social Sciences, University of Texas at Tyler, 3900 University Blvd, Tyler, TX 75799, USA
出處	Journal of Economics (2017) 122:239–266
摘要	There is a wide range of countries which have employed local content requirements to promote jobs and meet national green energy objectives. At the same time market-based policies (e.g., emission taxes) have been implemented to address environmental degradation. This paper considers a Cournot model in the presence of emission taxes and local content requirements where the number of foreign, more efficient firms, is endogenous. The analysis explores conditions under which an emission tax and/or local content may lower emissions and encourage foreign direct investment. The analysis of policy reform is also explored.
研究動機	There is a wide range of developing countries which have employed local content requirements to promote employment and stimulate the development of industries (for specific cases see e.g., UNIDO 1986, 2011a, b; Sturgeon 1998; Lahiri and Ono 2003; Ado 2013; UNCTAD 2014). At the same time, developing countries face environmental issues and, as a result, some have implemented market-based policies such as emission/carbon taxes (e.g., Blackman and Harrington 2000; Shan and Larsen 1992; Tyler et al. 2013) as well as local content requirements tomeet green energy objectives(UNCTAD 2014, pp. 19–26). The analysis of the interplay between development andenvironmental policy is thus relevant (Bowen 2012). With these in mind, this paper examines the effects of emission taxes and local content requirements on emissions and foreign direct investment (FDI) where firms behave à la Cournot. The analysis explores the policy reform of emission taxes and local content requirements and, in addition, the conditions under which stricter/laxer local content and emission taxes aid in the reduction of emissions and increase in income via FDI.

模型	• Consider an m number of foreign firms and an n number of home firms all of which operate in the home country. Firms (home and foreign firms) compete for the production of a homogeneous good which is exported to a third market exclusively. The number of foreign firms is determined endogenously via the zero-profit condition, whereas the number of home firms is exogenous (Sect. 5 assumes fixed number of foreign firms). The chief reason for the free-entry assumption of foreign firms is to capture the flow of foreign firms in and out of the home country, and thus the role of FDI. • As in Lahiri and Ono (1998) I shall assume constant marginal costs c^h (c^f) for each home (foreign) firm and therefore unit cost are equal to marginal cost. Home firms employ inputs from the home country, but foreign firms may employ inputs from the home and foreign country. With this in mind let k^h (k^f) denote marginal cost when production takes place using all inputs from the home (foreign) country. The government in the home country may command foreign firms to employ a share, $\delta \in (0,1)$,of domestic inputs i.e., δ captures the extent of local content requirement. • Therefore, marginal production costs for each home firm $i(i = 1, \dots, n)$ and each foreign firm$j(j = 1, \dots, m)$ are given by $C_i^h = k_i^h$ (1) (2) $C_j^f = (1-\delta)k_j^f + \delta k_i^h$ • where $k^h > k^f$ i.e., foreign firms are assumed to be more efficient than home firms. Strict inequality is assumed to capture the role of the local content, δ, and the role of entry and exit of foreign, more efficient, firms on emissions and FDI.
研究結果	Proposition 3.1 *Let* $\theta^h \neq \theta^f$ *. Then, total emissions fall with an increase in the emission tax if home firms are sufficiently more pollution intensity i.e.,* $\theta^h n > \theta^f(n+1)$. Proposition 3.2 *Let* $\theta^h \neq \theta^f$."Then, total emissions rise with an increase in the local content if home firms are relatively more pollution intensive i.e.," $n\theta^h > (n+1)\ \theta^f$.
研究貢獻	None
未來研究方向	Crucially, results depend on the assumption that the number of home firms is exogenous. Relaxing this assumption may yield interesting results and it is proposed as a future line of research.

篇名	*Globalization and Market Structure*
作者	J. Peter Neary
出處	Journal of European Economic Association, 2003, V 1, p.245-271.
摘要	Globalization means different things to different people. Neary insists that the core meaning of globalization is the increased interdependence of national economies, and the trend towards greater integration of goods and factor markets. He further proposes a so-called GOLE (General equilibrium model ＋ Imperfectly competitive models) model to approach the study of globalization. In this paper, Neary explores some economic aspects of globalization, e.g., its effects on specialization patterns, cross-border merger waves, and wage inequalities.

研究動機	• To overcome the difficulties of modelling oligopoly in general equilibrium, we want firms to be
	  • large enough to influence the price of their output and smart enough to behave strategically against their rivals,
	  • but small in the economy as a whole such that they take factor prices and national income as fixed in making their decisions.
	• To view firms as large in their own sector but small in the economy as a whole.

模型	Demand: Assume a representative consumer has an additively separable utility function defined over a continuum of goods: (1) $U[\{x(z)\}] = \int_0^1 u[x(z)]dz, \quad u' > 0, \quad u'' < 0$ with a sub-utility function is quadratic: (2) $u[x(z)] = ax(z) - \frac{b}{2}x(z)^2$ Production: • Each of the infinite number of goods be produced by a small number of firms. • Number of firms is exogeneous. • In each sector, one-stage homogeneous-product Cournot competition prevails. • Ricardian specialization: labor is the only factor of production, returns to scale and constant, and labor is used with different efficiency levels across sectors and countries.

研究結果	I.Wage adjustments dampen cross-border merger wave (i) In some sectors, high-cost firms in the home country are brought out by low-cost foreign rivals, while in other sectors the converse happens. That is, in both countries, there are expanding and contracting sectors. (ii) However, the total demand for labor contracts in both countries, wages are then bid down, which raises the profitability of marginal high-cost firms, putting them out of reach of takeovers. (iii) As illustrated in Figure 4, the cost locus shifts down, and do the general-equilibrium repercussions working through labor markets dampen the tendency towards merger waves. II. Implications for takeover (i) Cross-border mergers happen with the facts that the sectors in which mergers occur become less competitive, and the distribution of income tilts towards profits at the expense of wages in both countries (ii) But cross-border mergers serve as “instruments of comparative advantage”, since a. they facilitate more specialization in the direction of comparative advantage. b. And, by putting downward pressure on wages, they reduce the variance of prices and so may increase the gains form trade in both countries.
研究貢獻	Neary's pioneer work has inspired many fellow researchers to investigate the phenomenon of globalization and its resultant results for recent decades.
未來研究方向	Union, multiproduct design, product completion modes, and trade policy.

