

Can market incentives from limited, legalized trade in certain products help protect endangered species?

Trading in Endangered Species

LEGAL SALES VERSUS TOTAL BANS

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Debate over whether to sell confiscated endangered-species products is a regular part of the agenda at meetings of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). Rhinoceros horns, tiger bones, and turtle shells are among the banned products for which markets exist, but sales of ivory in particular have been hotly contested.

International trade in ivory was banned in 1989, after poachers in Africa killed as many as 100,000 elephants annually, halving the continent's population in a decade. Since then, conservation activities in some African nations have allowed elephant populations to recover. Seeking funds to support such work, these countries have asked for special authorization to sell stockpiled ivory.

In 1999, Botswana, Namibia, and Zimbabwe were permitted to sell to Japan about 110,000 pounds from their existing legal stocks of raw ivory—tusks of elephants that died from natural causes or as a result of government animal control programs—thereby raising US\$5 million for elephant conservation. Two years later, CITES accepted similar proposals from Botswana, Namibia, and South Africa. However, support was not unanimous among the 160 members, and similar proposals by Zambia and Zimbabwe failed out of concern that those governments could not effectively protect their elephant herds or monitor the ivory sales.

Can market incentives from limited legalized trade in certified products help protect endangered species? The effects on poaching of even limited legalized trade are unclear. According to the Environmental Investigation Agency, a non-governmental organization based in Britain, the 1999 sales encouraged elephant poaching; according to the United Nations Environment Programme and the TRAFFIC network, which monitors wildlife trading, they did not.

Traditional economic theory says that selling confiscated goods helps satisfy consumer demand and drive down prices, thus reducing the financial gains to poaching. Prohibiting confiscated goods from being sold, on the other hand, increases scarcity and drives up prices, actually encouraging illegal activity. When a larger share of poached ivory is confiscated, less gets through to the market, and poachers may then respond to the higher prices by increasing their total catch to ensure that enough of the unconfiscated share reaches the high-paying consumers.

Such economic analyses depend on two crucial assumptions: that illegally produced goods and legally sold confiscated goods are truly interchangeable, and that consumers are indifferent to both wildlife populations and the nature of

the market. The reality, of course, is more complex, leading conservationists and legal experts to discount the economists' theory. Their concerns tend to fall along four lines:

(1) certified trade would create new demand from law-abiding consumers, which would raise prices; (2) legal trade would reduce the stigma of owning endangered species products, encouraging demand, and raising prices; (3) laundering may bring illegal goods to legal markets; and (4) legal sales may lower the costs of illegal supply by making monitoring more difficult.

Given the conflicting evidence, which aspects of these complicated markets are important for determining whether limited trade in illegal goods can help achieve policy goals like reducing poaching?

Dealing with Different Kinds of Consumers

Separate markets with different types of consumers can exist side by side. When CITES banned international trade in ivory and other endangered species products, demand from law-abiding consumers in nonproducing countries, particularly wealthy industrialized nations, fell. The remaining consumers were either domestic or those willing to engage in illegal trade.

The fear is that certified sales will reinvigorate demand from the high-paying consumers and bid up the return to poaching. However, this consequence is not unavoidable: adding a separate legal market alongside an existing black market does not necessarily lead to more poaching. Since law-abiding consumers will purchase only from certified sources, their demand does not drive up the prices for illegal sources—if anything, it would drive them down. Presumably, consumers willing to buy on the black market would buy the legal product as long as it was not more expensive. Thus, prices cannot rise in the black market.

If demand from law-abiding international consumers is great, they will purchase all the certified products and only the certified products; meanwhile, black-market consumers will find the certified prices too high and engage as before, with no change to illegal trade. If demand from the law-abiding consumers is moderate, some of the certified sales will satisfy consumers who would otherwise resort to the black market, causing those prices to fall.

Thus, either prices for uncertified goods will fall, as in the

traditional model, or they will remain unchanged. In the case of ivory, auctions of lawfully obtained products should raise revenues without any increase in harm to the elephants.

The Question of Stigma

Part of the success of the ivory ban was attributed to the stigma it created—the perception that ivory products had been obtained through illegal or inhumane means. If that perception affects how much the consumer enjoys owning and displaying ivory, the relative share of trade in certified

goods can affect her willingness to pay. A larger market of legal products can raise her willingness to pay; more illegal trade can lower it.

A robust legal market, then, could reduce stigma, increase demand from the law-abiding consumers, and cause prices to rise in the certified market. (As long as the two markets remain separate, prices in the illegal market should not be affected.) A limited amount of legal sales, on the other hand, would tend to keep stigma high and demand low; prices would not rise, and the legal sales would satisfy some of the illegal demand. Stigma is more likely to be important for display goods, like ivory or diamonds, than for consumed goods, like medicinal rhino horn.

