CLASS ACTION TORT COSTS AND THE CONSEQUENCES FOR INNOVATION

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EXECUTIVE SUMMARY

This paper examines the state of existing research on the relationship between tort costs in the United States and the incentive to invest in innovative activities as measured by research and development intensity. We review some recent examples of litigation impacts on innovative industries and companies as a means of illuminating the work of academic researchers, with particular attention to developments in the evolution of the class action system and the effects of these developments on decisions about business risk-taking.

Research and development (R&D), notably private sector research and development, has been largely responsible for the economic growth of the recent decades. The economic and social significance of R&D expenditures will only increase as global competition intensifies. Yet, the very nature of innovation—the development of new products whose aspects are multifaceted and not entirely describable *ex ante*—opens companies in the current legal environment to myriad potential class action lawsuits. And some of these class action lawsuits are frivolous and involve excessive awards or settlements. This paper finds that evidence is accumulating that one effect of escalating tort costs is to reduce incentives to innovate. In short, *rising liability exposure threatens to depress innovation and thereby weaken one of the engines of economic growth.*

I. TORT COSTS IN THE UNITED STATES

The United States' tort liability system is clearly the most expensive in the world. With the exception of Italy, no country comes even close to the U.S. in total direct costs[1]. Conservatively estimated, the United States tort system had direct costs of $233 billion,

or 2.23% of GDP[2]. The relatively high cost of the U.S. tort system has made it a target for reform efforts at both the federal and state level.

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The rationale for an efficient tort system is straightforward. The threat of liability provides firms incentives to consider the social consequences of their actions, for example, by compelling them to make safer products. Tort liability also provides a compensation mechanism for individuals who incur losses as a result of negligence. Likewise, tort liabilities give firms additional incentives to accurately represent their wares when bringing products and services to market.

The argument made by critics of the U.S. tort system, is that, in fact, the costs associated with the system in its current form are excessive. Insofar as tort liability is intended to change the behavior of firms, critics allege that the U.S. tort system is inefficient. In so much as it discourages investment in novel R&D, or new products, the tort system may discourage firms from undertaking new innovation.[3]

It should be noted here that there is no consensus that the sole goal of an efficient tort system is to create incentives for firms to make their products and services safer. Some argue that the tort system should also take into account the "retributive aims of punishment."[4] In fact, it could be argued that current law reflects this conception of tort. The notion of "punitive damages"—compensation beyond economic and non-economic damages—suggests strongly that existing jurisprudence recognizes the notion that "retributive aims" are a valid component of the tort process.

Putting aside these important questions temporarily—what is an "efficient" tort system? and what are the proper aims of tort liability?—it is instructive to simply look at

the scope and trend of tort costs. The three studies discussed below highlight the scope and magnitude of the economic inefficiencies that result from the U.S. tort system in its current forms. Later, we will narrow our focus to one of them in order to examine the impact of the tort system on innovation.

A recent study (part of an annually updated research effort) by Tillinghast-Towers Perrin, a consultancy that has been tracking tort-costs for more than two decades, is a good place to start.

- The 2.23% ratio of tort costs to GDP is the highest since 1990.
- U.S. tort costs grew by 13.3% in 2002, the second consecutive year of double-digit growth.
- This 13.3% rate of growth greatly outpaced overall economic growth of 3.6%.
- The high tort growth rates of the past two years suggests that we may be entering a decade of high tort cost growth comparable to what was experienced during the 1970s and 1980s
- U.S. tort costs were $809 per person in 2002, compared to a mere $12 per person in 1950 (in 2002 dollars.)[5]

The sheer size of these figures, even when compared with other countries, is not *prima facie* evidence of an inefficient tort system. However, a number of credible analyses do make a very compelling case that the U.S. tort system needs repair.

