

TRADE AND TRADEOFFS: THE CASE OF INTERNATIONAL
PATENT EXHAUSTION

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Sellers of patented products ranging from printer cartridges to pharmaceuticals frequently charge higher prices in the United States than they do abroad. To maintain this price differential, such sellers often prohibit the resale of their goods in the United States. The Federal Circuit has maintained that importers may be sued for infringing U.S. patents on these goods. But that may change: In *Lexmark v. Impression Products*, the en banc Federal Circuit was asked to hold that the sale of a patented product anywhere in the world “exhausts” the seller’s U.S. patent rights.¹ In a February 2016 decision, the Federal Circuit chose to maintain the status quo, over a dissent from Judge Timothy B. Dyk.² Patent law commentators think it is likely that the Supreme Court will hear the case.³ If the Supreme Court adopts a rule of international patent exhaustion, firms that sell patented products abroad will find it much harder to prevent those products from being resold in the United States.

Both advocates and opponents of international patent exhaustion argue that their preferred rule would be more efficient (i.e., would increase aggregate welfare). This Essay suggests, however, that whether international patent exhaustion increases aggregate welfare depends on whose welfare is aggregated. Put differently, the desirability of international patent exhaustion depends on a question that economic models

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1. See *Lexmark Int’l, Inc. v. Impression Prods., Inc.*, 785 F.3d 565 (Fed. Cir. 2015) (calling for en banc briefing). The court issued its opinion on February 12, 2016.

2. *Lexmark Int’l Inc. v. Impression Prods. Inc.*, Nos. 2014-1617, 2014-1619, 2016 WL 559042 (Fed. Cir. Feb. 12, 2016), petition for cert. filed. The opinion was released shortly before this Essay went to press, and it cited a draft of this piece that is available on SSRN. *Id.* at *45 n.26. The substance of this Essay remains unchanged.

3. See, e.g., Thomas F. Cotter, *Breaking News: U.S. Federal Circuit Adheres to National Exhaustion of Patent Rights, Comparative Patent Remedies* (Feb. 12, 2016, 8:26 AM), <http://comparativepatentremedies.blogspot.com/2016/02/breaking-news-us-federal-circuit.html> [<http://perma.cc/SB3Q-E6C8>] (“Next stop, I feel reasonably certain, will be the Supreme Court . . .”); Scott W. Doyle et al., *Lexmark Is Much Ado About Nothing—For Now*, *Law360* (Feb. 18, 2016), <http://www.law360.com/articles/760145/lexmark-is-much-ado-about-nothing-for-now> [<http://perma.cc/NNT3-TXW5>] (“The Federal Circuit’s decision . . . foreshadows the potential for a future showdown in the Supreme Court and, perhaps, another retooling of well-established Federal Circuit precedent by the Supreme Court.”).

alone cannot answer: How much weight (if any) should U.S. courts assign to foreign interests when crafting patent policy?

This Essay explains why the adoption of a rule of international patent exhaustion would likely lower prices of patented goods in the United States and raise prices abroad. Moreover, such a rule would impose costs on foreign governments that choose to subsidize access to patented goods for their own citizens. These tradeoffs between U.S. and foreign interests were ignored (or misunderstood) in the *Lexmark* briefing before the Federal Circuit. This Essay brings these tradeoffs into clearer focus.

Part I provides an overview of the various positions taken in the *Lexmark* briefing before the Federal Circuit. Part II analyzes the likely economic effects of a U.S. international exhaustion rule. Part III explains why a U.S. rule of international exhaustion would make it more difficult for foreign countries to use nonmarket mechanisms to allocate access to patentable goods. Last, Part IV suggests several approaches that U.S. courts can take when faced with tradeoffs between domestic and foreign welfare.

I. WHY ECONOMIC POLICY MATTERS FOR EXHAUSTION DOCTRINE

Both sides of the exhaustion debate agree on one fundamental point: Economic considerations are and should be relevant to the resolution of the exhaustion question in *Lexmark*. The judge-made patent-exhaustion doctrine has not been codified.⁴ Like many patent doctrines, it remains a product of common law development, in which “economic analysis is a broadly accepted interpretative gloss.”⁵ The current rule of no inter-

4. When an exclusive right of importation was added to the Patent Act in 1994 to comply with the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS), the Statement of Administrative Action said that TRIPS “does not affect U.S. law or practice relating to parallel importation of products protected by intellectual property rights.” H.R. Rep. No. 103-316, at 312 (1994). Even if pre-1994 case law on international patent exhaustion were clear, it would be difficult to read this language as intending the 1994 amendments—which did not add any statutory language related to exhaustion—as somehow codifying pre-1994 practice, as opposed to leaving exhaustion doctrine in the continued care of the judiciary. But see John F. Duffy & Richard Hynes, *Statutory Domain and the Commercial Law of Intellectual Property*, 102 Va. L. Rev. 1 (2016) (arguing international patent exhaustion is codified).

5. Michael Abramowicz & John F. Duffy, *The Inducement Standard of Patentability*, 120 Yale L.J. 1590, 1619 (2011); see also *id.* at 1618–19 (analogizing Patent Act to Sherman Act). Policy-oriented judicial development of patent doctrine is widely accepted. See, e.g., Dan L. Burk & Mark A. Lemley, *The Patent Crisis and How Courts Can Solve It* 103 (2009) (comparing Patent Act to antitrust law in its failure to specify how to apply its principles in detail, and authorizing courts to play major role in defining scope of protection); Arti K. Rai, *Engaging Facts and Policy: A Multi-Institutional Approach to Patent System Reform*, 103 Colum. L. Rev. 1035, 1119–20 (2003) (“There should be little question that the patent statute, as currently structured, contemplates policy-oriented judicial development of patent common law.”).

national exhaustion stems from the Federal Circuit's 2001 *Jazz Photo* decision,⁶ which now has the value of having been the prevailing rule for nearly fifteen years. But the Supreme Court is not bound by the Federal Circuit's precedent, and the Supreme Court recently held that authorized foreign sales do exhaust U.S. copyrights, using logic that could (but need not) be applied to patents.⁷ Thus, statutory text and precedent do not seem to significantly constrain the outcome in *Lexmark*.

