

A Quantitative Analysis of Damages in Trade Secrets Litigation

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Trade secrets constitute an important component of many companies' intellectual property portfolio, and trade secrets are an integral driver of economic growth. Yet there is a surprising lack of empirical research related to the valuation of trade secrets. The collection of U.S. civil case law pertaining to damages awarded for misappropriation of trade secrets offers a potentially rich area of study. This discussion presents a quantitative analysis of damages for trade secrets misappropriation in civil litigation. This damages analysis may also provide insights into the trade secrets valuation.

INTRODUCTION

The misappropriation of trade secrets reflects a significant business risk. Trade secrets are elements of business that drive investment, innovation, and economic growth. Economists estimate that trade secrets comprise roughly two-thirds of the value of companies' intellectual property portfolios and reflect a key competitive advantage.¹

The theft of trade secrets can be more problematic for smaller companies due to a greater reliance on a few trade secrets. In 2009, a Valspar Corporation employee downloaded proprietary paint formulas from his employer's computer system, which he intended to take to a new employer in China.²

The company estimated the value of the formulas at \$20 million, representing an eighth of its entire operating profits.

The valuation of trade secrets is not well studied from an empirical perspective. The collection of U.S. civil case law pertaining to the misappropriation of trade secrets offers a potentially rich area of study. After all, trade secrets are validated in a litigation environment.

No legal trade secret status actually exists until a judgement is rendered by the court, unlike other forms of intellectual property.

Damages are based on this validation and reflect an insightful measure of value. Yet trade secrets case law remains a largely neglected area of valuation research.

This discussion presents a quantitative analysis of damages for trade secrets misappropriation in civil litigation. And, this discussion includes an overview of trade secrets law from a damages analysis perspective.

PRIOR STUDIES

Unlike litigation for patents, trademarks, and copyrights, damages in trade secrets litigation is an understudied subject. A review of the published literature revealed three prior studies of case law. None of the studies provided a substantive analysis of damages in trade secrets civil litigation.

The first study was published in 2006 by John Lerner of Harvard Business School.³ In his study, Lerner analyzed a sample of federal court and state court cases in California and Massachusetts involving trade secrets misappropriation.

Lerner determined that the courts found a trade secrets violation in two-thirds of the cases. Only 9 percent of the cases recorded an award of damages (about 50 of the 583 cases considered). In those



cases where damages were awarded, the average award was \$1.5 million in 2004 dollars.

No statistical data was presented in the published study regarding the range or variability of these damages. Further, the study presented no discussion of the methodologies employed by the courts to determine these damages.

The second study was published by Nicola Searle of the University of St. Andrews in Scotland.⁴ The study analyzed 21 cases of criminal trade secrets misappropriation based on violation of the Economic Espionage Act of 1996 (EEA).

Searle found that the values of misappropriated trade secrets ranged from a low of \$6,000 to a high of \$272 million in 2008 dollars, with a mean of \$4.5 million. But the mean reflected a relatively high variability (the standard deviation was 1.4 times the mean), and Searle noted that 79 percent of the misappropriated secrets in the study were estimated to be worth less than \$5 million.

While informative, it is unclear how well this study of criminal trials translates to damages in civil proceedings.

The third study was published in 2010 by *Gonzaga Law Review* by a team of attorneys from O'Melveny & Myers, LLP.⁵

The study analyzed a sample of federal and state court cases: (1) 358 state appellate court cases from 1995 to 2008 and (2) 394 federal court cases from 1950 to 2008. The selected cases all involved trade secrets issues.

An interesting finding of this study was that 78 percent of the state court cases involved alleged employee misappropriators, as compared to only

58 percent of federal court cases (the remainder pertaining mostly to misappropriation by business partners).

While the study provided a number of statistics characterizing the posture and application of law, it presented no statistics or substantive discussion of damages.

A reason for the dearth of prior studies of trade secrets litigation is the difficulty in compiling and analyzing case data. Neither federal nor state courts systemically track trade secrets litigation, so identifying trade secrets cases is a challenge. And, for many states, cases are published only at the appellate level. Many state trial decisions, therefore, are not available for analysis.

METHODOLOGY

The present study, as summarized in this discussion, comprises a review by the author of federal and state civil court cases involving damages awards for trade secrets misappropriation. The author defined “trade secrets cases” as decisions published from 1950 to 2015 in which a U.S. district court or state appellate court decided a substantive issue based on trade secret civil law.

Such cases were identified initially as cases in which the term “trade secrets” appeared at least three times based on the keyword search of a commercial legal database.

This initial search resulted in the identification of 4,738 U.S. district court decisions and 1,629 state appellate decisions for the 1950 to 2015 period.⁶ A subsequent winnowing process reduced the number of decisions by selecting only those mentioning a derivation of the terms “damages” or “award.”

This winnowing process resulted in 717 U.S. district court decisions and 426 state appellate decisions that were potentially relevant to the damages study.

The author then compiled two sample populations. The two sample populations were compiled using a computer algorithm that randomly selected 25 percent of the decisions from each group of potentially relevant federal and state court decisions.

This random selection produced a federal sample population of 180 U.S. federal court decisions and a state sample population of 104 state appellate court decisions.

The author read every case in the two sample populations and coded them based on multiple criteria. The author excluded decisions from the sample populations that failed to present an opinion of damages for each case at hand, including an amount of damages.⁷

This review produced a federal sample population of 42 cases and a state sample population of 42 cases. The author then performed a quantitative analysis based on the sample populations. The findings of this analysis are discussed below.

TRADE SECRETS DEFINED

U.S. trade secret law protects secret, valuable business information from theft and espionage.

A trade secret generally consists of information that conveys a competitive advantage to its holder so long as the information is kept secret by reasonable measures. Whether information qualifies as a trade secret under federal or state law is a question of fact for the court.

One federal court described trade secrets as follows:

A trade secret is really just a piece of information (such as a customer list, or a method of production, or a secret formula for a soft drink) that the holder tries to keep secret by executing confidentiality agreements with employees and others and by hiding the information from outsiders by means of fences, safes, encryption, and other means of concealment, so that the only way the secret can be unmasked is by a breach of contract or a tort.⁸

Trade secrets tend to lose value once they are no longer secret. The court may enjoin a party from disclosing a trade secret and award monetary damages to compensate for the loss of trade secret value in cases of misappropriation.

Ordinarily, the holder possesses no legal rights to exclude others from using a trade secret that has been obtained in good faith, such as by reverse engineering or independent discovery. This circumstance is unique to trade secrets.

Patents, trademarks, and copyrights, on the contrary, convey the right of exclusive use and other legal protection in exchange for public disclosure.



Trade secrets can coexist with patents, trademarks, and copyrights. For example, a trade secret may be based on information related to the use of an issued patent or published patent application that is not disclosed in the patent specification. A trade secret may be based on confidential information used to produce a product that is marketed under a trademark. And, a trade secret may be based on the source code of a software application where the corresponding object code (compiled software) is protected by a copyright.