Similarly, an analysis conducted by the Council of Economic Advisers in April 2002 argues that inefficiencies in the tort system can be construed as a sort of "tort tax", given that these tort liability costs must take the form of higher prices for consumer goods, reduced wages, and/or reduced shareholder value.[6] The authors consider three scenarios: the first regards tort costs not related to economic and non-economic damages and reasonable administrative costs as excessive; the second broadens this so that non-economic damages are excessive as well; and, the final scenario regards the entire tort

system as inefficient. This final scenario is based on the assumption that damages are essentially "random" and therefore tort liability does not create proper incentives for firms.[7]

Using these three scenarios, the CEA generated three estimates of the tort "tax" for the year 2000.[8] These costs grew by 26% between 2000 and 2002. By 2002 these costs, under the three scenarios, stood at:

- Cautiously, $101 billion;
- In the intermediate case where non-economic damages are seen as excessive, $169 billion;
- And in the extreme case whereby the entire tort liability system is viewed as inefficient, $233 billion.[9]

Another example of the economic consequences that result from the tort system involves innovation. An analysis conducted by W. Kip Viscusi of Harvard University and Michael Moore of Duke University published in the *Journal of Political Economy* (1993) found a non-linear empirical relationship between product liability costs and research and development.[10] Simply put, while low levels of product liability did stimulate R&D expenditures, excessive levels of liability led to a decline in R&D expenditures. Their analysis identified 11 industry groups for which liability costs exert a negative effect on innovation. Given the crucial role of innovation in economic growth and well-being, the scope and logic of their argument deserves further consideration especially in light of changes in the nation's product liability system in the past two decades, particularly class action. We discuss their argument in greater detail after an examination of the evolution of class actions.

II. Class Actions: Legal Doctrines, State Courts, and Entrepreneurial Attorneys

This section describes the confluence of three overarching trends that taken together are largely responsible for the inefficiency and excess of the tort liability system observed today. First, this section discusses a change in legal doctrine that took place in the sixties that radically expanded participation in lawsuits by the members of a class. Second, we discuss the rise of county courts—as opposed to federal courts—as a venue for class actions, and in particular the emergence of "magnet" courts that are hospitable to frivolous claims. Finally, we discuss the activities of entrepreneurial class action attorneys, whose aims are not necessarily compatible with the consumers they purport to represent, or the social purposes of tort liability law.

Within the American legal system, class action cases have their roots in the 19th Century, when federal courts first provided for group litigation. Major revisions took place in 1966 when the Supreme Court issued a new version of the rule permitting class actions. By most accounts, changes were motivated by civil rights litigation, which named whole categories of people as plaintiffs in the fight against segregation. The changes also addressed technical questions such as how to notify the members of a class that suits had been filed on their behalf.

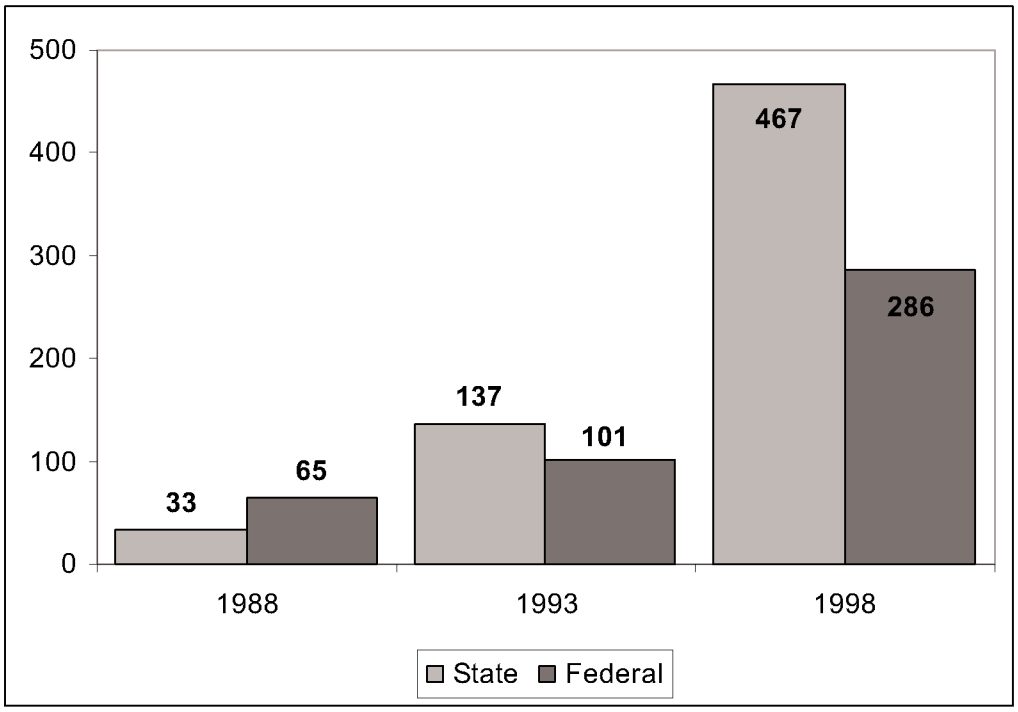
Crucially, the rules changes did away with a 30 year old distinction which dealt with the conditions under which members of a class were "bound" by—that is, were active participants in–the lawsuit. That is, for some cases, all members of a class were bound by the suit, whereas in other cases, only those who explicitly chose to participate were bound by the suit. The new rules did away with the requirement that for certain

