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IP in the U.S. Economy

No matter how the numbers differ from study to study, from estimate to estimate, the important role that intellectual property plays in the twenty-first-century economy comes through loud and clear.

IP represents a major share of the U.S. economy, while also being an area for high-valued, robust growth. For good measure, IP industries provide a big share of exports, a large portion of U.S. jobs, and pay a premium in terms of salaries and wages.

A wide range of economic studies has provided fascinating estimates on the economic impact of IP.

In April 2005, for example, the International Intellectual Property Alliance issued a valuable survey of findings regarding the role copyright industries play in economic development.¹⁰ The key point was: “The general consensus among economists and scholars is that enhanced copyright protection leads to positive economic growth. The statistical evidence suggests that economies with

¹⁰ International Intellectual Property Alliance, “Initial Survey of the Contribution of the Copyright Industries to Economic Development,” April 2005.

stronger copyright protection experience a greater contribution to GDP from those sectors.”

Following are key findings worth noting, not just about copyright, but also patents and IP protections in general:

- “An adequate and effective copyright regime creates jobs in developing countries, creates taxable income for the governments of those countries, and compels foreign investment by assuring protection for the investors’ intellectual property.”

- Economist Keith Maskus “notes that copyright protected products have extremely high investment costs but very low copying costs, and points out the detrimental effects of a regime that would allow piracy: ‘If other members of society were allowed to free ride on works without compensating their creators, the incentives to create would be severely dampened...’ Maskus offers statistical evidence of increased international trade in goods protected by intellectual property rights in both developed and developing countries.”

- “The strong suggestion is that strengthened IPRs [that is, intellectual property rights] contribute to positive growth by creating more attractive [foreign direct investment] opportunities for foreign investors and thus create a spill-over which leads to greater domestic growth. Maskus identifies four implications of this dynamic. First, weaker IPR regimes tend to isolate countries from technological advances, including computer software advances protected by copyright. Secondly, those countries with weaker protection of IPRs receive fewer spillover benefits that new technologies would bring. Third, the technologies that are available to such countries tend to be out of date. *Finally, and perhaps most importantly, countries with weak IPRs provide almost no incentive to*

their people to create or innovate, nor do they attract new technological investment.” (Emphasis added.)

- A 2005 study by World Bank economist “Smarzynska Javorcik concludes that weak IPR protection acts as a deterrent for investors. Furthermore, ‘[t]here is also some evidence that weak IPR protection may discourage all investors, not just those in the sensitive sectors.’ Finally, Smarzynska Javorcik finds that where there is a ‘lack of IPR protection,’ investors are discouraged ‘from undertaking local production and encourag[ed]. . . to focus on distribution of imported products.’ As with the general statement about IPR protection, ‘this effect is present in all sectors, not only those relying heavily on IPR protection.’”

- Economist Edwin Mansfield found that “IPR protection afforded by the patent system provides a way for inventors to get back some of the benefits to society at large that would not be theirs were there no patent system at all. Mansfield’s findings indicate that the existence of the patent system is thought to be crucial for innovation in both the chemical and drug industries.”

- Economists Claude E. Barfield and Mark A. Groombridge “make the compelling point that the kinds of growth the United States has seen as a result of the contribution of the copyright industries, will go to any country that institutes a strong intellectual property regime.”

- “The general consensus of the academic literature is that stronger copyright protection contributes to positive growth. This is arguably the case regardless of a country’s level of development. Strong intellectual property rights provide incentives for local creators to bring the products of their mind to their local markets. By doing so, they help to lay the groundwork, in their countries, for strong growth

the likes of which have been seen in countries which have effective regimes for IPR protection.”

Subsequently, various studies have reconfirmed the importance of IP rights and protections for economic growth, incomes, jobs, investment, trade, etc. Consider the key findings from various studies published over the last few years that provide a powerful message as to IP and the economy.

• In 2005, Stephen E. Siwek and Economists Incorporated did a study commissioned by NBC Universal titled “Engines of Growth: Economic Contributions of the US Intellectual Property Industries.” It was billed as “the first study that quantifies the economic contributions of intellectual property (IP) industries to the U.S. economy.” Among the key findings were:

1) IP industries “had an approximate 20% share of U.S. private industry GDP in 2003,” but were “responsible for nearly 40% of the growth achieved by all of U.S. private industry during that year.”

2) IP industries “had approximately 40% of the GDP of U.S. exportable products and services yet contributed nearly 60% to the growth of the U.S. exportable high-value-add products and services.”

3) IP industries “are essential to the future growth of the U.S. economy. GDP 10-year growth estimates would be approximately 30% lower than current predictions without the contributions of the IP industries.”

4) IP industries account for nearly 18 million workers, and pay higher wages than most other industries.

5) “For all IP industries, *gross exports* in 2004 exceeded \$455 billion.”

- In the *Economic Report of the President 2006*, an essay titled “The Role of Intellectual Property in the Economy” served as an excellent primer on intellectual property’s economic significance.

