

Research Synthesis: Parallel import

v1.0 researched and written by Elise Erickson, edited by Suerie Moon, last updated June 2018

Introduction

The literature on parallel import/parallel trade has been considerable* over time, and it ranges from theoretical to empirical studies. Much of the parallel import literature is bundled together with discussions on tiered pricing/differential pricing, or the protection of intellectual property rights. The literature is heavily EU-focused.

Search terms

Parallel import, parallel trade

Synthesis of the literature

One of the major discussions in the literature is whether or not parallel trade hampers innovation. Those opposed to parallel trade argue that it weakens intellectual property rights, undermines profits, and therefore hinders investment/innovation (Danzon 1998; Li and Maskus 2006). Along these lines, some then argue that parallel trade reduces welfare. Others, however, argue that parallel trade does not have damaging effects on innovation (Bennato and Valletti 2014), and can even increase the pace of innovation (Grossman and Lai 2008), and can increase a firm's profit (Pecorino 2002). Other models produce mixed results – i.e. showing how parallel trade can increase or decrease profits depending on a variety of factors (Guo, Hu, and Zhong 2013).

Maskus (2001) combined theory and empirical evidence to conclude that parallel exports from LICs to HIC should be prohibited, but that LICs could be open to parallel imports. Some argued that parallel trade would undermine price differentials – therefore reducing profit, and subsequently innovation (Szymanski, Valletti, and Demange 2005; Danzon 1998).

For instance, Danzon (1998) argued that parallel trade would make both LICs and HICs worse off since LICs would suffer from higher prices and decreased access to new drugs, and HICs would suffer from less development of new drugs.

Similarly, there is a debate over whether or not parallel trade implies price convergence, and over the tension between parallel importation and price differentials. Danzon (1998) argued that parallel trade tends to force price convergence across countries, and others found empirical evidence to support 'convergence to the top' rather than a convergence to the bottom for EU prices (P. Kanavos, Costa-Font, and Gollier 2005; P. Kanavos and Vandoros 2010).

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Some studies examined the savings generated by parallel trade. Two reports, a 2003 London School of Economics (LSE) report and the 2002 York report, are viewed by some as influential in the parallel trade of pharmaceuticals debate (P. Kanavos et al. 2004; West and Mahon 2003). These reports draw conflicting conclusions. The LSE report found insignificant savings from parallel trade, whereas the York report found significant savings (over €600 million in 2001). A subsequent study in 2006, however, found that the methodology for computing savings was more appropriate in the York report, and that when this methodology was subsequently applied to 2004 data, direct savings from parallel trade to patients/health insurers amounted to 441.5 million Euro in four European countries (Enemark, Pedersen, and Sorensen 2006). Other studies examined savings in Sweden (Ganslandt and Maskus 2004), and Finland (Linnosmaa, Karhunen, and Vohlonen 2003).

When examining who benefits from parallel trade, one study found that in Europe the parallel distributors benefit most (without any direct benefits to patients) (P. Kanavos et al. 2004, 15). In addition, a study presented evidence that suggests parallel trade does not generate price competition (Vandoros and Kanavos 2014). Panavos and colleagues have concluded that parallel trade is not a suitable long-term solution to cutting prices (P. Kanavos and Kowal 2008; P. Kanavos, Costa-Font, and Gollier 2005).

Finally, parallel trade also emerges as a topic in papers discussing multiple pricing policies; for example, Chaumont et al. (2015, S179) described how Mexico's laws prohibiting parallel trade, including through PAHO's Strategic Fund, limited its ability to lower drug prices.

Research gaps

- Analysis of estimated or potential savings of parallel trade in medicines and impact on prices, particularly for countries outside of the EU
- Further analysis of the distribution of economic benefits from parallel trade (patients, distributors, etc.)

Cited papers with abstracts

Bennato, Anna Rita, and Tommaso Valletti. 2014. "Pharmaceutical Innovation and Parallel Trade." *International Journal of Industrial Organization* 33 (March): 83–92.
<https://doi.org/10.1016/j.ijindorg.2014.02.009>.