Some consumers may care about

the state of the species or the absolute size of the illegal activity. This “outrage” factor has its roots in altruism or existence value, since personal enjoyment of the good is reduced by the scope of the harmful behavior, even if one’s own purchase was obtained in a lawful or cruelty-free manner. The effect is to reduce the willingness to pay for certified goods when poaching increases; as long as markets are separate, however, poaching incentives (and thus the degree of outrage) should remain the same.

What if There Is Laundering?

Laundering poses a real problem for legalized trade, since it means the two markets cannot remain truly separate. If demand is high among law-abiding consumers and prices for certified products are higher than for black-market goods, incentive exists to launder illegal goods for fraudulent sale in the legal market. Part of this incentive is then passed on to



poachers, as some illegal consumption is diverted to legal markets and prices are bid up on the black market.

What policy, then, leads to the lowest price for illegally obtained goods? If law-abiding demand is low, the best policy may be to sell all the certified goods available. If stigma is strong but might fall, it may be to allow limited sales. However, if law-abiding demand would be high, the trade ban can indeed provide the lowest economic incentives for poaching.

Lowering the Costs of Illegal Supply

But what about the supply side? The relative size and scope of the legal market could affect smuggling costs if, for example, more legal trade lowers the odds of being caught in an illegal exchange. The effects of these interactions may not be straightforward, however, and their exact form can be important. Do thriving legal markets make poaching enforcement less effective and poaching cheaper? Do they lower the costs of laundering? Or do they lower the confiscation rate for laundering?

Recall that an increase in poaching enforcement that raises the confiscation rate can have perverse effects and increase poaching activity if the price response outweighs the increase in supply costs. For the same reasons that an increase in enforcement can have uncertain effects, a reduction in enforcement effectiveness can also have ambiguous effects. On the other hand, if legal sales have supply interactions that directly lower poaching or laundering costs (rather than lowering confiscation), illegal activities could increase. Still, it does not necessarily follow that a trade ban minimizes poaching, since the optimal policy must balance the demand effects as well.

Balancing Trade Effects

Appropriate trade and enforcement policy for endangered species products thus requires a reasonable sense of the demand and supply parameters. For example, if lawful demand for rhino horn is low and most consumers are indifferent to certification, the trade ban is likely to be ineffectual in reducing demand, and selling confiscated products would bring down prices, primarily by increasing supply to consumers indifferent to the law. But if ivory is in demand by law-abiding consumers sensitive to the stigma, sales of some but perhaps not all the available stock may help reduce the return to poaching.

Understanding the demand variables for the products in question is essential for research. Unfortunately, and understandably, good data for black-market sales are not available; the next most reliable data sources are studies of the Japanese ivory market, the designated consumer of legal African

ivory sales. It appears that market separation and stigma may be at play. In the two decades before the international ivory ban, domestic prices remained relatively constant at 18,000 to 20,000 yen per kilogram (kg) for large tusks. Shortly after the ban, prices peaked at 180,000 yen and then gradually fell to a stable price of 60,000 yen (us\$450) per kg. This pattern would be consistent with an initial restriction of legal supply and then growing stigma as legal stocks dwindled relative to illegal supplies.

Meanwhile, the surveyed price for smuggled ivory is considerably lower, at 20,000 to 25,000 yen per kg, which is consistent with separated markets. Original supplier costs might be 6,000 to 8,000 yen, with the difference attributed to mark-ups by middlemen—the smugglers. Prices for Japanese ivory imports from Botswana, Namibia, and Zimbabwe rose from 14,941 yen per kg in 1983 to 37,216 in 1989, as elephant populations dwindled and the ban loomed. Prices for the 1999 transactions averaged 10,904 yen per kg, considerably lower than before the ban, perhaps reflecting stigma effects. However, drawing strong inferences from price data is tricky: ivory characteristics vary (by origin and by tusk size), and since five dealers dominate the legal market in Japan, prices may be distorted by their power over the market.

Clearly, there are price incentives for poaching, but the ultimate solution may require a broader approach. Restricting trade has several consequences, including forgone enjoyment of the products, enforcement costs, and wildlife management costs, not to mention community impacts of changes in the species population. Furthermore, the revenue from certified sales could be important to poor countries. If the goal is to maximize welfare, determining optimal policy involves more complex issues, not the least of which is defining welfare. Should one care about the utility of illegal consumers or illegal producers? How does stigma affect the evaluation of the utility of law-abiding consumers? Stigma can be a policy tool for demand management, as in the slogan for the People for the Ethical Treatment of Animals' anti-fur campaign: "I'd rather go naked than wear fur." By reducing law-abiding consumer demand, one could make a certified sales policy more effective at driving down the return to poaching.

The complications analyzed here are not restricted to ivory and other endangered species products. The "blood" diamonds from war-torn areas like the Democratic Republic of Congo involve issues of stigma in demand and laundering in supply. Other products with segregated markets include GMO-free (genetically modified organisms), cruelty-free, or organic produce; certified, sustainably harvested timber; drugs; and guns. Understanding real market interactions will be critical to evaluating the effects of banning or restricting sales of many kinds of products that society finds troubling. ■