It was reported that IP industries, that is, those “highly dependent” on patent or copyright protections, “represented approximately 17.3 percent of total U.S. economic activity and approximately one-fifth of private economic activity” in 2003.

As for public firms, it was noted, “Intellectual property accounts for approximately 33 percent of the value” of publicly traded U.S. corporations, and in all, the value of IP in the U.S. could top \$5 trillion. But this estimate excluded trademarks due to the difficulty in separating the value of trademarks from the value of branding. It was pointed out that “the combined value of branding and trademarks represents approximately 14 percent of the total value of publicly traded U.S. firms.”

Indeed, it was noted that the economic importance of IP is under-estimated in the analysis, as “many industries that are not counted among the intellectual property industries ... generate innovations and rely on patent and other intellectual property protection to create incentives for innovation and growth.” In addition, the economy still benefits from previous IP advances even though IP protections have expired, and the information and innovations have moved into the public domain.

Robust growth in the IP sector was highlighted as well: “Other studies have indicated that intellectual property-related industries tend to grow at approximately twice the rate of the economy as a whole and are an important contributing factor not only to the productivity growth of

the intellectual property-related sectors of the economy but also to the growth of all sectors of the economy.”

And then there is IP’s role in U.S. trade. From 1991 to 2002, but for one year, “exports from copyright industries grew at a faster rate than total exports” – on average six percentage points higher and becoming “an increasing share of our total exports.”

And finally, others studies highlighted made clear the “direct link between greater intellectual property protection and capital investment.”

- In April 2010, NDP Consulting published a study titled “The Impact of Innovation and the Role of Intellectual Property Rights on U.S. Productivity, Competitiveness, Jobs, Wages, and Exports.” It provides a wealth of information on IP and the economy, but it’s worth highlighting here key points on trade and investment.

On trade: “IP-intensive industries promote exports and America’s competitiveness abroad. Investment in IP creates new products and services that strengthen America’s competitiveness in global markets. IP-intensive industries, which made up nearly half of output and sales of all 27 U.S. tradable industries and employed more than 30 percent of American workers in all 27 tradable industries, accounted for about 60 percent of total U.S. exports. During 2000-07, the annual value of exports per employee in IP-intensive industries was 235 percent higher (3.4 times) than in non-IP-intensive industries, \$91,607 and \$27,369, respectively. Employment and economic activities to support exports in IP-intensive industries were also higher than in non-IP-intensive industries.”

And on investment: “IP-intensive industries create jobs and spur economic growth resulting from high investments in research and development (R&D) in comparison to non-IP-intensive industries. While the direct outputs of R&D are typically the development of new forms of intellectual

property, R&D spending also affects the economy by creating jobs and economic activities in R&D industries as well as in their supporting industries. During 2000-07, IP-intensive industries spent almost 13 times the R&D per employee that non-IP-intensive industries spent—averaging \$27,839 and \$2,164 per employee per year, respectively.”

- In January 2011, NDP Consulting published a study titled “Employment and Gross Output of Intellectual Property Companies in the United States.”

As for economic output, the key findings were: “IP companies in the manufacturing and non-manufacturing sectors generated more than \$7.6 trillion in gross output in 2008, accounting for 33.1 percent of total U.S. gross output. IP companies in the manufacturing sector alone generated \$3.9 trillion in output, constituting 75.2 percent of total U.S. manufacturing output. IP companies in the non-manufacturing sector generated \$3.7 trillion in output, accounting for 20.8 percent of U.S. non-manufacturing gross output.”

And in terms of employment: “Based on the latest U.S. official data, we estimate that, in 2008, IP companies in manufacturing and non-manufacturing sectors employed more than 19 million full- and part-time (headcounts) workers and accounted for 16.3 percent of U.S. full- and part-time employment. Nearly 70 percent of U.S. manufacturing jobs and 9.3 million workers (full- and part-time) were in IP companies and less than 10 percent of U.S. non-manufacturing jobs and 9.8 million workers (full- and part-time) were in IP companies.”

- The 2011 edition of “Copyright Industries in the U.S. Economy,” prepared by Economists Incorporated for the International Intellectual Property Alliance, reported that in 2010, total copyright industries contributed significantly

to the overall economy, with added value of \$1.627 trillion, or 11.1% of GDP. In addition, during recent tough economic times, copyright industries grew at a much faster pace than the broader economy, i.e., from 2007-10, total copyright industries grew at an average annual rate of 1.47%, compared to 0.05% for the overall economy.

On the jobs front, it was estimated that total copyright industries accounted for 9.9% of private sector employment in 2010, and average annual compensation in total copyright industries (\$70,513) topped the U.S. average by 15%, with compensation in “core” copyright industries (\$78,128) beating the national average by 27%.

