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IPI CENTER FOR TECHNOLOGY FREEDOM

The True Cost of Motion Picture Piracy to the U.S. Economy

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EXECUTIVE SUMMARY

Synopsis: Motion picture piracy costs the film industry billions of dollars in lost revenue, but this is only a fraction of its impact on the total U.S. economy. Combining the latest data on worldwide movie piracy with multipliers from a respected U.S. government model, this study concludes that motion picture piracy costs American workers significant losses in jobs and earnings, and costs governments enormous lost tax revenue.

It is obvious that copyright piracy and counterfeiting harm the intellectual property owner, who loses the revenue that would have been gained had the legitimate product been purchased. But that is only part of the story. Piracy and counterfeiting also cause significant and measurable harm to the overall economy, directly affecting upstream suppliers and downstream purchasers, with a cascading effect that includes lost output, lost earnings, lost jobs, and lost tax revenues.

In order to inform policymakers of the true magnitude of piracy's ripple effect, this paper estimates the impact of piracy in one industry—the motion picture industry—on the overall U.S. economy. Using the RIMS II mathematical model maintained by the U.S. Bureau of Economic Analysis (BEA), this analysis estimates the impact of motion picture piracy on economic output, jobs, personal income, and tax revenues. It is the first of a series of papers that will provide a comprehensive estimate of the overall impact of piracy and counterfeiting.

This study utilizes, as a starting point, the lost revenue figures from a recent and comprehensive worldwide consumer research study conducted by LEK Consulting and released in May 2006 by the Motion Picture Association of America (MPAA). According to the LEK study, MPAA studios lost \$6.1 billion to piracy in 2005.

Applying the RIMS II tool to the LEK loss figures reveals that the true cost of movie piracy to the U.S. economy is far more than \$6.1 billion. Instead, the comprehensive estimate of losses reveals that:

- Motion picture piracy now results in *total lost output* among all U.S. industries of *\$20.5 billion annually*. Output includes revenue and related measures of economic performance.
- Motion picture piracy costs U.S. workers *\$5.5 billion annually* in lost earnings. Of this amount, *\$1.9 billion* would have been earned by workers in the motion picture industries while *\$3.6 billion* would have been earned by workers in other U.S. industries.
- Motion picture piracy *costs jobs*. Absent piracy, *141,030 new jobs* would have been added to the U.S. economy. Of this total, *46,597 jobs* would have been created in the motion picture industries while *94,433 jobs* would have been added in other industries.
- Motion picture piracy costs governments at all levels *\$837 million in lost tax revenue*. Absent piracy, an additional *\$147 million* in corporate income taxes from motion picture corporations, *\$91 million* in other taxes on motion picture production or sales, and *\$599 million* in personal income taxes from employees would have been paid annually to federal, state and local governments.

The true cost of motion picture piracy far exceeds its impact on the movie producers themselves, and harms not only the owners of the intellectual property but also all U.S. consumers and taxpayers. As policymakers seek to maintain the health and vitality of the U.S. economy and preserve our global competitiveness, it is imperative that government and industry work together to combat this growing problem.

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by Stephen E. Siwek

INTRODUCTION

It is well-known that rampant piracy and counterfeiting of desirable products such as movies, recorded music, software, pharmaceuticals, and name-brand and designer consumer goods harm the bottom lines of the companies that produce these products. Because of the innovative and creative nature of our economy, U.S. companies are particularly vulnerable.

Companies work diligently to protect their products, employing civil enforcement, utilizing technology, and forming industry coalitions—as companies have in the U.S. through the United States Chamber of Commerce’s Coalition Against Counterfeiting and Piracy (CACP)—to increase understanding of the scope of the problem and drive greater government-wide efforts to address this threat. Ultimately, however, given the global nature of the problem and its criminal character, government must play a crucial role in combating piracy and counterfeiting, and insisting on the enforcement of intellectual property rights as part of agreements with our trading partners.

Unfortunately, there has been little reliable economic information available to U.S. policymakers to assist them in balancing the importance of enforcing intellectual property rights against other priorities. To begin to address that problem, I published last year *Engines of Growth: Economic Contributions of the U.S. Intellectual Property Industries*,¹ which examined the contributions to the U.S. economy of the “IP industries”—industries that rely most heavily on copyright or patent protection to generate revenue, employ and compensate workers, and contribute to growth. The study found, among other things, that these IP industries are the most important growth drivers in the U.S. economy, contributing nearly 40% of the growth achieved by all U.S. private industry and nearly 60% of the growth of U.S. exportable products. It also found that the IP industries are responsible for one-fifth of the total U.S. private industry’s contribution to GDP and two-fifths of the contribution of U.S. exportable products and services to GDP.

But if the IP industries are worth protecting because of their contributions to the U.S. economy, policymakers still need sound information on the impact of piracy and counterfeiting on the U.S. economy to enable them to gauge the appropriate level of resources to deploy against the problem. To be sure, many industries cite statistics on piracy or counterfeiting losses specific to them, and some overall estimates of losses due to piracy and counterfeiting periodically surface in the media. But there is noticeably little data that reliably estimates the *total economic impact piracy and counterfeiting have on the U.S. economy*—including the impact on tax revenue, job creation, and economic output.

This study is a first step in this direction. It concentrates solely on movie piracy, taking as its starting point a recent comprehensive analysis that found that the major U.S. movie companies lost \$6.1 billion in 2005

to piracy. Using methodology developed and maintained by the U.S. government, this study finds that the movie companies' \$6.1 billion loss translates into total lost output among all industries of \$20.5 billion annually. It also finds that lost earnings for all U.S. workers amounts to \$5.5 billion annually, and 141,030 jobs that would otherwise have been created are lost. In addition, as a result of piracy, governments at the federal, state, and local levels are deprived of \$837 million in tax revenues each year.

In the coming months, we will conduct additional analyses on other industries affected by counterfeiting and piracy, using similar methods to estimate the effects of piracy and counterfeiting in those industries on the U.S. economy. When the series of studies is completed, policymakers will have a much clearer picture of the true cost of piracy and counterfeiting to the U.S. economy.

This study, focused solely on the effects of piracy from one industry, suggests that the economic toll taken by copyright piracy and counterfeiting as a whole is enormous, and harms not only the owners of the intellectual property but all U.S. consumers and taxpayers. As policymakers seek to maintain the health and vitality of the U.S. economy and preserve our global competitiveness, the importance of recognizing the real costs of piracy and counterfeiting cannot be overstated.

I. BACKGROUND: MEASURING THE HARM CAUSED BY MOTION PICTURE PIRACY

Because popular motion pictures are expensive to produce but cost almost nothing to illegally reproduce, they are a favorite target for pirates. Within days of their theatrical release—and in rare cases even before—most movies are available through DVDs sold on the street or by downloading illegally over the Internet.

In order to provide an accurate and detailed assessment of the film industry's worldwide losses due to piracy, in 2004 the Motion Picture Association of America (MPAA) commissioned a study by LEK Consulting, Inc. This study, based on extensive consumer surveys, determined what revenues the movie companies would have earned if pirated products had not been available. The result is the most comprehensive look at film piracy to date, capturing losses due to both Internet and hard goods piracy, the cost of piracy to domestic and worldwide industries, and the profile of the typical pirate in various markets. The findings from the LEK study are found in Appendix C.

The LEK study determined that the losses sustained from piracy to U.S. MPAA member companies in 2005 amounted to approximately \$6.076 billion.² But that figure reflects only the direct losses to the major motion picture studios themselves, and does not shed light on the overall effect of motion picture piracy on the U.S. economy.

OUR INTERLOCKING ECONOMY

In order to understand how piracy in one segment of the economy can affect other industries, we must remember that the economy is an “interlocking” system. Changes in supply or demand in one industry can and do affect supply and demand in other industries.

For example, assume that personal watercraft, like Jet-Skis[®], suddenly become very popular and shortages develop. In this situation, the price of personal watercraft will rise and so will the profits of the manufacturers. However, in order to continue to earn these higher profits, the manufacturers will have to make more personal watercraft. In the process, they will buy more waterproof seats from seat manufacturers.

Of course, it doesn't stop there. In order to produce more seats, the seat manufacturers will have to buy more plastic and more padding. And the plastic and padding manufacturers will have to buy more of the particular materials that they need.

The cascade does not end with the suppliers to personal watercraft manufacturers, but continues downstream as well. The retail sellers of personal watercraft who buy from the manufacturers will also

be able to earn more money by raising prices or increasing volume. In their wake, specialty stores that customize personal watercraft or sell parts also stand to benefit.

These kinds of interactions among industries are captured in input-output tables. Input-output tables measure the interrelationships that exist among different industries. With this information, one can then estimate what impact a specific change in one industry will have on other industries.