THE EVOLUTION OF TRADE SECRETS LAW

Trade secrets historically have been protected through state common law using a combination of property, contract, and tort law theories. In one of the first trade secrets cases, for example, a Massachusetts state court held in 1868 that an employee had breached a nondisclosure agreement by disclosing confidential information about the manufacture of certain machinery.⁹

Rather than applying a straight contract remedy, the court provided injunctive relief based on its recognition of the employer's property right in the confidential information.

Trade secrets law developed from the early days in a haphazard manner with protections varying from state to state, often with wide disagreement over legal concepts. In 1939, the *Restatement*

(*First of Torts*) reflected the first attempt to unify trade secrets law and to clarify its generally accepted principles.

For many years thereafter, the Restatement was the primary authority cited in most trade secrets cases. The *Restatement* enunciated six factors to consider in determining whether information qualifies as a trade secret, as follows:¹⁰

- The extent to which the information is known outside of the company
- The extent to which it is known by employees and others involved in the company
- The extent of measures taken by the company to guard the secrecy of the information
- The value of the information to the company and to its competitors;
- The amount of effort or money expended by the company in developing the information
- The ease or difficulty with which the information could be properly acquired or duplicated by others

The Uniform Trade Secrets Act

The 1979 *Restatement (Second) of Torts* did not address trade secrets law. To fill the gap, and to further unify and modernize trade secrets law, the National Conference of Commissioners on Uniform State Laws published the Uniform Trade Secrets Act (UTSA).¹¹

The UTSA offered a statutory model that states could decide to adopt. Over time, most did. As of the date of this discussion, the UTSA has been adopted by all states except New York, North Carolina, and Massachusetts. Some states have made amendments to the UTSA, so slight variations exist among a number of the adopting states.

The UTSA was designed to establish common rules for the handling of trade secrets disputes. It provides a broader definition of trade secrets than the *Restatement*. The *Restatement* requires that a trade secret be “a process or device for continuous use in operation of business.”

Many courts interpreted this language to:

1. preclude internal business information from protection because such information is not a process or device and
2. preclude research and development (R&D) information from protection because such information does not reflect continuous use.

The UTSA merely requires that the information (1) derives independent economic value, actual or potential, from not being generally known to—and not being readily ascertainable by proper means by—other persons who can obtain economic value from its disclosure or use, and (2) is the subject of efforts that are reasonable under the circumstances to maintain its secrecy.¹²

Under the UTSA, a trade secret can be any information that satisfies these two requirements, including internal business information and R&D information.

Damages for misappropriation of trade secrets under the UTSA is similar to the *Restatement*. Damages can include “the actual loss caused by misappropriation and the unjust enrichment caused by misappropriation that is not taken into account in computing damages for actual loss.”¹³

A plaintiff can be awarded both actual damages and unjust enrichment to the extent that there is no double counting. Double counting can occur when damages calculated under the two theories are based on the same sales transaction.

Damages also can include a reasonable royalty as an alternative form of monetary relief. The UTSA differs from the *Restatement* by expressly providing for injunctive relief.

Monetary relief—whether based on actual loss, unjust enrichment, or a reasonable royalty—is appropriate only for the period in which information is entitled to protection as a trade secret, plus the additional period, if any, in which a misappropriator retains a competitive advantage because of the misappropriation.

Once information is publicly known, it no longer can be considered a trade secret. No monetary damages ordinarily would be awarded for the misappropriator’s use of the information following its loss of trade secret status. But the courts have recognized that the plaintiff may not be made whole if the misappropriator retains a “head start” advantage.

An award of monetary relief based on a period of time after the information loses its status as a trade secret can offset this ill-gotten competitive advantage.

Determination of Damages, Generally

The determination of trade secrets damages involves two primarily goals:

1. To make the victim whole “but for” the misappropriation

2. To strip the misappropriator of any unjust enrichment gained from the misappropriation

These goals are compensatory in nature.

In some cases, the courts may deem it necessary to award punitive or “enhanced” damages for the purpose of creating a disincentive for would-be misappropriators and as a punishment for egregious behavior.

The determination of damages is very case-specific. In *University Computing Company v. Lykes-Youngstown Corporation*, the Fifth Circuit provided the following insight in this 1974 opinion regarding trade secret damages:

Our review of the case law leads us to the conclusion that every case requires a flexible and imaginative approach to the problem of damages. We agree with the Court of Appeals for the Sixth Circuit that “each case is controlled by its own peculiar facts and circumstances,” and accordingly we believe that the cases reveal that most courts adjust the measure of damages to accord with the commercial setting of the injury, the likely future consequences of the misappropriation, and the nature and extent of the use the defendant put the trade secret to after misappropriation.¹⁴

The wide array of facts and circumstances encountered in trade secret cases requires flexibility in the calculation of damages. State legislatures and courts have responded to this need by supporting an assortment of damage approaches for use by plaintiffs and their experts in the calculation of trade secret damages.

Determination of Actual Loss Damages

Actual loss refers to a specific injury to the plaintiff. Often this injury is determined as lost profits based on the incremental operating income attributable to the use of the trade secret.

If lost profits resulted from lost revenue, incremental costs related to this revenue are deducted. These are costs that generally would have been incurred only if the lost revenue had been realized by the plaintiff.

Lost revenue may result from lost sales of the protected product or service, lost sales of complementary products and services (convoled

sales), and price erosion resulting from the misappropriator’s entry into the market with a competing product or service.

Courts also have accepted determinations of actual loss based on the loss of business value resulting from the misappropriation and the investment value of the trade secret.¹⁵ However, actual loss does not always equate to the investment value of the trade secret to the plaintiff.

The Fifth Circuit in *University Computing Co.* stated:

[N]ormally the value of the secret to the plaintiff is an appropriate measure of damages only when the defendant has in some way destroyed the value of the secret. The most obvious way this is done is through publication, so that no secret remains. Where the plaintiff retains the use of the secret, as here, and where there has been no effective disclosure of the secret through publication, the total value of the secret to the plaintiff is an inappropriate measure.¹⁶

The proper measure of actual loss reflects what is required to make the plaintiff whole. If the plaintiff retains some use of the trade secret, perhaps because it has been used by the misappropriator but not otherwise disclosed to the public, the actual loss may be something less than the investment value of the trade secret to the plaintiff or the full contribution of the trade secret to business value.

Determination of Unjust Enrichment Damages

Under the premise that a defendant was unjustly enriched due to misappropriation, a plaintiff may seek the defendant’s wrongfully gained profits as a remedy. These profits are available as a remedy to the extent that they are not derived from sales considered in the calculation of the actual loss.

When calculating the defendant’s profits, there is divergence among the courts about the means by which deductible costs should be determined.