Abstract: This paper proposes a North–South model to study the interaction between price regulation policies and parallel trade, with a particular focus on the pharmaceutical sector. We show that, under parallel trade, R&D investment can rise only when the South government takes into full account its impact both on investment and on the firm's decision to supply the regulated country. This arises because of a complete withdrawal from price regulation. When policy choices are endogenized, indeed the South wants to achieve this level of full commitment when it is large in size. When instead it is smaller in size, the South chooses an intermediate form of commitment whereby it anticipates its effect only on local distribution and delivery, but not

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on global R&D investment. As a response to these credible levels of price control commitments, the North reacts by allowing parallel imports from the South.

Link: <https://www.sciencedirect.com/science/article/pii/S0167718714000228>

Chaumont, Claire, Sergio Bautista-Arredondo, Juan José Calva, Roberto Isaac Bahena-González, Gerda Hitz Sánchez-Juárez, Arturo González de Araujo-Muriel, Carlos Magis-Rodríguez, and Mauricio Hernández-Ávila. 2015. "Antiretroviral Purchasing and Prescription Practices in Mexico: Constraints, Challenges and Opportunities." *Salud Pública de México* 57: s171–82.

Abstract: OBJECTIVE: This study examines the antiretroviral (ARV) market characteristics for drugs procured and prescribed to Mexico's Social Protection System in Health beneficiaries between 2008 and 2013, and compares them with international data.

MATERIALS AND METHODS: Procurement information from the National Center for the Prevention and the Control of HIV/AIDS was analyzed to estimate volumes and prices of key ARV. Annual costs were compared with data from the World Health Organization's Global Price Reporting Mechanism for similar countries. Finally, regimens reported in the ARV Drug Management, Logistics and Surveillance System database were reviewed to identify prescription trends and model ARV expenditures until 2018.

RESULTS: Results show that the first-line ARV market is concentrated among a small number of patented treatments, in which prescription is clinically adequate, but which prices are higher than those paid by similar countries. The current set of legal and structural options available to policy makers to bring prices down is extremely limited.

CONCLUSIONS: Different negotiation policies were not successful to decrease ARV high prices in the public health market. The closed list approach had a good impact on prescription quality but was ineffective in reducing prices. The Coordinating Commission for Negotiating the Price of Medicines and other Health Supplies also failed to obtain adequate prices. To maximize purchase efficiency, policy makers should focus on finding long-term legal and political safeguards to counter the high prices imposed by pharmaceutical companies.

Link: <https://scielosp.org/pdf/spm/2015.v57suppl2/s171-s182/en>

Danzon, Patricia M. 1998. "The Economics of Parallel Trade." *PharmacoEconomics* 13 (3): 293–304. <https://doi.org/10.2165/00019053-199813030-00004>.

Abstract: Not available

Link: <https://link.springer.com/article/10.2165%2F00019053-199813030-00004>

Enemark, Ulrika, Kjeld Moller Pedersen, and Jan Sorensen. 2006. "The Economic Impact of Parallel Import of Pharmaceuticals." University of Southern Denmark: CAST - Centre for Applied Health Services Research and Technology Assessment. https://static.sdu.dk/mediafiles/Files/Om_SDU/Centre/CAST/PDF_filer/parallel_import_rapport_13_06

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_1430_opdateret_final2.pdf.

Abstract: Not available

Link: https://static.sdu.dk/mediafiles/Files/Om_SDU/Centre/CAST/PDF_filer/parallel_import_rapport_13_06_1430_opdateret_final2.pdf

Ganslandt, Mattias, and Keith E. Maskus. 2004. "Parallel Imports and the Pricing of Pharmaceutical Products: Evidence from the European Union." *Journal of Health Economics* 23 (5): 1035–57. <https://doi.org/10.1016/j.jhealeco.2004.03.005>.

Abstract: We consider policy issues regarding parallel imports (PIs) of brand-name pharmaceuticals in the European Union, where such trade is permitted. We develop a simple model in which an original manufacturer competes in its home market with PI firms. The model suggests that for small trade costs the original manufacturer will accommodate the import decisions of parallel traders and that the price in the home market falls as the volume of parallel imports rises. Using data from Sweden we find that the prices of drugs subject to competition from parallel imports fell relative to other drugs over the period 1994–1999. Econometric analysis finds that parallel imports significantly reduced manufacturing prices, by 12–19%. There is evidence that this effect increases with multiple PI entrants.