篇名	*The strategic incentive of corporate social responsibility in a vertically related market*
作者	Chih-Wei Chang, Chia-Chun Li and Yan-Shu Lin
出處	*International Review of Economics and Finance* 59 (2019), 88–97.
摘要	This paper builds a duopoly supply chain model to find the optimal degree of CSR. It shows that a unique interior solution exists when the two brand firms decide their manufacturers' degree of CSR; but when they decide the distributors' degree of CSR, they enforce these distributors to fully participate in the CSR activities. Moreover, in the former case, even though consumer surplus and social welfare are better off, the two brand firms' revenues are worse off; in contrast, in the latter case, although consumer surplus and social welfare are worse off, the two brand firms can obtain more revenue.
研究動機	CSR has become a trend in real world. The CSR Guidelines for Suppliers are also becoming increasingly common. In this paper, the authors want to know whether firms' social responsibility results in a Pareto improvement.
模型	We mainly refer to the setting in Goering(2012) and extend his model to discuss the competition among firms in a duopoly supply chain; in addition, we assume that the brand firm can endogenously choose the degree of CSR of its manufacturer or distributor. Based on this, we set up two cases: one is when the two brand firms decide their manufacturer's degree of CSR; the other is when both brand firms select to enforce the downstream distributor in their supply chain to participate in CSR activities. We also explore the strategic incentive of CSR and its impact on consumer surplus and social welfare and find out optimal degree of CSR in the two cases, respectively. Therefore, the distributor i's profit function is $$\pi_i^d = (p - w_i)q_i - F_i,\ i = 1, 2,$$ and the manufacturers' profit function is $$\pi_i^u = (w_i - c)q_i + F_i,\ i = 1, 2.$$ Let the parameter $$\theta_i^u,\ \theta_i^d \in [0, 1],$$ respectively represent the degree to which the owner requires its manufacturer or

	distributor to participate in CSR activities. Timing of the game: First, the owner determines the optimal degree of CSR to maximize its own profit. [θ^u_i (CP) or θ^d_i (PC)] Second, the upstream manufacturer chooses the optimal royalty rate and fixed franchise fee. [w_i , F_i] Third, the downstream distributor sells the product to the final market of end consumers.[q_i]
研究結果	**Proposition 1.** Under the existence of competition, there is a unique interior solution, i.e.$\theta_i^{u*} \in (0,1), i = 1, 2$, when the two owners simultaneously decide their manufacturers' degree of CSR. **Proposition 2.** Under the existence of competition, given the owners decide to enforce the distributors to participate in CSR activities, they will set the degree of CSR equal to one, i.e. θ^{j*}_i=1, i = 1, 2. **Proposition 3.** Overall consumer surplus and social welfare are better (worse) if the owners ask their manufacturers (distributors) to engage in CSR; however, if the owners force their distributors (manufacturers) to participate in CSR activities, then this leads to an increase (decrease) in industry profit.
研究貢獻	This article focuses on an economic analysis of CSR, and thus we consider all people in the market as potential consumers, evaluate enterprises' CSR by using consumer surplus, and use a two-part tariff as authorization for vertically related markets. Under the existence of competition, we show that the owner has incentive to ask it manufacturer to participate in CSR activities, and so the distributor in the supply chain has a cost advantage to sell more products and occupy a greater market share. CSR is no longer just used for the internal self-regulation of enterprises. Aside from the influence of internal suppliers in the supply chain, CSR also affects the choice of cooperation among manufacturers or even further influences the mode of market competition.
未來研究方向	1. It can be extended to the case when an owner can choose the degrees of CSR of both the manufacturer and the distributor at the same time. 2. we can introduce an asymmetrical strategy into the model - that is, one owner chooses the manufacturer's degree of CSR, while the other owner chooses the distributor's degree of CSR. 3. We could also just modify our model via changing the competition scheme of the distributors (i.e., Bertrand competition). 4. It may look into different structures of the supply chain - for example, when

	there is only one manufacturer, both brand firms will trust the manufacturer to produce their product, and then those end products can be authorized for sale by multiple distributors.

篇名	*Foreign direct investment as a signal*
作者	*Onur A. Koska*[1] *| Ngo Van Long*[2] */Frank Stähler*[3] [1] *Middle East Technical University (METU), Turkey* [2] *McGill University, Canada, and University of Tasmania, Australia* [3] *University of T€ubingen, Germany; University of Adelaide, Australia; and CESifo, Germany*
出處	WILEY
摘要	This paper models oligopolistic competition among potential multinational firms in an environment of firm heterogeneity, incomplete information on costs, and strategic interactions. We show that foreign direct investment is more likely if it can serve as a signal of productivity in an environment of incomplete information as firms would like to avoid sending a low productivity signal. Our model shows that this effect is strong enough such that foreign direct investment can be an optimal foreign entry mode even if trade costs are zero.
研究動機	Why has foreign direct investment (FDI) become the major driver of economic integration although trade has been liberalized at the same time? FDI has become more important than trade, as evidenced by the fact that sales by foreign affiliates have outnumbered export since 1980s. How can trade liberali- zation be aligned with the surge in FDI? In this paper, we explore how FDI as a signal of productivity contributes to the proliferation of multinational enterprises.

模型	1. Our model consists of two countries and two firms. Entry to the industry is restricted because Z units of a specific factor are needed to be able to produce at all, and the aggregate supply of this factor is strictly less than 3Z. The outside option of this factor determines its wage that we have normalized to unity, and we focus on the case of two firms with their headquarters in different countries.[3] The input of Z can best be understood as making the firm productive for the market, but the outcome is random. We also assume that this fixed cost Z is independent of the foreign entry mode (FDI or exporting; but FDI involves an additional fixed cost, F), and consequently, Z does not play any role in determining the foreign entry mode. The firm that is based in country i, denoted firm i, competes against the firm that is based in country j, denoted firm j, in both markets i and j, $i \neq j$ 2. Following the empirical evidence, to reflect the fact that multinational firms are more productive on average, we choose a model in which firms have a genuine interest to be of high productivity, and this is the reason why we employ the simplest model of strategic substitutes in the sense of Bulow, Geana- koplos, and Klemperer (1985). Since FDI is capacity-building and thus a lasting commitment, we develop a model in which firms compete by quantities or capacities.[4] Thus, our model encompasses the reciprocal dumping model of Brander and Krugman (1983), and the reciprocal FDI model of De Santis and Stähler (2004), along with two additional features: marginal production costs are private informa- tion, and FDI may serve as a signal. We defer, however, the signaling aspect of FDI until Section 4. In our model, marginal production costs, denoted c, are private information.
研究結果	Can we say anything about the welfare effects of FDI when FDI is a signal of productivity? Con- sumers will always benefit from FDI as it will reduce the variable production costs. However, it is well known from duopoly models without firm heterogeneity that an FDI option can lead to a prisoners' dilemma for both firms: while each firm's total profits (from the two markets) would be larger if both firms were to choose exporting as the mode of supplying the foreign market, each firm has a unilateral incentive to become multinational, and even the reduction in profit can be larger than the gain in con- sumer surplus.