At least three possible positions emerge from the briefs that were filed before the Federal Circuit in *Lexmark*. Impression Products and its amici argued that an authorized sale anywhere in the world should *always* exhaust the seller's U.S. patent rights.⁸ At the other end of the spectrum, *Lexmark* and its amici argued that an authorized sale outside the United States should not exhaust the seller's U.S. patent rights unless the seller explicitly relinquishes those rights.⁹ This was the traditional *Jazz Photo* rule, which the Federal Circuit majority reaffirmed in *Lexmark*.¹⁰ The United States staked out a middle ground in its amicus brief: It argued that an authorized foreign sale should exhaust the seller's U.S. patent rights by default unless the seller explicitly reserves those rights.¹¹ This

6. *Jazz Photo Corp. v. Int'l Trade Comm'n*, 264 F.3d 1094, 1105 (Fed. Cir. 2001). The *Jazz Photo* court did not seem to realize the importance of its decision on this issue. The entire exhaustion analysis consists of the conclusory statement that “[t]o invoke the protection of the first sale doctrine, the authorized first sale must have occurred under the United States patent,” plus a mistaken citation to a single case. *Id.* at 1105 (citing *Boesch v. Graff*, 133 U.S. 697, 701–03 (1890)). The cited case did not involve an authorized first sale—it involved a German sale that was legal (due to prior user rights under German law) but that the patentee did not authorize. *Boesch*, 133 U.S. at 701–03.

7. *Kirtsaeng v. John Wiley & Sons, Inc.*, 133 S. Ct. 1351, 1355–56 (2013). The copyright exhaustion issue in *Kirtsaeng* is easily distinguished from the patent exhaustion issue in *Lexmark*: Patent exhaustion, unlike copyright first sale, has not been codified; patents, unlike copyrights, must be affirmatively obtained in each jurisdiction and vary dramatically in scope; and the Supreme Court's concerns about “deeply embedded” reliance of copyright users, *id.* at 1354, are not applicable here.

8. Brief for Defendant-Appellant Impression Products, Inc. on En Banc Review at 2–3, *Lexmark Int'l, Inc. v. Impression Prods., Inc.*, No. 2014-1617 (Fed. Cir. June 12, 2015), 2015 WL 3818682, at *4; see also *infra* note 15 and accompanying text (listing some of Impression's amici). None of these parties appears to dispute that patent owners can *contractually* restrict manufacturers and distributors from importing patented products into the United States. The patent owners would then be limited to contract remedies (often in foreign courts) rather than patent remedies (including border measures), and they could not enforce these contracts against third parties.

9. En Banc Brief for Plaintiff-Cross Appellant *Lexmark International, Inc.* at 10, *Lexmark*, No. 14-1617 (Fed. Cir. Aug. 12, 2015), 2015 WL 4995731, at *24; see also *infra* note 13 and accompanying text (listing some of *Lexmark*'s amici).

10. *Lexmark*, 2016 WL 559042, at *2.

11. Brief for the United States as Amicus Curiae at 2, *Lexmark*, No. 2014-1617 (Fed. Cir. June 29, 2015), 2015 WL 4112927, at *13. This position is in some tension with the United States' position on the second issue in *Lexmark*, on which the United States argued that “any post-sale restrictions that a patentee attempts to place on the use or resale of a patented article cannot be enforced through patent law.” *Id.* at *1. This piece focuses only on the international exhaustion issue.

middle ground was advocated by Judge Dyk in his *Lexmark* dissent, which was joined by Judge Hughes.¹²

In this Essay we focus on the differences between Impression's mandatory-exhaustion position and the positions of the parties who would allow sellers to reserve U.S. patent rights. To be sure, the gap between Lexmark's position (adopted by the *Lexmark* majority) and the United States' (adopted by the *Lexmark* dissent) is not insignificant: A default rule of exhaustion might "nudge" patent owners to cede U.S. rights even if they have the option to retain U.S. patent protection. A mandatory exhaustion rule, however, would yield much more dramatic distributive consequences than a shift to the United States' exhaustion-by-default position.

II. PATENT EXHAUSTION WINNERS AND LOSERS

An initial indication of who wins and who loses under a U.S. rule of international patent exhaustion is apparent from the lineup of amici on each side of the *Lexmark* dispute. Among private parties, those opposing exhaustion generally profit from sales of patented products and include the Intellectual Property Owners Association (IPO), the Pharmaceutical Research and Manufacturers of America (PhRMA), the Biotechnology Industry Organization (BIO), and a coalition of manufacturers of imaging supplies (including Canon, Hewlett-Packard, Samsung, and Xerox).¹³ The pro-exhaustion parties, who tend to depend on using others' patents, include many technology companies (such as Amazon, eBay, Dell, Facebook, Google, Intel, and Samsung¹⁴), Costco (which buys goods abroad for U.S. resale), remanufacturing firms, and consumer groups (including the Electronic Frontier Foundation and Public Knowledge).¹⁵

12. *Lexmark*, 2016 WL 559042, at *55 (Dyk, J., dissenting).

