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The Economic Impact of Trademark Counterfeiting and Infringement

Estimation of the Impact of Trademark Counterfeiting and Infringement on Worldwide Sales of Apparel and Footwear

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Summary

As part of its mission to actively pursue public policy matters relating to trademarks, the International Trademark Association (INTA) requested that WEFA, Inc., a prestigious econometric firm based in Eddystone, Pennsylvania, develop an economic model to quantify losses to trademark owners due to infringement and counterfeiting.

Combating counterfeiting and infringement is tremendously costly for individual companies and getting the authorities in many countries to address the problem can be difficult. INTA determined that a study providing quantitative evidence of the magnitude of the losses suffered by industry would be a powerful tool in its ongoing efforts to persuade governments to commit more resources to reduce the level of counterfeiting and infringement.

This report describes the model design that WEFA developed in collaboration with the Economic Impact Subcommittee of INTA and the estimate of losses to trademark owners. This estimation was carried out for apparel and footwear as these were items where the importance of copyright and patent protection is minimal, where the definition of the sector is fairly clear, and where cooperation from INTA member companies was anticipated.

In a unique approach, this study measures the impact of the degree of trademark protection on sales of trademarked products directly, without making any assumptions about the actual level of counterfeiting or the effect, in turn, of counterfeiting on sales.

WEFA first constructed a univariate measure of trademark protection for 40 countries using the results of a survey of 230 attorneys worldwide with experience in trademark protection issues. The second input into the model estimation effort was a database of apparel and footwear sales and quantity figures from INTA member companies for the period 1991 through 1995. Among the companies that provided data are Anne Klein, Caterpillar, Inc., Fila U.S.A., Inc., K-Swiss, Inc., Lands' End, Inc., Levi Strauss & Co., NBA Properties, Inc., Reebok International Ltd., and The Timberland Company.

The results indicate that in 1995, the participating companies lost an average of 22% of their total sales, or $2.0 billion, as a result of trademark infringement and counterfeiting. This estimate is based on two models -- one for per-capita sales and one for market share -- for each of the two product categories. The losses by country for the period 1992-1995 ranged from 13.6% of sales for France to 30.4% of sales in Pakistan. In the United States, counterfeiting and infringement cost these companies 22.8% of sales.

The results of the model clearly demonstrate the high price that trademark owners must pay because of inadequate trademark protection. INTA will continue the fight for better protection of trademarks and hopes that governments and industry can work together to raise awareness of the importance of enforcement of intellectual property rights.

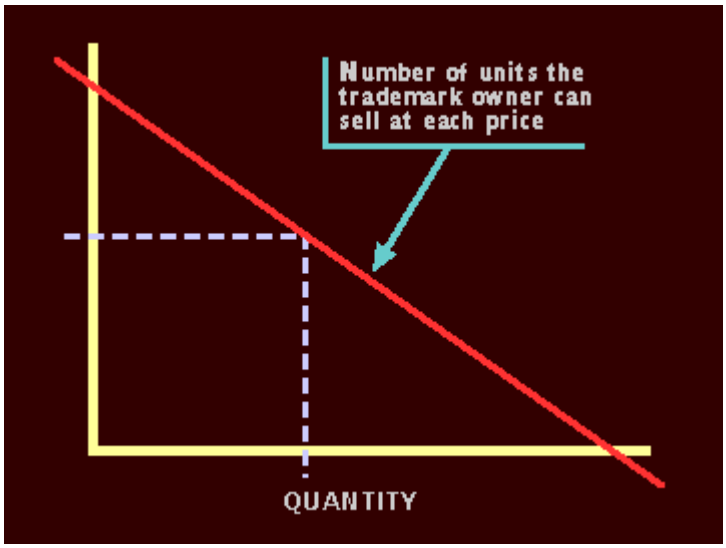
The Economics of Trademarks

The economic treatment of trademarks and their value is derived from the exclusivity of the trademark. The owner of the trademark has the sole right to sell products with that mark.

The value of a trademark can be measured by the **demand curve**: the measure of the quantity of the trademarked product people are willing to purchase at a given price.

In presenting the economic theory of trademarks, we begin by constructing the demand curve. We assume that sales of the trademarked product will fall as its price rises. In Figure 1, we show the demand curve as a straight line, a simplification to assist in understanding the basic theory.