	This incentive is stronger in the case when FDI can serve as a signal: firms may be will- ing to incur fixed FDI costs, even when trade costs are zero.[15]
研究貢獻	Our paper has shown that the ability to signal productivity via FDI strengthens the incentive to under- take FDI. Of particular interest is our finding that the incentive to be perceived as strong could be so large that FDI may even occur when trade liberalization is complete, that is, when trade costs are zero. In our model, it is the combination of firm heterogeneity and incomplete information that increases the incentive to become multinational. This effect is not present in models of monopolistic competition because there is no strategic interaction; thus such models cannot explain the existence of multinational enterprises in a world without trade frictions.
未來研究方向	none

篇名	Production externality and productivity of labor
作者	JUAN CARLOS BARCENA-RUIZ University of the Basque Country
出處	Revista de Economia Publica, 196-(1/2011): 65-78
摘要	In this paper we consider two imperfectly competitive industries, with the polluting emissions from one industry harming the productivity of labor in the other. The polluting industry has to pay an environmental tax chosen by the government. In this framework, we analyze how the different organizational structure adopted by workers affect the environmental tax set by the government, total pollution emissions from the polluting industry and the productivity of workers in the industry that suffers the externality. We obtain that this depends on the degree to which pollution emissions from the polluting industry affects the marginal product of labor in the other industry.
研究動機	There are many studies that assume that environmental damage is exogenous for consumers and producers (see, for example, van der Ploeg and Zeeuw (1992), Ulph (1996), Requate (2006)). However, environmental damage is endogenous when pollution affects the marginal product of labor and lowers the competitiveness of environmentally sensitive industries. Thus, this paper seeks to analyze the choice of environmental policy (an environmental tax) by governments when the firms of one industry inflict a negative production externality on the firms of another. We assume that these industries are imperfectly competitive.
模型	We consider a model with two industries, denoted by Y and X. There is one firm in each industry. The inverse demand function for product k is: $$p_k = A - q_k,\ k = Y, X, \qquad [1]$$ where p_k is the price in force in industry k and q_k is the output level of firm k. There is a pollutant associated with the production of good X and each unit of good X produced gives rise to one unit of pollution which reduces the marginal product of labor in firm Y. If firm X chooses output level q_X and pollution abatement level a_X, its total pollutant emissions are: $e_X = q_X - a_X$. Therefore, the emission level of firm X depends on its output and its abatement effort. Following David and Sinclair-Desgané (2005) we assume that the emission level is additively separable. For example, an investment in end-of-pipe abatement does not modify the production process and so does not affect the amount of pollution attributable to each unit produced. However, there is technology available for abating this pollutant. Following Ulph (1996) we assume that the total cost of pollution abatement cost for firm X is[4]: $CA_X = d(a_X)^2$. Parameter d is set equal to 1 without loss of generality.

The only factor used in the production process, in both industries, is labor. Firm k hires L_k workers with a uniform wage rate w_k. We consider three cases. First, there is no wage bargaining and workers get their reservation opportunity wage, w_k, which is the same in both industries; this can be interpreted as the wage earned in the competitive sector. Second, there is an independent union in each firm and the utility function of the union in firm k is: $U_k(w_k, L_k) = (w_k - w_r)L_k$, $k=X, Y$. Thirdly, there is a single union that sets the wages in the two firms whose objective function is: $U_X(w_X, L_X) + U_Y(w_Y, L_Y) = (w_X - w_r)L_X + (w_Y - w_r)L_Y$.[5] We consider the monopoly-union model to determine the wage set in each firm in the second and third cases (see Booth, 1995). This model assumes that the union chooses the wage while the firm chooses the employment level once the wage is set by the union. Therefore, the union has full bargaining power when setting the wage.

The technology for producing the good in industry X is: $q_X = L_X$. The pollutant emissions from firm X reduce the marginal product of labor in firm Y. The production technology in firm Y is linear in the amount of labor hired. However, the marginal product of labor in firm Y depends on the total polluting emissions of firm X:

$$q_Y = \frac{L_Y}{1+\beta e_x}, \qquad [2]$$

where parameter β represents the degree to which emissions from firm X harm the marginal product of labor (MPL) in firm Y. From [2], it is obtained that the marginal product of labor in firm Y is: $MPL = \frac{\partial q_Y}{\partial L_Y} = \frac{1}{1+\beta e_X}$. Therefore, the marginal product of labor in firm Y strictly decreases with the pollutant emission level of industry X ($\partial MPL/\partial e_X<0$).[6] If $\beta=0$, $q_Y = L_Y$ and thus pollutant emissions do not harm firm Y. If $\beta>0$, the marginal product of labor in firm Y decreases with parameter β. We assume that $\beta<5/(6w_r) = \bar{\beta}$ to guarantee that the total emission level of firm X, e_X, is non negative when there is no wage bargaining. This assures a positive emission level in the other two cases.

The government sets an environmental tax, t, per unit of pollutant emitted by firm X. Given that firm X has to pay the tax and to abate emissions, its profit is given by:

$$\pi_X = (A - q_X)\, q_X - w_X L_X - t\,(q_X - a_X) - d\,(a_X)^2, \qquad [3]$$

where $L_X = q_X$. Firm Y does not pollute and, thus, it neither pays a tax nor abates pollutant emissions. Its profit is given by:

$$\pi_Y = (A - q_Y)\, q_Y - L_Y w_Y, \qquad [4]$$

where, from equation [2], $L_Y = q_Y(1+\beta(q_X - a_X))$.