13. Brief of Biotechnology Industry Organization and CropLife International as Amicus Curiae in Support of Plaintiff-Cross-Appellant, *Lexmark*, No. 2014-1617 (Fed. Cir. Aug. 19, 2015), 2015 WL 5076197; Brief of Imaging Supplies Coalition as Amicus Curiae in Support of Plaintiff/Cross-Appellant at 1, *Lexmark*, No. 2014-1617 (Fed. Cir. Aug. 18, 2015), 2015 WL 5076190, at *9 (listing members); Brief of Intellectual Property Owners Association on Hearing En Banc as Amicus Curiae in Support of Plaintiff-Appellee and Cross-Appellant *Lexmark*, *Lexmark*, No. 2014-1617 (Fed. Cir. Aug. 19, 2015), 2015 WL 5076192; Brief of Pharmaceutical Research and Manufacturers of America as Amicus Curiae in Support of Plaintiff and Cross-Appellant *Lexmark International, Inc.*, *Lexmark*, No. 2014-1617 (Fed. Cir. Aug. 19, 2015), 2015 WL 5076195.

14. Bizarrely, Samsung is on two briefs supporting Impression and one supporting *Lexmark*. See *supra* note 13, *infra* note 15 and accompanying text.

15. Brief of Computer & Communications Industry Association as Amicus Curiae in Support of Defendant-Appellant Impression Products, *Lexmark*, No. 2014-1617 (Fed. Cir. June 19, 2015); Brief for Costco Wholesale Corporation and Retail Litigation Center, Inc. as Amici Curiae Supporting Defendant-Appellant, *Lexmark*, No. 2014-1617 (Fed. Cir. June 19, 2015); Brief of LG Electronics, Inc. et al. as Amici Curiae in Support of Appellant, *Lexmark*, No. 2014-1617 (Fed. Cir. June 19, 2015) [hereinafter Brief of LG Electronics] (filed for companies including Google, Intel, and Samsung); Brief of Public Knowledge et

The academics who have signed on to amicus briefs have been mostly aligned with the pro-exhaustion camp.¹⁶

Pro-exhaustion parties argue that the current regime “fosters enormous complication, uncertainty, and inefficiency” because firms that seek to import goods into the United States must verify that no single part is protected by a U.S. patent.¹⁷ If patentees who sell products overseas can reserve U.S. patent rights, then all those who want to purchase a patented product abroad and bring it into the United States will have to incur the information cost of determining whether the patentee reserved U.S. rights—or else run the risk of a lawsuit. To be sure, a patentee who reserves U.S. patent rights will internalize some of the costs via the price mechanism (i.e., purchasers presumably will pay less if the seller retains U.S. patent protection). But the patentee and the first foreign purchaser will not internalize all the third-party information costs borne by the general class of consumers who wish to import patented products to the United States.¹⁸

Yet even under a rule of international exhaustion, downstream purchasers who wish to import patented products into the United States will face substantial information costs. Exhaustion only applies to “the

al. as Amici Curiae in Support of Appellant Impression Products, *Lexmark*, No. 2014-1617 (Fed. Cir. June 19, 2015) [hereinafter Brief of Public Knowledge]; Corrected En Banc Brief of Remanufacturing Associations as Amicus Curiae in Support of Appellant, *Lexmark*, No. 2014-1617 (Fed. Cir. Nov. 25, 2014), 2015 WL 4068148; see also Comput. & Commc’ns Indus. Ass’n, Members, <http://www.ccianet.org/about/members> [<http://perma.cc/P2ES-EP8B>] (last visited Feb. 13, 2016) (listing members including Amazon, eBay, Facebook, Google, and Samsung).

16. There were two academic briefs favoring international exhaustion—one by Professors Margreth Barrett and Fred Abbott and one by Stanford’s Intellectual Property and Innovation Clinic on behalf of twenty-four IP professors and the American Antitrust Institute. Corrected Brief of Professors Barrett and Abbott as Amicus Curiae in Support of Neither Party, *Lexmark*, No. 2014-1617 (Fed. Cir. June 5, 2015), 2015 WL 3645388; Brief of Intellectual Property Professors and American Antitrust Institute as Amici Curiae in Support of Defendant-Appellant, *Lexmark*, No. 2014-1617 (Fed. Cir. June 19, 2015) [hereinafter Brief of Intellectual Property Professors and American Antitrust Institute]. Professor Ted Field wrote a brief favoring the status quo. Amicus-Curiae Brief of Professor Theodore L. Field in Support of Lexmark International, Inc., *Lexmark*, No. 2014-1617 (Fed. Cir. Aug. 19, 2015), 2015 WL 5076196.

17. Brief of LG Electronics, *supra* note 15, at 4–5.

18. This argument may sound strikingly similar to one made by Professors Thomas Merrill and Henry Smith in the context of real and personal property. Thomas W. Merrill & Henry E. Smith, Optimal Standardization in the Law of Property: The Numerus Clausus Principle, 110 *Yale L.J.* 1, 26–34 (2000) (“The need for standardization in property law stems from an externality involving measurement costs: Parties who create new property rights will not take into account the full magnitude of the measurement costs they impose on strangers to the title.”). Indeed, Merrill and Smith’s example of a Monday-only watch, *id.* at 27, sounds much like the IP professors’ example of a patentee who “make[s] it a condition of sale that a consumer use its patented widget only on Sundays,” Brief of Intellectual Property Professors and American Antitrust Institute, *supra* note 16, at 28. For a justification of copyright exhaustion based on information costs, see generally Guy A. Rub, Rebalancing Copyright Exhaustion, 64 *Emory L.J.* 741 (2015).

