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HOW MANY JOBS DOES INTELLECTUAL PROPERTY CREATE?

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ABSTRACT

In the past two years, a spate of misleading reports on intellectual property has sought to convince policymakers and the public that implausibly high proportions of US output and employment depend on expansive intellectual property (IP) rights. These reports provide no theoretical or empirical evidence to support such a claim, but instead simply assume that the existence of intellectual property in an industry creates the jobs in that industry. We dispute the assumption that jobs in IP-intensive industries are necessarily IP-created jobs. We first explore issues regarding job creation and the economic efficiency of IP that cut across all kinds of intellectual property. We then take a closer look at these issues across three major forms of intellectual property: trademarks, patents, and copyrights.

JEL codes: O34, J21

Keywords: intellectual property, trademark, patent, copyright, jobs, employment

In the past two years, a spate of misleading reports on intellectual property (IP) has generated significant confusion among policymakers. Billed as empirical research, the reports aim to convince policymakers and the public that implausibly high proportions of US output and employment depend on expansive intellectual property rights.

But do as many as one-third of all US jobs depend on strong IP protection? Would millions of jobs be lost if IP laws were weakened? These reports, which attempt to uncover the link between employment statistics and intellectual property protection, don't answer such questions. Instead they make the substantial leap from the fact that IP exists within a particular industry to the conclusion that job creation and employment in that industry hinge on strong IP protections. Yet these studies provide no theoretical or empirical evidence to support such a claim.

In March 2012, the US Patent and Trademark Office and the Economics and Statistics Administration copublished a report that sought to provide "a better understanding of the industries where IP plays a particularly important role."[1] Titled *Intellectual Property and the U.S. Economy: Industries in Focus* (hereafter referred to as *IPUSE*), this report identified 75 "IP-intensive" industry groups and estimated US employment and output for this set of industries in 2010. According to the report, IP-intensive industries directly accounted for over 27 million jobs (roughly one-fifth of all US employment) and added just over $5 trillion in value to the domestic product.[2]

The US Chamber of Commerce's Global Intellectual Property Center launched a campaign called IP Creates Jobs for America, which provides an online, interactive map as well as several descriptive reports about US employment and output "driven" by strong IP protection.[3] The Global Intellectual Property Center's mission is "to

1. Economics and Statistics Administration and US Patent and Trademark Office, *Intellectual Property and the U.S. Economy: Industries in Focus* (March 2012), 2. Hereafter "IPUSE."

2. *IPUSE*, vi–vii.

3. Nam D. Pham, "Executive Summary," *IP Creates Jobs for America* (Washington, DC: Global Intellectual Property Center, 2013), http://dev.theglobalipcenter.com/wp-content/uploads/2013/01/sfs_executive_summary_final1.pdf. See also the Global Intellectual Property Center's IP Jobs Map, located at http://www.theglobalipcenter.com/jobs-map/.

champion intellectual property (IP) rights as vital for creating jobs." The campaign estimates that IP accounts for 55.7 million jobs and $5.8 trillion of GDP, numbers it reaches by emphasizing the "indirect" employment effects of IP.

The IP Commission Report, released in May 2013, estimates that US firms experience over $300 billion in lost revenues annually due to IP infringement. This report claims that stronger IP protections overseas would lead to the addition of millions of jobs to the US economy, greater research-and-development investment, and increased domestic growth.[4] It draws such conclusions based on the connection between the importance of intellectual property to small businesses and the supposed role of small businesses in job creation. The report walks readers through the example of a hypothetical start-up biotech company that is vulnerable to IP theft and is forced to close and lay off all its employees if and when its IP is stolen by a foreign entity. Stronger IP protections, it is argued, would prevent such events from happening in real life, leading to increased employment in the United States.

Finally, the International Intellectual Property Alliance released *Copyright Industries in the U.S. Economy* in 2013.[5] The report finds that "core copyright industries" have accounted for more than $1 trillion of US GDP in recent years, and that the figure is rapidly rising. Counting related industries, the statistic is even higher—$1.7 trillion in 2012.