What is true for personal watercraft is equally true for motion pictures. If the revenue generated by making motion pictures increases (in this case, not by higher demand but by a decrease in piracy), movie companies will make more movies, invest in higher quality, broader distribution or more marketing, or some combination of these activities in order to capture more profits. [See Sidebar “A Decrease In Piracy Expands Production”]

A DECREASE IN PIRACY EXPANDS PRODUCTION

The LEK study estimated the losses sustained by the U.S. motion picture industry as a result of global piracy. In this study, we estimate the gains to U.S. industries, to U.S. workers and to U.S. national, state and local governments that would occur absent those piracy losses. This analysis can be viewed either as an estimate of the *damages* sustained by the U.S. as a result of piracy in the past year or as an estimate of the *gains* that could be realized in the future if global piracy were substantially curtailed.

One way to characterize the LEK study is that it measures the *increased demand* for legitimate U.S. film products that would be observed throughout the world if piracy did not exist. The increased demand for U.S. motion pictures is quantified on a market-by-market basis in the LEK study and valued at the legitimate prices now in effect for motion pictures in each geographic market. The LEK study provides ample proof that sufficient demand for legitimate U.S. films now exists to justify the expansion in motion picture production and employment that is quantified subsequently in this study.

From the *supply side* perspective, we assume that the market for legitimate motion picture production and distribution would remain intensely competitive as it is today. We see little reason to assume the alternative: that absent piracy, motion picture producers would (or even could) cease to compete with each other.

We also assume that with a larger potential market for legitimate films, profit-seeking film producers could readily expand their production schedules to offer additional films or more expensive films or both. The motion picture industry does not face many of the production bottlenecks that might limit the ability of other industries to satisfy increased demand for their products.¹ More importantly, motion picture producers would likely seek to exploit the expansion of the market for legitimate U.S. films, not only by creating more films but also by increasing the audience appeal of each film through the use of more marketing, for example.

Indeed, as a general matter, we would expect profit-seeking producers to spend more on creative inputs the larger the potential market for the film. Higher quality inputs, in turn should increase the production's share of revenue from the market and increased share is more valuable in a larger market.² Because of these considerations, motion picture producers could (and as competitors, clearly would) attempt to meet the increased demand for legitimate U.S. films through a variety of strategies. These strategies might involve the production of more films or, investment in higher quality, broader distribution or more marketing, or some combination of these activities. Precisely because of this flexibility, however, there is little reason to believe that supply side constraints would inhibit the U.S. motion picture industry from satisfying even a significant increase in the demand for its products.

¹ For example, the motion picture industry could expand its production efforts to other locations and could commit to use less well known actors, directors, writers and special effects firms.

² Wildman, S., and Siwek, S., *International Trade in Films and Television Programs*, Ballinger Publishing co., 1988. Pages 68-70.

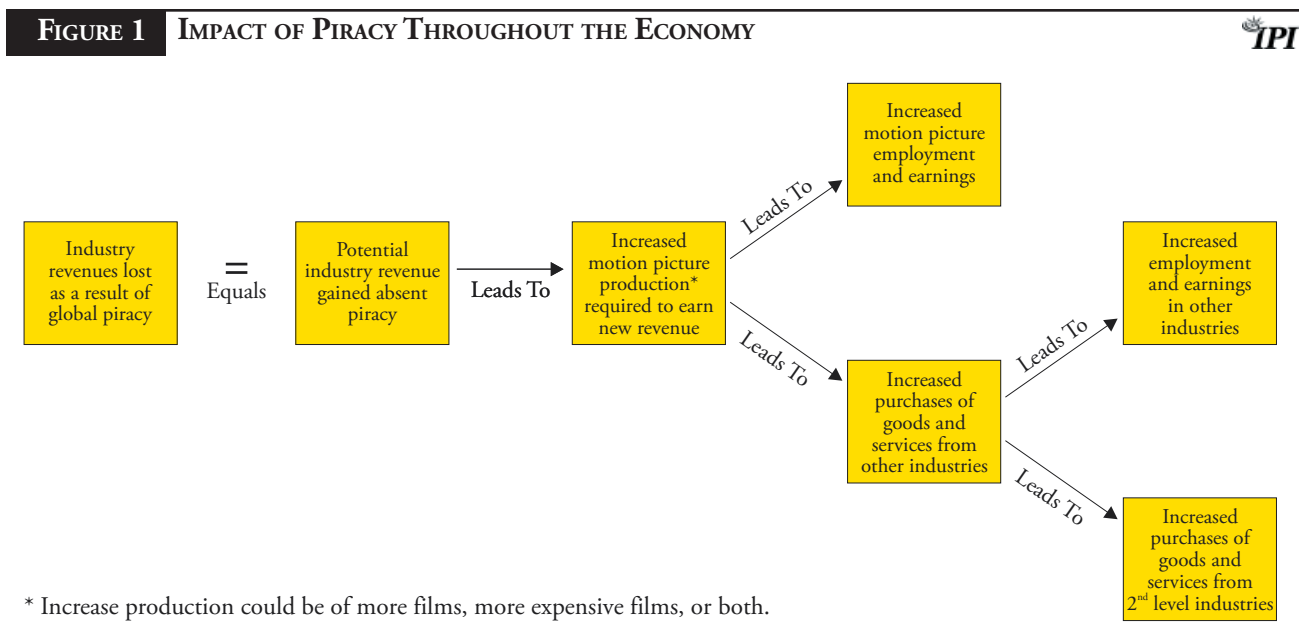
As more movies are made, or more is invested in making, marketing and distributing movies, the people and companies that supply movies will make more money. These include, for example, ad agencies, who sell more copy to newspapers and television promoting the films, and the newspapers and television stations that attract the increased revenue.

The benefits flow downstream as well. Video retailers, for example, will sell and rent more titles. Movie theaters will sell more tickets and more popcorn. Corn growers earn more profits, and can buy more farm equipment. And so on.

Put in economic terms, as motion picture output increases, so too would the output (sales of products and services) produced by these industries that supply motion pictures. As the output of these suppliers increases, so too would the output of other industries that supply the suppliers.

In sum, motion picture piracy affects not only the movie studios, but all the various businesses that supply the industry or buy from the industry, and the people who work in those businesses. Thus, the impact of movie piracy extends well beyond movie stars, all the way to the teenager selling popcorn and candy at the theater, the company that markets the candy, the farmer that grows the corn, and the workers that pick the farmer's crop.

A visual depiction of the process is contained in Figure 1.



THE RIMS II MODEL

The U.S. government has developed a widely accepted mathematical model, known as the Regional Input-Output Modeling System (or “RIMS II”), that enables analysis of how increased revenue generated by movies would affect all other aspects of the economy.³ The RIMS II model is maintained by the U.S. Bureau of Economic Analysis, and is designed to measure the impact that a specific change in the output of one industry will have on all other industries. It uses input-output multipliers to enable measuring both the direct and indirect effects of lost revenue, as well as the loss in labor income. [See Section II and Appendix A for a more detailed description of the actual multipliers used in this analysis.]

To obtain a comprehensive estimate of the total impact of film piracy on the U.S. economy, this paper uses the MPAA research together with the relevant RIMS II multipliers for the appropriate localities. Section II provides the detailed methodology employed to obtain the findings announced in Section III. Overall, the paper looks in some depth at U.S. movie theater owners, and mass market retailers who sell or rent home video cassettes and DVDs: the most visible and direct downstream victims of movie piracy who would have enjoyed higher revenue but for piracy. It also considers lost earnings to employees, as well as the loss of jobs that are not created because of piracy losses. Using financial accounts for the U.S. as a whole and industry-specific information, it estimates the tax losses to governments at all levels. Finally, with all these elements taken into account, it estimates the total impact on the U.S. economy.

II. METHODOLOGY: PIRACY LOSSES TO MOTION PICTURE PRODUCTION, DISTRIBUTION, AND EXHIBITION

The study by LEK is the most comprehensive look at film piracy to date, capturing losses due to both Internet and hard goods piracy, the cost of piracy to domestic and worldwide industries, and the profile of the typical pirate in various markets. The findings from the LEK study are presented in this paper in Appendix C.

However, for the reasons explained above, the LEK figure of \$6.1 billion in lost revenue does not provide a full picture of the effects of movie piracy. In particular, it does not include losses sustained directly by “downstream” industries like motion picture theatrical exhibitors or the video industry legitimately selling or renting U.S. motion pictures to consumers.⁴ In addition, the LEK figures do not include all of the secondary and tertiary losses sustained by the many U.S. industries that would have supplied inputs directly to the motion picture industry, the industry’s direct suppliers, or to the suppliers of those direct suppliers.

PRODUCTION LOSSES

The first step in the analysis is to quantify the direct losses to the motion picture industry in terms of production, distribution, and exhibition.

As shown in Table 1, the LEK study determined that in 2005, MPAA member companies worldwide lost \$6.076 billion in sales as a result of pirate activities. Of this total, U.S. market losses amounted to \$1.311 billion while non-U.S. market losses sustained by U.S. companies totaled \$4.765 billion.⁵

TABLE 1 MOTION PICTURE INDUSTRY DIRECT LOSSES DUE TO PIRACY, 2005

U.S. Motion Picture/Video Industries: NAICS 512100 *

Part One: Worldwide Losses of U.S. Production/Distribution Industries Plus U.S. Losses to U.S. Theatrical Exhibition Industries.