Generally, for purposes of calculating a defendant’s profits, deductible costs may be based on one of the following:

1. Incremental costs—costs that generally vary with sales volume
2. Direct costs—variable costs and direct overhead costs

3. Fully absorbed costs—all costs including variable costs and direct and indirect overhead costs

Under the federal statutes pertaining to trademark and copyright infringement matters, when the defendant's profits are being sought as damages in trademark and copyright infringement matters, the plaintiff is responsible for identifying gross sales only.¹⁷

The burden then shifts to the defendant to prove deductions for costs and sales unrelated to the wrongful activity. While there is no explicit provision for shifting the burden of proving defendant's profits under the UTSA, some courts have endorsed this type of approach.

The defendant's profits may not be the only measure of its unjust enrichment. In *University Computing*, the Fifth Circuit observed, "the appropriate measure of damages, by analogy to patent infringement, is not what plaintiff lost, but rather the benefits, profits, or advantages gained by the defendant in the use of the trade secret."¹⁸

In some circumstances, the misappropriator may show no profits, yet it derives a benefit or advantage from misappropriation of plaintiff's trade secret nonetheless. This is often the case where the misappropriator uses the trade secret to short-cut product development, saving time and costs. The plaintiff may seek these costs saved as a remedy.

For example, in *Salisbury Labs, Inc. v. Merieux Labs, Inc.*, the court recognized that limiting relief to the defendant's meager profits would have left the plaintiff less than whole.¹⁹

The court awarded \$1 million to the plaintiff based on the calculation that plaintiff's employees had spent in excess of 10,000 hours developing the trade secret. The average wage hour times the number of development hours yielded the estimated development costs.

The defendant's use of the trade secret to avoid these development costs conferred a benefit for which defendant's profits alone did not reflect.

Determination of Reasonable Royalty Damages

Under the 1985 amendments, the UTSA expressly provides for the award of a reasonable royalty in lieu of damages measured by any other methods.²⁰

A reasonable royalty represents compensation for the use of the trade secret that a willing licensor and willing licensee would have negotiated in an

arm's-length setting prior to infringement or misappropriation.

On one hand, a reasonable royalty represents a form of actual loss to a plaintiff under the premise that, had the misappropriator negotiated a license instead of misappropriating, the plaintiff would have generated additional revenue and profits from the license.

On the other hand, a reasonable royalty represents a benefit or advantage wrongfully obtained by the misappropriator, thus also representing a form of unjust enrichment.

The Fifth Circuit in *University Computing* discussed the factors to be considered in determining a reasonable royalty for trade secrets misappropriation:

[T]he proper measure is to calculate what the parties would have agreed to as a fair price for licensing the defendant to put the trade secret to the use the defendant intended at the time the misappropriation took place. . . . In calculating what a fair licensing price would have been had the parties agreed, the trier of fact should consider such factors as the resulting and foreseeable changes in the parties' competitive posture; the prices past purchasers or licensees may have paid; the total value of the secret to the plaintiff, including the plaintiff's development costs and the importance of the secret to the plaintiff's business; the nature and extent of the use the defendant intended for the secret; and finally whatever other unique factors in the particular case which might have affected the parties' agreement, such as the ready availability of alternative processes.²¹

Here, the Fifth Circuit echoed its 1971 seminal opinion in *Georgia-Pacific Corp. v. United States Plywood Corp.*, wherein the court delineated a list of 15 factors to consider in the determination of a reasonable royalty.²²

The *Georgia-Pacific* analysis was originally directed to the determination of a reasonable royalty for patent infringement. It has since been adopted in one form or another for use in nonpatent cases. *University Computing* has been frequently cited in reasonable royalty cases for trade secrets misappropriation.

Some states adopted the 1979 version of the UTSA without the express provision for a reasonable royalty. Even in those states, a review of case law suggests that the reasonable royalty remedy is available. *Veritas Operating Corp. v. Microsoft Corp.*,²³

for example, was decided under the Washington state statute, which makes no mention of a reasonable royalty.

Finding that the defendant's unjust enrichment could be measured by a reasonable royalty, the court denied the defendant's motion to exclude the testimony of the plaintiff's damages expert on this issue.

THE GROWTH OF TRADE SECRETS LITIGATION

Trade secrets litigation has increased substantially in the past few decades in both the federal and state forums. While the earliest trade secrets matters date back to the 1800s, trade secrets litigation was relatively obscure until the 1970s.

The following figures and exhibits illustrate the exponential growth of this area of litigation in recent history.²⁴

Figure 1 presents the number of trade secrets cases in U.S. district courts from 1950 to 2015.²⁵ Federal cases, notably, increased 14 percent per year between 2001 and 2012.

Since 2012, growth has moderated. One explanation for this growth pattern is linked to the increase in patent cases over roughly the same period.

Misappropriation of trade secrets is claimed alongside patent infringement in about a third of federal cases. Some legal commentators have pointed further to an increasing risk of patent invalidation by the courts as motivation for more reliance on trade secret protection.²⁶

However, patenting behavior does not appear to fully explain the increase in trade secret litigation. The percentage of technically based trade secrets involved in litigation has diminished significantly since 2001, as discussed in more detail below.

A more complete explanation would reflect the increasing recognition by the courts of the value of internal business information—such as customer information and business strategies. Adoption of the UTSA has encouraged this judicial recognition.

Figure 2 presents the number of trade secrets cases in state appellate courts for the same period. While state appellate decisions represent a fraction of state court trade secrets matters, they provide a reasonable illustration of the increase in state court cases.

DISCUSSION OF THE FINDINGS

This section discusses the findings of the quantitative analysis of damages in federal and state trade secrets civil litigation.