Figure 1. Trademark Owner's Demand Curve

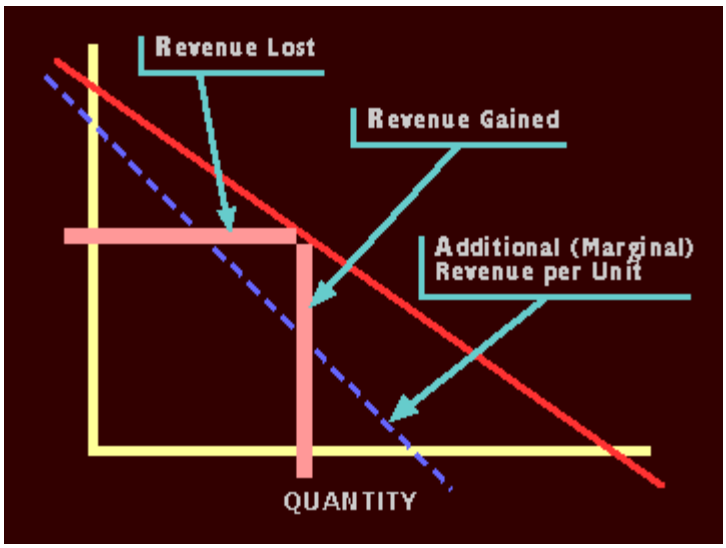


The trademark owner must decide on a price. The lower the price, the more units of the trademarked good or service the firm can sell. The demand curve contains all the information about the market for the trademarked good. For example, to the extent that other products are close substitutes in the consumer's mind, the curve will be flatter.

In Figure 1, the area delineated by the dotted lines is the product of the number of units sold and the price at which they are sold, namely, the **revenue**.

When the firm lowers the price, it obtains additional sales, but loses revenue from previous sales that are now made at the lower price. The lower price for both previous quantities sold as well as new quantities causes revenue per unit to fall faster than price per unit.

Figure 2. Trademark Owner's Marginal Revenue Curve

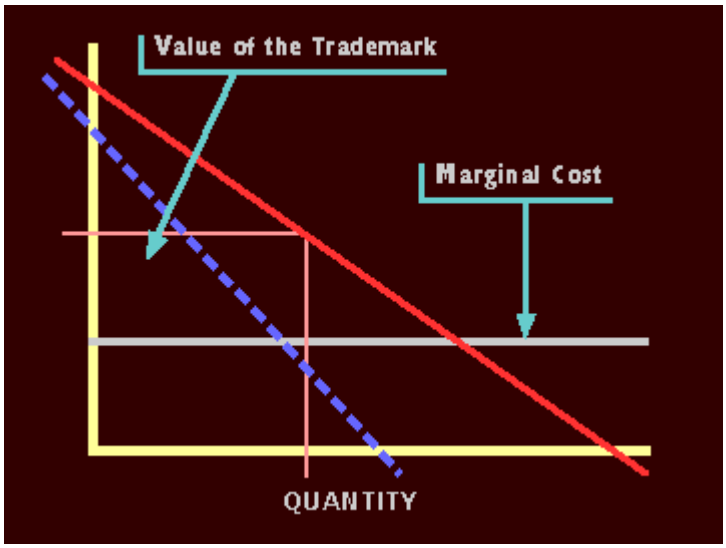


The additional profit obtained from increasing sales by one unit is given by the marginal revenue less the marginal cost. The marginal cost is the cost of producing and selling one more unit.

For simplicity, let us assume the marginal cost is constant (see Figure 3). This is a reasonable assumption in most cases as the additional cost is just the sum of the additional labor and materials required. An example of this would be an increase of the hours of plant operation by 10% to produce 10% more product. Note that plant and equipment costs are fixed while labor and material costs vary with the quantity produced.

A producer will maximize total profit by increasing production until the marginal revenue falls to the level of the marginal cost, producing zero marginal profit. As long as marginal revenue exceeds marginal cost, each additional unit sold will contribute a diminishing, but still positive, return.

Figure 3. Marginal Cost, Point of Maximum Profit for the Trademark Owner, and the Value of the Trademark



The total of revenue less marginal cost, shown by the shaded rectangle in Figure 3, is the **value of the trademark**.

If the good or service being sold were completely undifferentiated from all other similar products and there were enough of these similar products that the firm could not control the price by setting the level of his own production, then the demand curve would be flat and there would be no value. Only the extent of product differentiation by the trademark allows the producer to set the price and thus earn a value for the trademark.

Review of the 1988 ITC Model

In February 1988, the United States International Trade Commission (ITC) released a report entitled **Foreign Protection of Intellectual Property Rights and the Effect on U.S. Industry and Trade, USITC Publication 2065**. Pages 4-14 of the ITC report contain estimates of lost revenues and lost profits from infringement of intellectual property rights in 1986. The basis for these estimates was a questionnaire sent to 736 U.S. companies, including all of the Fortune

500. Of the 431 responding, 269 reported that intellectual property was of more than "nominal" importance to their business.

The ITC estimates of losses are based on a theoretical model using the following data:

- The value (or volume) of counterfeit sales;
- The value (or volume) of legitimate sales in the market where the counterfeiting occurs; and
- The rate of profit per units of sales that the legitimate could reasonably expect in this market if there were no counterfeiting.