		Billions of U.S. Dollars
Global Piracy Losses to U.S. MPAA Production/Distribution:		\$6.076
U.S. Piracy Loss to U.S. Exhibition		
	U.S. Consumer Spending Loss (Theatrical)	\$0.670
	Est. U.S. Consumer Loss to MPAA Memco	\$0.630
Less:	U.S. Prod./Dist. Loss (Theatrical)	<u>\$0.253</u>
Equals:	Net U.S. Exhibition Loss (Theatrical)	\$0.377
Sub-total Piracy Losses (Part One)		\$6.453

* NAICS 512100 - Motion Picture and Video Industries includes production, distribution, theatrical exhibition and post-production.

Significantly, the losses sustained by MPAA member companies do not reflect sales at the retail (consumer) level. In the motion picture industry, the major producer/distributors typically share gross retail revenues with theatrical exhibitors (theater owners), home video retailers, and others. This is part of the reason that retail losses resulting from pirate activities are much higher than losses to the movie studios alone. In its study, LEK estimated that the worldwide consumer spending loss to the motion picture industry worldwide resulting from all motion picture piracy in 2005 was \$18.186 billion. In the U.S. alone, lost consumer spending amounted to \$2.724 billion.⁶

THEATRICAL EXHIBITION LOSSES

The LEK study reports that, of the total consumer spending loss reported for the U.S. market (\$2.724 billion), approximately \$670 million represented theatrical revenues lost to piracy (Table 1). The study also estimates that about \$630 million of the \$670 million represented theatrical revenues for MPAA member films in the U.S. that were lost to piracy.⁷ However, this figure of \$630 million represents lost value to both U.S. theatrical exhibitors and to MPAA producer/distributors. Since these losses to the MPAA producer/distributors have already been captured in the global piracy loss estimate of \$6.076 billion, it is necessary to extract the remaining lost U.S. theatrical margin from the overall U.S. exhibition loss of \$630 million.

As reflected in Table 1, the MPAA study reports that approximately \$253 million of the \$630 million lost U.S. theatrical revenues to MPAA members has already been counted as part of the global piracy losses to the same companies.⁸ As a result, the remaining U.S. piracy loss at the exhibition level can be estimated at \$377 million (\$630 million less \$253 million). As shown in Table 1, this figure, when combined with the global loss figure to U.S. producer/distributors of \$6.076 billion, yields total piracy losses to the motion picture and theatrical exhibition industries of \$6.453 billion.

HOME VIDEO DISTRIBUTION LOSSES

As noted, retailers that sell or rent motion pictures and videos directly to consumers also sustain lost profits as a direct consequence of the actions of pirates.

As shown in Table 2,⁹ the LEK study estimated that the total U.S. consumer loss sustained by firms that sell or rent MPAA produced cassettes, DVDs, or other home video products was \$1.932 billion in 2005. Of this amount, approximately \$1.058 billion represented MPAA member company revenue losses that have already been counted within the global MPAA member loss estimate of \$6.076 billion. As a result, the net losses to U.S. retailers of MPAA member cassettes, DVDs, and other home video products were \$874 million in 2005.

To summarize, based on the best and most recent data available, we have determined that worldwide motion picture piracy causes a loss of \$6.453 billion to the U.S. motion picture production, distribution, and exhibition industries, and a loss of \$874 million to U.S. retail industries. These numbers comprise some (but not all) of the inputs necessary to determine the total cost of motion picture piracy on the U.S. economy.

THE APPLICABLE RIMS II MULTIPLIERS

Even the direct losses computed above reveal only a portion of the impact of motion picture piracy on the U.S. economy. Other losses must also be derived and estimated using the multipliers from the RIMS II model.

The RIMS II model contains five types of multipliers for many U.S. industries. For each industry, there are three “Final Demand” multipliers for output, earnings, and employment and two “Direct-Effect” multipliers for “direct” earnings and employment. The Final Demand multipliers tell us the total effects of movie piracy on the output, earnings, and employment of all U.S. industries. The Direct Effects multipliers tell us the specific effects on the motion picture industry. Our analysis uses all five types of multipliers.

TABLE 2 **MOVIE RETAIL TRADE LOSSES DUE TO PIRACY, 2005****U.S. Motion Picture/Video Industries, Retail Trade: NAICS 44-45 ***

Part Two: U.S. Losses of U.S. Retail Industries that Sell or Rent Motion Pictures/Video Products.

U.S. Piracy Losses to U.S. Retail industries					Billions of U.S. Dollars
	U.S. MPAA Consumer Loss	<i>Less</i>	U.S. MPAA Memco Loss	<i>Equals</i>	Net U.S. MPAA Retail Loss
Rental	\$0.522		\$0.172		\$0.350
Sell-Through	\$1.116		\$0.724		\$0.392
PPV/VOD	\$0.294		\$0.162		\$0.132
Total	\$1.932		\$1.058		\$0.874
Sub-Total Piracy Losses (Part Two)					\$0.874

* NAICS 44-45 includes all industries engaged in retailing merchandise, generally without transformation, and rendering services to the sale of merchandise.

The RIMS II model defines industries based on the North American Industry Classification System (NAICS), a classification system maintained by the U.S. Government that contains increasing level of specialty within each classification. The U.S. Motion Picture and Video Industries are classified in NAICS 5121, and include the production and exhibition of motion pictures.

A total of five multipliers were acquired from the Bureau of Economic Analysis for NAICS 5121. These were the three Final Demand multipliers related to output, earnings (of workers), and employment and the two Direct Effect multipliers also related to earnings (of workers) and employment. Because the majority of people directly employed in motion picture production are employed in California and New York, all five multipliers are reported for the states of California and New York. A detailed discussion of the reasons for this determination is found in Appendix A.¹⁰

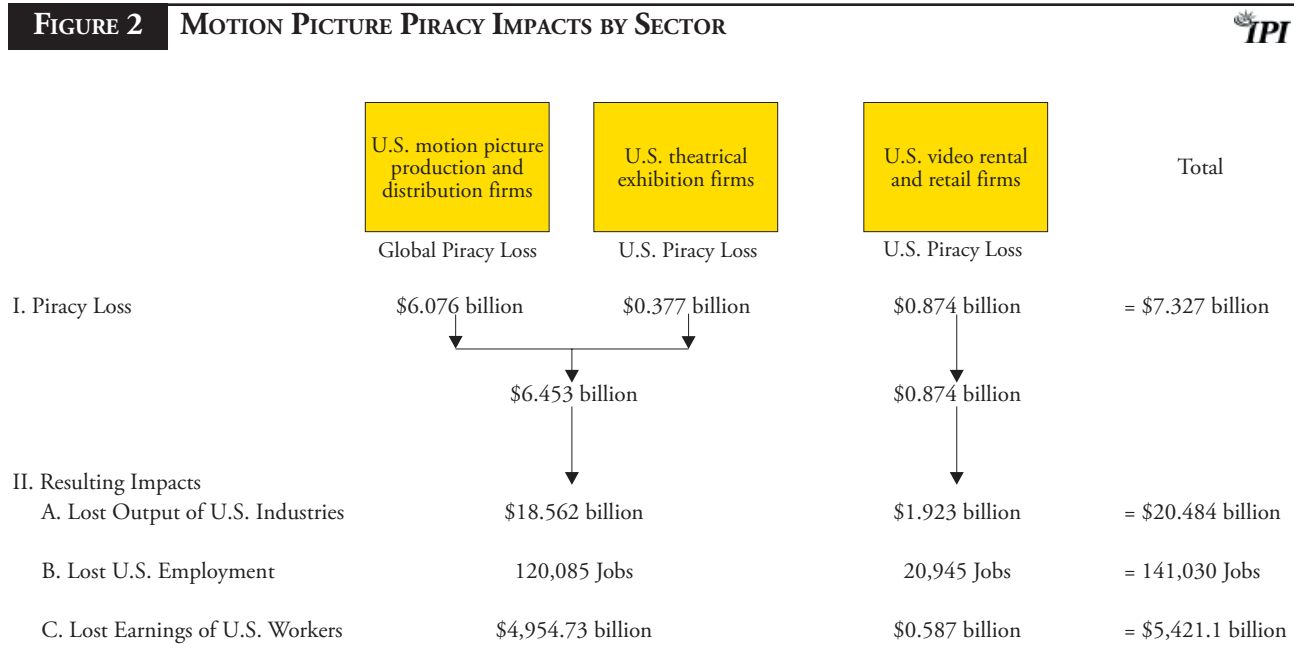
Different multipliers were chosen to apply to the retailing of motion picture cassettes and DVDs. That is because in the U.S., the industries that distribute cassettes and DVDs to consumers are far less geographically concentrated than the industries that produce motion pictures. In order to obtain a representative data sample for retail movie distribution, we used multipliers for eight states: California, New York, Texas, Ohio, Pennsylvania, Illinois, Florida, and New Jersey.¹¹ In this study, it is assumed that the retail industry multipliers for these eight states appropriately and reasonably capture the economic relationships that exist for the U.S. motion picture retailing sector as a whole.

More detailed information on the RIMS II multipliers used in this analysis may be found in Appendix A.