The objective function of the government includes the producer surplus in industries X and Y (PS_X and PS_Y), the surplus obtained by consumers when acquiring goods X and Y (CS_X and CS_Y), the utility of the workers in industries X and Y (U_X and U_Y), and the total taxes collected by the government, T:

$$W = CS_X + CS_Y + PS_X + PS_Y + U_X + U_Y + T. \qquad [5]$$

Given that firm X pays a tax of t per unit of pollutant emitted, the total taxes collected by the government are: $T=te_X$. Moreover, as goods X and Y are independent in demand, the consumer and producer surplus in industry k, respectively, are: $CS_k=(q_k)^2/2$ *and* $PS_k=\pi_k$, $k=Y, X$. Union rents are included as that part of the producer surplus which is absorbed by

	the unions (see, for example, Brander and Spencer (1988), Ulph (1996), Bárcena-Ruiz and Garzón (2003)). The timing of the game is the following. In the first stage, the government chooses the environmental tax that firm X has to pay. In the second stage, wages are set simultaneously by the unions (when the wage is not exogenously given). In the third stage, firms simultaneously choose the output (employment) and pollution abatement levels. The game is solved by backward induction from the last stage of the game to obtain a subgame perfect Nash Equilibrium. □
研究結果	***Proposition 1***. *When the pollutant emissions from firm X reduce the marginal product of labor in firm Y, in equilibrium:* $w_X^S > w_X^F > w_r$ *and* $w_Y^S > w_Y^F > w_r$. ***Proposition 2***. *When the polluting emissions from firm X reduce the marginal product of labor in firm Y, in equilibrium: (i) if* $\beta > \beta^S$, *then* $t^N > t^F > t^S > 0$; *(ii) if* $\beta^S \geq \beta > \beta^F$, *then* $t^N > t^F > t^S = 0$; *(iii) if* $\beta^F \geq \beta > \beta^N$, *then* $t^N > t^F = t^S = 0$; *and (iv) if* $\beta^N \geq \beta$, *then* $t^N = t^F = t^S = 0$. ***Proposition 3***. *When the pollutant emissions from firm X reduce the marginal product of labor in firm Y, in equilibrium: (i) if* $\beta^1 > \beta$, *then* $e^N > e^F > e^S$; *(ii) if* $\beta^2 > \beta \geq \beta^1$, *then* $e^F > e^N \geq e^S$; *and (iii) if* $\beta \geq \beta^2$, *then* $e^F > e^S \geq e^N$.
研究貢獻	There are three different wage setting structures. First, wages are exogenously given. Second, there is an independent union in each firm. And, finally, the workers of the two firms are organized in a single union. In this framework, we analyze how the different organizational structures adopted by workers affect the environmental tax set by the government, total pollution emissions from the polluting industry and the productivity of workers in the industry that suffers the externality. We obtain that it depends on the degree to which pollution emissions from the polluting firm affect the marginal product of labor in the other firm.
未來研究方向	We can apply the production externality improving idea to privatization model.

篇名	*Multidivisional firms, internal competition, and comparative advantage: Baye et al. Meet Neary*
作者	*Hamid Beladi[a], Avik Chakrabarti[b]* *a College of Business, University of Texas at San Antonio, United States* *b University of Wisconsin, Department of Economics, Milwaukee, United States*
出處	Journal of International Economics 116 (2019) 50–57
摘要	We present a tractable general equilibrium model to capture the effects of divisionalization on trade in oligopolistic industries. Divisionalization reduces the incentives for diversification in production. The extensive margins of trade expand as a result of divisionalization, facilitating specialization toward the direction of comparative advantage, with exports rising in the case of domestic divisionalization and imports rising in the case of foreign divisionalization. This effect of internal competition on specialization is magnified when competition between divisions is staggered. The factor market effects of divisionalization, domestic and/or foreign, strengthen the expansionary effects on the extensive margins of trade.
研究動機	How does divisionalization affect international trade? They build what is, to the best of their knowledge, the first general equilibrium model that parsimoniously links international trade and divisionalization in general equilibrium.
模型	Consider, following Neary (2003, 2007),5 a stylized world containingtwo countries, with a continuum of atomistic industries indexed by $z \in [0,1]$ each characterized by Cournot competition in the market for a homogeneous good sold at pricep(z). Markets are integrated: Firms produce in the home or foreign country and the output is distributed at zero additional cost to satisfy world demand.6 We abstract from transport costs or trade costs. Following the Dornbusch-Fischer-Samuelson (DFS) exposition of the Ricardian theory, let the countries differ in their access to technology, reflected in unit labor requirements denoted by $\beta(z)$ and $\beta*(z)$ with wages w and w* at home and abroad respectively.

研究結果	1. The extensive margins of domestic exports expand with domesticdivisionalization, holding wages are fixed. 2. Staggered competition between divisions magnifies the extensive margins of trade. 3. Factor market effects of divisionalization strengthen its expansionary effects on international trade.
研究貢獻	Divisionalization is in general expansionary in terms of international trade.
未來研究方向	The framework of analysis can be applied to other issues related to industrial organization.

篇名	Multi-dimensional price discrimination
作者	Qihong Liu a, Jie Shuai
出處	International Journal of Industrial Organization 31 (2013) 417–428
摘要	This paper examines the profitability and welfare implications of price discrimination in a multi-dimensional model. First, when firms price discriminate on one and the same dimension, uniform price lies in between discriminatory prices and price discrimination raises profits relative to uniform pricing. This is in contrast to common findings in existing one-dimensional models featuring best-response asymmetry, suggesting that price discrimination can have qualitatively different implications in one- and multi-dimensional models. Second, price discrimination on one and the same dimension is the likely outcome when price discrimination decisions are endogenized using a two-stage discrimination-then-pricing game. Correspondingly, an observation of one-dimensional price discrimination in practice does not necessarily indicate that the underlying model should be one-dimensional.
研究動機	A relatively large literature has answered these questions in one dimensional settings where consumer heterogeneity occurs on a single dimension along which firms can price discriminate. One strand of this literature assumes best-response symmetry and common findings are that uniform price lies in between discriminatory prices and price discrimination may raise or lower profits. Another strand assumes best-response asymmetry and usually finds that price discrimination intensifies competition, benefiting consumers at the cost of firms This paper extends the existing analysis to a multi-dimensional setting and several new questions emerge. Would firms have an incentive to price discriminate on some dimensions but not others? And if they do, would they price discriminate on the same or different dimensions? These questions do not fit existing studies, because their underlying one-dimensional models do not give firms the option of price discriminating on some dimensions but not others. Moreover, as we will show later, even when product differentiation occurs on multi-dimensions, firms may still choose to price discriminate on only one dimension. Correspondingly, an observation of one-dimensional price discrimination is not necessarily a confirmation that the underlying model is one-dimensional.