In response to the survey, 244 companies reported their sales, but only 45 reported the information necessary to make estimates of loss based on the ITC model.

The ITC model begins with the same economic theory outlined in this report, namely, the analysis of the market demand for a product whose manufacturer has the exclusive right to manufacture and sell that product.

The ITC model is designed to make estimates based on information for a single geographical market. In order to do this, the authors must make several simplifying assumptions. The key assumption is that counterfeit supply is perfectly inelastic. This says that the counterfeiter will supply the same quantity of the counterfeited good regardless of price.

In addition, the model assumes that the counterfeit product is the same as the trademarked product. Finally, even with these assumptions, the model requires that an estimate be made of counterfeit sales. This is very difficult to determine, particularly as there might be a variety of counterfeit products, some close substitutes and some not, being sold at a range of prices, depending on the degree to which consumers recognize that they are counterfeits of inferior quality.

The ITC paper presents a general theoretical model which would be the basis for any analysis of this issue. To quantify the impact, however, the ITC essentially adopted another, more severely constrained model.

For these reasons, INTA and WEFA sought to build a model that would not be constricted by such limitations.

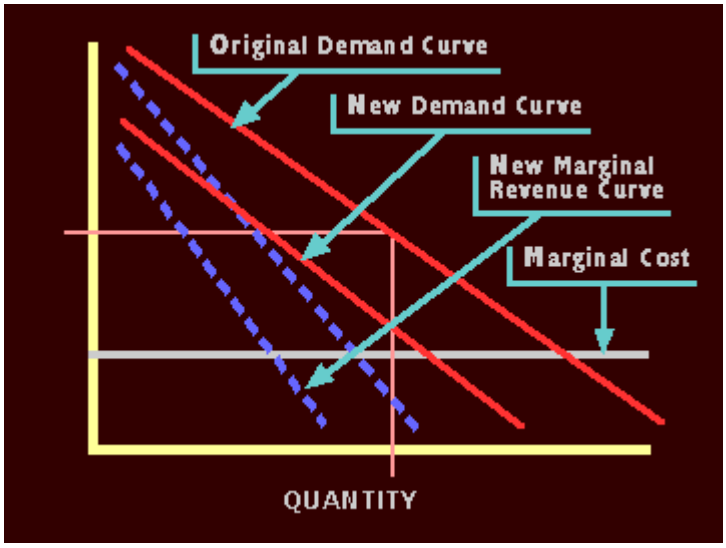
Design of the Model

To summarize the theory:

- The exclusivity of the trademark can be translated into economic terms as a downward sloping demand curve for the trademarked product. The more the trademark sets the trademarked products apart from competing products, the greater the trademark's value, and the steeper the demand curve.
- For simplicity, a flat marginal cost curve is assumed; that is, each additional unit of the product costs the same to produce as the last unit of the product.

As shown in Figure 4, the presence of counterfeiting and infringement produces a leftward shift in the demand curve. That is, at each price, the trademark owner can sell less of the trademarked product in a given market.

Figure 4. New Demand and Marginal Revenue Curves in the Presence of Counterfeiting



Thus, the implication of lower trademark protection is lower revenues, reflecting lower prices and/or lower sales volumes of the trademarked product in a given market. The shape of the new demand curve depends on the nature of the counterfeiting or infringement. The nature and amount of counterfeiting or infringement need not be known, so long as it is possible to measure the shift in demand.

Projected losses are shown in Figure 5.

Figure 5. New Demand and Marginal Revenue Curves in the Presence of Counterfeiting

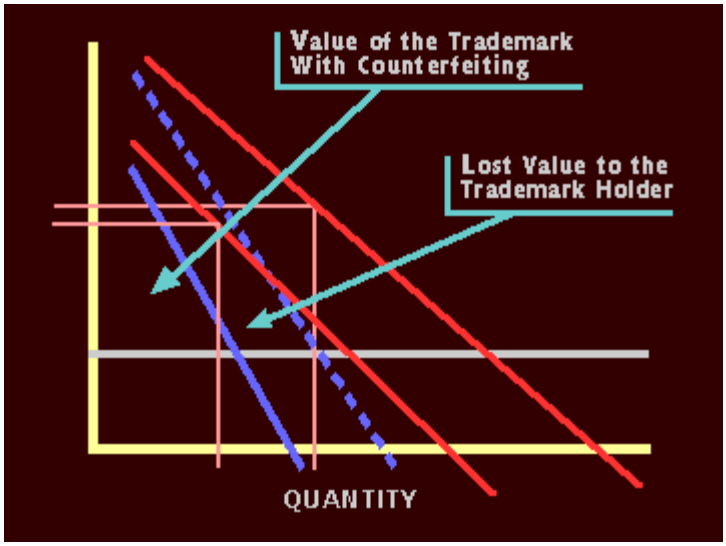


Figure 5 shows the difference between the value the trademark owners receive with and without the presence of counterfeiting, or the loss to the owner. This is the value that needs to be measured.