III. FINDINGS: THE IMPACT OF MOTION PICTURE PIRACY ON THE OVERALL ECONOMY

As detailed below, using the LEK results and the appropriate RIMS II multipliers, we have determined that motion picture and video piracy exact a heavy toll not only on the U.S. motion picture industry, but the overall U.S. economy as well. Movie piracy causes \$20.5 billion annually in total lost output among all industries, \$5.5 billion annually in lost earnings for all U.S. workers and 141,030 jobs that would otherwise have been created. In addition, as a result of piracy, governments at the federal, state, and local levels are deprived of \$837 million in tax revenues each year.

Figure 2, entitled Motion Picture Piracy Impacts by Sector, summarizes the findings described in detail below.



TOTAL LOST OUTPUT, EMPLOYMENT, AND EARNINGS FROM MOVIE PIRACY

To produce industry-specific estimates of the impacts of piracy on the U.S. economy, the motion picture industry’s estimated losses from piracy are combined with the appropriate multipliers. The three “Final Demand” estimates of the overall impact of piracy on U.S. industries are reported in Table 3.

As shown in Table 3, as a result of piracy, the motion picture and theatrical exhibition industries have lost direct output (sales) of \$6.452 billion in 2005. Using the relevant industry multipliers, this “direct” loss is converted into an estimate of the total loss in U.S. output. This total loss figure was \$18.56 billion.¹² In addition, the “direct” loss sustained by U.S. motion picture retailers (\$874 million) would add an additional \$1.923 billion to the total loss in U.S. output. As a result, the full impact of motion picture piracy on U.S. output in 2005 was an overall loss of **\$20.5 billion**.

With regard to lost earnings for U.S. workers, the comparable loss figures are \$4.954 billion that stem from the losses sustained by the motion picture production and theatrical distribution industries and \$587 million from the losses of retail distributors of cassettes and DVDs. Thus, the total loss in earnings to workers in 2005 was **\$5.5 billion**.

Finally, in terms of losses in employment that would have been created, the effects of piracy on the motion picture industries in NAICS 5121 cost the United States 120,085 jobs and the effects on U.S. retail

distribution cost 20,945 additional job losses. Thus, that total loss in U.S. employment that has resulted from piracy of U.S. motion pictures in 2005 was **141,030 jobs**. (See Table 3).

DIRECT LOST EMPLOYMENT AND EARNINGS

Through the methodology explained below, we have determined that the **direct loss in employee earnings** to the motion picture and retail distribution industries was **\$1.903 billion**. The direct loss in **employment** resulting from piracy in the motion picture production and retail distribution industries was **46,597 workers** in 2005.

TABLE 3 COST OF MOVIE PIRACY IN OUTPUT, EARNINGS AND EMPLOYMENT

Part One: Absent Piracy, Final Demand in U.S. Production/Distribution Industries and in U.S. Theatrical Exhibition Industries Would Increase.

State	Allocation Factor	Final Demand (\$ Millions)	Output (\$ Millions)	Earnings (\$ Millions)	Employment (Number)
		\$6,452.91			
California	0.8131		\$15,424.72	\$4,219.52	102,838
Texas	0.1869		\$3,135.97	\$735.21	17,246
		Sub-total	\$18,560.69	\$4,954.73	120,085

Part Two: Absent piracy, Final Demand in U.S. Motion Picture and Video Retail Would Also Increase.

State	Allocation Factor	Final Demand (\$ Millions)	Output (\$ Millions)	Earnings (\$ Millions)	Employment (Number)
		\$874.03			
California	0.2967		\$596.34	\$187.86	6,328
New York	0.1607		\$285.03	\$81.75	2,795
Texas	0.1471		\$285.97	\$87.54	3,227
Ohio	0.0919		\$175.55	\$53.75	2,113
Pennsylvania	0.0847		\$161.93	\$48.58	1,851
Illinois	0.0837		\$170.35	\$51.77	1,851
Florida	0.0798		\$143.68	\$45.68	1,765
New Jersey	0.0554		\$104.43	\$30.41	1,017
		Sub-total	\$1,923.27	\$587.34	20,945

Economic Impacts of Increased Final Demand for Motion Pictures and Videos

Output (\$ Millions)	Earnings (\$ Millions)	Employment (Number)
\$20,483.96	\$5,542.07	141,030

The RIMS II model also generates Direct Effects multipliers that can be used to derive the lost earnings and employment effects in those industries that are directly affected by the assumed change in Final Demand, in this case, the U.S. motion picture and retail distribution industries.

As shown in Table 4, **the total loss in employee earnings for the motion picture and retail distribution industries was \$1.903 billion.** This value is only 34.3 percent of the total losses in employee earnings (\$5.5 billion) reported previously. Thus, about *two-thirds of the total lost earnings to U.S. workers that result from motion picture piracy can be attributed to workers in industries other than the motion picture production and retail industries.*

TABLE 4 MOVIE INDUSTRY DIRECT LOSSES TO EMPLOYMENT AND EARNINGS, 2005

Part One: Absent Piracy, the Direct Effects of Increased Final Demand on U.S. Production/Distribution Industries and on U.S. Theatrical Exhibition Industries Would Increase.

State	Total Employment (Number)	Direct Employment (Number)	Total Earnings (\$ Millions)	Direct Earnings (\$ Millions)
California	102,838	28,587	\$4,219.52	\$1,352.85
Texas	17,246	5,549	\$735.21	\$262.35
Sub-total		34,136	\$4,954.73	\$1,615.19

Part Two: Absent Piracy, the Direct Effects of Increased Final Demand on the U.S. Motion Picture and Video Retail Industries Would Also Increase.

State	Total Employment (Number)	Direct Employment (Number)	Total Earnings (\$ Millions)	Direct Earnings (\$ Millions)
California	6,328	3,612	\$187.86	\$87.59
New York	2,795	1,816	\$81.75	\$43.91
Texas	3,227	1,874	\$87.54	\$43.33
Ohio	2,113	1,259	\$53.75	\$26.46
Pennsylvania	1,851	1,129	\$48.58	\$24.00
Illinois	1,851	1,094	\$51.77	\$23.99
Florida	1,765	1,057	\$45.68	\$23.54
New Jersey	1,017	619	\$30.41	\$15.03
Sub-total		12,461		\$287.86

Direct Effects of Increased Final Demand for Motion Pictures and Videos

Total Direct Employment (Number)	Total Direct Earnings (\$ Millions)
46,597	\$1,903.05

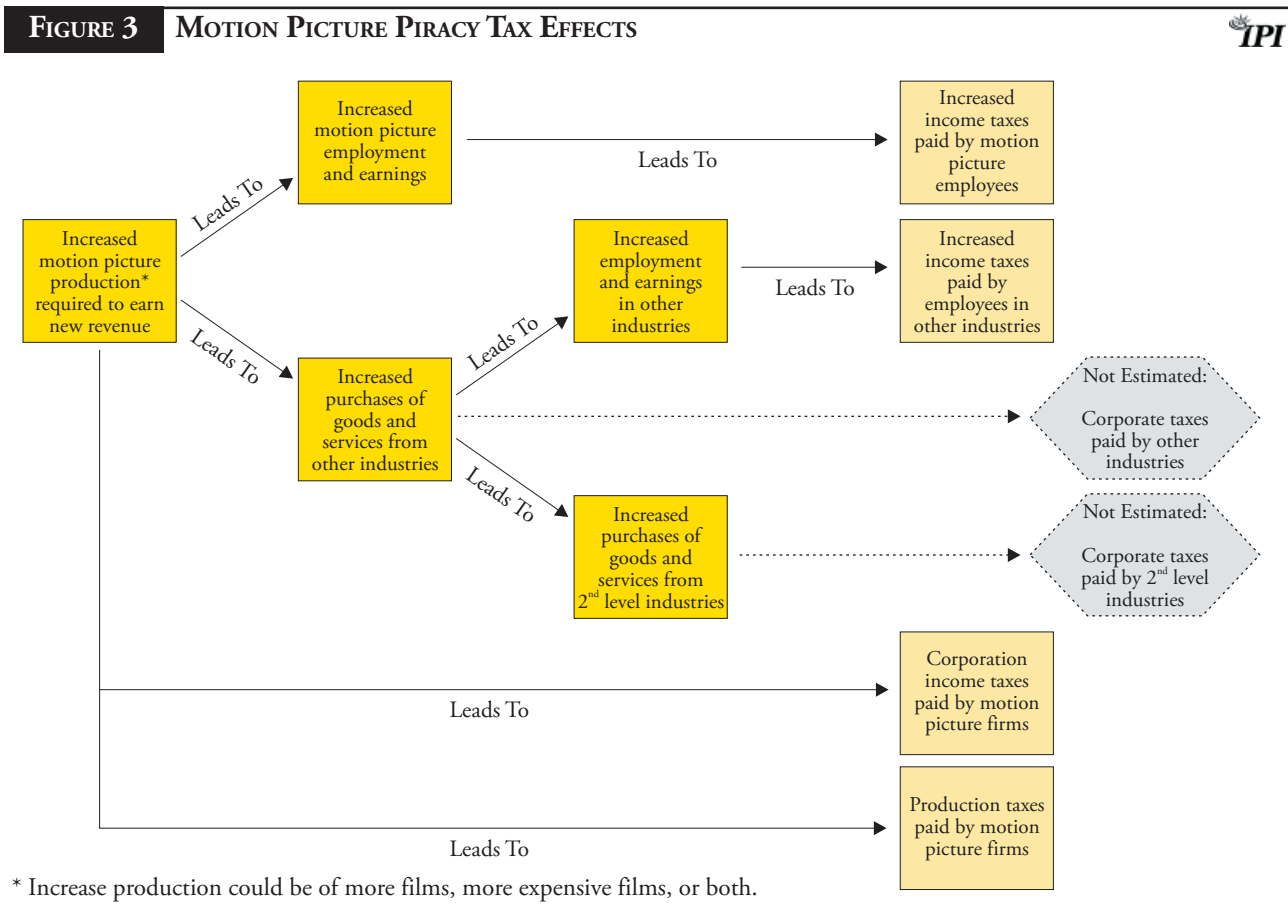
Also, as reported in Table 4, the direct loss in employment resulting from piracy in the motion picture production and retail distribution industries was 46,597 workers in 2005. This total is only 33 percent of the total lost employment from piracy (141,030) reported above. As with earnings, *approximately two-thirds of the U.S. employment that is lost as a consequence of motion picture piracy occurs in industries other than the motion picture production and retail industries.*