模型	Two firms – A and B – are located at the two end points of the square, with firm A at $(0,0)$ and firm B at $(1,1)$ respectively. When a consumer located at (x,y) buys from firm A, she enjoys an indirect utility of[11] $u_A = V - p_A - t_1 x^2 - t_2 y^2,$ where p_A is firm A's price and t_i is the unit transport cost on dimension $i = 1, 2$. If the consumer buys from firm B instead, her indirect utility becomes $u_B = V - p_B - t_1 (1-x)^2 - t_2 (1-y)^2.$ *Generic marginal consumer* Let $(x,\bar{y})$ denote a generic marginal consumer and let p_A and p_B denote firms' prices. Then $$p_A + tx^2 + ty^2 = p_B + t(1-x)^2 + t(1-y)^2 \Rightarrow \bar{y} = \frac{p_B - p_A + 2t - 2tx}{2t}. \quad (1)$$ This formula holds under uniform pricing and for each group of consumers under price discrimination. Throughout the paper, they focus on the welfare impacts of price discrimination on one and the same dimension, and explore how the results compare with those in the standard one- dimensional Hotelling model. In section 3, they discuss Uniform pricing (U–U), Firms price discriminate on one and the same dimension (D–D1), and focus on the comparison of one-dimensional vs. two-dimensional model. Next, they turn to analyze the endogenous price discrimination decisions, and consider two cases: the symmetric subgames and asymmetric subgames. And, they show the SPNEs of the model. In the end of the paper, they also present three cases of extension of the model, namely the perfect price discrimination, asymmetric dimensions, and general n-dimensions.
研究貢獻	The authors examine the issue of price discrimination in a multi-dimensional model. Firms have the option of price discriminating on some dimensions but not others. They find that price discrimination on one and the same dimension raises prices in firms' strong markets but lowers prices in their weak markets, leading to higher overall profits relative to uniform pricing. These results are contrary to predictions from one-dimensional models. On the other hand, price discrimination on one but different dimensions and price discrimination on both dimensions lead to lower prices on average and lower profits, similar to the results in existing literature. We then endogenize price discrimination decisions and find that the likely outcome is price discrimination on one and the same dimension. Correspondingly, observed one-dimensional price discrimination in practice does not necessarily mean that the underlying model should

	be one-dimensional. Our results have clear managerial implications regarding pricing strategies in multi-dimensional settings. Relative to one-dimensional settings, firms may also have more incentives to acquire consumer information which facilitates price discrimination.
未來研究方向	1. To allow for consumer distributions on different dimensions being independent. (e.g. Chen and Riordan, 2010, 2013) 2. To consider general n-dimensions but allow unit transport cost ti and consumer information costs to vary across dimensions. 3. To consider multidimensional price discrimination in settings other than best-response asymmetry (e.g., Holmes, 1989; Schmalensee, 1981) and compare the results in one- vs. multi-dimensional models.

篇名	稅簡化、關垂直差異化產品和社會福利
作者	陳宏易[a]、楊雅博[b]、王穎達[c], a 東吳大學國際經營與貿易學系教授 b 國立高雄大學經營管理研究所教授 c 國立中央大學經濟系博士
出處	*Working paper*
摘要	WTO自杜哈回合談判後推行「關稅簡化 (Tariff Simplification)」政策，其目標是將目前仍屬於非從價關稅的商品轉為以從價關稅的方式課徵。本文建構一個三國兩廠商的垂直差異化模型，並以高、低品質廠商在從量關稅下之價格加權，計算出文獻所謂的等量從價關稅 (Ad Valorem Equivalent, AVE) 稅率，並分析關稅簡化的福利效果。本文的主要發現如下：首先，關稅簡化會使外國生產高品質廠商的利潤下降，而低品質廠商的利潤提高，這是因為相對於從量關稅，上述AVE相當於是對高品質廠商提高實質稅率或對低品質廠商降低實質稅率，對高品質廠商相對不利之故。其次，關稅簡化對進口國的關稅收入、消費者剩餘和社會福利會的影響，取決於AVE計算從價稅率時對高、低品質產品價格所採取的權重大小。當對高品質產品價格所採取權重較小時，關稅收入會提高、消費者剩餘會減少、社會福利會提高；當對高品質產品價格所採取權重居中時，關稅收入、消費者剩餘及社會福利皆會提高；當對高品質產品價格所採取權重較大時，關稅收入會降低、消費者剩餘會和社會福利會提高。最後，若進一步以WTO的觀點來考慮，則本文發現關稅簡化政策並不一定會提升世界福利。
研究動機	WTO 自杜哈回合的後續談判，要求所有的會員國將非從價關稅簡化成從價關稅納入各會員國關稅調整的時間表。但關稅簡化在執行上尚有許多爭議，其中最具爭議的是如何將從量關稅轉為從價關稅的計算方式。目前各國主要採行的方式是將從量關稅稅率除以進口品價格，即所謂的等量從價關稅 (Ad Valorem Equivalent, AVE)。但是由於產品範圍定義的粗細，會影響進口品價格的認定。一般而言，比較合乎邏輯的選擇是使用每個國家海關統計的進口品的單位價值，這些統計數值反映了該國進口品的品質水準和類型。但由於每種類型產品的品項非常多，在計算並不容易，實務上的作法是參考聯合國 (United Nations) 所統計的世界平均進口價格。然而若採取世界平均進口價格作為關稅簡化的標準，卻引起許多開發中國家出口商的不滿，他們認為世界平均進口價格是以較為寬鬆的產品範圍去加總平均而成，這樣無法清楚地反映這些產品範圍中高品質產品的價值。究竟要以「世界平均價格」或該國的「海關價格」作為進口品價格認定的選擇，對 WTO 會員國而言，形成了一個嚴重的問題。因為根據世界進口量計算的進口單位價格，通常遠低於已開發國家海關所計算的平均進口價格。以歐盟為例：如果以從量關稅稅率除以「世界平均價格」來計算 AVE，那麼它將導致比以從量關稅稅率除以較高的歐盟進口價格所計算的 AVE 高出很多。因此，究竟是要以進口國海關統計的進口價格或是世界平均價格，作為關稅簡化的基礎成為各國談判的角力。