The figures presented by these reports are striking, and they are supported by anecdotes of piracy and IP theft from around the globe. The reports have influenced the policy discussion in Washington. For example, in a July 2013 op-ed, Rep. Marsha Blackburn opens by citing the US Chamber of Commerce's report: "U.S. industries reliant on intellectual property supported more than 55 million jobs, contributed to $5.8 trillion in economic output and accounted for nearly 74 percent of total exports. These figures prove what should be obvious: Strong intellectual property (IP) rights are essential to expanding economic growth and fostering innovation."[6]

However, the claims are unsupported by any evidence linking job creation to intellectual property. These reports possess a common underlying assumption regarding both the causality and the predominance of intellectual property in creating jobs within US firms. For instance, *IPUSE* frames its analysis by describing intellectual property as the "key force behind U.S. economic growth and national competitiveness" and the protection of IP as the "key to creating new jobs and growing exports."[7]

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4. The Commission on the Theft of Intellectual Property, *The IP Commission Report* (Seattle: National Bureau of Asian Research, May 2013), 2.
5. Stephen E. Siwek, *Copyright Industries in the U.S. Economy* (Washington, DC: International Intellectual Property Alliance, 2013).
6. Marsha Blackburn, "White House Must Strengthen Foundation of US Innovation," *Hill*, July 9, 2013, http://thehill.com/special-reports/innovation-a-intellectual-property-july-2013/309999-white-house-must-strengthen-foundation-of-us-innovation-.
7. *IPUSE*, i.

In this paper, we explore the assumption that jobs in IP-intensive industries are necessarily IP-*created* jobs. We first explore issues regarding job creation and the economic efficiency of IP that cut across the various forms of intellectual property. We then take a closer look at these issues across three major forms of intellectual property: trademarks, patents, and copyrights.

IP AND THE ECONOMY

Before addressing some issues associated with the employment analysis of each of the three major forms of intellectual property, it is worth evaluating some of the problems that cut across trademarks, copyrights, and patents. Even at a general level, it is fallacious to equate employment within an IP-intensive industry with an economic benefit of IP.

Perhaps most fundamentally, jobs are not ends in themselves, and counting the number of jobs created is therefore not the best way to evaluate a policy. As Bryan Caplan notes, "Economists have been at war with make-work bias for centuries. [19th-century French economist Frédéric] Bastiat ridicules the equation of prosperity with jobs as 'Sisyphism,' after the mythological fully employed Greek who was eternally condemned to roll a boulder up a hill."[8] Economic progress, Bastiat says, is defined by an increasing ratio of output to effort—indeed, economic nirvana is achieved when there is high output and zero labor effort.

Lawmakers could create jobs by requiring that construction projects be performed with spoons instead of shovels or tractors. Such a policy, however, would reduce worker productivity and decrease total economic output. Consequently, this spoon mandate would not promote economic progress.

Likewise, some of the jobs created by IP may harm the economy instead of helping it. Suppose IP laws necessitated that every firm hire 10 additional IP lawyers, but otherwise left output unchanged. IP could be said to create millions of additional jobs, but these would be jobs that reduced real output per worker, jobs that moved society further away from economic nirvana. They should be reckoned as economic *costs* of IP, not economic benefits. If (counterfactually) this were the only effect of IP, then abolition of IP would mean that the effort of the heretofore unproductively employed IP lawyers could be redirected to more productive uses.