To make this measurement in a single market requires something like the ITC model. **The INTA model measures revenue directly by obtaining data for many different "markets," that is, for many different countries.**

We posit the existence of a mathematical relationship between total revenue and the degree of trademark protection. When we control for each country's tastes, income levels, and other factors, total revenue should vary with the degree of trademark protection. The model being estimated is:

$$TR=f(P,Z)$$

where TR is total revenue earned for a product or narrow group of products, P is the degree of trademark protection, and Z is the set of additional variables such as income per capita.

The specific econometric technique used is called Pooled Time-Series, Cross-Section Multivariate Analysis. This is a particular case of analysis of variance where data from different time periods and from different markets are pooled to give more data points and a better estimate. This is the standard approach making estimates of the type we are discussing here.

To carry out the estimate, revenue received from the sales of trademarked goods in many different markets (countries) would need to be examined to estimate the variation in revenue due to trademark protection. Data was needed for which there is significant variation in all of the important variables, namely:

- trademark protection
- income per capita
- price
- consumer preferences

Specifically, the model is as follows:

$$\begin{aligned}\log(s_{it}/n_{it}) = {} & a + b_1*\log(y_{it}) + b_2*\log(p_{it}) + b_3*\log(r_i) + b_4*\log(c_i) + \\ & c_1*\log(y_{it})*\log(r_i) + c_2*\log(p_{it})*\log(r_i) + c_3*\log(c_i)*\log(r_i) + \\ & c_4*\log(n_{it})*\log(r_i)\end{aligned}$$

where:

s_{it} = revenue from sales of trademarked goods in country i at time t,

n_{it} = population of country i at time t,

a = constant term,

$b_1, b_2, ...$ = constant coefficients of the first order terms,

$c_1, c_2, ...$ = constant coefficients of the second order terms,

y_{it} = per-capita income in country i at time t,

p_{it} = average price of the trademarked goods in country i at time t,

r_i = trademark protection of trademarked goods in country i,

c_i = share of total consumer expenditure on goods of type being measured, for example, clothing and footwear, in country i.

The coefficients on the terms in the equation that contain the trademark protection variable, r_i, can be used to estimate the economic impact of trademark protection.

WEFA has in its databanks data for all of the variables in this equation except for the sales and price of trademarked goods and the trademark protection variable. Therefore, INTA, with WEFA's assistance, undertook two parallel data-gathering activities:

- a trademark protection survey of members
- gathering data on sales revenues and quantities for apparel and footwear.

If trademark protection were perfect everywhere and thus without variation, the trademark protection variable would drop out of the equation. For there not to be circularity, the trademark protection variable had to be constructed in such a way as to be as independent as possible of the perceived level of counterfeiting. A key difference between the INTA model and the ITC model is that the INTA model does not make any assumptions as to the precise effect of counterfeiting on the demand curve.

The question as to how the factors and variables that go into trademark protection affect the level of counterfeiting and infringement and its impact on sales go to the heart of the model. The ITC model assumes that counterfeiting produces a simple leftward shift in the demand curve. That is, it assumes that at every price, demand is reduced by the same amount. This is equivalent to a simple linear model to determine the effect of counterfeiting. The model INTA used measures the impact of the degree of trademark protection on the dollar value of sales of the trademarked product directly, without making any assumptions about the actual level of counterfeiting or the effect, in turn, of the level of counterfeiting on sales.

The presence of other products that the consumer regards as close substitutes appear as a flattening of the demand curve. In the market for blue jeans, for example, there are a number of trademarks. The degree to which the consumer differentiates the trademarked products will affect the steepness of the demand curve, and thus the degree to which the trademark owner can set the price for their brand of blue jeans.

Although a counterfeit product is not the same as a competitive product, in the consumer's view it plays the same role. The entrance of a counterfeit product into a market gives the consumer a new choice. Given that choice, some consumers may buy the counterfeit product.

Counterfeiting affects the demand for the trademark owner's product in a number of ways. If the counterfeit product is a perfect substitute, then we might expect the type of shift the ITC model assumes. However, if the counterfeit product is inferior, as we assume is the usual case, the

counterfeiter must charge a lower price depending on the degree to which the product is inferior and the degree to which the consumer recognizes that the counterfeit good is inferior.

Another factor in the value of a trademark is goodwill. Goodwill is, in economic terms, the ability of a firm to sell the product above the cost of a generic item. Clearly, if a consumer assumes that the counterfeit is genuine, and discovers it is of poor quality, there is an intangible loss of goodwill that will react back on demand for the trademarked product. As noted above, INTA's model does not assume a particular mechanism for the effect of trademark protection on the demand for the trademarked good, only that trademark protection is a factor in that demand.

