Counterfeiting and Piracy: Can It Be Quantified?

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Counterfeiting and piracy of intellectual property are often pointed to as substantial problems, particularly in certain regions or countries. In April of 2010, the Government Accountability Office (GAO) released a study on counterfeiting and piracy (the "Report") that was required by the Prioritizing Resources and Organization for Intellectual Property Act (PRO-IP Act) passed by Congress in 2008. The GAO interviewed officials and subject matter experts, and reviewed literature and studies quantifying or discussing the economic impacts of counterfeiting and piracy on consumers, industries, government, and the U.S. economy. The following summarizes some GAO insights from this Report.

The GAO noted that the U.S. has generally been very active in advocating strong IP protection and encouraging other nations to improve these systems for two key reasons: 1) the U.S. has been the source of a large share of technological improvements for many years and, therefore, stands to lose the most if the associated IP rights are not respected by other nations, and 2) IP protection appears to be one of the factors that has helped to generate the enormous growth in the world economy and in the standard of living that has occurred in the last 150 years. "Pirated copyright goods" (defined as goods that are copies made without the consent of the rights holder or person duly authorized by the rights holder) and "counterfeit goods" (defined as goods including packaging or bearing that, without authorization, contain a marking that is identical to a trademark validly registered for those goods, or that cannot be distinguished in its essential aspects from such a trademark, and that thereby infringes the trademark owner's rights) are violations of IP rights and are generally viewed as hindering technological improvement and the accompanying economic growth. However, the GAO found that quantifying this effect on economic growth is more difficult than it seems.

According to data from U.S. Customs and Border Protection (CBP), seized counterfeit goods are dominated by products from China (77%), followed by Hong Kong (7%), India (2%), and Taiwan (1%).[2] The GAO found that there is little factual information on the extent of domestically produced counterfeits, but pointed out that that such counterfeiting is estimated to be relatively low compared to foreign countries. Another aspect not captured by this CBP seizure data is the piracy of digital copyrighted products, and the GAO stated that there was no government agency that systematically collects data on the extent of digital copyright piracy.

The GAO observed that counterfeiting and piracy have produced a wide range of effects on consumers, industry, government, and the economy as a whole. While most of the information that was reviewed focused on the significant direct negative effects, some experts and some literature pointed out that some of these constituencies may experience certain positive effects from counterfeits and piracy, though there was little information available on such potential positive effects. Negative effects attributed to counterfeiting and piracy included negative health and safety effects that arise from counterfeit pharmaceuticals, automotive products, and software; lost sales and reduced incentive to innovate; lost tax revenue, enforcement expenses, and supply chain risks to the U.S. Government; and slower economic growth.

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[2] *This data was collected during fiscal years 2004-2009. In 2009, around 58% of the seized goods from China were footwear and handbags, 69% of the seized goods from Hong Kong were consumer electronics and watch parts, 91% of the seized goods from India were pharmaceuticals and perfume, and 85% of the seized goods from Taiwan were computers and consumer electronics.*

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Among the potential positive effects attributed to counterfeiting and piracy are consumer benefits related to cost savings of less expensive counterfeit goods, possible availability of counterfeit versions of scarce genuine goods, availability of goods (*e.g.*, movies) that simply are not available in legitimate form, and lower prices on legitimate goods due to competitive pressures from counterfeit goods. The Organization for Economic Cooperation and Development (OECD) pointed out that the longer-term impact for consumers of such falling prices of legitimate goods is unclear, as these changes may affect the speed of innovation. Other potential positive effects focus on IP rights holders, and include situations where consumers use pirated goods to 'sample' legitimate goods before purchasing them, which may lead to increased sales of legitimate goods. Furthermore, products characterized by large 'switching costs' may benefit from piracy due to "lock-in effects" (*e.g.*, consumers introduced to a pirated version of software may get locked into new legitimate software because of large switching costs, such as a steep learning curve, reluctance to switch to a new product, and search costs to identify a new product). Finally, companies that experience revenue loss in one line of business from counterfeiting and/or piracy may see increased revenues in a related or complementary business due to increased brand awareness (*e.g.*, merchandise based on movie characters whose popularity is increased by pirated movies, perhaps Captain Jack Sparrow in *Pirates of the Caribbean* about the seafaring type of pirates), while some industries may experience an increase in demand for their products because of piracy in other industries (*e.g.*, increased demand for Internet infrastructure products such as routers due to the increased transfer of pirated digital content).

However, while research in specific industries suggests that the economic impact of IP infringement is sizeable, and despite significant efforts to develop estimates of its net effects, most experts the GAO spoke with agreed that it is difficult, if not impossible, to quantify the net effect of counterfeiting and piracy on the U.S. economy as a whole. The primary challenge to doing so is the lack of available data on the extent and value of counterfeit trade. Counterfeiting and piracy are illicit activities, which makes data on them inherently difficult to obtain and has resulted in assessments that, according to a 2008 report by the OECD, "rely excessively on fragmentary and anecdotal information; where data are lacking, unsubstantiated opinions are often treated as fact." Seizure data, such as that collected by the CBP and discussed above, is problematic in its completeness. For example, it is difficult to determine whether the data reflects the extent and types of counterfeit products entering the U.S. in any given year, the counterfeit products that were detected or of which CBP was notified by private entities, or the level of federal border enforcement effort expended. The U.S. Department of Commerce and FBI officials noted that they rely on industry statistics and do not conduct any original data gathering. Because industry associations do not always disclose their proprietary data sources and methods, it is difficult to verify their estimates. Furthermore, industries that collect this data may do so to address counterfeiting or piracy problems associated with their products. Consequently, they may be reluctant to disclose the extent of counterfeiting because it may cause consumers to lose confidence they are obtaining the authentic item, or it may encourage additional counterfeiting and piracy if it is perceived as commonplace.