MOTION PICTURE PIRACY: LOST TAX REVENUES

In total, motion picture piracy costs governments at all levels, conservatively, \$837 million in lost tax revenue annually.

The RIMS II model cannot be used to generate multipliers for the tax payments that would have been made by employees and corporations if motion picture piracy had been reduced. For this reason, the analysis of the tax effects of piracy losses in this study makes use of financial accounts for the U.S. as a whole and of industry-specific information on components of the value added by the motion picture industry. The techniques for analyzing tax losses are described in Appendix B.

In the motion picture industry, the economic consequences of piracy are not limited to companies and workers. Piracy also reduces the taxes that would otherwise be paid by U.S. corporations and U.S. citizens. The tax effects of piracy result from changes in corporate output, corporate income and in the taxable income of U.S. workers. See Figure 3.



In this analysis, it is generally assumed that the U.S. average tax rates calculated by reference to the national accounts can also apply to the industry-by-industry data that are shown in Table 5.

TABLE 5 DIRECT TAX LOSSES: U.S. MOTION PICTURE INDUSTRY, 2005
U.S. Motion Picture and Video Industries: NAICS 5121
Personal Income Tax Losses
I. Personal Income Taxes on Lost Employee Earnings: NAICS 5121 Only

	(\$ Billions)	Assumed Tax Rate*	NAICS 5121 Personal Taxes (\$ Billions)
Direct Employee Earnings Loss NAICS 5121	\$1.903	10.8%	\$0.206

IA. Personal Income Taxes on Lost Employee Earnings: NAICS 5121 Plus All Input Industries

	(\$ Billions)	Assumed Tax Rate*	NAICS 5121 Plus All Input Industries Personal Taxes (\$ Billions)
Total Employee Earnings Loss: All Affected Industries	\$5.542	10.8%	\$0.599

*See Tax 1.0 Worksheet

Corporate Income and Production Tax Losses
II. Corporate Income Taxes Lost: NAICS 5121 Only

	(\$ Billions)	Apply to Direct Earnings NAICS 5121 (\$ Billions)	Estimate of Other GOS NAICS 5121 (\$ Billions)
Other GOS (Corporate) NAICS 512	\$12.028		\$0.991
Employee Compensation NAICS 512	\$23.100	\$1.903	
Ratio of Other GOS to Employ Comp.	52.1%		
		Assumed Tax Rate*	14.8%
Equals Estimated Corporate Income Tax Loss in NAICS 5121			\$0.147

III. Taxes on Production Lost: NAICS 5121 Only

	(\$ Billions)	Apply to Direct Earnings NAICS 5121 (\$ Billions)	Estimate of Other GOS NAICS 5121 (\$ Billions)
Taxes on Production NAICS 512**	\$1.100		\$0.091
Employee Compensation NAICS 512**	\$23.100	\$1.903	
Ratio of Taxes on Prod. to Employ Comp.	4.8%		
Equals Estimated Production Tax Loss in NAICS 5121			\$0.091

*See Tax 1.0 Worksheet

** See Direct Tax Losses: NAIC 512 Worksheet

In Table 5, the various national and industry specific tax rates described in Appendix B are applied to the Motion Picture industry. The direct loss in Motion Picture and Video employee earnings reported in Table 5 is \$1.903 billion. But taking into account all input industries to the motion picture industry, the value for *total* employee earnings in *all U.S. industries* that are lost as result of motion picture piracy was \$5.542 billion.

As shown in Table 5, the total direct tax losses attributable to motion picture industry piracy in 2005 were \$206 million in personal income taxes, \$147 million in corporate income taxes and \$91 million in taxes on production. However, as also shown in Table 3, the personal income tax losses that result from piracy for employees *in the movie industry and in all movie input industries combined* is **\$600 million per year**. In total, motion picture piracy costs governments at all levels, conservatively, \$837 million in lost tax revenue annually.

CONCLUSION

Motion picture and video piracy exact a heavy toll not only on the U.S. motion picture industry, but the overall U.S. economy as well: \$20.5 billion annually in total lost output among all industries, \$5.5 billion annually in lost earnings for all U.S. workers and 141,030 jobs that would otherwise have been created are lost. In addition, as a result of piracy, governments at the federal, state, and local levels are deprived of \$837 million in tax revenues each year.

These figures suggest that the true costs of copyright piracy are enormous, and harm not only the owners of the intellectual property but all U.S. consumers and taxpayers. As policymakers seek to maintain the health and vitality of the U.S. economy and preserve our global competitiveness, it is imperative that government and industry work together to help combat this growing problem. It is no longer acceptable to consider counterfeiting and piracy just another cost of doing business.

APPENDIX A—MOTION PICTURE INDUSTRY MULTIPLIERS

The estimates in this report are based on an analytical framework known as an *input-output* (“I-O”) table. For every industry in the economy, an I-O table shows the distribution of the inputs purchased and the outputs sold. Using this framework, the U.S. Bureau of Economic Analysis (BEA) has developed a method for estimating I-O *multipliers*. Using multipliers, it is possible to measure not only the direct effects of piracy (i.e., the lost 1st round of output) but also the indirect effects (i.e., the lost 2nd and subsequent rounds of output) as piracy reduces the need for inputs from factor suppliers in other industries. In addition, the BEA’s multipliers also consider the “induced” economic effects that arise from the piracy-driven loss in labor income that is borne by workers in the legitimate industries and which results in a consequent decrease in household consumption.

In this analysis, the multipliers used to estimate the full effects of motion picture piracy were derived using the BEA’s Regional Input-Output Modeling System or (“RIMS II”). The RIMS II model produces industry-specific “final demand” multipliers for output (in dollars), employment (in numbers of employees) and earnings of those employees (in dollars). The RIMS II model also provides industry-specific “direct effects” multipliers for employment and earnings.

DEFINING REGIONS BY INDUSTRY

The RIMS II model produces industry-specific final demand and direct effects multipliers. However, the RIMS II model is fundamentally a regional model that estimates multipliers within a pre-defined geographic area. Thus, for example, an analyst might be given the task of estimating the economic effects of building a new sports stadium within a given metropolitan region. In this example, the analyst would first pre-specify the relevant metropolitan region for which the RIMS II model should be calibrated. Subsequently the analyst would select the relevant industry multipliers to be derived *within that region*. The pre-specification of a region directly affects the RIMS II multipliers because, all else equal, the smaller the region, the greater the chance that that necessary inputs will be obtained from outside the region. When inputs are obtained from outside the pre-specified region in RIMS II, they may no longer “count” as in-region effects of the initial change in final demand. Thus, with a narrowly defined area, the indirect economic effects of a given change in final demand might be too low.

This study differs from the more typical RIMS II analysis in that the economic effects of motion picture piracy are clearly not focused on one or a few small geographic areas. According to the latest Economic Census., in 2002 the U.S. Motion Picture and Video Industries (NAICS 5121) employed workers in 44 different states. While the California motion picture industry did employ the largest share of these workers, the state’s industry still employed less than half (40.9 percent) of all employees in NAICS 5121. Moreover, the California movie industry is not even fully centered in the Los Angeles metropolitan area. The same economic census reported that in 2002, there were 10,191 workers employed in NAICS 5121 in the San Jose-San Francisco-Oakland, Calif., Combined Statistical Area. The annual payroll for these workers in 2002 was \$659 million. If this study had only attempted to measure the economic effects of movie piracy in the Los-Angeles Metropolitan Region, it would have ignored 59 percent of the industry’s employees who do not work in California and well over 10,000 industry employees who do not work in Los Angeles.

