

Parallel Imports and Music CD Prices*

Yeh-ning Chen** and Ivan Png***

Parallel imports are a significant academic and policy issue. Official investigations into the impact of parallel imports on music CD prices have reached widely conflicting conclusions. This note reports an event study on an international panel of changes in copyright law to permit or disallow parallel imports. The study shows that, on average, legalization of parallel imports was associated with a 7.2~7.9% reduction in the retail price of music CDs.

Keywords: parallel imports, gray markets, price discrimination

JEL Classification: F15, L13, O34

I. Introduction

Parallel imports refer to the sale of genuine products outside of the market for which they had been authorized. The price impact of parallel imports is a significant

* Acknowledgments: I gratefully acknowledge the helpful advice of the editor and two anonymous referees.

** Department of Finance, National Taiwan University

*** Corresponding author: Department of Information Systems, National University of Singapore, E-mail: ipng@comp.nus.edu.sg

Table 1 Changes to national copyright law affecting parallel imports¹⁾

Jurisdiction	Date	Change for/against parallel imports	Details
Australia	July 1998	For	Parliament passed <i>Copyright Amendment Bill No. 2</i> .
Canada	Sep. 1997	Against	Section 44.4 of the <i>Copyright Act</i> (S.C. 1997, c. 24)
Hong Kong	Jun. 1997	Against	<i>Copyright Ordinance</i> , No. 92 of 1997, Laws of Hong Kong
Israel	Dec. 1999	Against	Amendments to <i>Copyright Act</i> and <i>Copyright Ordinance</i> , 1721 Law of Israel 44
Malaysia	1990	For	<i>Copyright (Amendment) Act</i>
Netherlands	Mar. 1993	Against	<i>Law on Neighbouring Rights</i> , Article 6
New Zealand	1998	For	Parliament repealed importation provisions of <i>Copyright Act</i> .
Norway	June 1993	Against	<i>Copyright Amendment Act</i>
Singapore	Dec. 1993	Against	High Court ruling in <i>Public Prosecutor v. Teo Ai Nee & Another</i> , 1994, 1 Singapore Law Reports 452.
Singapore	Oct. 1994	For	<i>Copyright (Amendment) Act</i> , No. 14 of 1994.
USA	Mar. 1998	For	US Supreme Court ruling in <i>Quality King Distributors v. Lanza Research International</i> . (96-1470) 98 F.3d 1109, reversed.

policy issue in international business (Maskus, 2000). The recording industry, for instance, has variously asserted:

- “the price of retail CDs in Australia will not fall if parallel imports are permitted” (Parliament of Australia, 1998),

1) In compiling these data, we received valuable assistance from: Jacov Assaf, Interdisciplinary Centre, Herzliya, Israel; Mario Bouchard, General Counsel, Copyright Board Canada; and George Wei, National University of Singapore.

- “If parallel import restrictions are removed, imports will increase dramatically, mainly from developing markets …… This will not result in reduced UK shop prices” in evidence to the UK House of Commons (British Phonographic Industry 1999, Section 5), and
- “open parallel import does not necessary mean lower prices for the consumer” in a submission to the Hong Kong Legislative Council (International Federation of the Phonographic Industry, 2001).

Official investigations and studies of the price impact of parallel imports have reached widely conflicting conclusions. “It seems unlikely that removing that right [of a copyright owner to control parallel imports] would lead to a reduction in the price of recorded music generally,” (MMC, 1994, paragraph 2.183). A study commissioned by the European Commission predicted that parallel imports would reduce music CD prices by just 0.6% (NERA, 1999, Appendix C, page 27). By contrast, the Australian authorities projected that parallel imports would reduce prices by 5~33% (Parliament, 1997, page 9).

Previous quantitative studies were based on largely anecdotal evidence. This note reports an event study on an international panel of changes in copyright law to permit or disallow parallel imports. The study shows that legalization of parallel imports had a significant effect on music CD prices. On average, legalization was associated with a retail price reduction of 7.2~7.9%.