initial *authorized* sale of a *patented* item.”¹⁹ So if a pharmaceutical firm authorizes a Chinese manufacturer to sell a patented drug in China and the manufacturer instead sells the drug in India, the unauthorized Indian sale would not exhaust the pharmaceutical firm’s U.S. patent rights.²⁰ Moreover, it is unclear what would happen if the patentee had been granted no patent—or only a narrow patent—in the country of first sale. For instance, if a pharmaceutical firm authorizes a Chinese manufacturer to sell a drug in China but the pharmaceutical firm only has a U.S. patent (not a Chinese patent) on the drug, the firm might be able to argue that the authorized sale in China did not exhaust U.S. patent rights. To be sure, in the pharmaceutical context, even if they lose the benefit of exhaustion, U.S. manufacturers still have the protection of a statute banning re-importation—albeit one subject to a number of limitations that makes it less attractive to patentees than a no-exhaustion rule.²¹ And this protection is unavailable for nonpharmaceutical manufacturers. Furthermore, even if the foreign sale exhausts the *seller’s* U.S. patents, the importer risks liability for infringing *someone else’s* U.S. patents (e.g., even if Samsung authorized the foreign sale of one of its Galaxy smartphones, Apple might still sue the importer). So while it is true that allowing patentees to reserve U.S. patent rights does impose some information-cost externalities on third parties, the cost of determining whether the patentee has reserved its U.S. patent rights does not seem particularly onerous in comparison with all the other information costs involved in verifying that a product is noninfringing.

Exhaustion opponents argue that international exhaustion would limit the ability of patentees to engage in geographic price discrimination and that price discrimination in turn increases economic efficiency. A simple example helps to illustrate the point: Imagine a world with three countries—one that is high income (say, the United States), one that is middle income (say, Brazil), and one that is low income (say,

19. *Quanta Comput., Inc. v. LG Elecs., Inc.*, 553 U.S. 617, 625 (2008) (emphasis added).

20. See *id.* at 636 (noting prior Supreme Court cases found no exhaustion where licensee was not authorized to make particular kind of sale).

21. See 21 U.S.C. § 381(d) (2012) (banning re-importation except where Secretary authorizes such re-importation for “emergency medical care”). This statute is subject to a personal use exemption, see *id.* § 384(j), and it depends on discretionary government enforcement, which might not be particularly vigorous in cases where there is a large price differential and U.S. policymakers are concerned about ballooning health care costs. This statute also only prohibits re-importation, not importation of drugs manufactured abroad. (It thus privileges U.S. manufacturers—though only to the extent that they are not competing with foreign manufacturers whose products can be imported for lower prices.) Moreover, the re-importation ban only affects prescription drugs; it does not affect parallel trade in other patented products that might be sold abroad at discounted prices, including other medical products such as medical devices. But to the extent that this statute is able to replicate the effects of a no-exhaustion rule for prescription drugs, it may produce a nice compromise for those who believe that prescription drugs should be treated differently than other products.

Ethiopia). Let us say that cardiac patients in the United States will pay up to \$10 for a certain patented pacemaker, that patients in Brazil will pay up to \$6, and that patients in Ethiopia will pay up to \$2. For the sake of simplicity, let us assume that there is one patient per country and that the marginal cost of producing an additional pacemaker is zero. In a world without international patent exhaustion, the patentee will charge \$10 in the United States, \$6 in Brazil, and \$2 in Ethiopia; its total revenue will be \$18, and deadweight loss will be zero.²² In a world with international patent exhaustion, however, the patentee cannot charge different prices in different countries. This is because if the patentee tried, then arbitrageurs would purchase the pacemaker in Ethiopia and resell it in Brazil and the United States, causing prices across countries to converge. The patentee will have to choose one worldwide price—and in this case, the revenue-maximizing price would be \$6.²³ The patentee would earn \$12 (\$6 from the U.S. sale and \$6 from the Brazilian sale), and the deadweight loss due to the forgone Ethiopian transaction would be \$2.²⁴ U.S. consumers would be better off (paying \$6 instead of \$10), Brazilian consumers would be unaffected, and Ethiopian consumers would be priced out of the market entirely.

This stylized example oversimplifies the complicated economics of geographic price discrimination, but its three basic conclusions remain true in most models of parallel trade. First, a rule of international patent exhaustion will push patentees to raise prices in low-income countries and lower prices in high-income countries.²⁵ Second, a move to international exhaustion will reduce patentees' profits and thus reduce the rewards from innovation, which may lead to a decline in aggregate investment in research and development.²⁶ Third, a rule of international

22. By "deadweight loss," we mean the economic inefficiency that results from forgone transactions when the price of a product exceeds its marginal cost.

23. The patentee earns \$12 from setting a price of \$6 (from the U.S. and Brazilian sales), which is more than the \$10 earned from a price of \$10 (with only the U.S. sale) or the \$6 earned from a price of \$2 (from making a sale in each of the three countries).

24. The full welfare loss would be even higher if the social value of treating a low-income patient for heart disease exceeds the patient's ability to pay.

25. This is not to say that prices will be exactly the same everywhere under an exhaustion regime: For example, the U.S. price of a patented product may remain higher than the price of the same product in Ethiopia if the difference is less than the cost of transporting the product from Ethiopia to the United States. Export taxes in developing nations also may allow some cross-country price differences to persist. See generally Daniel Crosby, WTO Legal Status and Evolving Practice of Export Taxes, *Bridges*, Oct.–Nov. 2008, at 3, <http://www.ictsd.org/sites/default/files/review/bridges/bridges12-5.pdf> [<http://perma.cc/3JMB-DDA6>] (last visited Feb. 9, 2016) (noting "general WTO rules do not discipline Members' application of export taxes" (emphasis omitted)). But even if it does not lead to complete convergence, a regime of international patent exhaustion would limit the ability of patentees to engage in geographic price discrimination.

26. If one believes that patentees reap excessive rewards under the current system, then one might *favor* a rule of international patent exhaustion on the ground that it reduces those rewards. For an explanation of the problems with allowing producers to

patent exhaustion will interfere with geographic price discrimination and in doing so, often will increase the deadweight loss from above-marginal-cost pricing.²⁷ Concededly, one cannot say with certainty that a rule of international patent exhaustion is less efficient overall—the third-party information costs discussed above are one factor that may push in the other direction.²⁸ What we can say with a high degree of confidence is that if the Supreme Court reverses the Federal Circuit and adopts a rule of mandatory exhaustion in the *Lexmark* case, prices of patented products in the developing world will increase and prices of those same products in the United States will fall.²⁹

capture all of the surplus they create, see generally Brett M. Frischmann & Mark A. Lemley, *Spillovers*, 107 *Colum. L. Rev.* 257 (2007).