Figure 1
Trade Secrets Cases in U.S. District Courts per Year
1950–2015

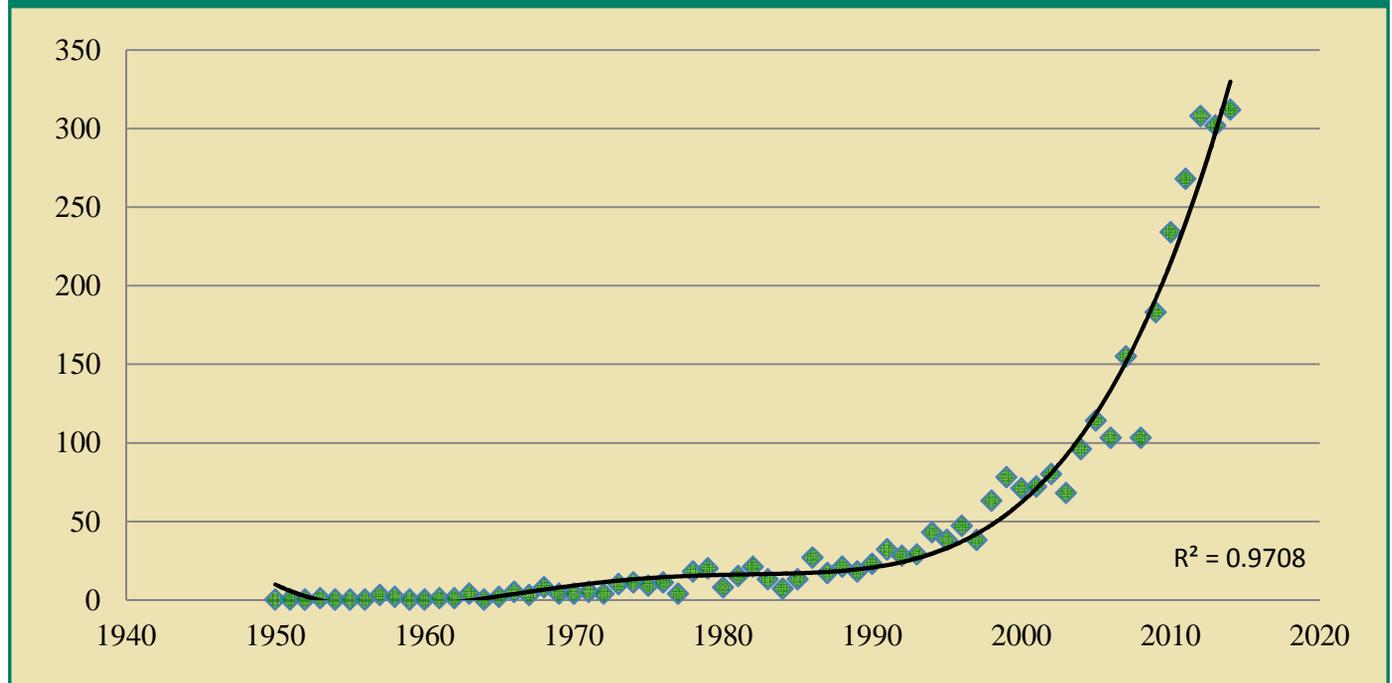
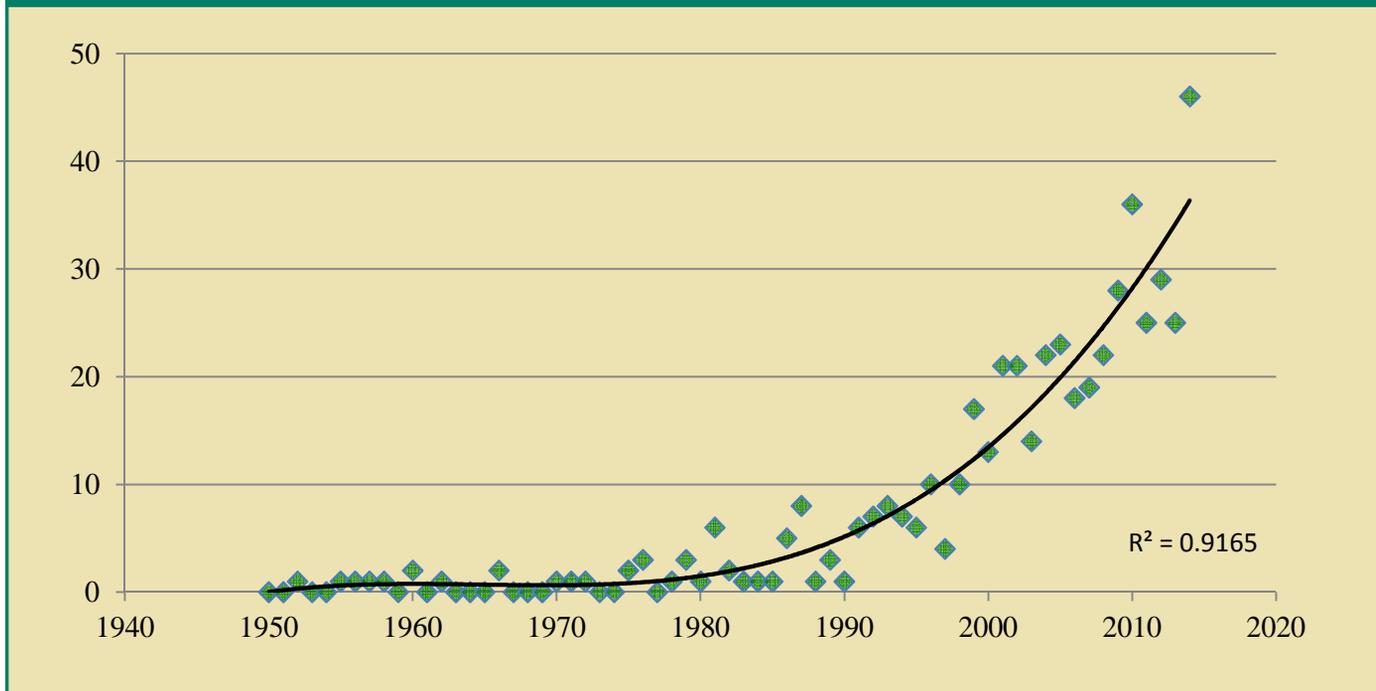


Figure 2
Trade Secrets Cases in State Appellate Courts per Year
1950–2015



Trade Secrets Divide Evenly between Technical and Business Information

For purposes of the analysis, the samples of the trade secrets cases were coded into the following five general categories in order to reflect the type of trade secret(s) that was misappropriated:

1. Business information—customer lists, other customer information, business strategy, marketing plans, information about suppliers, and the like
2. Technical know-how—technical processes, methods, formulas, algorithms, excluding software
3. Software—computer programs
4. Negative information—information typically describing what does not work or what to avoid
5. Other or unknown

Business information includes information internal and external to the business. Theoretically, a distinction in the coding could be made between the internal information (customer information, business strategy, etc.) and the external information (information about suppliers and competitors).

However, judicial opinions often do not provide sufficient clarity or detail to make a proper distinction between the two types of business information.

A judicial opinion, for example, may state that a misappropriator downloaded customer information, marketing plans, and “pricing information,” the latter of which could be interpreted to pertain to supplier pricing information. Further study may be warranted on this issue.

The findings of the analysis with regard to the type of trade secrets are presented in Figure 3. These findings reflect trade secrets for which damages were awarded. The findings are categorized by jurisdiction (federal or state) and time period.