The Trademark Protection Variable

In order for WEFA to construct a trademark protection variable, the Economic Impact Subcommittee designed a Trademark Protection Survey and sent it to 230 INTA members with knowledge of the level of trademark protection available in the 40 countries in the study. The Trademark Protection Survey is provided as Appendix A.

The survey consists of 13 questions covering registration, maintenance, and enforcement of trademark rights. The answers are on a 1 to 5 scale where 1 represents strongly disagree and 5 represents strongly agree. The questions are all phrased such that strongly disagree indicates the highest degree of trademark protection.

The construction of the variable from the survey results involved a two-step process. First, the 13 responses on each questionnaire were averaged. Then the questionnaires were sorted by country and all of the responses for a given country averaged. In addition, INTA developed subjective weights for each of the answers to the survey.

Table 1 provides the final results for the trademark protection variable. As a result of this process, the minimum value of the trademark protection variable is 1.0, corresponding to the highest degree of trademark protection, and the maximum is 5.0, corresponding to the lowest degree of trademark protection.

Table 1. Trademark Protection Variable

Country	Survey Results	Number of Responses
Argentina	3.10	8
Australia	2.16	7
Belgium	2.04	4
Brazil	3.30	5
Canada	2.58	7
China	3.37	10
Chile	3.00	6
Cyprus	2.44	4
Czech Republic	3.15	6
Denmark	2.26	5
France	1.80	7
Germany	2.04	9
Greece	3.07	6

Hong Kong	2.12	8
Hungary	3.02	7
India	3.62	4
Indonesia	2.74	4
Israel	2.99	6
Italy	3.00	9
Japan	2.14	7
Korea, South	2.9	4
Malaysia	2.68	4
Mexico	3.02	5
Netherlands	2.6	5
Philippines	3.09	5
Pakistan	4.26	2
Poland	2.63	5
Russian Federation	3.74	2
South Africa	2.59	3
Singapore	2.69	3
Saudi Arabia	3.68	2
Spain	3.24	11
Sweden	3.07	8
Switzerland	2.2	4
Thailand	3.06	5
Turkey	2.76	5
Taiwan	2.59	6
United Kingdom	2.14	8
United States	2.81	7
Venezuela	3.73	7

Sales Data

The Economic Impact Subcommittee then surveyed 46 INTA member companies in the apparel and footwear industry or which license their marks for use on apparel or footwear. Companies were asked to provide sales and quantity data in as many of the 40 countries as possible for the period 1991-1995. Twelve companies provided data, although not every company's data covered a wide enough range of countries to be valid for the purposes of the model.

Results

The estimated models included, for each of the 40 countries, per capita sales or market share, per-capita income, trademark protection, and population. Price was not successfully included in the equation, nor was the share that all apparel or footwear consumption is of total consumption. The time period was likely to have been too short to see a price effect. The share that the product category is of total consumption does not appear to affect trademarked goods, possibly because they are a small niche of the overall category. The measure of trademark protection entered the estimated equations only in combination with population rather than as a separate variable. This implies that the effect of lower trademark protection is very strongly affected by the size of the country.

In pooled time-series, cross-section analysis, the econometric technique that WEFA used in the estimation of the equations, one has the choice as to whether to vary the coefficients and the constant term across companies. In the work being reported here, WEFA chose to have the same coefficients for all companies, but to vary the constant term.

Further, as the equations are in logarithmic form, the coefficients are the elasticities.[1] Thus, the requirement of having the same coefficients for each company is then just requiring that each company's sales have the same elasticities with respect to the right-hand-side variables. By estimating separate constant terms for each company, WEFA is essentially estimating separate equations for each company.

Another consideration was that the time covered by the data, five years, is not sufficient for a significant price effect. The variation in sales in each country by each company over time most probably has more to do with company decisions, marketing, and other factors that have nothing to do with the variables that WEFA has included in the equation.

Therefore, WEFA examined each year in the data independently as well as in combination. As a result of this approach, there are separate equations for each year as well as equations covering all of the years.

The four equations that provide the results over the period 1992 to 1995 appear in Appendix B. The coverage in the 1991 data is not sufficient for those data to be included.

There are two equations for each of apparel and footwear. The first equation has per-capita sales as the dependent variable. This is the equation form described at the beginning of this report.

In addition, WEFA estimated an equation for market share. This divides each company's sales by the total sales of apparel or footwear in the country.

Because the data was on a company basis, the cross-terms in the model equation were too highly correlated with the linear terms to provide estimates of coefficients for either. Further, price, apparel or footwear as a ratio to total consumption, and the linear form of the trademark protection variable all entered with the wrong sign. Therefore, each equation contains on the right-hand side only per- capita income, the product of trademark protection and population, and the constant terms for each company.