27. See Hal R. Varian, *Price Discrimination and Social Welfare*, 75 *Am. Econ. Rev.* 870, 870–75 (1985) (identifying conditions under which imperfect price discrimination enhances welfare).

28. Reviewing the different theories, Keith Maskus concluded that “[t]here are no simple answers,” but that based on existing empirical evidence, “it would be inadvisable to move toward a global policy of . . . international exhaustion.” Keith E. Maskus, *Parallel Imports*, 23 *World Econ.* 1269, 1270 (2000).

29. A rule of international patent exhaustion may have additional effects on economic efficiency—including some potentially positive effects. For example, in a world without exhaustion, countries can set price controls on patented products and as long as the controlled price is above marginal cost, patentees cannot credibly threaten to withhold their products from controlled markets. With international patent exhaustion, a patentee’s threat to withhold its product from a price-controlled market becomes more credible: A patentee will rationally refuse to sell its product at a controlled price if arbitrageurs can purchase the product at that price and resell it in an uncontrolled market such as the United States (thus undercutting the patentee’s U.S. price). See Gene M. Grossman & Edwin L.-C. Lai, *Parallel Imports and Price Controls*, 39 *RAND J. Econ.* 378, 386–87 (2008) (explaining options available to patentee under regime with international exhaustion). Significantly, however, Grossman and Lai arrive at the same redistributive result as our simple model: A rule of international patent exhaustion would lead to a redistribution of wealth from consumers in the global South to the global North. See *id.* at 400 (concluding “legalization of parallel imports by North spells a welfare loss for South” while “North fares better”). For another model with similar results, see Paul Pecorino, *Should the US Allow Prescription Drug Reimports from Canada?*, 21 *J. Health Econ.* 699, 707 (2002) (concluding in a model with price controls, when reimportation is allowed, “profits of the domestic monopolist rise” and “prices rise abroad and fall at home”).

Additionally, the shape of the demand curve in rich and poor countries might sometimes mean that a rule of international exhaustion increases global welfare. Imagine that there are two countries—the United States and Mexico—and three consumers in each country. The three U.S. consumers value a particular patented product at \$10, \$9, and \$5, respectively; the Mexican consumers value the product at \$5, \$3, and \$1, respectively. Again assume a marginal cost of zero. Without exhaustion, the patentee will set the U.S. price at \$9 and the Mexican price at \$3. As a result, the producer surplus will be \$24, the consumer surplus will be \$1 in the United States and \$2 in Mexico, and the social surplus will be \$27. With exhaustion, the patentee will set the worldwide price at \$5. This results in a producer surplus of \$20, consumer surpluses of \$9 in the United States and \$0 in Mexico, and a social surplus of \$29. Here too, however, the shift to a rule of international exhaustion leads to a redistribution of wealth from foreign consumers to U.S. consumers.

The fact that mandatory exhaustion will benefit U.S. *consumers* does not mean that mandatory exhaustion will increase U.S. citizens' welfare overall. U.S. citizens are producers as well as consumers of patented products, and—as noted above—mandatory exhaustion likely leads to lower profits for patentees. In the example above, the shift from a no-exhaustion rule to mandatory exhaustion resulted in a \$4 increase in U.S. consumer surplus and a \$6 decline in the patent holder's profits. If the patent holder is American, then the net effect of exhaustion on the aggregate welfare of U.S. citizens is -\$2. Note, though, that the majority of U.S. patents are granted to foreign applicants³⁰ and when the patent holder is a foreigner, the shift to exhaustion leads to a net increase in U.S. citizens' welfare. From a perspective of pure national interest (with no regard for the interests of consumers or firms outside the United States), the desirability of an exhaustion regime depends on whether the gains to U.S. consumers outweigh the losses to U.S. patent holders—an empirical question that no study has successfully answered.

It is not surprising, then, that U.S. firms with vast patent portfolios have largely lined up on the anti-exhaustion side, while U.S. retailers have adopted a pro-exhaustion position. What *is* surprising is that groups focused on global access to medicines are advocating for a U.S. rule of international exhaustion. For example, Public Citizen—which has identified global access to medicine as a top policy priority³¹—nonetheless joined a brief calling for a mandatory exhaustion rule. According to that brief, “case studies find that it is international exhaustion that reduces prices and ameliorates the crisis of access to affordable medicines.”³² But the cited case studies tell a somewhat different story: They suggest that some countries might benefit if *they* adopt a rule of international patent exhaustion. For example, South Africa may have benefited from adopting an exhaustion rule that allowed it to import lower-priced medicines from countries such as India.³³ The studies say nothing about how U.S. exhaus-

30. U.S. Patent Statistics Chart: Calendar Years 1963–2014, U.S. Patent & Trademark Office, http://www.uspto.gov/web/offices/ac/ido/oeip/taf/us_stat.htm [<http://perma.cc/ZS53-ADFB>] (last visited Feb. 9, 2016).

31. See Access to Medicines, Public Citizen, <http://www.citizen.org/more-about-access-to-medicine> [<http://perma.cc/V5UB-CS5Z>] (last visited Feb. 9, 2016) (describing Public Citizen's Global Access to Medicines Program).