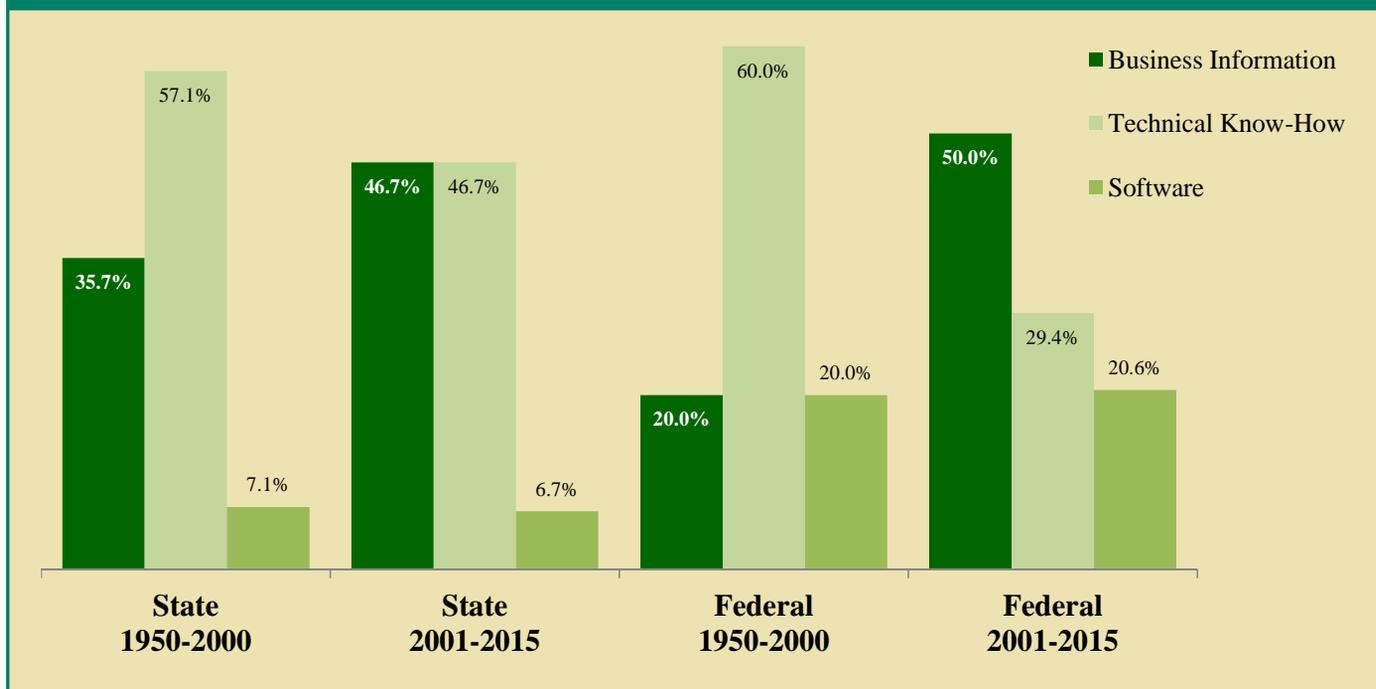
No negative information was expressly identified in the samples by the courts, and none was inferred. The trade secrets discussed in the sample cases were found to be reasonably identifiable as business information, technical know-how, or software.

The findings suggest that business information has gained more importance as a protected trade secret in both the federal and state courts. Business information has now reached parity with technical know-how and software.

Adoption of the UTSA by the states likely has been a driver of this increase, as it broadened the definition of trade secrets to include forms of business information not recognized by the *Restatement*.

This increase is particularly noteworthy in the federal courts, where business information

Figure 3
Type of Trade Secret



increased from 20 percent of trade secrets prior to 2001 to 50 percent in the period thereafter.

One explanation for the significantly greater increase in the federal courts is that trade secrets disputes involving business information have traditionally been pursued in the state courts.

Trade secrets in the federal cases were predominantly technical in nature, in large part due to the linkage between patents and technical trade secrets. Approximately 37 percent of trade secrets misappropriation claims in federal courts were filed with patent infringement claims during the 1950 to 2000 period.

As business information has become more protected, the relative share of technical know-how has decreased. That the relative share of software has remained steady is noteworthy. Its stability on a percentage basis actually reflects a modest increase in the number of cases involving damages awarded for theft of software protected as trade secrets.

Top Industries

The sample trade secrets cases were coded for a number of broadly defined industries. For each case, the primary industry of the trade secret holder was discerned by the author from the information provided in the court decision.

The top 10 industries associated with the trade secrets samples are presented in Exhibit 1.

These industries represent about 80 percent of the trade secrets holders. While confidential technology and business information are utilized for virtually every industry, it is not surprising that most of the industries in the list are technology based.

The federal and state findings differ significantly in certain industries. One plausible explanation for this difference is that:

1. the federal case-related industries tend to be ones where companies rely more on patents for protection (e.g., medical devices and construction tools) and
2. the state case-related industries tend to be the ones where companies tend to rely less on patents and more on secrecy to protect innovations (e.g., chemicals).

Misappropriators Are Predominately Employees and Business Partners

The sample trade secrets cases were coded to indicate whether the misappropriator in each case was:

1. an employee,
2. a business partner, or
3. other.

**Exhibit 1
Top 10 Industries**

Industry	SIC Codes	1950-2015	
		Federal	State
Information Technology	737	19.0%	19.0%
Miscellaneous Services	738, 76, 89	21.4%	11.9%
Chemical	28	2.4%	14.3%
Consumer Products	20, 23, 25, 30, 35	4.8%	11.9%
Resources and Utilities	29, 46, 49	4.8%	11.9%
Construction	15, 16, 17	9.5%	2.4%
Manufacturing and Industrial Products	35	7.1%	4.8%
Health Care	80	7.1%	2.4%
Medical Devices	38,807	7.1%	0.0%
SIC = Standard Industrial Classification			

**State Law
Applied**

Trade secrets civil law is state law. The sample trade secrets cases were coded to reflect the state law applied. Federal courts select the appropriate state law to apply in adjudicating claims for trade secrets misappropriation. In this vein, federal and state case data were aggregated for this analysis.

The top 10 states for applied law are presented in Exhibit 2. Collectively, these states represent 57 percent of the trade

secrets cases for which damages were awarded. California, Texas, and New York lead the list, which is unsurprising given these states' history as hubs of economic growth and innovation.

However, an analysis of the case data after 2000 indicates the distribution of applied state law has flattened somewhat. This flattening is likely explained, at least in part, by (1) a greater dispersion of economic development among the states and (2) the adoption of the UTSA by all but three states, which broadened the definition of trade secrets and encouraged litigation in more jurisdictions.

Type of Remedy

The sample trade secrets cases were coded to indicate the type of remedy awarded. The types of remedies available are as follows:

1. Nominal damages
2. Compensatory damages
3. Punitive damages
4. Injunction
5. Attorney's fees

A summary of the analysis regarding remedies is presented in Figure 5.

Based on the findings, compensatory damages were awarded in about 90 percent of the cases. In

The term “business partner” is broadly defined to include joint ventures and development agreements between companies.

The findings for identifying the misappropriator are presented in Figure 4. In the state cases, the misappropriator was an employee 85 percent of the time. This finding is consistent with the Almeling, et al., state study which found 77 percent of the state trade secrets cases filed between 1995 and 2009 involved alleged misappropriation by an employee.²⁷

In the federal cases, the identity of the misappropriator was more evenly split between employee (44 percent) and business partner (56 percent). This finding is consistent with the Almeling, et al., federal study that found 52 percent and 40 percent of the federal trade secrets cases filed between 1995 and 2007 involved alleged misappropriation by an employee and a business partner, respectively.²⁸

One plausible explanation for the higher incidence of misappropriation by business partners in federal cases is that disputes involving business partnerships are more likely to satisfy diversity jurisdiction requirements or invoke claims based on federal law, such as patent infringement.