Second, an accounting of the employment created by intellectual property necessarily focuses on what Bastiat called the "seen," as opposed to the "unseen,"[9] effects of IP. Consumers ultimately pay the salaries of any newly employed workers through

8. Bryan Caplan, *The Myth of the Rational Voter: Why Democracies Choose Bad Policies* (Princeton: Princeton University Press, 2007), 41. See also Frédéric Bastiat, *Economic Sophisms* (Irvington-on-Hudson, NY: Foundation for Economic Education, 1964).
9. Frédéric Bastiat, *Selected Essays on Political Economy* (Irvington-on-Hudson, NY: Foundation for Economic Education, 1964).

their (now higher) expenditure on IP-intensive products. But in the absence of the "new employment," consumers would have extra money to spend on other products and services, which would support the creation of different jobs, which of course cannot be observed. Unless the jobs that intellectual property creates are better for the economy than the ones that are replaced, IP at best moves jobs from this "unseen" domain to the seen one.

Third, as a matter of basic logic, it is not the case that every job—or even most jobs—in IP-intensive industries would not exist but for the existence of IP. The fact that an industry is IP-intensive, as defined by *IPUSE*, does not necessarily indicate that an industry's output or employment is IP-dependent.[10]

As a reductio ad absurdum, consider the blogging "industry." As a matter of law, all authors are automatically, without registration or any other formal notice, bestowed with a copyright in their blog posts. Since the entire output of the blogosphere is copyrighted, under *IPUSE*'s methodology it would qualify as an IP-intensive industry (if it were considered an industry). Nevertheless, it seems clear that copyright protection accounts for at best a tiny sliver of bloggers' output—the vast majority of blogs are accessible without a paid subscription, and many bloggers do not attempt to monetize their posts (with ads, say) at all.

If some industries resemble blogging—for example, if copyrights are automatically awarded but not relied on, or if patenting is done for primarily defensive purposes, or if trademarks exist but are rarely relied on by consumers—then *IPUSE* and the other reports that rely on simplistic counts of IP grossly overstate the number of jobs due to intellectual property. For these industries, IP intensity is not a reliable indicator of IP dependence.

Fourth, intellectual property is not the only way to incentivize creation and invention. Prizes and awards can stimulate production of new innovations or creative works. Assurance contracts, such as those enabled by new online crowdfunding platforms like Kickstarter and Indiegogo, are another mechanism by which creation can be rewarded. Governments or wealthy individuals can also commission creative works or fund research teams. When these studies estimate the number of jobs created by intellectual property, they typically make a static comparison to a baseline in which no other policies or institutions adapt to accommodate the need to incentivize creation. These studies will therefore overcount the number of jobs due to IP.

As a general matter, intellectual property law can overprotect as well as underprotect. When it overprotects, it creates jobs without a corresponding increase in

10. *IPUSE*, 33. The analysis from the Patent and Trademark Office and the Economics and Statistics Administration explicitly acknowledged that the value and purpose of holding IP varies across companies. For instance, some firms use patents solely as a measure of employee performance, meaning the IP behind the patent makes perhaps no contribution to the firm's earnings and consequently the existence of the particular position. Instead the defined unit of IP is used as a measure of the outputs by a specific employee within a given position.

real output, it creates jobs by destroying other jobs that are not accounted for, and at the margin it accounts for very little of the actual output created by supposedly IP-intensive industries. These facts should be borne in mind as we examine the specific claims that have been made about particular industries and kinds of IP.

TRADEMARKS

Trademark-intensive employment appears to make up the bulk of the claimed IP-*created* jobs. The IP Creates Jobs for America campaign counted as IP-created any position within a company that reported positive research-and-development spending, as well as any position at a company falling within one of the six predefined copyright-intensive industries.[11] Jobs that "depend" on trademarks were supposedly captured through the use of research-and-development spending figures, but how is not exactly clear.[12] The analysis then used "multipliers" to more than triple the total number of jobs attributable to intellectual property. Putting aside these questionable methods, the IP Creates Jobs for America publications fail to provide a breakdown of the number of jobs attributable to each type of intellectual property; it is therefore not entirely clear by their account exactly how many jobs are associated with trademarks.

In contrast, the *IPUSE* authors developed clear and defensible methods for classifying industry groups as IP-intensive for each of the three major types of intellectual property in the United States.[13] The analysis used four-digit North American Industrial Classification System (NAICS) codes to identify 75 industry groups as intellectual-property-intensive. Figure 1 shows the composition of jobs attributed to firms within IP-intensive industries based on IP type.