32. Brief of Public Knowledge, *supra* note 15, at 23. See also Burcu Kilic & Peter Maybarduk, The Lexmark Litigation: Why Does Big Pharma Care So Much About Ink Cartridges?, IP Watch: Inside Views (Sept. 17, 2015), <http://www.ip-watch.org/2015/09/17/the-lexmark-litigation-why-does-big-pharma-care-so-much-about-ink-cartridges> [<http://perma.cc/X4K7-GLAE>] (“PhRMA claims that, if patent rights were exhausted by sales abroad, the ‘artificially lowered prices’ of foreign markets would encourage the resale of medicines from those markets in the US.”).

33. See Sisule F. Musungu & Cecilia Oh, Comm'n on Intellectual Prop. Rights, Innovation & Pub. Health, The Use of Flexibilities in TRIPS by Developing Countries: Can They Promote Access to Medicines? 30 (Aug. 2005), <http://www.who.int/intellectualproperty/studies/TRIPSFLEXI.pdf> [<http://perma.cc/2CAR-UCT4>] (recommending developing countries adopt international exhaustion rules but not

tion rules affect access to medicines. In the South African case, the benefits to South Africa from adopting a rule of international patent exhaustion could only materialize if patentees previously had authorized sales in other countries at more heavily discounted prices. In other words, South Africa's gain from its own exhaustion rule comes at the expense of patients elsewhere—and likely at the expense of patients in countries where per capita income is lower than it is in South Africa.³⁴

We are not, however, aware of any study suggesting that the United States' adoption of an international exhaustion rule would lead to lower prices in the developing world.³⁵ To the contrary, the consensus among scholars of IP law and economics is that a U.S. rule of international patent exhaustion would lead to higher prices for patented products in lower-income countries, although there is some debate about whether the net result would be an increase or decrease in global welfare.³⁶ As counter-intuitive as it might be for developing countries and global access-to-medicine proponents to take the side of pharmaceutical companies, their

mentioning effect U.S. exhaustion rules would have on developing countries); Jayashree Watal, *Access to Essential Medicines in Developing Countries: Does the WTO TRIPS Agreement Hinder It?* 4–5 (Harvard Ctr. for Int'l Dev., Sci., Tech. & Innovation, Discussion Paper No. 8, 2000), <http://www.cid.harvard.edu/archive/biotech/papers/discussion8.pdf> [<http://perma.cc/XP2Q-N2N4>] (discussing effects developing nations' adoption of international exhaustion rule could have on their economies).

34. Indeed, this possibility is admitted by one of the studies cited by the Public Knowledge brief. See Watal, *supra* note 33, at 5 (“[I]t has to be noted that consumers in developing countries from which parallel imports originate may experience a rise in prices or may face inadequate availability of the product subject to parallel imports.”).

35. A U.S. rule of international exhaustion might make it more likely that other countries will adopt international exhaustion. See Kilic & Maybarduk, *supra* note 32 (stating U.S. rule of international exhaustion would reduce international pressure against other countries' adoption of similar rules). But uniform international exhaustion rules would not benefit the developing world because this regime would still lead to raised prices in countries where patented goods are currently less expensive. And while the Office of the U.S. Trade Representative has at times worked to “export a ban on international patent exhaustion,” Margot E. Kaminski, *The Capture of International Intellectual Property Law Through the U.S. Trade Regime*, 87 *S. Cal. L. Rev.* 977, 1021 (2014), Congress has subsequently prohibited appropriated funds from being used to include similar text in other free-trade agreements. See, e.g., Act of Nov. 22, 2005, Pub. L. No. 109-108, § 631, 119 Stat. 2290, 2344 (2005) (stating “[n]one of the funds made available in this Act may be used to include in any new bilateral or multilateral trade agreement the text of” provisions in other free-trade agreements that banned international patent exhaustion).

36. See, e.g., Keith E. Maskus & Yongmin Chen, *Vertical Price Control and Parallel Imports: Theory and Evidence*, 12 *Rev. Int'l Econ.* 551, 561–62 (2004) (“[P]arallel importing can increase world welfare in some situations but reduce world welfare in other situations”); Sarah R. Wasserman Rajec, *Free Trade in Patented Goods: International Exhaustion for Patents*, 29 *Berkeley Tech. L.J.* 317, 361–62 (2014) (noting conventional argument that “international exhaustion would result in less innovation and less access for consumers in low-income countries,” but arguing this “fails to recognize the costs of geographical price discrimination”). For an explanation of how a U.S. rule of international exhaustion might increase global welfare in a world with price controls, see *supra* note 29.

interests in fact seem aligned on the exhaustion issue.³⁷ In sum, while the net winners and losers from a U.S. international exhaustion rule are somewhat ambiguous, it seems clear that consumers in low-income countries do not come out ahead.

III. PRESERVING INNOVATION POLICY POSSIBILITIES

If the Supreme Court adopts an international exhaustion rule in *Lexmark* or another case, the decision would, as explained above, almost certainly result in higher prices for patented products in non-U.S. markets. But a U.S. rule of international patent exhaustion would also have a further effect abroad: It would make it more difficult for foreign countries to allocate access to patentable goods via *nonmarket* mechanisms. Some national governments subsidize their citizens' consumption of patented products: Examples range from the U.K. National Health Service's provision of pharmaceuticals³⁸ to Uruguay's one-laptop-per-child program.³⁹ If the subsidy reduces the price for the consumer to marginal cost, then the subsidy can eliminate the deadweight loss from the patent monopoly (though the use of the tax system to finance the subsidy may yield deadweight losses of its own⁴⁰). But if arbitrageurs can acquire the patented product in the foreign country and export it to the

37. We are not the first to make this observation. See, e.g., Nick Gallus, *The Mystery of Pharmaceutical Parallel Trade and Developing Countries*, 7 *J. World Intell. Prop.* 169, 171–81 (2002) (explaining why developing countries are wrong to support legality of parallel trade). And the observation should be coupled with a caveat: If a rule of international patent exhaustion bolsters the bargaining power of patentees in negotiations with developing countries, see Grossman & Lai, *supra* note 29, at 4 n.2 (“The possibility of reimportation strengthens the bargaining position of the manufacturer by lending credibility to the threat that he will not serve the foreign market.”), then patentees might be better off under exhaustion than under the current regime. In that case, advocates for access to patentable goods in the developing world and pharmaceutical companies *both* would be on the “wrong” side of the exhaustion issue (i.e., both would be taking positions against their own interests). Advocates for access to patentable goods should cross over to the anti-exhaustion camp, while pharmaceutical companies and other patent holders should cross over to the pro-exhaustion side.