The broad takeaway is that in almost all of the civil cases, the misappropriator is someone the trade secret holder knows.

Figure 4
Misappropriator

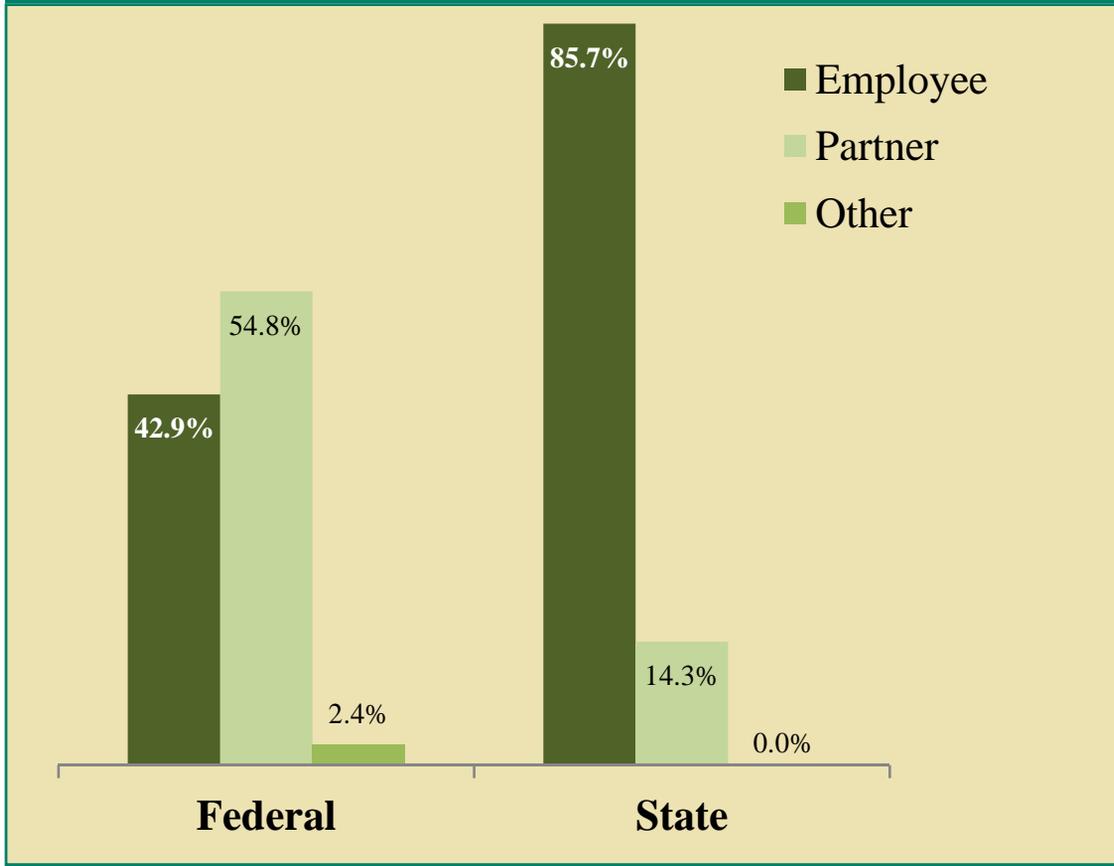
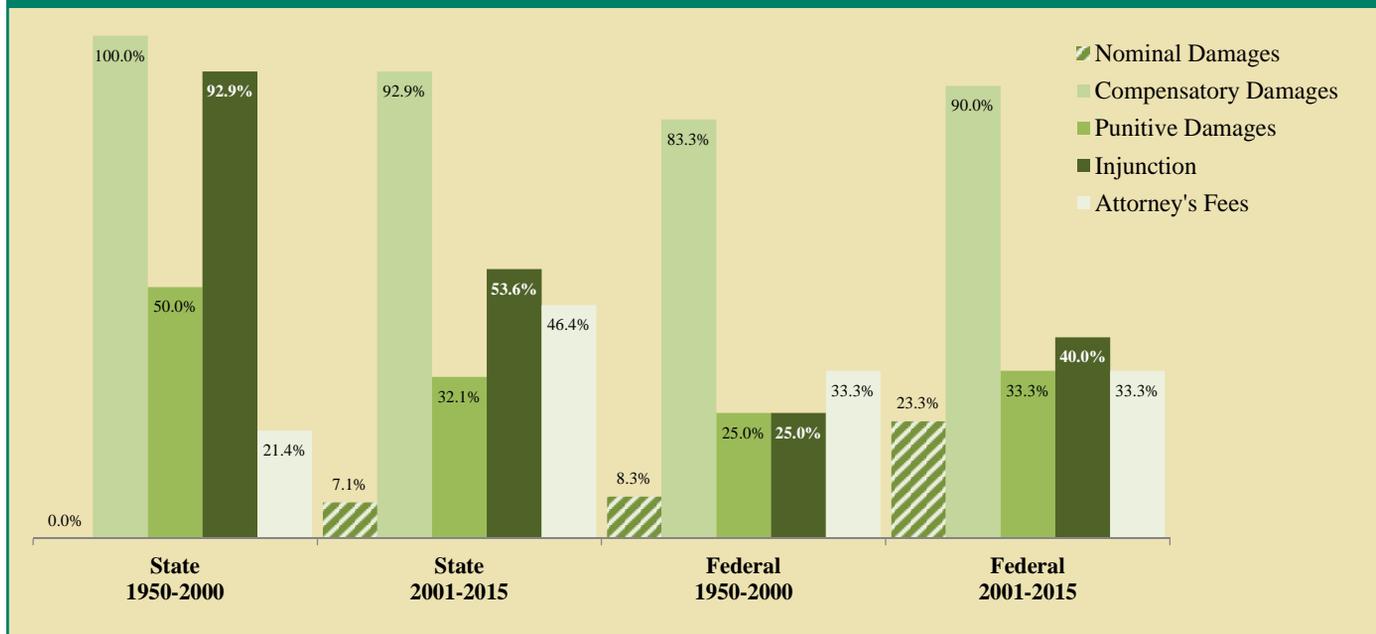


Exhibit 2
State Law Applied

State	1950–2000	2001–2015	1950–2015
California	16.0%	5.1%	8.3%
Texas	8.0%	6.8%	7.1%
New York	8.0%	5.1%	6.0%
Kansas	4.0%	6.8%	6.0%
North Carolina	4.0%	6.8%	6.0%
Iowa	8.0%	5.1%	6.0%
Illinois	4.0%	5.1%	4.8%
Utah	0.0%	6.8%	4.8%
Connecticut	4.0%	5.1%	4.8%
South Carolina	0.0%	5.1%	3.6%

Figure 5
Type of Remedy



the remaining cases, nominal damages (e.g., \$1) were awarded. Punitive damages were awarded in about a third of the cases. As discussed earlier, the sample cases were selected under the presumption of a monetary damages award. The analysis does not address the cases where injunctive relief was awarded but no monetary damages were awarded.