MULTIPLIERS FOR THE NAICS 5121 INDUSTRIES

In view of these considerations, a decision was made to acquire statewide RIMS II multipliers for estimating the total costs of motion picture piracy for the U.S. economy. However, in view of the particular significance of the state of California for the U.S. Motion Picture and Video Industries, a further analysis was conducted to determine the appropriate state or states for which these multipliers should be applied. A review of the motion picture industry’s employment levels on a state-by-state basis revealed that in 2002 only two states—California and New York—employed 50.3 percent of all U.S. workers in NAICS 5121. In addition, for the

six-digit NAICS 512111, the Motion Picture and Video production industries, the states of California and New York employed 73.4 percent of all employees. For these reasons, the final multipliers used to analyze the motion picture and video industries in NAICS 5121 were multipliers for California and New York. (See Multiplier 1.0 Movies).

TABLE A Multiplier 1.0 Movies

U.S. Motion Picture/Video Industries: NAICS 512100

*Final Demand Multipliers for Primary States**

Output:

California	2.9398
New York	2.6002

Earnings:

California	0.8042
New York	0.6096

Employment:

California	19.6
New York	14.3

*Direct Effect Multipliers for Primary States**

Earnings:

California	3.1190
New York	2.8024

Employment:

California	3.5974
New York	3.1080

* In the 2002 Census, California and New York collectively employed 50.3% of all employees in NAICS 512100. California employed 81.31% of this subtotal while New York employed 18.69%. California and New York also employed 73.4% of all employees in NAICS 512111, which is Motion Picture and Video Production.

As shown in Multiplier 1.0 Movies, a total of five multipliers were acquired from the Bureau of Economic Analysis for NAICS 5121. The three Final Demand multipliers related to output, earnings (of workers) and employment. The two Direct Effect multipliers also related to earnings (of workers) and employment. In Multiplier 1.0 Movies, the five multipliers are reported for the states of California and New York.

MULTIPLIERS FOR U.S. RETAILERS OF HOME VIDEO PRODUCTS

As noted previously, motion picture piracy affects other U.S. industries in addition to the industries that are classified in NAICS 5121. In particular, U.S. retailers of video cassettes and DVDs face reduced sales and lower profits as a result of pirate activities that occur in the United States. However, the inter-industry relationships that affect these industries differ from the inter-industry relationships that exist in the motion picture industry. As a result, the multipliers that apply to the retailing of motion picture cassettes and DVDs

should also differ from the multipliers that were calculated for NAICS 5121. In this study, the economic effects of piracy on U.S. motion picture retailers are measured Using multipliers for U.S. retail trade (NAICS 44-45). These multipliers are provided in Multiplier 1.1 Movies.

TABLE B Multiplier 1.1 Movies

U.S. Motion Picture/Video Industries: Retail Trade NAICS 44-45

*Final Demand Multipliers for Primary States**

States	Output	Earnings	Employment
California	2.2996	0.7244	24.4
New York	2.0293	0.5820	19.9
Texas	2.2242	0.6809	25.1
Ohio	2.1855	0.6692	26.3
Pennsylvania	2.1873	0.6562	25.0
Illinois	2.3286	0.7077	25.3
Florida	2.0600	0.6549	25.3
New Jersey	2.1566	0.6280	21.0

*Direct Effect Multipliers for Primary States**

States	Earnings	Employment
California	2.1477	1.7520
New York	1.8618	1.5392
Texas	2.0205	1.7222
Ohio	2.0312	1.6773
Pennsylvania	2.0238	1.6387
Illinois	2.1579	1.6914
Florida	1.9406	1.6689
New Jersey	2.0227	1.6420

* In the 2002 Census, the top eight states for establishments and employment in NAICS 45122—Prerecorded Tape, Compact Disk and Record Stores, were responsible for 50% of the total establishments and employment in NAICS 45122 for the U.S. as a whole.

The five multipliers reported in Multiplier 1.1 Movies are each shown for eight states: California, New York, Texas, Ohio, Pennsylvania, Illinois, Florida and New Jersey. In the U.S., the industries that distribute cassettes and DVDs to consumers are far less geographically concentrated than the industries that produce motion pictures. For example, Blockbuster, Inc. operated 5,696 stores in the United States in 2005. These stores were located in all 50 states, the District of Columbia and the U.S. territories of Guam, Puerto Rico and the Virgin Islands.

Nevertheless, all states are not equal even with regard to home video sales and rental services. In 2002 the U.S. Census Bureau calculated state-by-state figures for the number of U.S. establishments and paid employees in NAICS 45122 – Prerecorded Tape, Compact Disk and Record Stores. For both establishments and employment, eight states were responsible for 49.1 percent of the U.S. totals within this industry. Those states were the eight states shown in Multiplier 1.1 Movies. In this study, it is assumed that the retail industry multipliers for these eight states appropriately and reasonably capture the economic relationships that exist for the U.S. motion picture retailing sector as a whole.

APPENDIX B—DETERMINING TAX LOSSES

Within the financial accounts of the United States, one can readily identify the taxes paid in aggregate by U.S. resident individuals and U.S. corporations as a whole. For example, in 2004 personal (“current”) taxes paid by U.S. residents totaled \$1,049.1 billion. As shown in the table labeled Tax 1.0 Income, these taxes amounted to 10.8 percent of total Disposable Personal Income for the same year. While the Disposable Income of U.S. residents was derived from many sources, it is assumed in this analysis that all forms of personal income were in effect taxed at the same average rate. Under this assumption, the U.S. average personal tax rate in 2004 was 10.8 percent.

The data in the Tax 1.0 Income table also show two separate calculations of the corporate income tax rate paid by U.S. corporations to federal, state and local tax authorities in 2004. In 2004 total corporate income taxes were \$271.1 billion. Dividing this figure by total corporate profits, as adjusted, of \$1,161.5 billion yields an average corporate tax rate of 23.3 percent.

Unfortunately, in the U.S. accounts, corporate profits by industry are not to our knowledge reported by any of the U.S. statistical agencies in the same format shown here. The Bureau of Economic Analysis does report industry data on Gross Operating Surplus (GOS) by industry in its calculations of value added by industry. Within these data, GOS by industry can in turn be divided into five underlying categories. The categories include “Other GOS,” which can be defined as corporate profits before tax plus net interest and miscellaneous payments and adjustments. While this measure is broader than U.S. corporate profits, it does provide an approximate measure of corporate profits that is recorded on an industry-by-industry basis.

TABLE C Tax 1.0 Income

<i>Tax Rates on Personal Income:</i>				<i>Tax Rates on Corporate Income:</i>	
		2004 (\$ Billions)	2004 (\$ Billions)		2004 (\$ Billions)
	US Disposable Personal Income		\$8,664.2	US Corporate Profits w Adjus.	\$1,161.5
<i>Add Back:</i>	Personal Current Taxes		\$1,049.1	Taxes on Corporate Income	\$271.1
<i>Equals</i>	US Personal Income		\$9,713.3	Corp. Inc. Taxes/Corp. Profits	23.3%
	Compensation of Employees	\$6,687.6		US Other GOS (Corporate)	\$1,822.9
	Proprietors' Income	\$889.6		Taxes on Corporate Income	\$271.1
	Rental Income	\$134.2		Corp. Inc. Taxes/US Other GOS (Corp.)	14.9%
	Personal Income Receipts/Assets	\$1,396.5			
	Personal Current Transfers	\$1,427.5			
<i>Less</i>	Contrib. Govern. Social Insurance	(\$822.2)			
<i>Equals:</i>	US Personal Income	\$9,713.2	\$9,713.2		
	Pers. Cur. Tax/Pers. Income		10.8%		
				<i>Taxes on Production:</i>	
					2004 (\$ Billions)
				Taxes on U.S. Production and Imports less Subsidies.	\$809.4

In addition to corporate income tax, U.S. businesses pay a variety of other taxes on their production or sales. In the U.S. accounts, these taxes are recorded as taxes on U.S. Production and Imports less Subsidies. In 2004 U.S. firms paid \$809.4 billion in such taxes.