38. See U.K. Dep't of Health, *The Pharmaceutical Price Regulation Scheme 2014* (Dec. 2013), http://www.gov.uk/government/uploads/system/uploads/attachment_data/file/282523/Pharmaceutical_Price_Regulation.pdf [<http://perma.cc/Y6Y6-FHGW>] (setting out rules whereby U.K. Department of Health purchases patented medicines from pharmaceutical manufacturers that opt into Pharmaceutical Price Regulation Scheme for distribution within United Kingdom through its National Health Service).

39. See Verónica Psetizki, *Laptop for Every Pupil in Uruguay*, *BBC News* (Oct. 16, 2009, 8:25 AM), <http://news.bbc.co.uk/2/hi/technology/8309583.stm> [<http://perma.cc/5TLX-KSR5>] (describing how Uruguay provides a free laptop for every child attending state primary school).

40. Or it may not. See Louis Kaplow, *The Optimal Supply of Public Goods and the Distortionary Cost of Taxation*, 49 *Nat'l Tax J.* 513, 513 (1996) (showing under certain conditions, provision of public goods can be financed through income taxes in way that leads to no additional distortion).

United States, then the foreign country ends up subsidizing consumption by U.S. consumers—which may lead it to withdraw the subsidy altogether.

A concrete example helps to illustrate this scenario. A firm charges \$100 in the United States for a patented laptop, while Uruguay offers its citizens a \$90 subsidy that reduces the price of the laptop from \$100 to \$10. If the United States adopts a rule of international patent exhaustion, then arbitrageurs stand to profit by procuring laptops for \$10 in Uruguay and reselling them in the United States for less than \$100.⁴¹ If arbitrageurs compete with one another, then the price of a patented laptop in the United States will fall below \$100, which means that some portion of Uruguay's \$90-per-laptop subsidy will redound to the benefit of U.S. citizens. (Indeed, with perfect competition among arbitrageurs and no transportation costs, the price of a patented laptop in the United States will fall all the way to \$10, and Uruguay's \$90-per-laptop subsidy will be captured almost entirely by non-Uruguayans.) Uruguay might respond to this problem by attaching conditions to its own subsidies (e.g., a rule that recipients of the \$90 subsidy must promise not to resell the laptops outside Uruguay). But those restrictions may be difficult to enforce, and in any event, the cost of enforcement is nonzero. Thus, a U.S. rule of international patent exhaustion would make it more costly for a country like Uruguay to adopt a subsidy program for patented products, thereby limiting Uruguay's autonomy to craft its own policy for allocating access to patentable goods.⁴²

IV. DISTRIBUTIVE TRADEOFFS AND PARALLEL TRADE

If U.S. courts agree that adopting an international patent exhaustion rule would harm foreign consumers and make it more difficult for foreign countries to choose nonmarket mechanisms for allocating access to patentable goods, should this factor into their analysis of the exhaustion issue? The economic analysis of IP often takes efficiency as its lodestar and leaves the tough distributive justice questions for tax law.⁴³ This approach maps messily onto the question of international patent

41. In fact, the laptops distributed in Uruguay, which had a nominal value of \$188, were offered to Americans in a limited program for about \$425 and were being resold for as much as \$600 on eBay. San Jose Mercury News, *Low-Cost XO Laptops Are Fetching Good Prices on eBay Auctions*, Balt. Sun (Jan. 3, 2008), http://articles.baltimoresun.com/2008-01-03/business/0801030345_1_xo-ebay-laptop [<http://perma.cc/YQ5F-CGF9>].

42. In a forthcoming article, we explain that such autonomy—in production of patentable goods in addition to allocation—is a principal advantage of the existing international IP regime. Daniel J. Hemel & Lisa Larimore Ouellette, *Knowledge Goods and Nation-States*, 101 Minn. L. Rev. (forthcoming 2016) (manuscript at 50), <http://ssrn.com/abstract=2745632>. The Federal Circuit's adoption of an international exhaustion rule would severely undermine this advantage.

43. Cf. Louis Kaplow & Steven Shavell, *Why the Legal System Is Less Efficient than the Income Tax in Redistributing Income*, 23 J. Legal Stud. 667, 667–68 (1994) (“[R]edistribution through legal rules offers no advantage over redistribution through the income tax system and typically is less efficient.”).

exhaustion—most obviously because there is no global tax system to redistribute wealth. But even more fundamentally, one cannot identify the policy that maximizes aggregate welfare without first deciding whose welfare counts in the calculus. If one assigns zero value to the interests of foreigners, then the United States might well be better off if it adopted a rule of international patent exhaustion. If one assigns a very high value to the interests outside the United States, particularly those in developing countries, then one should almost certainly come down against a U.S. rule of international exhaustion. The harder question is how much weight U.S. courts and policymakers should assign to foreign interests—a question that no economic model can resolve.