Because of this lack of data, methods for calculating economic losses due to counterfeiting and piracy often involve certain assumptions, and the resulting loss estimates are highly sensitive to the assumptions used. Two key assumptions are the substitution rate by consumers[3] and the value of counterfeit goods.[4] The level or extent of deception that consumers face is also an important factor to

[3] *The assumed rate at which a consumer is willing to switch from purchasing a fake good to the genuine product.*
[4] *Several measures of value can be used, such as the production cost, the domestic value, or the manufacturer's suggested retail price.*

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consider when developing assumptions for the substitution rate and the value of fake goods. For example, if a consumer is completely deceived, it could be reasonable to assume a one-to-one substitution rate (*i.e.*, the purchase of legitimate goods in place of counterfeit goods) and a full retail price (*i.e.*, the manufacturer's suggested retail price). Many experts, however, informed the GAO that a one-to-one substitution rate is not likely to exist in most circumstances where counterfeit goods are significantly cheaper than the legitimate goods. Experts observed that assessing the reasonableness of a resulting estimate is difficult, if not impossible, if these assumptions are not transparently explained.

The GAO gave three examples of widely cited piracy estimates that could not be substantiated: 1) an FBI estimate that U.S. businesses lose $200-$250 billion annually to counterfeiting, 2) a 2002 CBP press release that estimated that U.S. businesses lose $200 billion a year in revenue and 750,000 jobs due to counterfeit merchandise, and 3) a Motor and Equipment Manufacturers Associated report of an estimate that the U.S. automotive parts industry has lost $3 billion in sales due to counterfeit goods that it attributed to the Federal Trade Commission (FTC). In investigating these estimates, FBI officials told the GAO that it has no record of source data or methodology for generating the estimate attributed to them nor was the information corroborated. A CBP official stated that its figures were of uncertain origin, had been discredited, and are no longer used. The FTC official was unable to locate any record or source for the estimate, and officials could not recall the agency ever developing or using the estimate. Despite this, the GAO found that these estimates continue to be referenced by various industry and government sources as evidence of the detrimental effect counterfeiting and piracy has on the U.S. economy. Indeed, even if the data were accurate, at least the one statistic is likely obsolete since it was allegedly released in 2002.

Due to the nature of data collection, the substitution rate, value of goods, and level of deception not being the same across industries, there appears to be no single methodology to collect and analyze data that can be applied across industries. Different methodologies have been developed, however, and tend to indicate that the problem is sizeable. The most commonly used methods to collect and analyze data include extrapolation of enforcement seizure data[5], surveys of supply and demand[6], use of economic multipliers to estimate effects on the U.S. economy[7], other data collection and modeling methods[8], and "rule of thumb" measurements.[9]

Most experts and literature reported that despite significant efforts, it is difficult, if not impossible, to *quantify* the net effects of counterfeiting and piracy on the economy as a whole. To determine the net effect, the experts and literature stated that any positive effects of counterfeiting and piracy on the

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[5] This approach provides hard evidence of the minimum quantity of counterfeit goods, but is significantly impacted by the IP enforcement and skill of the personnel at the ports. The CBP acknowledged that their success rate in interdicting illegal goods is "unknowable". Determining the dollar value to assign to seized goods also represents a challenge when extrapolating.

[6] Surveys are labor-intensive and can cost millions of dollars, and bias in surveys is hard to identify. For example, students are often the subjects of illegal file sharing surveys, and may either not admit to the illegal activity or may be more likely admit to such behavior because it may be popular for their demographic.

[7] Economic multipliers show how capital changes in one industry affect output and employment of associated industries. Most of the experts the GAO spoke with were reluctant to use economic multipliers because this methodology was developed to look at a one-time change in output and employment.

[8] These include combinations of the previously mentioned methods. The OECD adopted such an approach, but noted that it did not independently assess the reliability of figures supplied by national governments and relevant industries. The report stated "there do not appear to be any methodologies that could be employed to develop an acceptable overall estimate." Equilibrium models that model supply and demand and simulate the effects of counterfeiting on a good and the economy as a whole show potential benefits, but data limitations make them currently close to impossible to implement.

[9] The GAO stated that experts and literature show there is no evidence to support a "rule of thumb" that measures counterfeit trade as a proportion of world trade, most commonly cited as 5 to 7 percent of world trade.

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economy should be considered. Few studies have been conducted on positive effects, however, and little is known about how or whether any such effects impact the U.S. economy. While some literature and experts suggest that negative effects may be overstated, in general, they conclude that the negative effects of piracy and counterfeiting outweigh the positive effects. But due to an absence of reliable data concerning these potential effects, the net effect is uncertain. So Increasing certainty would require unprecedented sharing of counterfeiting and piracy data by industry players, including actual tracking by various government agencies, along with the use of independent parties to analyze the data and determine the appropriate assumptions to use. Even if this were possible to easily orchestrate, the resulting cost estimate would likely be in a relatively large range that would probably provide little satisfaction relative to the costs of producing it.

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