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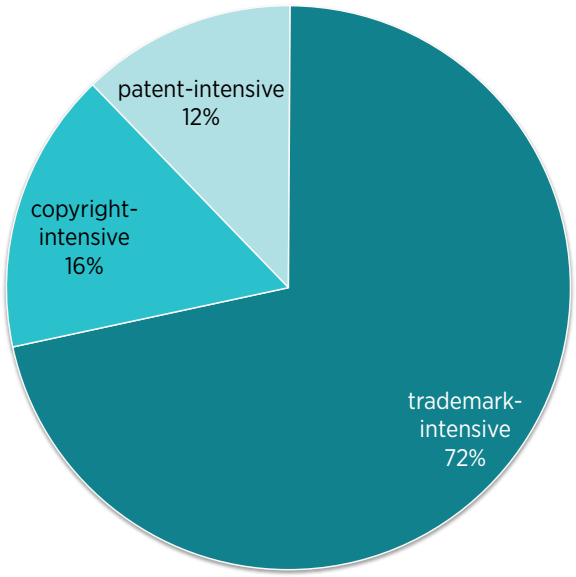
11. Pham, *IP Creates Jobs*, 3.

12. Ibid. This document states, "Economic literature suggests research and development (R&D) expenditures are positively correlated with the number of patents and the number of trademarks in both large and small firms." Beyond this statement, there is no description of the magnitude of the correlation(s) and no citation of research to support the claim.

13. To gauge patent intensity, *IPUSE* seeks to put all industries on a "level playing field" and therefore divides the number of utility patents issued to a particular industry between 2004 and 2008 by the total number of employees in that industry (pp. 5–6). It identifies trademark-intensive industries using three methods: First, using the entire population of trademark registrations, the report matches the data to information regarding the registrants' primary industries and employment statistics. From these data, the report derives a measure of trademarks per employee and then ranks industries. Second, the report utilizes a list of the top 50 corporate trademark registrants published by the Patent and Trademark Office and identifies the top industry groups. Third, the researchers make use of a representative, random sample of trademark registrations in order to confirm the identified trademark-intensive industries and capture any small firms underrepresented by the previous two methods (p. 8). The report designates copyright-intensive industries based on the World Intellectual Property Organization's *Guide on Surveying the Economic Contribution of the Copyright-Based Industries* (p. 30).

FIGURE 1. EMPLOYMENT BY INTELLECTUAL PROPERTY TYPE



Source: Economics and Statistics Administration and US Patent and Trademark Office, Intellectual Property and the U.S. Economy: Industries in Focus *(March 2012), 39.*

According to *IPUSE*, roughly 72 percent of the identified IP-intensive jobs are trademark-intensive. In other words, the vast majority of the tens of millions of jobs claimed to be *created* by IP turn out to be in places where the value and purpose of intellectual property likely exhibit the widest variation. The list spans pharmaceuticals to residential construction to sporting-goods retailers—all apparently identified as trademark-intensive. The implication remains that every single position at those firms depends on IP. Do the jobs of framers, roofers, plumbers, and electricians truly depend on intellectual property, and in particular strong trademark protections both domestically and abroad? Even when they are necessary, trademarks add value to a company in the same way that telephones do. It is difficult to imagine a company that does not use phones, but that hardly gives phone companies fair claim to providing most of the value of all businesses. Trademarks, phones, desks—a thousand things prove near-necessary to making money. No one of them gets all the credit for the result.

A closer look at the full list of trademark-intensive industries reveals that IP, in fact, is likely to play a limited role in many of the 22.6 million jobs ostensibly dependent on this form of intellectual property.[14] It seems far more reasonable to assume that for many of the firms a substantial portion of their products' value is

14. See *IPUSE* at 35–38.

added independent of any trademark. In some instances trademarks likely play a more significant role, either across the industry as a whole or to specific positions within that industry. Overstating the relationship between trademarks and job creation across the board undermines the credibility of this argument and distracts policymakers from the instances where trademarks do in fact contribute significant value.