Each of the equations was estimated for each year, 1992 though 1995 and for the full period. Table 2 provides the estimates of the elasticity of sales relative to trademark protection. The interpretation of each of the values shown in Table 2 is as follows. An elasticity of -0.11, for example, implies that a 10% increase in the trademark protection variable (10% less trademark protection) would result in a change (decrease) in sales of -1.1% (the product of the coefficient with the percentage change, 10% in this case).

Table 2. Estimates of the Elasticity of Sales Relative to Trademark Protection for Each Year of the Data and for the Entire Period					
	Estimation Period				
Equation	**1992**	**1993**	**1994**	**1995**	**1992- 1995**
Apparel					
Per capita sales	- 0.11	- 0.16	- 0.29	- 0.28	- 0.20
Market share	- 0.18	- 0.22	- 0.35	- 0.34	- 0.26
Footwear					
Per capita sales	- 0.25	- 0.25	- 0.29	- 0.25	- 0.26
Market share	- 0.28	- 0.27	- 0.31	- 0.27	- 0.28
Average	- 0.21	- 0.23	- 0.31	- 0.28	- 0.25

It is apparent that the estimated elasticities for sales relative to trademark protection are significantly smaller in 1992 and 1993 for the apparel equations. There is not significant variation across the estimated values for footwear. The variation across the different forms of the equation are not significantly different from one another. Further, the results for apparel and footwear are not significantly different.

The major result is the stability of the estimated equation and of the elasticity results across the different equation forms and products. WEFA concluded that the elasticity of sales relative to trademark protection over the period 1992 through 1995 for both apparel and footwear is -0.25.

Table 3 presents the calculations for each country of the percentage decrease in sales as a result of decreased levels of trademark protection. The calculation involves only the value of the trademark protection variable for the country and the elasticity of -0.25:

$$\text{Percent loss of sales} = (\text{value of trademark protection variable})^{-0.25} - 1.$$

If the value of the trademark protection variable were 1, then the percent loss of sales is zero. If the value of the trademark protection variable were 5 and the elasticity -0.25, the percent loss of sales is -33%. Thus, the maximum possible percent loss of sales with this model as estimated is 33%.

In Table 4, these percentages of loss of sales are applied to 1995 sales in each country of the 10 companies that participated in the study. Lost sales are estimated to have averaged 22% across all countries and total lost sales are estimated to have been $2 billion out of total sales of $9 billion. With the margin of error factored in, the resulting estimate of losses worldwide in 1995 for apparel and footwear is 22% ±4%.

Table 3. Trademark Protection Results							
	Trademark Protection Variable	Applying Elasticity	Percent Loss of Sales		Trademark Protection Variable	Applying Elasticity	Percent Loss of Sales
Country	T	$T^{-0.25}$	$T^{-0.25} - 1$	Country	T	$T^{-0.25}$	$T^{-0.25} - 1$
France	1.80	0.864	- 13.6%	S. Korea	2.90	0.766	- 23.4%
Belgium	2.04	0.837	- 16.3%	Israel	2.99	0.760	- 24.0%
Germany	2.04	0.837	- 16.3%	Italy	3.00	0.760	- 24.0%
Hong Kong	2.12	0.829	- 17.1%	Chile	3.00	0.760	- 24.0%
Japan	2.14	0.827	- 17.3%	Mexico	3.02	0.759	- 24.1%
UK	2.14	0.826	- 17.4%	Hungary	3.02	0.758	- 24.2%
Australia	2.16	0.825	- 17.5%	Thailand	3.06	0.756	- 24.4%
Switzerland	2.20	0.821	- 17.9%	Greece	3.07	0.756	- 24.4%
Denmark	2.26	0.815	- 18.5%	Sweden	3.07	0.755	- 24.5%
Cyprus	2.44	0.800	- 20.0%	Philippines	3.09	0.754	- 24.6%
Canada	2.58	0.789	- 21.1%	Argentina	3.10	0.753	- 24.7%
South Africa	2.59	0.788	- 21.2%	Czech Rep.	3.15	0.751	- 24.9%
Taiwan	2.59	0.788	- 21.2%	Spain	3.24	0.745	- 25.5%
Netherlands	2.60	0.788	- 21.2%	Brazil	3.30	0.742	- 25.8%
Poland	2.63	0.785	- 21.5%	China	3.37	0.738	- 26.2%
Malaysia	2.68	0.781	- 21.9%	India	3.62	0.725	- 27.5%
Singapore	2.69	0.781	- 21.9%	Saudi Arabia	3.68	0.722	- 27.8%
Indonesia	2.74	0.777	- 22.3%	Venezuela	3.73	0.720	- 28.0%
Turkey	2.76	0.776	- 22.4%	Russia	3.74	0.719	- 28.1%
US	2.81	0.772	- 22.8%	Pakistan	4.26	0.696	- 30.4%