types of suits, all members of a class had to come forward (or "opt-in") and declare themselves to be members of that class if they wished to be beneficiaries. After the changes, those who wished to be excluded had to "opt-out" and declare that they were not participants. *The net effect of these changes was to dramatically increase the sum of potential damages.* Class actions are intended to have the same effect as other types of tort liability: to compensate the injured and deter potentially negligent actors from injuring others. Yet, these changes in the class action system contributed greatly to the inefficiencies of the current tort system.

Another factor contributing to tort liability inefficiency is the growth of "magnet" county courts that are often unduly hospitable to frivolous class actions. By most (though not all) accounts, the number of class action cases has been growing in the states.[11] And the emergence of courts in the states that effectively specialize in class actions has increased liability costs. There is no national registry of class action cases in state courts, and data is hard to come by. Measured by press reports and judicial filings, the number of cases in some states has grown dramatically[12]. Press reported class actions in California, for example, grew from 354 cases in 1995/96 to 997 cases in 1996/97.[13] A survey by Class Action Watch of 32 large, primarily Texas based companies showed a growth in class actions cases as results below (Figure 1) show.

> AFTER 1966, THOSE WHO WISHED TO BE EXCLUDED FROM CLASS ACTION SUITS HAD TO "OPT-OUT" OF PARTICIPATION. THE NET EFFECT WAS TO DRAMATICALLY INCREASE THE SUM OF POTENTIAL DAMAGES AND INCREASE FEES FOR ATTORNEYS.

Figure 1: Results of Survey of Corporations –Number and Venue of Class Action Lawsuits, 1988, 1993 and 1998[14]



Given that corporate respondents have an interest in restricting many class action cases, skeptics may question these figures. Interestingly, the RAND Institute also surveyed trial lawyers who specialize in class action. They confirmed what corporate respondents have been insisting; the number of class action cases has been increasing.[15] With the rise of county ("magnet") courts that appear to specialize in class action (e.g., Madison County Illinois, or Jefferson County, Mississippi) the incentives to file claims grow. Madison County, Illinois experienced a 1,850% increase in class action filings between 2000 and 2002.[16]

This trajectory may not be a bad thing by some accounts. As outlined above, some argue that tort liability functions as a sort of adjunct to regulatory enforcement. On this view, where regulatory regimes are inadequate, or the resources of state and federal regulatory agencies too limited to pursue enforcement, tort liability provides an additional

layer of protection for consumers. However, this line of reasoning may be crucially flawed in two ways: first, if aggregate harms are large, individual harms may be still be too small to compel individuals to come forward and litigate; and second, consumers will not pursue legal claims where they are ignorant of the law, and are unaware that there is a valid claim to be made.