- In the World Intellectual Property Organization’s “2011 World Intellectual Property Report: The Changing Face of Innovation,” the role that IP rights play in explaining differences in income between nations was laid out. It was reported, “As early as the mid-1990s, the economic literature suggested that innovation accounted for 80 percent of productivity growth in high-income economies; whereas productivity growth, in turn, accounted for some 80 percent of gross domestic product (GDP) growth.” In addition, it was stated: “Differences in innovative activity and related technological gaps between countries are a significant factor in explaining cross-country variation in income and productivity levels. According to several studies, roughly half of cross-country differences in per capita income and growth can be explained by differences in total factor productivity, a measure of an economy’s long-term technological change or dynamism.”

- As noted in the previous chapter, the 2012 report titled “Intellectual Property and the U.S. Economy: Industries in Focus,” published by the U.S. Department of Commerce, and prepared by the Economics and Statistics Administration and the United States Patent and

Trademark Office, found that “IP-intensive industries” are major contributors to GDP and jobs. Specifically, IP-intensive industries “contributed 34.8 percent to gross domestic product (GDP), with total value added of \$5.06 trillion in 2010,” while “[d]irect employment in the subset of most IP-intensive industries ... amounted to 27.1 million jobs in 2010, while indirect activities associated with these industries provided an additional 12.9 million jobs throughout the economy in 2010, for a total of 40.0 million jobs, or 27.7 percent of all jobs in the economy.”

A further breakdown on employment pointed to copyright industries providing big job gains. As reported, “Due primarily to historic losses in manufacturing jobs, overall employment in IP-intensive industries has lagged other industries during the last two decades... [However,] copyright-intensive industries provided a sizeable employment boost, growing by 46.3 percent between 1990 and 2011.” That was more than twice the rate of non-IP-intensive industries.

More recently, IP-intensive industries have been ahead of general job creation: “Between 2010 and 2011, the economic recovery led to a 1.6 percent increase in direct employment in IP-intensive industries, faster than the 1.0 percent growth in non-IP-intensive industries. Growth in copyright-intensive industries (2.4 percent), patent-intensive industries (2.3 percent), and trademark-intensive industries (1.1 percent) all outpaced gains in non-IP-intensive industries.”

For good measure, employment in IP-intensive industries paid better – by significant margins. It was reported in the study: “Average weekly wages for IP-intensive industries were \$1,156 in 2010 or 42 percent higher than the \$815 average weekly wages in other (non-IP-intensive) private industries. This wage premium nearly doubled from 22 percent in 1990 to 42 percent by 2010. Patent- and copyright-intensive industries have seen

particularly fast wage growth in recent years, with the wage premium in patent-intensive industries increasing from 66 percent in 2005 to 73 percent in 2010, and the premium in copyright-intensive industries rising from 65 percent to 77 percent.”

Once again, IP proves to be critical to U.S. trade. It was noted that 60.7 percent of U.S. merchandise exports came from IP-intensive industries in 2010, and despite limits on data, that 19 percent of U.S. private services exports came from IP-intensive service-providing industries in 2007.

- In May 2012, the U.S. Chamber of Commerce Global Intellectual Property Center (GIPC) published a report titled “IP Creates Jobs for America.” This analysis was unique in that it broke out the impact of intellectual property on jobs, output, wages, and exports on a state-by-state basis.

The GIPC study found that, nationally, IP-intensive industries accounted for 55.7 million direct and indirect jobs, generated more than \$5 trillion in GDP, and produced 74 percent of total U.S. exports.

As for the state aspect, it’s worth noting the IP impact in the four largest states – California, Texas, New York and Florida.

- In California, 7.38 million jobs, or 55 percent of private sector employment, are supported by IP, while 58 percent, or \$922.8 billion, of economic output is created by IP-intensive firms. In addition, 76.8 percent of exports are IP exports. Average wages in IP-intensive companies are higher than non-IP businesses – \$65,171 and \$47,571, respectively.

- In Texas, 4.61 million jobs, or 49 percent of private sector employment, are supported by IP, while 54 percent, or \$541.3 billion, of economic output is created by IP-

intensive firms. In addition, 85.4 percent of exports are IP exports. Average wages in IP-intensive companies are higher than non-IP businesses – \$55,148 and \$41,320, respectively.

- In New York, 2.78 million jobs, or 36 percent of private sector employment, is supported by IP, while 49 percent, or \$385.8 billion, of economic output is created by IP-intensive firms. In addition, 63.7 percent of exports are IP exports. Average wages in IP-intensive companies are higher than non-IP businesses – \$69,581 and \$53,660, respectively.

- In Florida, 2.05 million jobs, or 28 percent of private sector employment, is supported by IP, while 36 percent, or \$225.5 billion, of economic output is created by IP-intensive firms. In addition, 75.3 percent of exports are IP exports. Average wages in IP-intensive companies are higher than non-IP businesses – \$49,550 and \$36,366, respectively.

Indeed, IP matters to economic growth on an international level, the national level, by state, and therefore, right down to local cities and towns. In turn, it must be understood that the significant role that IP plays in the economy, and the major economic part that small business plays, mean that IP and small business basically go hand in hand. That is made clear in the following chapter, as well as in chapters focused on specific IP industries.