Link: <http://www.sciencedirect.com/science/article/pii/S0167629604000670>

Grossman, Gene M., and Edwin L.-C. Lai. 2008. "Parallel Imports and Price Controls." *The RAND Journal of Economics* 39 (2): 378–402. <https://doi.org/10.1111/j.0741-6261.2008.00019.x>.

Abstract: Price controls create opportunities for international arbitrage. Many have argued that such arbitrage, if tolerated, will undermine intellectual property rights and dull the incentives for investment in research-intensive industries such as pharmaceuticals. We challenge this orthodox view and show, to the contrary, that the pace of innovation often is faster in a world with international exhaustion of intellectual property rights than in one with national exhaustion. The key to our conclusion is to recognize that governments will make different choices of price controls when parallel imports are allowed by their trade partners than they will when they are not.

Link: <http://onlinelibrary.wiley.com/doi/10.1111/j.0741-6261.2008.00019.x/full>

Guo, Shen, Bin Hu, and Hai Zhong. 2013. "Impact of Parallel Trade on Pharmaceutical Firm's Profits: Rise or Fall?" *The European Journal of Health Economics* 14 (2): 345–55. <https://doi.org/10.1007/s10198-012-0380-0>.

Abstract: Most existing studies on parallel trade conclude that it reduces pharmaceutical firms' profits. One special feature of the pharmaceutical industry is the presence of price regulation in most countries. Taking into account the impact of parallel trade on the regulated pharmaceutical prices [Pecorino, P.: *J. Health Econ.* 21, 699–708 (2002)] shows that a pharmaceutical firm's profit is greater in the presence of parallel trade. The present paper relaxes the assumption on identical demands among countries, and takes into account transaction

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costs. The results of our model show that a firm's profits may increase or decrease in the presence of parallel trade, depending on its bargaining power in the price negotiation and market size of the drug. Changes in social welfare due to the transition to parallel trade regime are also considered.

Link: <https://link.springer.com/article/10.1007/s10198-012-0380-0>

Kanavos, Panos, and Stacey Kowal. 2008. "Does Pharmaceutical Parallel Trade Serve the Objectives of Cost Control?" *Eurohealth* 14 (2).

Abstract: The extent to which pharmaceutical parallel trade can contain pharmaceutical costs has been debated intensely. Although parallel import penetration is significant in many EU countries, parallel trade generates at best moderate savings to health insurance, is not necessarily associated with sustainable long-term price competition and can lead to product shortages in exporting countries and, recently, a higher probability of counterfeiting. Parallel distributors emerge as the key beneficiaries from this practice. The high transaction costs associated with parallel trade, the lack of sustainable long-term price competition and the lack of tangible benefits to patients make this practice an inefficient means of containing costs.

Link: <http://apps.who.int/medicinedocs/documents/s20966en/s20966en.pdf>

Kanavos, Panos G., and Sotiris Vandoros. 2011. "Determinants of Branded Prescription Medicine Prices in OECD Countries." *Health Economics, Policy and Law* 6 (3): 337–67. <https://doi.org/10.1017/S1744133111000090>.

Abstract: This article uses a price determination model with dynamic panel data estimation to examine the extent to which pharmaceutical parallel trade promotes price competition and leads to downward price convergence. Little evidence of sustainable price competition is found. We find that prices are mainly affected by regulation and by competition in the wholesale distribution chain; that the pricing strategy of parallel distributors resembles that of originator drugs in importing countries; and that there may be upward rather than downward price convergence. Drawing on the European evidence, the findings also indicate that opening the US market to parallel imports will not necessarily lead to competition and enhance pharmaceutical cost containment.

Link: <http://onlinelibrary.wiley.com/doi/10.1002/mde.1486/full>

Kanavos, Panos, Joan Costa-Font, and Christian Gollier. 2005. "Pharmaceutical Parallel Trade in Europe: Stakeholder and Competition Effects." *Economic Policy* 20 (44): 753–98.