模型	假設兩家外國廠家 h、l，各自生產高、低品質的產品並出口至本國進行價格競爭。其中，h 廠商生產的產品品質和價格分別為 q_h 和 p_h，l 廠商生產的產品價格為 p_l，其產品的品質為 q_l，且 $q_h > q_l$。為了簡化分析，本文將低品質廠商的產品品質標準化為 1（亦即 $q_l = 1$），因此 q_h 的大小也反應了兩產品間品質差異的水準。此外，我們假定本國消費者對於產品品質的偏好均勻分布在 θ 上，其中 θ 介於 0 到 1 之間。θ 的大小可以表示消費者對產品品質的偏好程度，θ 越接近 1，就代表消費者越偏好高品質的產品，反之則代表消費者對產品品質的偏好較低。因此，我們可以知道消費者買或不買高（低）品質產品的淨效用分別為： $U_h = \begin{cases} \theta q_h - p_h，買高品質產品的效用 \\ 0，不買的效用 \end{cases}$，(1) $U_l = \begin{cases} \theta - p_l，買低品質產品的效用 \\ 0，不買的效用 \end{cases}$。(2) 由 (1) 和 (2) 式，我們可得知買高品質或低品質無差異的邊際消費者為 $\hat{\theta} = (p_h - p_l)/(q_h - 1)$。同理，我們亦可以求得買低品質或不買無差異的邊際消費者為 $\tilde{\theta} = p_l$。據此，我們可進一步得知高（低）品質產品的需求分別為 $x_h = 1 - \hat{\theta}$ 和 $x_l = \hat{\theta} - \tilde{\theta}$。將邊際消費者代入後，我們可得高、低品質產品的需求分別為： $x_h = \frac{q_h - 1 - (p_h - p_l)}{q_h - 1}$，(3) $x_l = \frac{p_h - p_l q_h}{q_h - 1}$。(4) 利用此一個三國兩廠商的垂直產品差異化進口模型， 其中有兩家生產高、低品質的外國廠商，在本國市場作Bertrand競爭，而本國政府對兩進口品課徵關稅。以高、低品質的產品價格的加權組合作為關稅簡化的基礎，分析關稅簡化對外國生產高、低品質廠商的產量、價格及利潤的影響以及進口國的消費者剩餘、稅收和社會福利的影響。
研究結果	命題 1：對外國高品質廠商而言，除了當 AVE 對高品質產品價格採取夠高的權重，且高低產品品質的差異夠大，導致其增產外，高品質廠商在關稅簡化後會減產。 命題 2: 當 a 值較小時，關稅簡化後，高品質產品的價格會提高，低品質產品的價格則不一定；當 a 值大時，關稅簡化後，高、低品質產品的價格皆會降低。 命題 3 關稅簡化後高品質廠商的利潤下降，低品質廠商的利潤則會增加。 命題 4 關稅簡化對課徵關稅國（本國）的消費者剩餘、關稅稅收及社會福利影響如下：(i) 當 α 較低時，本國的消費者剩餘降低、關稅稅收提高、社會福利提高；(ii) 當 α 居中時，本國的消費者剩餘、關稅稅收以及社會福利皆提高；(iii)當 α 較高時，本國的消費者剩餘提高、關稅稅收降低、社會福利提高。

	命題 5 就全球福利而言，關稅簡化後，當α較小（大）時，全球福利將會降低（提升）。
研究貢獻	本文主要的發現如下：首先，高品質出口廠商的利潤將會下降，低品質廠商的利潤將會提高，這是因為不論 AVE 對高低品質產品價格所採取的權重為何，關稅簡化對高品質廠商相對不利之故。其次，對進口國而言，關稅簡化後，當 AVE 對高品質產品價格所採取權重較小時，關稅收入會提高、消費者剩餘會減少、社會福利會提高，當 AVE 對高品質產品價格所採取權重居中時，關稅收入、消費者剩餘及社會福利皆會提高，當 AVE 對高品質產品價格所採取權重較大時，關稅收入會降低、消費者剩餘會和社會福利會提高。過去文獻認為關稅簡化會將使進口國關稅稅收增加，進而使進口國社會福利增加，但本文發現，關稅簡化並不一定有利於消費者剩餘或使關稅收入增加，需要看關稅簡化 AVE 的權重而定。最後，若進一步以 WTO 的觀點來考慮，則本文發現關稅簡化並不一定有利於提升世界福利，此結果說明 WTO 在實務上推動關稅簡化時，應更注意各國在 AVE 上所訂定的各產品之權重，以減少關稅簡化有可能反而使世界福利減少的可能性。
未來研究方向	雖然本文彌補了過去文獻僅討論同質產品的不足，但實務上仍有許多情況值得後續研究者繼續研究探討的部分，例如當兩國都存在市場，那兩國最適關稅簡化的方式或採計的 AVE 加權權重又該如何調整。除此之外，若市場結構變得更為競爭，即當市場上的廠商家數變更多時又會如何影響各國政府對於關稅簡化的決策，也是值得後續關注的議題。

篇名	*Strategic corporate social responsibility, imperfect competition, and market concentration*
作者	Lisa Planer-Friedrich[1] · Marco Sahm[1] *Department of Economics, Otto-Friedrich-Universität Bamberg, Feldkirchenstraße 21, 96052 Bamberg, Germany*
出處	Journal of Economics
摘要	We examine the strategic use of corporate social responsibility (CSR) in imperfectly competitive markets. Before firms decide upon supply, they choose a level of CSR which determines the weight they put on consumer surplus in their objective function. First, we consider Cournot competition and show that the endogenous level of CSR is positive for any given number of firms. However, positive CSR levels imply smaller equilibrium profits. Second, we find that an incumbent monopolist can use CSR as an entry deterrent. Both results indicate that CSR may increase market concentration. Finally, we show that CSR levels decrease as the degree of product heterogeneity increases in Cournot competition and are zero in Bertrand Competition.
研究動機	Corporate social responsibility (CSR) has become a major concern for many firms, particularly large ones. Among the various motives for CSR, its strategic use in markets with imperfect competition plays an important role. The basic idea is that even pure profit-maximizing firms engage in CSR because it may serve as a commitment device for their strategy choices in oligopolistic environments. Based on this notion, our paper investigates the interplay between the market structure and the level of firms' social concern. We find a mutual impact: On the one hand, higher market concentration leads to higher levels of CSR. On the other hand, the strategic use of CSR increases market concentration.
模型	We consider competition between n ∈ N profit-maximizing firms on the market for some homogeneous good with (normalized) linear inverse demand $p = 1 - \sum_{i=1}^{n} qi$ (1) where p denotes the price of the good and q_i denotes the output of firm $i \in \{1,\ldots, n\}$.Marginal costs of production are assumed to be constant and identical for all firms. For simplicity, we normalize them to zero. Competition between firms is modeled as a two-stage game. In the first stage of the game, each firm $i \in \{1,\ldots, n\}$ publicly commits to a certain objective function V_i . In particular, firm i chooses its level of CSR, i.e., the weight $\theta_i \geq 0$ it puts on consumer surplus C S in addition to profits π_i : $V_i = \pi_i + \theta_i \cdot CS = \left(1 - \sum_{j=1}^{n} qj\right) qi + \frac{1}{2} \cdot \theta_i \cdot \left(\sum_{j=1}^{n} qj\right)^2$ (2) In the second stage of the game, firms decide simultaneously on their output levels $q_i \geq 0$ in order to maximize their objective functions V_i . Below we consider two different scenarios and