Another factor to consider entails a more fundamental question regarding the relationship between trademarks and their value to society. The economic case for trademarks hinges on their role as a consumer-protection mechanism. Many characteristics of goods only reveal themselves upon use of the product, not at the time of purchase. In order to ensure that goods meet consumers' expectations, firms put their reputations on the line. If customers are unhappy with their purchases, they can tell others not to patronize the producers. However, to use reputation to protect themselves against shoddy products, customers must know with whom they are dealing. If low-quality firms can masquerade as reputable ones, the whole system breaks down.

Trademarks, therefore, play an important role in the economy: protecting consumers by informing them about the producer of the goods they are interested in buying. But trademarks have no other social value. It is difficult to economically justify enforcing trademarks when there is no confusion on the consumer's part about the origin of the product. When someone buys a "Louis Vuitton" handbag out of the trunk of somebody's car for $20, or a "Rolex" watch while in a foreign country for $10, the customer does not generally believe that the article is genuine. This variety of trademark infringement costs the economy nothing, and indeed adds value to society.

However, firms can gain *at the expense of consumers* if they enforce trademarks even in cases in which there is no customer confusion.[15] If Louis Vuitton and Rolex go after "counterfeit" merchandise even when buyers know that they are not buying the real thing, they can preserve the exclusive image of their products. But such anticonsumer action is of questionable social value; it does little or nothing to add to trademark's purpose as a consumer-protection mechanism.

Because firms can gain from trademarks even when the trademarks are socially useless, not all trademarks in practice add value to the economy. It therefore seems very unlikely that *IPUSE* is correct that trademarks account for more than 22 million jobs.

15. In 2012, Louis Vuitton sent a cease-and-desist letter to the University of Pennsylvania Law School for using artwork derived from its famous "Toile Monogram" pattern, which is trademarked, in a poster advertising an event on intellectual property law. The law school refused to cease or desist, citing the fact that the posters were not being used to identify goods and services and could not cause any customer confusion. See Eugene Volokh, "Penn Law School Rejects Louis Vuitton Nastygram," *Volokh Conspiracy*, March 3, 2012, http://www.volokh.com/2012/03/03/penn-law-school-rejects-louis-vuitton-nastygram/.

PATENTS

By providing a time-limited monopoly to inventors, patents both provide benefits to and impose costs on innovation. The benefits are well understood—inventors can recuperate the sunk costs of research and development by charging a higher price for their products when they are protected from competition from new entrants who could simply copy their innovations without making the same investment. Without protection, the inventors might never recover their investments in research and development, and therefore might be unwilling to invest in the first place.

The fact that patents also impose significant costs on innovation—and on society in general—is less recognized. At the most basic level, patents raise the price of patented goods to consumers, which reduces the amount that consumers have to spend on other goods. This reduction of consumer spending means a loss of jobs that otherwise could have existed.