One might argue that U.S. policymakers should pursue IP rules that maximize global rather than national welfare because the United States already redistributes wealth to the global South each year via foreign aid.⁴⁴ The United States should therefore adopt the IP policies that maximize global welfare, and if those rules also lead to more redistribution to the global South than U.S. voters think is optimal, then the United States can cut its foreign aid expenditures commensurately. On this view, the shift to an IP rule that maximizes global welfare is Pareto efficient (i.e., it leaves everyone at least as well off as before): Adjustments to foreign aid allow the United States to engage in the same amount of redistribution as previously while also growing the global pie. There are, however, several caveats that come with this argument. First, the argument treats the “global South” as an undifferentiated block when in fact it comprises more than 100 distinct nation-states.⁴⁵ To fully offset the distributive consequences of a change to its IP laws, the United States would have to calculate each country’s losses or gains from the change—and any such calculations would almost certainly be imprecise. Moreover, there are some countries (e.g., Eritrea) that categorically refuse U.S. aid; for those countries, the United States cannot offset the distributive consequences of IP policy changes via foreign aid adjustments.⁴⁶ Second, the argument glosses over the institutional

44. See ForeignAssistance.gov, <http://foreignassistance.gov> (on file with the *Columbia Law Review*) (last visited Feb. 13, 2016) (reporting U.S. government plans to spend \$37.9 billion in foreign aid for fiscal year 2016).

45. See Paulos Milkias, *Developing the Global South: A United Nations Prescription for the Third Millennium 45* (2010) (stating “global South” generally includes Asia (but not Japan), Africa, and Latin America—areas encompassing well over 100 nations—but also noting that, like “Third World,” this is a less descriptive euphemism for “poor nations”); see also Country & Lending Groups, World Bank, <http://data.worldbank.org/about/country-and-lending-groups> [<http://perma.cc/433C-X8RH>] (last visited Feb. 9, 2016) (reporting 135 countries have GNI per capita under \$12,736).

46. See Edmund Sanders, *Eritrea Aspires to Be Self-Reliant, Rejecting Foreign Aid*, L.A. Times (Oct. 2, 2007), <http://www.latimes.com/world/la-fg-eritrea2oct02-story.html> [<http://perma.cc/K8DQ-GMRF>] (describing Eritrea’s decade-long self-reliance program, which included rejecting hundreds of millions in foreign aid). Note, though, that most countries do receive U.S. aid in *some* form, even under the no-exhaustion status quo. See

dimension of U.S. patent policymaking: The institution that will decide the *Lexmark* case (U.S. courts) is not the institution that sets the foreign aid budget (Congress). Even if Congress conceivably *could* adjust foreign aid spending to offset the redistributive consequences in the event that the Supreme Court reverses the Federal Circuit in the *Lexmark* case, political gridlock may stand in the way of such adjustments.⁴⁷ So as a practical matter, if the Supreme Court adopts an international exhaustion rule, the decision will have distributive effects that Congress is unlikely to offset.

Alternatively, one might argue that U.S. federal courts—when faced with a tradeoff between the interests of U.S. citizens and those of low-income individuals overseas—should err on the side of favoring foreign interests because the error costs in that direction are lower (at least where, as here, Congress can override any court decision by statute). The argument would be that if the federal court reaches a foreigner-favorable result out of line with the distributive preferences of most U.S. voters, members of Congress will have a strong incentive to override the court through legislation. By contrast, if the court reaches a U.S.-favorable result misaligned with majoritarian distributive preferences (i.e., if the judicial decision leads to a larger inbound redistribution of wealth than U.S. voters think is optimal), then Congress is unlikely to correct the error. (After all, very few U.S. politicians win elections on a platform of “more foreign aid.”)⁴⁸ This argument, however, has somewhat less force in the exhaustion context, where there are well-organized interests on both sides. The U.S. pharmaceutical industry will fight fiercely against any legislative effort to adopt an exhaustion rule, while if the Supreme Court reverses the Federal Circuit in *Lexmark*, firms such as Amazon, Costco, Facebook, and Google will lobby hard against any bill to bring back the no-exhaustion regime. The likelihood of a lobbying stalemate may mean that Congress will leave in place whatever patent exhaustion rules the courts choose.

U.S. Agency for Int'l Dev., Foreign Aid Dashboard, <http://explorer.usaid.gov/aid-dashboard.html> [<http://perma.cc/ZFB6-A9YC>] (last visited Feb. 9, 2016) (showing United States gave \$40 billion in aid to 194 countries in 2013). This suggests that even after redistributing wealth via its no-exhaustion rule, the United States still desires to transfer more wealth to most other countries.

47. See generally Lee Anne Fennell & Richard H. McAdams, The Distributive Deficit in Law and Economics, 100 *Minn. L. Rev.* 1051 (2016) (noting efficiency-improving judicial decisions may have redistributive consequences that political process is unlikely to offset).

48. For an analogous argument that courts should err against politically powerful interest groups when interpreting ambiguous statutes, see Jonathan R. Macey, Promoting Public-Regarding Legislation Through Statutory Interpretation: An Interest Group Model, 86 *Colum. L. Rev.* 223, 223–24 (1986) (“Too often the [political] process seems to serve only the purely private interests of special interest groups at the expense of the broader public interests it was ostensibly designed to serve.”).

CONCLUSION

In short, the normative question at the heart of *Lexmark*—how much U.S. courts should care about foreign consumers—is a question that defies easy answer. While we do not seek to answer it here,⁴⁹ we do offer two observations. First, advocates for access to patented goods in the developing world seem to be on the “wrong” side of the exhaustion debate, in the sense that the rule they are advocating will yield consequences inconsistent with their stated objectives. Second, there is no “right” answer to the exhaustion question independent of one’s distributional preferences—and, in particular, one’s cross-national distributional preferences. Those who argue that a U.S. rule of international patent exhaustion can be a win-win for consumers at home and abroad are, this piece argues, avoiding the inevitable tradeoffs that *Lexmark* forces us to face.

49. Philosophers have for decades debated the question of how much individuals in the industrialized world should value the interests of those in lower-income countries. Arguably the most significant work on the subject (and quite likely the most thought-provoking) is Peter Singer, *Famine, Affluence, and Morality*, 1 *Phil. & Pub. Aff.* 229 (1972).