TABLE D **TAX 2.0****U.S. Motion Picture and Video Industries: NAICS 5121****Personal Income Tax Losses**

I. Personal Income Taxes on Lost Employee Earnings: NAICS 5121 Only

	(\$ Billions)	Assumed Tax Rate*	NAICS 5121 Personal Taxes (\$ Billions)
Direct Employee Earnings Loss NAICS 5121	\$1.903	10.8%	\$0.206

IA. Personal Income Taxes on Lost Employee Earnings: NAICS 5121 Plus All Input Industries

	(\$ Billions)	Assumed Tax Rate*	NAICS 5121 Plus All Input Industries Personal Taxes (\$ Billions)
Total Employee Earnings Loss: All Affected Industries	\$5.542	10.8%	\$0.599
*See Tax 1.0 Worksheet			

Corporate Income and Production Tax Losses

II. Corporate Income Taxes Lost: NAICS 5121 Only

	(\$ Billions)	Apply to Direct Earnings NAICS 5121 (\$ Billions)	Estimate of Other GOS NAICS 5121 (\$ Billions)
Other GOS (Corporate) NAICS 512	\$12.028		\$0.991
Employee Compensation NAICS 512	\$23.100	\$1.903	
Ratio of Other GOS to Employ Comp.	52.1%		
		Assumed Tax Rate*	14.8%
Equals Estimated Corporate Income Tax Loss in NAICS 5121			\$0.147

III. Taxes on Production Lost: NAICS 5121 Only

	(\$ Billions)	Apply to Direct Earnings NAICS 5121 (\$ Billions)	Estimate of Other GOS NAICS 5121 (\$ Billions)
Taxes on Production NAICS 512**	\$1.100		\$0.091
Employee Compensation NAICS 512**	\$23.100	\$1.903	
Ratio of Taxes on Prod. to Employ Comp.	4.8%		
Equals Estimated Production Tax Loss in NAICS 5121			\$0.091

*See Tax 1.0 Worksheet

** See Direct Tax Losses: NAIC 512 Worksheet

In Tax 2.0, we first show the methodology used to estimate the personal income taxes that would have been paid by U.S. employees on their increased earnings if there had been no motion picture piracy. The table shows the estimation of tax losses on both the direct earnings of motion picture employees and on the total earnings of all affected employees. In both cases, the assumed average personal tax rate of 10.8% is applied to the industry earnings derived from the RIMS II model. As shown in Table 2, lost personal income taxes for motion picture industry employees alone were \$0.205 billion. For all industry employees, lost personal income taxes were \$0.599 billion.

In Tax 2.0, we also provide the methodologies used to measure the corporate income taxes and taxes on production that would have been paid by the U.S. motion picture industry absent piracy. In the corporate tax calculations, we first calculate the ratio of “Other” Gross Operating Surplus (“OGOS”) to Employee Compensation for NAICS 512, a broader industry measure than that of the U.S. motion picture industry (NAICS 5121). In 2004, this ratio was 52.1%. Applying this ratio to the lost motion picture earnings estimate of \$0.991 billion yields lost corporate income taxes in the amount of \$0.147 billion.

Similarly, with regard to taxes on production, we first derive the ratio of production taxes to employee compensation in the broader industry category of NAICS 512. Using this ratio, we then estimate these taxes as \$0.091 billion.

Overview

- Piracy is the biggest threat to the U.S. motion picture industry.
- In 2004, the MPAA commissioned a study to provide an accurate and detailed assessment of the film industry's worldwide losses to piracy and the demographic profile of those engaging in piracy.
- The survey results are the most comprehensive picture of film piracy to date, capturing
 - (a) losses due to both internet and hard goods piracy,
 - (b) the cost of piracy to domestic and worldwide industries, and
 - (c) the profile of the typical pirate in various markets.



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The Cost of Movie Piracy



Major Findings

- The major U.S motion picture studios lost \$6.1 billion in 2005 to piracy worldwide.
- 80 percent of those losses resulted from piracy overseas, 20 percent from piracy in the U.S.
- 62 percent of the \$6.1 billion loss result from piracy of hard goods such as DVDs, 38 percent from internet piracy.
- Piracy rates* are highest in China (90 percent), Russia (79 percent) and Thailand (79 percent).
- The worldwide motion picture industry, including foreign and domestic producers, distributors, theaters, video stores and pay-per-view operators, lost \$18.2 billion in 2005 as a result of piracy.
- The typical pirate is age 16-24 and male. 44 percent of MPAA company losses in the U.S. are attributable to college students.



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The Cost of Movie Piracy

* See page 6 for definition of piracy rates.



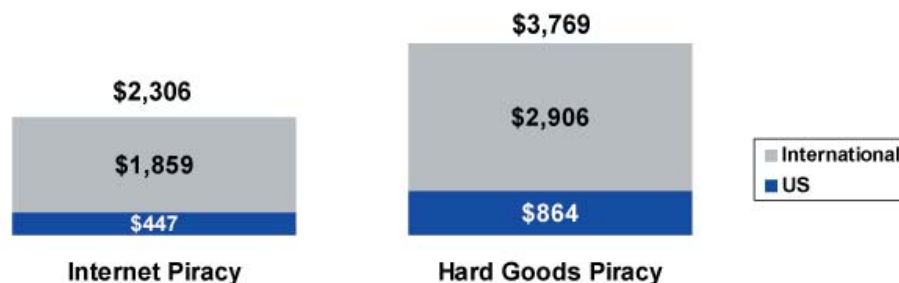
Losses to MPAA Member Companies

The major U.S. motion picture studios lost **\$6.1 billion** to piracy in 2005. **\$4.8 billion, or 80 percent**, resulted from piracy in other countries and **\$1.3 billion, or 20 percent**, resulted from losses in the U.S.

\$3.8 billion was lost to hard goods piracy, defined as obtaining movies by either purchasing or acquiring an illegally produced VHS/DVD/VCD through a commercial source, or making illegal copies for oneself or receiving from a personal source (friend or family) an illegal copy of a legitimate VHS/DVD/VCD.

\$2.3 billion was lost to internet piracy, defined as obtaining movies by either downloading them from the Internet without paying or acquiring hard copies of illegally downloaded movies from friends or family.

MPAA Member Company Revenue Loss by Source of Piracy*



*All figures throughout shown in U.S. Millions



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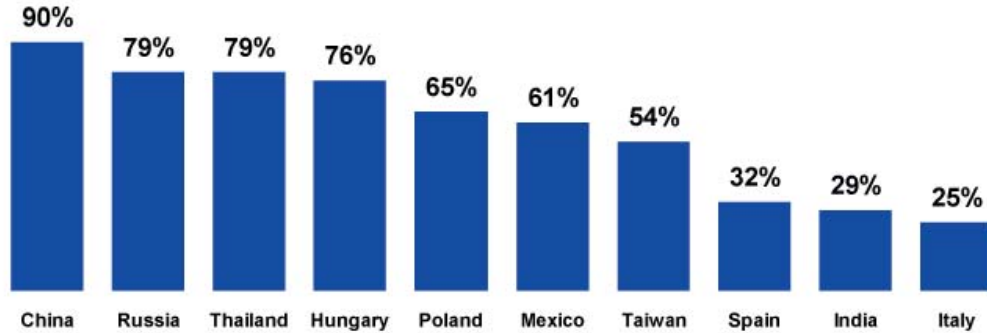
The Cost of Movie Piracy



Where is the piracy rate highest?

China, Russia and Thailand have the highest piracy rates*. By comparison, the piracy rate in the U.S. is 7 percent.

Percent of Potential Market Lost to Piracy *



**Piracy rates are derived from MPAA member company legitimate revenue plus estimated revenue lost to piracy in each market. They are a static snapshot of the percentage of the potential market that is lost due to piracy. The piracy rate is based on existing market data and does not incorporate growth if piracy did not exist.*



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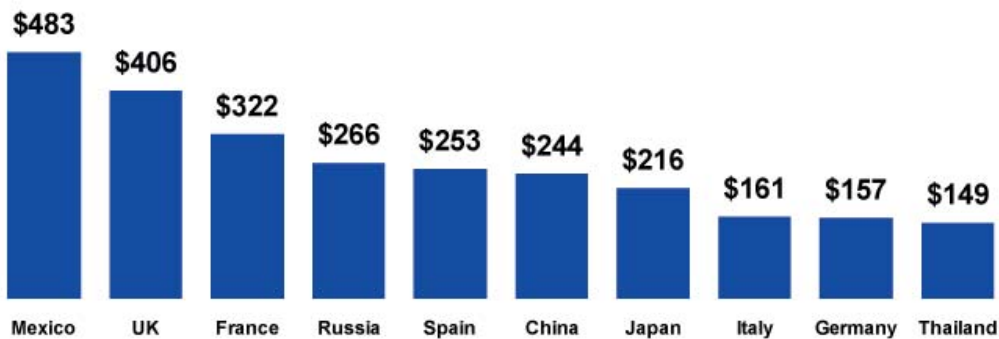
The Cost of Movie Piracy



Dollars lost in international markets

The markets where the dollars lost are highest are Mexico, UK and France. These mature markets return greater income to the U.S. motion picture industry than still developing markets such as China and Russia. Restricted access to the China market in particular limits potential legitimate revenues as well.

MPAA Member Company Revenue Loss



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The Cost of Movie Piracy



Piracy in China and Russia

- China and Russia have the highest piracy rates of all countries surveyed – 90 percent and 79 percent, respectively.
- The study indicates that the U.S. motion picture dollar losses in those markets are smaller than losses in Mexico and the UK. Why?
 - The U.S. motion picture industry's access to China is severely limited. China limits the number of foreign films allowed in theaters each year to 20, and imposes a number of restrictions on the distribution of home video products. By contrast, pirates operate unfettered and outside the law.
 - Mexico and the UK are free markets resulting in higher revenue for the U.S. motion picture industry.



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The Cost of Movie Piracy



Piracy's cost beyond the U.S. film industry

Piracy cost the worldwide motion picture industry an estimated **\$18.2 billion** in 2005. This includes producers, distributors, theaters, video stores and pay-per-view providers in the U.S. and around the world.