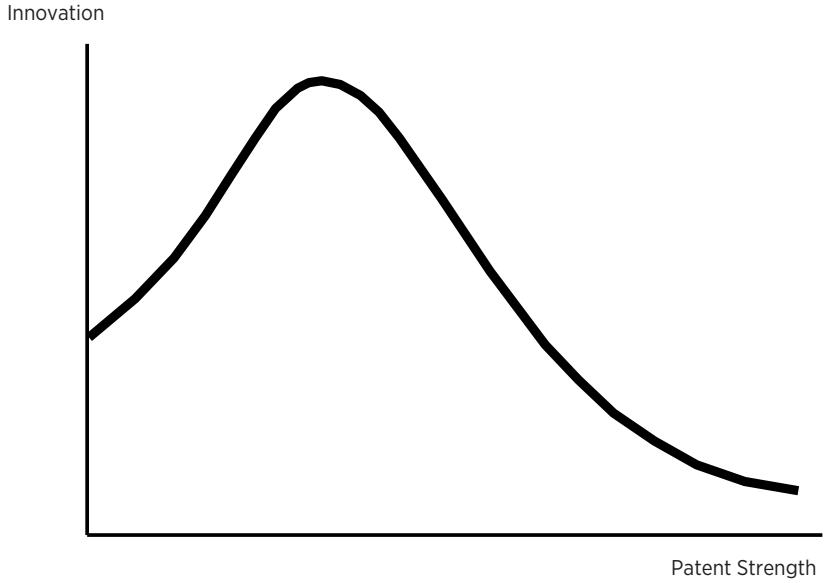
At a deeper level, patents can also reduce innovation directly, because ideas build upon ideas. If innovation is cumulative, then past inventions are inputs into the next generation of ideas. Since patents raise the price of using past inventions, they can raise the cost of creating new innovative ideas, products, and services to the extent that such innovations build on rather than merely compete with patented ideas.

When innovation is cumulative, patents can lead to what Michael Heller has called "the tragedy of the anticommons."[16] Suppose that a firm wants to bring an innovative new product to market, and the product relies on 1,000 different patents. If patent holders are each only willing to license their patents for 1 percent of the new product's revenue, then the firm will need to pay out 1,000 percent of its revenue in licensing fees. This is not a profitable proposition for the innovating firm, and therefore the product will not be made. The fact that patent holders are competing with each other for the revenues of follow-on innovation means that patents can discourage innovation as well as stimulate it.

These potential innovation costs of patents mean that patent strength can be too strong as well as too weak. The optimal level of patent protection will be enough to incentivize investment in new research and products while being careful not to impede follow-on research and new product development. This set of trade-offs is illustrated in figure 2, called the Tabarrok Curve. To the extent that patent protections are too strong, economic welfare, including production and employment, is reduced, not increased, by intellectual property at the margin. A study that only counts the number of jobs in IP-intensive industries will severely overstate employment due to patents if in fact patent law is too strong.

16. Michael A. Heller, "The Tragedy of the Anticommons: Property in the Transition from Marx to Markets," *Harvard Law Review* 111 (1998): 621–88.

FIGURE 2. THE TABARROK CURVE



Source: Eli Dourado and Alex Tabarrok, "Public Choice and Bloomington School Perspectives on Intellectual Property" (Working Paper No. 13-23, Mercatus Center at George Mason University, Arlington, VA, November 2013), 23, http://mercatus.org/publication/public-choice-and-bloomington-school-perspectives-intellectual-property-0.

There is good economic evidence that patent law is stronger than is optimal. Most broadly, there has been an explosion in the number of patents in recent years, and little visible economic benefit to show for it. If the US were on the left side of the Tabarrok Curve, then one would expect the quadrupling of the annual rate of patents granted in the past 30 years to correlate with a speedup in economic growth. In fact, economic growth has significantly slowed in the past 30 years. As Michele Boldrin and David Levine put it, "There is no empirical evidence that [patents] serve to increase innovation and productivity, unless productivity is identified with the number of patents awarded—which, as evidence shows, has no correlation with measured productivity."[17]

In addition, there is reason to believe that the Tabarrok Curve differs for different industries. Some industries, such as pharmaceuticals, produce higher social benefits when patent protection is relatively strong. Other industries that more intensively use patents as inputs into new products produce the highest social benefits when patent protection is very weak. In these industries, patent law is doing an especially large amount of harm. Edwin Mansfield provides survey evidence from an array of manufacturing industries that shows that different industries have widely varying benefits from patent protection.[18]