II. Data and Model

Parallel imports are governed by various branches of law including trademark and copyright (Gallini and Hollis, 1999). The core doctrine is that of territorial “exhaustion” of intellectual property rights. In the case of national exhaustion, the rights holder may prevent parallel trade with other countries, while in the case of international exhaustion, rights are exhausted upon first sale anywhere and parallel imports are permitted. For instance, if Australia subjects Universal Music’s copyright over Mariah Carey CDs to international exhaustion, then Universal cannot legally

Table 2 Summary Statistics

Variable	Unit	Source	Min	Mean	Max	Std dev
Retail price of music CDs	US dollars	GMID*	5.85	11.9	23.7	4.32
Per capita income	Thousand US dollars	GMID*	1.85	13.2	23.2	5.03
CD player ownership per household		GMID*	0.132	0.469	0.830	0.208
Exchange rate	US dollars	GMID*	0.130	0.594	1.67	0.395
Legal		Table 1	0.000	0.345	1.000	0.478

Note: * Euromonitor, Global Market Information Database.

prohibit trans-shipment of genuine Mariah Carey CDs from Singapore for sale in Australia. The European Union adopted the intermediate case of regional exhaustion, which permits parallel trade within the Union but not from outside.

Through extensive legal research, we identified ten jurisdictions that revised the exhaustion provisions of their copyright laws between 1990~1999 (Table 1). For each of these countries, we collected the prices of music CDs and variables—household income, CD player ownership, and exchange rates—that would affect CD prices. (We added the United Kingdom, which did not change the exhaustion provisions of its copyright laws during the period to provide a balanced sample of North American, European, and Asia-Pacific countries.)

We focused on music CDs for several reasons. As indicated above, there is tremendous policy interest in parallel imports of music. Indeed, recorded music was one of the ten product categories selected for a European Commission study of parallel imports (NERA, 1999, pp. 83~84). Further, among copyrightable product categories, music CDs are quite closely priced across different artists and genres. By contrast, in other copyrightable categories including computer software and books, there is wide price dispersion, which might possibly obscure the estimated effect of legal changes.

Lacking sufficient data to estimate a set of structural demand and supply equations, we estimated a reduced form instead. The dependent variable was the retail price of music CDs in US dollars.

Table 2 summarizes the data. Euromonitor's Global Market Information Database

(GMID) provided data on retail prices for music CDs. The panel began with 1993 as GMID data was available only from that year.²⁾ The indicator variable “Legal” took the value 1 for years in which the copyright law permitted parallel imports of CDs, and 0 otherwise. Among the other explanatory variables, increases in household income and CD player ownership would be expected to raise demand, and hence lead to higher prices. The exchange rate was also included, as previous research has shown that exchange rates affect international pricing of differentiated products (Knetter, 1993).

III. Results

Table 3, column (a), reports ordinary least squares estimates with retail price as the dependent variable and country fixed effects. The coefficient of “Legal” was negative (-0.439). However, it was not significant. All the country fixed effects were significant. For brevity, the fixed effects are not reported.

Changes in the law might not have been anticipated and hence would take time to affect pricing. Accordingly, a lagged indicator variable was introduced to characterize the legal changes. This was defined to be 0 in years when parallel imports of CDs were disallowed and the year of any change to permit parallel imports, and 1 in years when parallel imports were permitted and the year of any change to disallow parallel imports.

Table 3, column (b), reports the results with the lagged legal variable. The coefficient of the lagged legal variable was negative and significant -0.944 (± 0.418). In absolute value, it was more than double the coefficient of the (unlagged) legal variable, which was consistent with the conjecture that legal changes took time to affect pricing. The coefficient of -0.944 suggested that a change in the law to permit parallel imports was associated with a US\$0.94 decrease in the retail price of music CDs.

In the regression in table 3, column (b), the coefficient of CD player ownership was

2) From 2000, GMID changed its methodology to include pirated CDs, so the price series became significantly less reliable. Hence, we limited our study to the years 1993~1999.

Table 3 CD prices: Ordinary least squares regressions with country fixed effects

	(a) No lag	(b) Legal lag	(c) Legal lag; year trend	(d) Legal lag; year dummies
Constant	17.1*** (1.29)	17.3*** (1.26)	16.9*** (1.22)	17.9*** (1.45)
Income	0.157 (0.126)	0.156 (0.122)	0.373*** (0.145)	0.301* (0.172)
CD Player ownership	-4.01 (2.65)	-4.65* (2.57)	0.434 (0.319)	-0.00545 (3.26)
Exchange rate	8.61*** (3.06)	8.55*** (2.95)	4.58 (3.24)	3.07 (3.32)
Legal	-0.439 (0.446)			
Legal (lagged)		-0.944** (0.418)	-0.856** (0.403)	-0.879** (0.421)
Year			-0.300*** (0.119)	
No. of observations	84	84	84	84
Adjusted R^2	0.922	0.926	0.931	0.933
F -statistic	66.04	70.28	71.53	55.97

Note: *** significant at 1%, ** significant at 5%, * significant at 10%.

negative and significant. CD player ownership ought to raise demand and hence increase price. This result suggests that the equation was not correctly specified. Accordingly, several alternative specifications were considered.