Abstract: Not available

Link: <https://www.jstor.org/stable/3601058>

Kanavos, Panos, Joan Costa-i-Font, Sherry Merkur, and Marin Gemmill. 2004. "The Economic Impact of Pharmaceutical Parallel Trade in European Union Member States: A Stakeholder

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Analysis.” London: LSE Health and Social Care London School of Economics and Political Science.
<http://www.lse.ac.uk/LSEHealthAndSocialCare/pdf/Workingpapers/Paper.pdf>

Abstract: Not available

Link: <http://www.lse.ac.uk/LSEHealthAndSocialCare/pdf/Workingpapers/Paper.pdf>

Li, Changying, and Keith E. Maskus. 2006. “The Impact of Parallel Imports on Investments in Cost-Reducing Research and Development.” *Journal of International Economics* 68 (2): 443–55.
<https://doi.org/10.1016/j.jinteco.2005.07.006>.

Abstract: We develop a two-country model of endogenous investment in process innovation by a manufacturer facing competition from parallel imports (PI). We find that the distortions associated with PI inhibit innovation. However, the difference between the manufacturer's expected profits under successful and failed innovation is U-shaped in the cost of engaging in PI. Thus, the reduction in R&D investment depends on both legality of PI and transport costs. The reduction in innovation could harm global welfare, depending on whether the manufacturer was deterring PI with a high wholesale price. If so, banning such trade would raise expected welfare.

Link: <https://www.sciencedirect.com/science/article/pii/S0022199605000930>

Linnosmaa, Ismo, Taru Karhunen, and Ilkka Vohlonen. 2003. “Parallel Importation of Pharmaceuticals in Finland.” *Pharmaceutical Development and Regulation* 1 (1): 67–74.
<https://doi.org/10.1007/BF03257366>.

Abstract: Background: Parallel importation of pharmaceuticals is illegal in many countries. In the European Union it is allowed, as it is consistent with the principles of free trade and the community exhaustion of intellectual property rights. Parallel importation is assumed to affect pharmaceutical expenditures in two ways. First, parallel imported pharmaceuticals are typically priced lower than brand-name pharmaceuticals, which may reduce pharmaceutical expenditures. Secondly, parallel imported pharmaceuticals may trigger price competition, which might also reduce prices of brand- name products and pharmaceutical expenditures.

Objective: To measure reductions in pharmaceutical expenditures due to the entry of parallel imported pharmaceuticals in Finland. Methods: Both realized reductions in expenditures (realized savings) and potential reductions (potential savings) were estimated. Savings were estimated using a method that measures differences in pharmaceutical expenditures when prices of pharmaceutical products differ as a result of price differences between parallel imported and brand-name pharmaceuticals (direct effect) and the effect of parallel imported products on the prices of brand- name products (competitive effect). Potential savings were estimated under different assumptions concerning the price development of pharmaceutical products. It was assumed that prices of brand- name pharmaceuticals would decrease either by 22% or 10% as a result of competition from parallel imports.

Results: Realized savings due to parallel importation were approximately €294 000 in the years 1998–2001. The savings remained low since parallel imports have not intensified price

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competition in Finland. Potential savings for the period between March 2000 and March 2001 were estimated to vary in the range of €3.4–10.2 million depending on the assumptions made on the price development of pharmaceutical products.

Link: <https://link.springer.com/article/10.1007/BF03257366>

Maskus, Keith E. 2001. "Parallel Imports in Pharmaceuticals: Implications for Competition and Prices in Developing Countries." [https://doi.org/10.1016/S0167-6296\(02\)00035-8](https://doi.org/10.1016/S0167-6296(02)00035-8).

Abstract: Not available

Link: http://www.wipo.int/export/sites/www/about-ip/en/studies/pdf/ssa_maskus_pi.pdf

Pecorino, Paul. 2002. "Should the US Allow Prescription Drug Reimports from Canada?" *Journal of Health Economics* 21 (4): 699–708. [https://doi.org/10.1016/S0167-6296\(02\)00035-8](https://doi.org/10.1016/S0167-6296(02)00035-8).

Abstract: As a result of public outrage over lower prescription drug prices in Canada, Congress passed legislation that would allow these drugs to be imported into the US. The lower Canadian prices reflect price regulation. Opponents of allowing these imports have argued that the US will import Canadian price controls and that profits of pharmaceutical companies will be hurt. In this paper, a model is developed in which a good sold in the foreign country is subject to a negotiated price which is determined in a Nash bargaining game. When imports back into the home country are allowed, this negotiated price also becomes the domestic price. This causes the home firm to make fewer price concession in the Nash bargaining game. Home firm profits are found to rise under the reimport regime for both of the demand functions analyzed in this paper.