17. Michele Boldrin and David K. Levine, "The Case against Patents," *Journal of Economic Perspectives* 27 (2013): 3.

18. Edwin Mansfield, "Patents and Innovation: An Empirical Study," *Management Science* 32 (1986): 173–81.

Software is perhaps the industry that is most harmed by strong patent laws. In addition to being an industry in which the anticommons problem is highly applicable, software is inherently plagued by a problem of description. It is not immediately obvious how it is that new software innovations can be described in a way that clearly makes available to other inventors the information that the idea is patented. James Bessen and Michael Meurer note that software patents are particularly susceptible to "broad and fuzzy" language, unlike chemical patents, where formulas provide a complete and standardized description of the patent.[19] Christina Mulligan and Timothy Lee note that this creates serious problems for patent search, making independent invention and inadvertent infringement inevitable.[20] Bessen and Meurer find that the explosion of software-related patent litigation accounts for the majority of the "patent troll" problem, which imposes $29 billion per year in direct costs[21] and $83 billion in lost shareholder value according to Bessen, Jennifer Ford, and Meurer.[22] If software were a small part of the patent landscape, this might be an interesting footnote. But according to a report from the Government Accountability Office, software-related patents accounted for more than half of all patents in 2011, a proportion that is growing.[23] In other words, more than half of all patents may be more likely to kill jobs than create them.

IPUSE itself cites research providing evidence that further challenges the view that patents lead to job creation. Carnegie Mellon researchers surveyed managers of research-and-development labs regarding the efficacy of various means for capturing the benefits of intellectual property.[24] On average, barely one-third of the industries surveyed considered patents "an effective mechanism for appropriating the returns to innovation" in products, and less than one-fourth reported patents as effective for appropriating the returns to process innovations.[25] On average, research-and-development managers reported secrecy, lead time, complementary sales/service, and complementary manufacturing as more effective than patents. *IPUSE* employs this research as a robustness test for the industries it identifies

19. James Bessen and Michael J. Meurer, *Patent Failure: How Judges, Bureaucrats, and Lawyers Put Innovators at Risk* (Princeton, NJ: Princeton University Press, 2009).
20. Christina Mulligan and Timothy B. Lee, "Scaling the Patent System," *NYU Annual Survey of American Law*, forthcoming.
21. James Bessen and Michael J. Meurer, "The Direct Costs from NPE Disputes," *Cornell Law Review*, forthcoming.
22. James Bessen, Jennifer L. Ford, and Michael J. Meurer, "The Private and Social Costs of Patent Trolls," *Regulation* 34 (2011).
23. US Government Accountability Office (GAO), "Intellectual Property: Assessing Factors That Affect Patent Infringement Litigation Could Help Improve Patent Quality" (2013), http://www.gao.gov/assets/660/657103.pdf.
24. Wesley M. Cohen, Richard R. Nelson, and John P. Walsh. "Protecting Their Intellectual Assets: Appropriability Conditions and Why U.S. Manufacturing Firms Patent (or Not)" (NBER Working Paper 7552, February 2000), www.nber.org/papers/w7552.
25. *IPUSE*, see table 2 at 10.

as patent-intensive, but the results contradict its central thesis. The fact that industries view patents as one of the least effective mechanisms for appropriating returns to innovation undermines the arguments attributing so much job creation to patent protections.

COPYRIGHT

The benefits of copyrights are similar to those of patents. Copyrights provide content creators with the opportunity to recoup the investment made during the creative process.[26] Legal authority for US copyrights originated from the Constitution, which granted Congress the authority "to promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries."[27] The belief was that society would benefit in the long run if individuals were given a temporary monopoly over their creative works in the short run.

The interpretation of "for limited times" has evolved over the past two centuries. The Copyright Act of 1790 afforded authors protection for a period of 14 years, with the option of a single 14-year extension.[28] Since that time, Congress has extended the scope and length of protection numerous times—to 95 years for corporate authors publishing immediately. In each instance, Congress even extended the length of protection retroactively to existing works.[29] As it relates to the question of job creation, it's difficult to imagine that the changes to copyright length have led to any direct employment gains or other social benefits. In fact the exact opposite seems more plausible, as most sales of copyrighted material occur well within the first 14 years following publication.[30] The retroactive extensions constituted an enormous wealth transfer from consumers and current innovators to existing content owners. They were not about providing necessary incentives to creation, but about rewarding a small group of individuals at the expense of the broader public.