The estimates in table 3, column (c), included a time trend. The coefficient of income was positive and significant, while the coefficient of CD player ownership was positive, but not significant. The coefficient of the lagged legal variable was -0.856 (± 0.403), which was close to that in column (b). Further, the coefficient of “year” was negative and significant, suggesting that this variable was relevant.

The estimates in table 3, column (d), specified the effect of time through separate indicator variables for each year. For brevity, these coefficients are not reported. Compared with column (c), this specification slightly improved the fit but much reduced the overall significance of the model. All of the coefficients of the year

indicator variables were negative, but only one was significant at the 95% level or higher.

In conclusion, the results are not consistent with industry claims and the projections of the UK Monopolies and Mergers Commission and European Commission. Changes in copyright law to allow parallel imports did have a significant effect on music CD prices. On average, legalization of parallel imports was associated with a retail price reduction of US\$0.86~0.94. Given the average price of US\$11.90, this reduction amounted to 7.2~7.9% in proportionate terms.

IV. Concluding Remarks

Our empirical results show that legalization of parallel imports reduced the average price of music CDs by 7.2~7.9%. The price reduction was probably concentrated in relatively new, top-of-the-chart releases (NERA, 1999, Appendix C, page 26; Papadopoulos 2000). These results are suggestive of the impact of parallel imports on the markets for other copyrightable items, such as movies and electronic games, with high margin relative to transport cost and that involve relatively little national customization.

A major limitation of the present study was the assumption that the price impact was identical across all countries. Realistically, the price impact might vary from one country to another. In addition, half the sample comprised English-speaking countries. Future research should expand the sample and employ longer time series to explore national differences in the impact of parallel imports.

References

- British Phonographic Industry, Ltd., Supplementary memorandum to House of Commons Select Committee on Trade and Industry, 1999.
- Gallini, Nancy T. and Aidan Hollis, "A Contractual Approach to the Gray Market,"

- International Review of Law and Economics*, Vol. 19, 1999, pp. 1~21.
- International Federation of the Phonographic Industry (IFPI), Letter to Legislative Council, 2001.
- Knetter, Michael, "International Comparisons of Pricing-to-Market Behavior," *American Economic Review*, 1993, Vol. 83, pp. 423~436.
- Maskus, Keith E., "Parallel Imports," *The World Economy*, 2000, Vol. 23, pp. 1269~1284.
- Monopolies and Mergers Commission (MMC), *The Supply of Recorded Music*, 1994.
- National Economic Research Associates (NERA), *The Economic Consequences of the Choice of a Regime of Exhaustion in the Area of Trademarks*, Final Report for DGXV of the European Commission, 1999.
- Papadopoulos, Theo, "Copyright, parallel imports and national welfare: The Australian market for sound recordings," *Australian Economic Review*, 2000, Vol. 33, pp. 337~348.
- Parliament of the Commonwealth of Australia, Copyright Amendment Bill (No. 2): Explanatory Memorandum, 1997.
- Parliament of the Commonwealth of Australia, Senate Legal and Constitutional Legislation Committee, Copyright Amendment Bill (No. 2) 1997, Labor's Minority Report Part 2, 1998.

[국문요약]

병행수입과 음악 CD의 가격

Yeh-ning Chen and Ivan Png

병행수입은 학술적으로도 중요한 이슈일뿐더러 정책적으로도 중요한 이슈이다. 병행수입이 음악 CD 가격에 미치는 영향에 관한 공식적 조사나 연구는 지금까지 여러 가지로 서로 상충되는 결론을 보여 주었다. 본 논문은 병행수입의 허용 또는 금지에 관한 저작권법의 변화를 반영하는 국제패널에 대한 이벤트 스터디이다. 본 연구는 병행수입의 합법화가 평균적으로 음악 CD 소매가격의 7.2~7.9% 저하와 관련이 있음을 보여 준다.

핵심주제어: 병행수입, 그레이 마켓(gray market), 가격차별화

JEL 분류기준: F15, L13, O34