Link: <https://www.sciencedirect.com/science/article/pii/S0167629602000358>

Szymanski, Stefan, Tommaso Valletti, and Gabrielle Demange. 2005. "Parallel Trade, Price Discrimination, Investment and Price Caps." *Economic Policy* 20 (44): 707–49.

Abstract: Parallel trade is the resale of a product by a wholesaler in a market other than that intended by the manufacturer. One of its consequences is that manufacturers may be prevented from price discriminating between markets that have different willingness to pay for the product in question. Some legal regimes give the manufacturer the right to prohibit parallel trade, but others do not. We examine the policy implications of parallel trade in a world in which manufacturers invest in product quality, and have the possibility to develop different quality variants of their goods. We also consider the possibility that the authorities may impose price caps and compulsory licensing (as commonly occurs for some pharmaceutical products). We find that taking investment incentives into account makes parallel trade much less likely to enhance overall welfare, which implies that parallel trade in products intensive in R&D, such as pharmaceuticals, is less desirable than in fields such as branded consumer products. We also find that, somewhat surprisingly, the threat of parallel trade does not induce firms to market inferior versions of their products in poor countries. However, parallel trade is less likely to be detrimental to welfare when there are price caps, since compulsory licensing can mitigate the major cost of parallel trade (namely a refusal to supply a poor country market).

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Link: https://www.jstor.org/stable/3601057?seq=1#page_scan_tab_contents

Vandoros, Sotiris, and Panos Kanavos. 2014. "Parallel Trade and Pharmaceutical Prices: A Game-theoretic Approach and Empirical Evidence from the European Union." *The World Economy* 37 (6): 856–80. <https://doi.org/10.1111/twec.12063>.

Abstract: This paper studies whether parallel traded products spark price competition in pharmaceutical markets and whether they are any cheaper than locally sourced products. We follow a game-theoretic approach and employ descriptive statistics and econometric methods to study the effects of parallel trade on competition from a theoretic and empirical perspective. The theoretic approach suggests that there is a unique Nash equilibrium, and the parallel trader sets prices at the same level as the locally sourced product, while the price of the latter remains unaffected by parallel trade. However, there may be deviations from this equilibrium in the presence of particular policies or generic competition, in which case the parallel traded product may be priced at lower levels than the locally sourced product. Empirical analysis confirms the predictions of the theory. Descriptive statistics show that there is no gap between locally sourced and parallel traded products, unless generics or policies encouraging parallel trade are present. Results of the econometric analysis show that parallel trade does not trigger price competition and that the price of the locally sourced product remains unaffected by parallel trade. Therefore, any savings for health insurance occurring as a result of parallel trade are limited.

Link: <http://onlinelibrary.wiley.com/doi/10.1111/twec.12063/full>

West, Peter, and James Mahon. 2003. "Benefits to Payers and Patients From Parallel Trade." York: York Health Economics Consortium. <http://archives.who.int/prioritymeds/report/append/8210ParallelTradeReport.pdf>.

Abstract: Not available

Link: <http://archives.who.int/prioritymeds/report/append/8210ParallelTradeReport.pdf>

* *For the purposes of this review, we have established three categories to describe the state of the literature: thin, considerable, and rich.*

- *Thin: There are relatively few papers and/or there are not many recent papers and/or there are clear gaps*
- *Considerable: There are several papers and/or there are a handful of recent papers and/or there are some clear gaps*
- *Rich: There is a wealth of papers on the topic and/or papers continue to be published that address this issue area and/or there are less obvious gaps*

Scope: While many of these issues can touch a variety of sectors, this review focuses on medicines. The term medicines is used to cover the category of health technologies, including drugs, biologics (including vaccines), and diagnostic devices.

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Disclaimer: The research syntheses aim to provide a concise, comprehensive overview of the current state of research on a specific topic. They seek to cover the main studies in the academic and grey literature, but are not systematic reviews capturing all published studies on a topic. As with any research synthesis, they also reflect the judgments of the researchers. The length and detail vary by topic. Each synthesis will undergo open peer review, and be updated periodically based on feedback received on important missing studies and/or new research. Selected topics focus on national and international-level policies, while recognizing that other determinants of access operate at sub-national level. Work is ongoing on additional topics. We welcome suggestions on the current syntheses and/or on new topics to cover.

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