What can be said of the statistics regarding copyright infringement and its impact on US employment? For instance, *The IP Commission Report*, citing Stephen E.

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26. Copyrights were originally only granted to US citizens and works created within US-owned territory. See US Copyright Act of 1790, §§ 1, 5.

27. U.S. Const. art. I, § 8, cl. 8.

28. US Copyright Act of 1790, § 1.

29. Eli Dourado and Alex Tabarrok, "Public Choice and Bloomington School Perspectives on Intellectual Property" (Working Paper No. 13-23, Mercatus Center at George Mason University, Arlington, VA, November 2013), 9–10, http://mercatus.org/publication/public-choice-and-bloomington-school-perspectives-intellectual-property-0.

30. Siva Vaidhyanathan, *Copyrights and Copywrongs: The Rise of Intellectual Property and How It Threatens Creativity* (New York: New York University Press, 2003). Tom W. Bell advocates returning to the Founders' original copyright policy, including the original term of 14 years, renewable once. Tom W. Bell, *Intellectual Privilege: Copyright, Common Law, and the Common Good* (Arlington, VA: Mercatus Center at George Mason University, 2014).

Siwek, suggests that the US economy loses $20.5 billion due to movie piracy and $12.5 billion due to music piracy on an annual basis.[31]

One challenge to estimating the true costs of piracy-related losses involves a concept known as the substitution rate.[32] Such loss estimates are generally based on the full retail price of the product and the full number of estimated units pirated, providing a total based on a one-to-one rate of substitution of legal goods for illegal goods. However, this turns out to be a highly improbable assumption.[33] As a result, it is not clear that stronger IP rights would generate a significant increase in the sales of nonpirated goods, and consequently may not have much of an effect on copyright-related employment.

Further complicating the matter is the potential for content creators and distributors to actually benefit from the availability of copyrighted work at no cost to end users. This possibility proves particularly relevant in the case of music artists, who can benefit significantly from global audiences accessing their work at low or no costs. Up-and-coming musicians can be discovered and build a fan base around the world at speeds and in ways that would be impossible under stricter IP approaches. Not only do artists benefit from "going viral," but media companies benefit as well: the phenomenon allows companies to readily discover new talent, ascertain valuable information about consumer preferences, and efficiently promote other profitable products to large audiences.

The numbers asserted in support of stronger copyright protections may appear impressive, but their substance remains questionable. They generally appear to overstate the costs of piracy while understating or completely ignoring the benefits of looser restrictions. As a result, the advocates of stronger copyright protection often grossly overstate the employment effects of their policy recommendations.

CONCLUSION

Reports that attempt to draw a strong link between US intellectual property and job creation usually fail to address many aspects of this complex issue. These campaigns commonly treat jobs as ends in themselves—they rarely stop to ask whether the jobs that would be created by stronger IP protections would actually benefit society.

Proponents of the IP-created-jobs argument also tend to underestimate the extent to which resources not spent on IP-protected products are spent elsewhere. Other issues aside, this means that stronger IP protection is more likely to change the distribution of employment than the overall number of jobs.

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31. *IP Commission Report*, 52. See also Stephen E. Siwek, "The True Cost of Sound Recording Piracy to the U.S. Economy" (Policy Report 188, Institute for Policy Innovation, Lewisville, TX, August 2007).
32. GAO, "Intellectual Property: Observations on Efforts to Quantify the Economic Effects of Counterfeit or Pirated Goods" (report to congressional committees, GAO-10-423, April 2010), 17.
33. Ibid.

Lastly, the value and purpose of IP vary significantly across positions, firms, and industries. Labeling every job that involves intellectual property (even if intensively) as "IP-created" grossly overstates the value of IP relative to other factors and motivations.