Worldwide Motion Picture Industry Losses



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The Cost of Movie Piracy

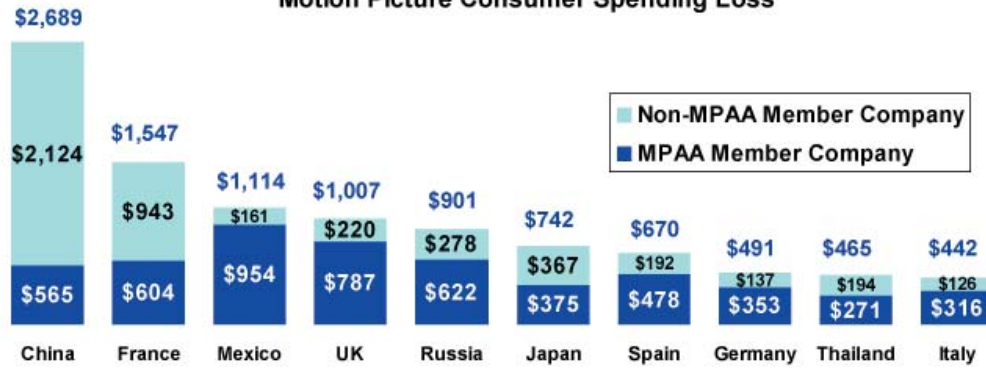


Dollar Losses – MPAA and International

Piracy is not just detrimental to major U.S. studios. Local and non-MPAA member companies* in other countries (including producers, distributors, theaters, video stores and pay-per-view providers) suffer from piracy as well. Losses to other film industries were highest due to piracy in China, France and Japan.

Combined worldwide industry losses due to piracy are highest in China, France and Mexico.

Motion Picture Consumer Spending Loss



* Non-MPAA member companies include local filmmakers in a given country. For example, the \$2.1 billion loss estimate in China for non-MPAA member companies includes losses to Chinese filmmakers in China as well as losses to French filmmakers in China.



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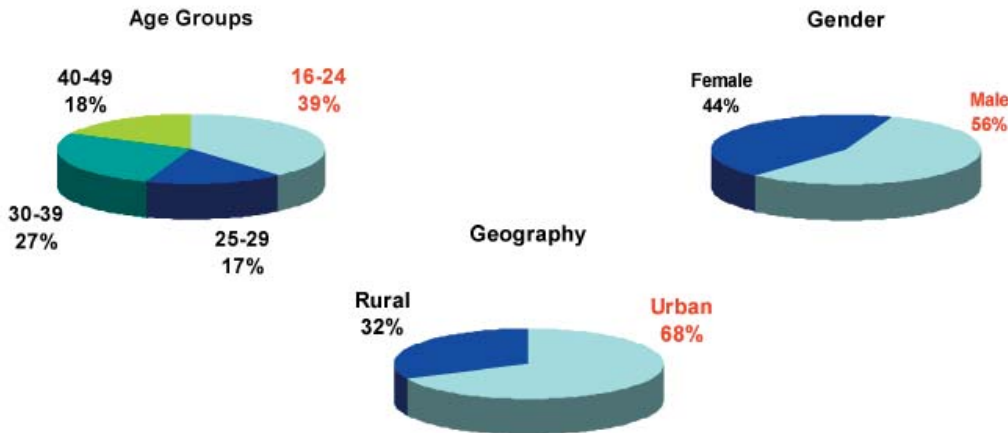


The Cost of Movie Piracy



Pirate Profile

The typical worldwide pirate is 16-24 years old, male and lives in an urban area.



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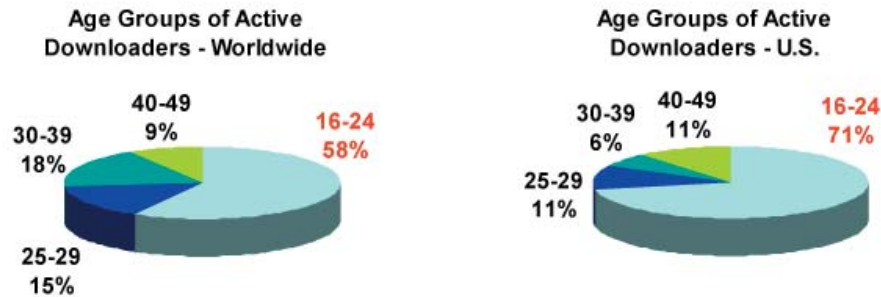


The Cost of Movie Piracy



Downloader Pirate Profile

The 16-24 age group is particularly high in the category of internet piracy, representing 58 percent of illegal downloaders across the 22 directly researched countries*. It is even higher in the US, where the same age range represents 71 percent of downloaders. 44 percent of MPAA company losses in the U.S. are attributable to college students.



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The Cost of Movie Piracy

* See page 13 for explanation of directly researched countries.



Methodology

- LEK is an international strategy consulting firm.
- The study was conducted over 18 months. LEK surveyed 20,600 movie consumers in 22 countries using focus groups and telephone, internet and in-person interviews.
- Those surveyed were movie watchers. Those who have dropped out of the market for movies were not included in the study.
- Data from the 22 directly research countries was extrapolated to 42 additional countries using a regression model developed in conjunction with UCLA and based on country-specific characteristics to complete the worldwide piracy picture.
- The study's piracy loss calculation is based on the number of legitimate movies - movie tickets, legitimate DVDs - consumers would have purchased if pirated versions were not available.



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The Cost of Movie Piracy



Methodology – 22 Directly Surveyed Countries

- Australia
- Brazil
- Canada
- China
- France
- Germany
- Hong Kong
- Hungary
- India
- Italy
- Japan
- Korea
- Mexico
- Netherlands
- Poland
- Russia
- Spain
- Sweden
- Taiwan
- Thailand
- UK
- United States



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The Cost of Movie Piracy



ENDNOTES

1. http://nbcumv.com/corporate/Engines_of_Growth.pdf
2. See LEK Final Loss Estimates.
3. <http://bea.gov/bea/regional/rims/>
4. Blockbuster, Inc., for instance, operated 5,696 U.S. stores providing in-home rental and retail movie entertainment to U.S. consumers in 2005. Blockbuster Inc., U.S. SEC Form 10-K, for the year ending 12/31/05, page 1. Absent piracy, the additional profits on motion picture sales and rental revenues that would have been earned by Blockbuster and by other U.S. retailers constitute additional losses to the U.S. economy. Note, however, that this additional loss is limited to the lost margin that the retail outlet would have been earned on the sale. The “cost” of the sale has already been counted among the sales lost by the motion picture producers.
5. See LEK Final Loss Estimates.
6. See LEK Final Loss Estimates.
7. The remaining \$40 million in U.S. theatrical losses were sustained by non-MPAA and foreign film producers and by their U.S. exhibitors.
8. The MPAA study reports that in the U.S., MPA member companies lost a total of \$1.311 billion in 2005. Of this total, \$253 million reflected theatrical losses while nearly \$900 million were lost home video sales and rentals.
9. This study focuses only on the piracy losses of U.S. firms. As a result, it does not measure losses of non-U.S. film producer/distributors, non-U.S. theatrical exhibitors or non-U.S. retailers of home video products.
10. Note that, while the BEA does publish industry multipliers for the U.S. as a whole, this analysis conservatively makes no use of these U.S. multipliers. Had they been used, the output and employment effects shown in this study would have been even higher than what we report.
11. 3,431 out of 6,987 establishments and 30,742 out of 62,647 employees in NAICS 45122 were located in the eight states listed above.
12. Note the total loss in final demand is allocated among the listed states on the basis of each state’s industry employment.
13. U.S. Department of Commerce, U.S. Census Bureau, 2002 Economic Census: Information-San Jose-San Francisco-Oakland, CA, Combined Statistical Area. Information Sector, NAICS 5121.
14. U.S. SEC, Form 10-K, for the fiscal year ended December 31, 2005, Blockbuster, Inc., pages 10-11.
15. 3,431 out of 6,987 establishments and 30,742 out of 62,647 employees in NAICS 45122 were located in the eight states listed above.
16. In these figures, corporate profits have been adjusted to reflect changes in inventory valuation and capital consumption.

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Stephen E. Siwek is a principal with Economists, Inc., and is a specialist in financial and cost analysis. Mr. Siwek has particular expertise in the economic analysis of regulated utilities including telecommunications, electric, gas and postal service providers. He has testified as an expert witness in more than forty proceedings before federal and state regulatory authorities. Mr. Siwek’s consulting specialties also include analysis of economic damages in commercial litigation and antitrust. He has evaluated damage claims in litigation involving telecommunications companies, media firms, airlines, consumer products providers and industrial corporations. Mr. Siwek also has substantial consulting and research experience in international trade. In the international area, Mr. Siwek has focused particularly on the media and software industries. He is co-author (with Steven S. Wildman) of *International Trade in Films and Television Programs*, American Enterprise Institute/Ballinger Publishing Company and *International Trade in Computer Software*, Quorum Books (with Harold Furchtgott-Roth). Mr. Siwek has also published annual studies of the “Copyright Industries” in the U.S. economy on behalf of the International Intellectual Property Alliances.

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