The award of injunctive relief in conjunction with monetary relief has declined significantly in the state courts over time.

One plausible explanation for the decline is the increasing hesitation by the courts of restricting competitive business activity if monetary relief, such as an ongoing reasonable royalty, can provide an adequate remedy for the harm. The plaintiff ordinarily bears the burden of proving that the harm would be irreparable absent an injunction. This issue would benefit from further study.

Compensatory Damages

For the analysis, the federal and state sample cases were coded to indicate the damages theory and dollar amount of the compensatory damages awarded for trade secrets misappropriation. The theory was coded using four categories:

1. Lost profits
2. Unjust enrichment
3. Reasonable royalty
4. Undetermined

The coding could include multiple selections. In fact, approximately 22 percent of federal cases and 13 percent of state cases involved monetary awards for both lost profits and unjust enrichment.

A summary of the damages theory analysis is presented in Figure 6. Lost profits represented the predominant damages theory for the reviewed period. The main difference between the federal and state cases was the greater use of a reasonable royalty in federal decisions.

One plausible explanation for this difference is the federal courts' familiarity with the reasonable royalty from patent litigation. This familiarity likely encouraged its adoption in trade secrets matters.

Moreover, prior to the UTSA, some state courts took a narrow view of a reasonable royalty as a form of actual loss. These courts often required a showing of an established royalty as a condition to awarding a reasonable royalty.

This qualification may help to explain why, for a time, the state courts appeared to favor unjust enrichment where actual loss could not be shown, even after a reasonable royalty was expressly provided through statutory law. In this vein, it is noteworthy that most of the reasonable royalty awards in the state cases sample occurred after 2010.

It is also possible that the difference between the federal and state results is largely a matter of semantics. Some reasonable royalty analyses could have been accepted by the state courts under the

label of unjust enrichment damages.

The labeling ambiguity is understandable given that a reasonable royalty can represent a means to the same end as unjust enrichment: to disincentivize the misappropriation of trade secrets. This issue would benefit from further study.

While the determination of damages is highly subject to the facts and circumstances of each case, a review of previous awards can provide useful benchmarks and insights.

The findings related to the amount of compensatory damages are presented in Exhibits 3 and 4. All amounts are presented in 2015 dollars.

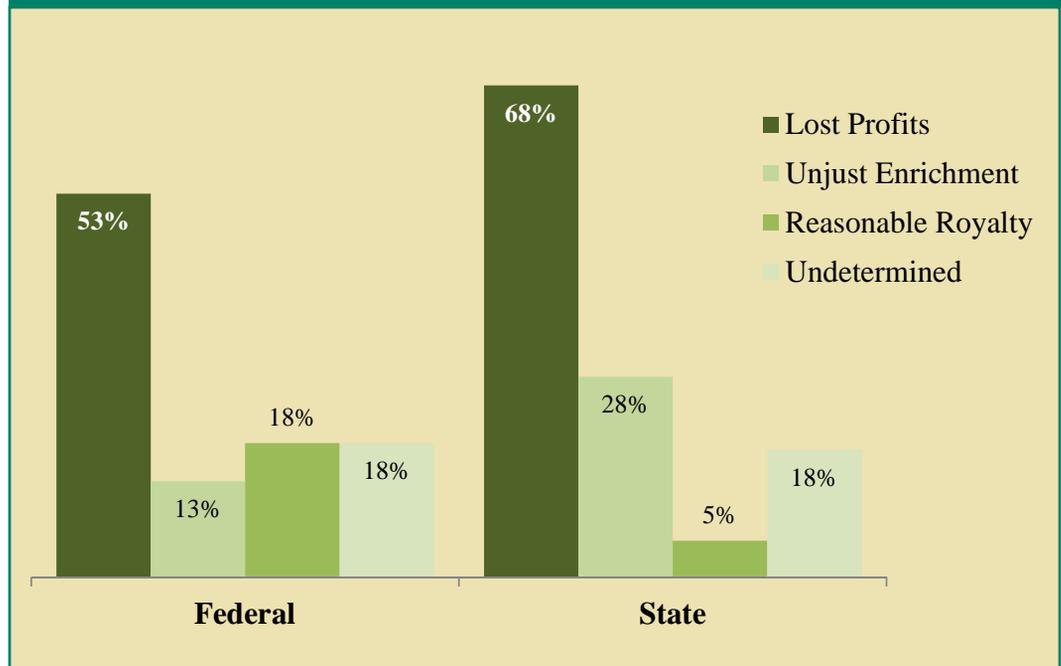
In the federal cases sample, the range was wide for the 1950–2015 period. The low was \$1 (nominal damages) and the high was approximately \$40 million. The average award was approximately \$3 million. This average is somewhat misleading given the relatively high variability of the data (the standard deviation is 2.5 times the mean).

Three-fourths of the awards were less than \$2.5 million. The median award between 2001 and 2015 was approximately \$450,000, falling from nearly \$1 million in the prior era. The median is a better indicator of a typical award.

The state cases sample presented an even wider range of trade secrets damages amounts: a low of \$1 (nominal damages) to a high of \$525 million.

The high amount represented the largest award in the case samples. It pertains to a 2014 decision by the Supreme Court of Minnesota, in *Seagate Technology,*

**Figure 6
Compensatory Damages Theory
1950–2015**



LLC v. Western Digital Corp.,²⁹ to affirm the trial court’s award for unjust enrichment.

Such large awards are rare. Three-fourths of the state court awards for trade secret misappropriation were less than \$575,000. The median state court award was approximately \$200,000.

The distribution of the awards of compensatory damages for the 1950 to 2015 period is presented in Figure 7. The figure illustrates that federal court

**Exhibit 3
Compensatory Damages in 2015 Dollars**

	1950–2000		2001–2015	
	Federal	State	Federal	State
Minimum	\$1	\$1,178	\$1	\$1
1 st Quartile	416,513	26,500	97,350	54,575
Median	999,741	73,777	443,453	201,676
Mean	4,488,147	663,121	2,470,257	19,073,897
Standard Deviation	11,818,355	1,449,000	5,386,374	99,152,874
3 rd Quartile	1,678,585	205,914	2,436,325	572,486
Maximum	40,053,772	4,634,754	27,553,708	525,000,000
Number	11	14	31	28

Exhibit 4
Compensatory Damages in 2015 Dollars

	1950–2015	
	Federal	State
Minimum	\$1	\$1
1 st Quartile	106,430	32,214
Median	716,580	183,260
Mean	2,998,752	12,936,972
Standard Deviation	7,490,133	80,944,996
3 rd Quartile	2,139,026	511,308
Maximum	40,053,772	525,000,000
Number	42	42

awards tend to be higher: 45 percent exceeded \$1 million. The corollary is that the majority of the awards in federal and state cases were less than \$1 million.