	solve each specification of the game for its subgame perfect equilibrium (SPE).
研究結果	Proposition 1 In the SPE of the two-stage game between $n \geq 2$ symmetric firms, the CSR level θ^* that is chosen by each individual firm (a) is positive for any given number n of active firms, (b) decreases in the number n of active firms, (c) converges to zero as the number n of active firms tends to infinity. Proposition 2 The SPE of the two-stage game between one monopolistic incumbent and one potential entrant depends on the level of entry costs. (a) For high entry costs $e > e^{+,}$ entry is blockaded and the monopolist does not engage into CSR. (b) For intermediate entry costs $e^* \leq e \leq e^+$, the incumbent deters entry by means of the positive CSR level $\theta_1^D = 1 - 2e - 2\sqrt{e(1+e)}$ which is decreasing in e. (c) For low entry costs $e < e^*$, the incumbent accommodates entry and both firms choose positive CSR levels with $\theta_1^A > \theta_2^A$.
研究貢獻	We have examined the strategic use of corporate social responsibility (CSR) in imperfectly competitive markets using a two-stage model, in which the level of CSR determines the weight a firm puts on consumer surplus in its objective function before it decides upon supply of a homogeneous good. First, we have shown that the endogenous level of CSR is positive for any given number of firms active in symmetric Cournot competition. Since positive CSR levels imply smaller equilibrium profits, however, consolidation of the market may result. Second, we have demonstrated that an incumbent monopolist can profitably use CSR as an entry deterrent. Both results indicate that CSR may increase market concentration and possibly be anticompetitive. Indeed we have identified circumstances in which CSR decreases consumer surplus, but mitigates the problem of excessive entry thereby increasing total welfare. Finally, we have shown that, qualitatively, the results also hold in Cournot competition with heterogeneous goods. The basic intuition is that the strategic use of CSR serves as a commitment to increase output. While this commitment leads to a kind of prisoner's dilemma in the case of substitutes, it helps to internalize the positive externalities in the case of complements. Such a commitment is, however, undesirable on markets with price competition because larger output implies lower prices. Consequently, firms will not engage in CSR if faced with Bertrand competition.
未來研究方向	None

篇名	Input pricing by an upstream monopolist into imperfectly competitive downstream markets
作者	Ioannis N. Pinopoulos Department of Economics, University of Macedonia
出處	Elsevier Ltd.
摘要	When entry is independent from profitability conditions, the upstream supplier's optimal pricing policy is invariant with respect to downstream market structure. This price invariance result, however, is reversed when there is free entry in downstream market. When entry is endogenously dependent on profitability conditions, the upstream supplier's price setting behavior depends on the number of operative firms in the final goods market. We show that the upstream supplier charges a higher input price under a free entry situation in downstream market than under a no-entry condition. We also show that a higher input price is set under Bertrand competition than under Cournot competition in a downstream market with free entry.
研究動機	A branch of literature that has received considerable attention examines the upstream supplier's optimal pricing policy with respect to downstream market competition. Greenhut and Ohta (1976) and Tyagi (1999) concluded that the price setting behavior of an upstream input supplier does not depend on the number of downstream firms for the constant elasticity of slope demand function.1 Both papers consider the case of an exogenous market structure. e consider the case where products are differentiated and demand structure is linear. In this setup, the upstream input price (wholesale price) is sensitive to downstream market competition, and more specifically it depends on the number of operative firms (retailers) in the final goods market. Hence, the free entry condition in downstream market affects the upstream monopolist's optimal pricing policy and the price invariance result is no longer valid. If the upstream supplier moves first by setting the price of intermediate goods anticipating free entry in the downstream market, she will use her first mover advantage in order to influence the degree of competition for the market. This effect cannot be present in models, which consider a fixed number of downstream firms, and therefore, the upstream monopolist can only influence the intensity of competition in the market. In a no-entry situation, the number of firms enters as a multiplicative factor, both for the downstream firm's profit and for the total revenue of the upstream monopolist. The neutrality result follows. In the case of free entry, however, the number of firms depends on the level of profit of downstream firms generated. Hence, with a higher input price, there is the previous effect (influencing competition in the market), and another one through the number of firms given the presence of elasticity of the number of firms with respect to the input price.

	The effect through the number of firms is always negative; by lowering the price of the input the upstream monopolist induces more entry. Consequently, a lower input price is set under a free entry situation in downstream market than under a no-entry condition. The above conclusions for the upstream monopolist's input supply price under free entry hold for both quantity and price setting behavior of downstream firms. For the Cournot case a full analytical proof is provided, while for the Bertrand case extensive numerical analysis is used.
模型	Consider an economy with two final goods, X and M; the latter is a homogeneous numeraire good produced by a competitive sector while product X is sold in an imperfectly competitive market. Assume an upstream monopolist, which is the provider of an essential input for the downstream production of final good X . One unit of retail output requires one unit of the input. The monopolist charges a price d for the input and the upstream marginal cost is set equal to zero. Let n be the number of retail competitors in the monopolistic sector, each producing a variety of differentiated good. Each downstream firm produces a single product and each product is produced by only one firm. All firms face identical cost functions, composed of a fixed cost f and a constant variable cost. For simplicity, we assume that the marginal cost of production for a downstream firm is the price d of the intermediate input supplied by the upstream monopolist. Let m be the quantity of the outside good which is assumed to be produced at a constant marginal cost equal to 1, and that its competitive price is 1. The utility function is additively separable in m and therefore there are no income effects on the monopolistic sector; this enables us to perform partial equilibrium analysis. Following Bowley (1924), consumer preferences are represented by a utility function of the general form. $$\mathrm{U} = \mathrm{a}\sum_{i=1}^{n} q_i - \frac{1}{2}b\sum_{i=1}^{n} {q_i}^2 - \theta b\sum_{i=1}^{n} q_i \sum_{i\neq j}^{n-1} q_j + m. \qquad (1)$$ The simplifying assumption that the slope parameter (b) is equal to 1 is adopted. Consumer demand for the retail product of firm i is given by the inverse demand function: $$p_i = a - q_i - \theta \sum_{i\neq j}^{n-1} q_j \qquad (2)$$ where pi is the price of firm i's product, qi,qj are the outputs of firm i and j respectively $(i, j \quad 1, 2, \ldots, n, i \quad j)$, and a is a strictly positive constant. The parameter $\theta \in [0,1]$shows the degree of product differentiation. As θ approaches 0, the products of retail rivals become independent. As θ approaches 1, the products of firms become closer substitutes. In the extreme case of $\theta = 1$ products are completely homogeneous. The equilibrium outcomes are derived using backward induction. First, the firms' decision variables under different forms of retail competition are determined, and then the upstream monopolist maximizes its profits, subject to the equilibrium demand for its output under each