Table 4. Trademark Protection Loss: Apparel & Footwear			
	1995 Sales	% Loss	$ Loss
Argentina	$2,203,276	-25%	$543,215
Australia	$78,856,741	-18%	$13,838,325
Belgium	$52,045,618	-16%	$8,484,372
Brazil	$40,939,373	-26%	$10,570,004
Canada	$236,071,582	-21%	$49,777,337
Chile	$5,498,559	-24%	$1,322,057
China	$30,476,780	-26%	$7,977,006

Cyprus	$414,707	-20%	$82,800
Czech R	$5,199,350	-25%	$1,295,451
Denmark	$29,330,418	-18%	$5,411,654
France	$261,172,938	-14%	$35,593,703
Germany	$424,022,220	-16%	$69,191,277
Greece	$42,418,756	-24%	$10,362,117
Hong Kong	$47,942,256	-17%	$8,213,206
Hungary	$28,669,947	-24%	$6,929,018
India	$1,305,395	-28%	$359,189
Indonesia	$303,805	-22%	$67,772
Israel	$5,724,019	-24%	$1,372,860
Italy	$379,954,182	-24%	$91,334,761
Japan	$392,712,832	-17%	$67,906,043
Korea, S	$51,587,718	-23%	$12,046,213
Malaysia	$19,600,673	-22%	$4,287,419
Mexico	$49,001,526	-24%	$11,817,985
Netherlands	$100,551,393	-21%	$21,342,085
Pakistan	$7,300	-30%	$2,219
Philippines	$41,470,800	-25%	$10,192,853
Poland	$26,589,559	-21%	$5,707,534
Russia	$139,712	-28%	$39,269
South Africa	$7,070,176	-21%	$1,495,695
Saudi Arabia	$4,518,772	-28%	$1,257,239
Singapore	$5,129,905	-22%	$1,123,652
Spain	$167,340,222	-25%	$42,632,792
Sweden	$43,769,520	-24%	$10,703,483
Switzerland	$54,668,027	-18%	$9,783,755
Taiwan	$24,445,201	-21%	$5,172,240
Thailand	$479,369	-24%	$116,804
Turkey	$47,098,688	-22%	$10,552,742
UK	$302,329,336	-17%	$52,499,816
US	$6,416,548,617	-23%	$1,462,624,147
Venezuela	$4,405,290	-28%	$1,234,998
Total	$9,432,014,558	-22%	$2,055,265,107

Conclusion

The results of the model clearly demonstrate the high price that trademark owners must pay because of inadequate trademark protection. This representative sampling of companies in one industry lost a staggering one-fourth of their sales on average due to trademark infringement and counterfeiting, yet many countries still lack the will or the resources to address the problem.

Trademark owners are not the only ones who suffer when countries lack strong protection for trademark rights. A country's economic growth is affected by the degree to which companies feel confident that their valuable intellectual property assets will be protected. Public health and safety are also put at risk when counterfeiters focus their efforts on such products as baby formula and airplane and automobile parts. Governments should be aware that it is in their own best interests to see to it that their country is a safe place for trademarks.

INTA's Anti-Counterfeiting and Enforcement Committee is working on a number of projects designed to educate governments, corporations, outside counsel, and the general public on the problems posed by counterfeiting and infringement and on the ways in which various laws can be used to thwart the efforts of those who would engage in such practices. Current activities of the Committee include the analysis of various countries' compliance with the enforcement provisions of the TRIPs Agreement and the development of INTA's own model guidelines for internal enforcement laws.

INTA will continue the fight for better protection of trademarks and hopes that governments and industry can work together to raise awareness of the importance of enforcement of intellectual property rights.

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1 The elasticity is the percentage change in sales relative to the percentage change in the right-hand-side variable.

Appendix A: Trademark Protection Variable Survey

Country: _____ Date: _____

Your Position (circle one): (1) In-house counsel for trademark owner; or (2) Practitioner in the country

Years of experience in enforcement of trademark rights in this country? _____

Please circle the degree of your expertise in trademark enforcement in this country:

(1) Great Expertise (2) Substantial Expertise (3) Some Expertise
(4) Some Experience (5) Little or No Experience

Please rate the extent to which you agree or disagree with the following statements for the country in question.