Compensatory damages can be categorized by type of damages methodology. The summary of this analysis is presented in Exhibit 5.

In terms of frequency, lost profits represented the most common damages theory in both federal and state cases. It also yielded the lowest median (approximately \$460,000 for federal cases and \$128,000 for state cases), with the exception of the reasonable royalty in state cases. Unjust enrichment and reasonable royalty damages generally were two to four times higher.

One plausible explanation for this discrepancy is that unjust enrichment, and to some extent reasonable royalty, are theories based on the goal of deterring unfair competition.

Damages under those theories are premised on the improper benefit the defendant has gained from using the misappropriated trade secrets, as opposed to what loss of use, if any, the plaintiff has experienced.

The defendant bears the burden of any uncertainty in determining the appropriate amount of damages to make the plaintiff whole, including the removal of any ill-gotten competitive advantage. This uncertainty likely translates into higher amounts of damages.

Figure 7
Distribution of Compensatory Damages
1950–2015
in 2015 Dollars



Exhibit 5
Compensatory Damages by Damages Methodology
1950–2015
In 2015 Dollars

	Lost Profits		Unjust Enrichment		Reasonable Royalty	
	Federal	State	Federal	State	Federal	State
Minimum	\$29,010	\$553	\$43,337	\$27,787	\$263,121	\$421
1 st Quartile	108,795	49,224	44,726	121,055	1,202,406	50,316
Median	462,512	128,487	1,856,049	256,947	2,690,799	100,210
Mean	4,036,462	466,516	1,162,142	44,190,202	2,605,355	100,210
Standard Deviation	10,408,530	772,254	1,022,638	151,417,149	1,756,711	141,124
3 rd Quartile	1,955,991	593,452	1,856,049	709,764	4,043,350	150,105
Maximum	40,053,772	3,410,030	2,010,550	525,000,000	4,792,052	200,000
Number	20	27	5	12	7	2

CONCLUSION

Trade secrets constitute an important component of companies' intellectual property portfolio and an integral driver of economic growth. The misappropriation of trade secrets reflects a significant business risk. Yet there is a surprising lack of empirical research related to the valuation of trade secrets.

The collection of civil case law pertaining to the misappropriation of trade secrets offers a potentially rich area of study.

Trade secrets civil litigation has increased substantially in the past few decades in both the federal and state forums. Whereas trade secrets cases were once relatively obscure, the courts now process hundreds of such cases a year.

This discussion presents a first of its kind quantitative analysis of damages for trade secrets misappropriation in civil litigation. Damages reflect a measure of value. Therefore, this analysis of trade secrets damages may also provide insights into the valuation of trade secrets.

Notes:

1. Forrester Consulting, "The Value of Corporate Secrets" (March 2010), available at <http://www.nsi.org/pdf/reports/The%20Value%20of%20Corporate%20Secrets.pdf>.
2. Office of the National Counterintelligence Executive, Report to Congress on Foreign Economic Collection and Industrial Espionage—2009-2011 (October 2011), available at http://www.ncsc.gov/publications/reports/fecie_all/Foreign_Economic_Collection_2011.pdf
3. Josh Lerner, "Using Litigation to Understand Trade Secrets: A Preliminary Exploration," working paper (August 2006), available at SSRN: <http://ssrn.com/abstract=922520>.
4. Nicola Searle, "Damages Valuations of Trade Secrets: Evidence from the Economic Espionage Act of 1996," working paper of the 4th Annual Conference of the EPIP Association (September 2009).
5. The study was published in two parts: David S. Almeling, et al., "A Statistical Analysis of Trade Secret Litigation in Federal Courts," *Gonzaga Law Review* 45, no. 2 (2010); and Davod S. Almeling, et al., "A Statistical Analysis of Trade Secret Litigation in State Courts," *Gonzaga Law Review* 46, no. 1 (2011).



6. Note that more than one decision may occur per trial, as the courts may decide on various motions related to a single trial.
7. A mention of nominal damages was interpreted as \$1 if no particular dollar amount was specified.
8. *ConFold Pac. v. Polaris Indus.*, 433 F.3d 952, 959 (7th Cir. 2006).
9. *Peabody v. Norfolk*, 98 Mass. 452 (1868).
10. Restatement (First) of Torts §757, comment b.
11. The National Conference of Commissioners on Uniform State Laws was established in 1892 as a non-profit association to assist states with legislation that brings clarity to critical areas of state statutory law. It published the UTSA in 1979 and further amended it in 1985.
12. Uniform Trade Secrets Act §1(4) (amended 1985).
13. Uniform Trade Secrets Act §3(a) (amended 1985).
14. *University Computing Co. v. Lykes-Youngstown Corp.*, 504 F.2d 518 (5th Cir. 1974).
15. See, e.g., *Cardiovention, Inc. v. Medtronic, Inc.*, 483 F. Supp. 2d 830, 846 (D. Minn. 2007).
16. *University Computing Co.*, supra note 15.
17. See 15 U.S.C. § 1117(a)(3) for trademark damages and 17 U.S.C. § 504(b) for copyright damages.
18. *University Computing Co.*, supra note 15, citing *International Industries, Inc. v. Warren Petroleum Corp.*, 248 F.2d 696, 699 (3d Cir. 1957).
19. *Salsbury Labs, Inc. v. Merieux Labs, Inc.*, 908 F.2d 706, 714 (11th Cir. 1990).
20. Uniform Trade Secrets Act §3(a) (amended 1985).
21. *University Computing Co.*, supra note 15.
22. *Georgia-Pacific Corp., v. United States Plywood Corp.*, 318 F. Supp. 1116 (S.D.N.Y. 1970) *aff'd*, 446 F.2d 225 (1971).
23. *Veritas Operating Corp. v. Microsoft Corp.*, 2008 U.S. Dist. LEXIS 112135 (W.D. Wash. 2008).
24. The trend lines shown in both figures reflect an ordinary least squares regression analysis with over 91 percent of the variability in the plotted data explained by the trend line equations ($R^2 > .91$).
25. The number of federal and state cases was determined based on counting the first published decision for each trade secrets case identified from a commercial legal database since 1950, excluding any subsequent decisions related to the same case.
26. See, e.g., Dana Finberg, "Trade Secrets Offer an End-Around to Patent Ineligibility," *The Recorder* (August 19, 2014).
27. Almeling, et al., "A Statistical Analysis of Trade Secret Litigation in State Courts," supra note 6, at 69.
28. *Ibid.*
29. *Seagate Technology, LLC v. Western Digital Corp.*, 854 N.W.2d 750 (Minn. 2014).

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