	form of retail competition. The types of retail competition examined are Cournot oligopoly, Bertrand oligopoly and oligopoly with free entry, i.e., the number of downstream firms, under quantity and price setting behavior, is determined by the zero profit condition.
研究結果	**Proposition 1.** Under an exogenous downstream market structure, the upstream monopolist sets its input price equal to $\hat{d} = a/2$ under both Cournot and Bertrand competition. **Proposition 2**. Under Cournot competition in a downstream market with free entry, the optimal input price the upstream supplier sets is sensitive to downstream market structure, and it depends on the number of operative firms. **Proposition 3**. $\tilde{d}^c - \hat{d}^c < 0$ for ∀ (f;θ) with $\lim_{f\to 0}(\tilde{d}^c - \hat{d}^c)=0$.
研究貢獻	We considered the case of an upstream monopolist producing the intermediate input and an imperfectly competitive downstream stage, with retailers producing the final differentiated goods. Our model showed that the result of the supplier's optimal pricing policy being invariant to downstream market structure is reversed when there is free entry. The upstream input price is sensitive to downstream market competition, and more specifically it depends on the number of downstream firms. Free entry condition in downstream market affects optimal upstream pricing and the price invariance result obtained under no-entry condition no longer holds. We showed that the upstream supplier charges a lower input price when the number of downstream firms is endogenously determined (free entry) compared to the case when the latter is determined exogenously (no-entry condition), for both quantity and price retail competition. We also showed that a higher input price is set under Bertrand competition than under Cournot competition in a downstream market with free entry. Furthermore, the standard welfare results of the previous literature comparing Bertrand and Cournot competition under free entry emerge if retail competitors procure inputs from an upstream supplier.
未來研究方向	Future research might consider alternative demand formulations, different cost structures and upstream potential competition. Although these extensions may provide new insights of interest, they seem unlikely to reverse the finding that in a downstream market with free entry the upstream input price depends on the number of operative firms.

篇名	*Optimal Production Tax in a Mixed Market with an Endogenous Market Structure*
作者	Susumu Cato and Toshihiro Matsumura Institute of Social Science, The University of Tokyo
出處	The Manchester School
摘要	We investigate how the optimal production tax rate is affected by privatization policies in a mixed oligopoly in which a state-owned public firm competes against private firms in a free-entry market. First, we investigate the domestic private firm case. The optimal tax rate is strictly positive except for the full privatization and full nationalization cases, and the relationship between the optimal tax rate and degree of privatization is an inverted U-shape. Next, we investigate the foreign private firm case and find that the non-monotonic relationship disappears.
研究動機	Tax-subsidy policies are widely observed as industrial policies in many industries (Itoh et al., 1991). In particular, these policies prevail in typical mixed oligopolies, such as the banking, energy, automobile, telecommunications, and transportation industries, and are intensively discussed in the literature (Mujumdar and Pal, 1998; Wang and Chiou, 2016). If the government could choose the tax or subsidy rate without incurring any political cost, this would be an effective and efficient policy instrument for such industries.
模型	Firms produce homogeneous goods and engage in Cournot competition. The inverse demand function is assumed to be $f(X) = A - X$ (A is a positive real number and X is total output). Here, market demand A is assumed to be sufficiently large. We consider $N + 1$ firms. Firm 0 is a partially state-owned public firm, while the other firms i(i = 1, 2, ..., N) are private. Let $\alpha \in [0, 1]$ be the degree of privatization of firm 0. All private firms have the same cost function $g(x_i) = \frac{cx_i^2}{2} + K$, where $x_i \geq 0$ is firm i's output level, c and K are positive real numbers, and K is the entry cost of each private firm. The cost function of firm 0 is given by $g_0(x_0, \alpha) = \frac{c_0(\alpha)x_0^2}{2} + K$, and thus, it depends on α.

研究結果	*Proposition 1:* $t^D(0) = t^D(1) = 0$, and $t^D > 0$ for any $\alpha \in (0,1)$. *Proposition 2:* $t^F(\alpha) = 0$ for all $\alpha \in [0,1]$. *Proposition 3:* Suppose that private firms are domestic. Under the optimal tax, (i) the consumer surplus shows a U-shape with respect to α; (ii) the producer surplus is non-increasing in α and decreasing in α unless $\alpha = 0$; (iii) tax revenue shows an inverted U-shape with respect to α; (iv) total welfare is non-increasing in α and decreasing in α unless $\alpha = 0$. *Proposition 4:* Suppose that private firms are foreign. Under the optimal tax, (i) the consumer surplus and tax revenue are independent of α; (ii) the producer surplus shows an inverted U-shape with respect to α; (iii) tax revenue is independent of α; (iv) total welfare shows an inverted U-shape with respect to α.
研究貢獻	We find that regardless of whether private firms are domestic or foreign, the optimal tax rate is zero in both the full nationalization and full privatization cases. However, the optimal tax rate is strictly positive except for these two cases if private firms are domestic. Our result suggests the possible risk of restricting the analysis to these two polar cases and highlights the importance of partial privatization. However, our non-monotone result does not hold if private firms are foreign and the optimal tax rate is zero for any degree of privatization.
未來研究方向	In this study, we assume that the policies are implemented before the entry of private firms. However, as Lee et al. (2018) and Sato and Matsumura(2019) showed, the timing of such policies may affect policymaking in mixed oligopolies. Investigating this topic is left to future research.