1 = Strongly Disagree	4 = Somewhat Agree
2 = Somewhat Disagree	5 = Strongly Agree
3 = No Opinion	N.I. = No Information or Do not Know

1. Trademark registration and maintenance standards (or lack thereof) unduly prevent effective protection and enforcement.	1 2 3 4 5 N.I.
2. Protection and enforcement mechanisms for well-known marks are ineffective.	1 2 3 4 5 N.I.
3. Use requirements and standards unduly restrict effective enforcement of trademark rights.	1 2 3 4 5 N.I.
4. Registered user and/or license recordal requirements unduly restrict enforcement of trademark rights.	1 2 3 4 5 N.I.
5. Temporary and preliminary injunctive relief is unduly difficult to obtain.	1 2 3 4 5 N.I.
6. Permanent injunctive relief is unduly difficult to obtain.	1 2 3 4 5 N.I.
7. Monetary damages are unduly difficult to obtain.	1 2 3 4 5 N.I.
8. Destruction of infringing goods is unduly difficult to obtain as a remedy.	1 2 3 4 5 N.I.
9. Customs procedures and remedies are either unavailable or ineffective as an enforcement tool.	1 2 3 4 5 N.I.

10. Evidentiary rules and standards unduly prevent effective enforcement of trademark rights.	1	2	3	4	5	N.I.
11. Restrictive or unavailable discovery procedures unduly prevent effective enforcement of trademark rights.	1	2	3	4	5	N.I.
12. Criminal sanctions for trademark counterfeiting are not reasonably available.	1	2	3	4	5	N.I.
13. The process for indictment and criminal prosecution of trademark counterfeiters is unduly difficult for effective enforcement of trademark rights.	1	2	3	4	5	N.I.

Please indicate the amount of trademark counterfeiting in this country (circle one):

(1) insignificant (2) small (3) moderate (4) large (5) very large

Appendix B: Equations Estimated for the Period 1992 Through 1995

APPAREL EQUATIONS

Per Capita Sales

lnpsalesa

= + 1.39732 * lnpgdpda - 0.20198 * lnpra - 2.90960 (company44)
(20.2008)[2] (3.51972) (2.19467)
- 3.80854 (company42) - 0.53200 (company34) - 3.71303 (company24)
(4.65908) (0.40128) (4.70579)
+ 2.20438 (company23) - 1.96123 (company10) - 2.75589 (company15)
(2.71744) (1.80974) (3.36943)
- 7.04485 (company8) - 3.83270 (company5)
(8.79391) (4.87859)

Adjusted R-Squared[3]= 0.7783

Market Share Of Sales

lmktsalesa%

= + 0.48528 * lnpgdpda - 0.26313 * lnpra - 2.28956 (company44)
(6.91539) (4.51986) (1.70232)
- 3.20599 (company42) + 0.08803 (company34)
(3.86592) (0.06545)
- 3.17331 (company24) + 2.75925 (company23)
(3.96431) (3.35286)
- 1.35070 (company10) - 2.19801 (company15)
(1.22857) (2.64895)
- 6.52618 (company8) - 3.29099 (company5)
(8.03010) (4.12921)

Adjusted R-Squared = 0.7179

where:

lnpsalesa	=	the natural logarithm of per capita sales,
lnpgdpda	=	the natural logarithm of per capita gross domestic product,
lnpra	=	the natural logarithm of the product of the trademark protection variable and population,
company I	=	constant term for company I,
lmktsalesa%	=	the natural logarithm of sales relative to total apparel consumption (market share).

FOOTWEAR EQUATIONS

Per Capita Sales

lnpsalesf

= + 1.07034 * lnpgdpdf - 0.25969 * lnprf + 1.73441 (company44)
(14.1323) (4.45234) (2.02770)
+ 4.69398 (company34) + 0.27870 (company27) - 0.07768 (company10)
(3.52142) (0.32143) (0.08689)
- 2.28019 (company8) + 1.66499 (company5)
(2.68342) (1.97800)

Adjusted R-Squared = 0.6318

Market Share Of Sales

lmktsalesf%

= + 0.04457 * lnpgdpdf - 0.28030 * lnprf + 4.63651 (company44)
(0.55065) (4.49672) (5.07205)
+ 7.69361 (company34) + 3.33496 (company27) + 3.17226 (company10)
(5.40067) (3.59907) (3.32005)
+ 0.72763 (company8) + 4.70904 (company5)
(0.80125) (5.23466)

Adjusted R-Squared = 0.4631

where:

lnpsalesf	=	the natural logarithm of per capita sales,
lnpgdpdf	=	the natural logarithm of per capita gross domestic product,
lnprf	=	the natural logarithm of the product of the trademark protection variable and population,
company i	=	constant term for company I,
lmktsalesf%	=	the natural logarithm of sales relative to total apparel consumption (market share).

2. Numbers in parenthesis are the t-statistics associated with the coefficients. The t-statistics is the ratio of the standard error of the estimate of the coefficient to the value of the coefficient. Values greater than 1.7 indicate the coefficient is significantly different from zero at a 95% level of confidence.

3. The adjusted R-squared measures the percentage of the dependent variable explained by the estimated equation.

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