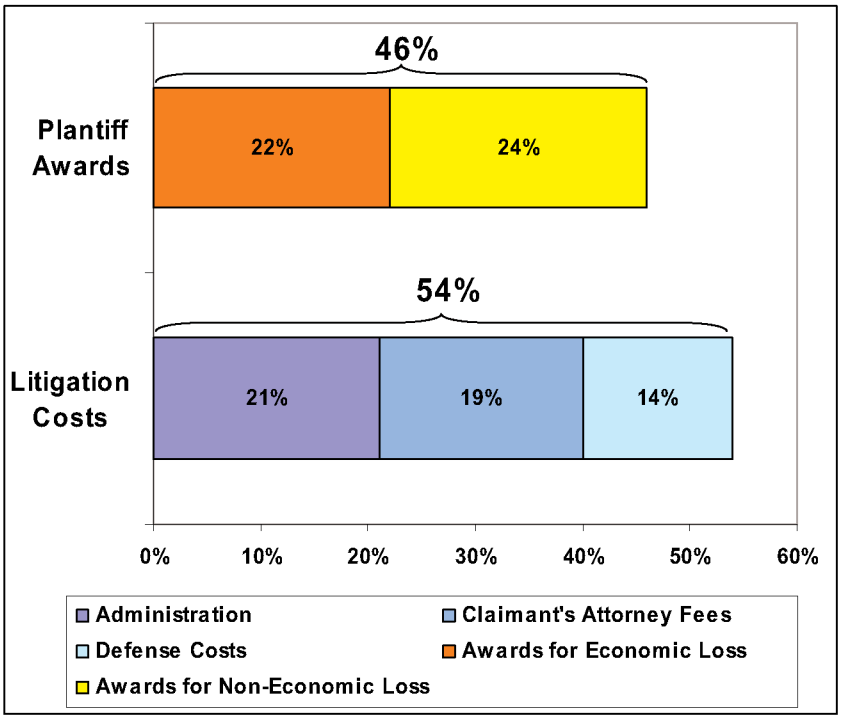
One possibility is that non-profit consumer advocates can fill this void. Consumer advocates can monitor corporate behavior, track violations, and in cases where the violation warrants action, find individuals who have been harmed and file a class action on their behalf. While consumer groups do commonly pursue class actions, their resources are often limited, preventing them from litigating extensively.

Instead, the gap has been filled by private attorneys who spot such legal violations, find individuals to serve as plaintiffs, and subsequently file a class action. However, where this activity is left to entrepreneurial lawyers, the incentive structure is distorted. While some of these lawyers are indeed genuinely civic-minded, in too many cases, these lawyers are entrepreneurially motivated. Litigation will be prioritized where the return is likely to be greatest as opposed to on the basis of a suit's merits. By contrast, public interest groups are more likely to concentrate their resources where the actual harm to consumers is greatest. And in these cases, there is a clear conflict between the social purposes of class action law and the private incentives of enterprising class action attorneys.

There is a great deal of evidence to support the view that this sort of entrepreneurial class action litigation is, at best, of little benefit to the consumers it purports to help. The distribution of tort liability costs is telling. As Figure 2 below shows, only 46% of tort liability costs in 2002 were directed towards actual damages. More than half of all tort liability costs for that year were associated with the cost of

litigation (transaction costs, effectively), of which 33% is devoted to attorney's fees, with 19% going to attorneys for the claimants and 14% to defense attorneys.

Figure 2: Distribution of Liability Costs, 2002[17]



What the above graph does not capture is the fact that in many class-action lawsuits, the benefits are almost overwhelmingly distributed towards plaintiffs' counsel. The reason for this is that the size of the injured class may be very large and the direct return to members of the class relatively trivial. In certain cases, no compensation was paid at all to members of the injured class.

A number of examples illustrate this dynamic:

- *Scott v. Blockbuster Inc.* (No. D162-535, Jefferson County, Texas, 2001) Customers who alleged that they were charged excessive late fees by Blockbuster will receive $1 dollar coupons for rentals – at the same time, their attorneys will divide up a *$9.25 million fee award*. Experts have predicted that only 20 percent of the class members would redeem the coupons. The settlement allows Blockbuster to continue its practice of charging customers for a new rental period when they return a tape late.[18]

- *Shields et al. v. Bridgestone/Firestone Inc. et al.* (No. E-0167637, Jefferson County, Texas, 2003) This suit concerns customers who had Firestone tires that the National Highway Traffic Safety Administration investigated or recalled, but who did not suffer any personal injury or property damage. While class certification was never obtained, a settlement has been reached. Under the settlement, the company has agreed to redesign the tires concerned (a move already underway regardless of the suit) and to develop a three-year consumer education and awareness campaign. Under the agreement, which has only received temporary approval by a Texas state court, members of the class will not be compensated, but plaintiff's council will get *$19 million*.[19].

- *Hoffman v. BancBoston Mortgage Corp.* (No. CV-91-1880, Mobile County, Alabama) – Plaintiff class members (estimated at 715,000), who alleged that the bank over-collected on escrow accounts, were issued refunds ranging from zero to $8.76 as a part of the approved settlement in this case. The settlement also allowed the bank to deduct the *$8.5 million attorneys' fees award* from the accounts of the 300,000 class members who joined the settlement – *resulting in a net loss for the class members*. Some class members discovered deductions of $80 to $100 on their accounts. For example, Dexter J. Kamilewicz of Maine recovered $2.19 in the settlement, but paid $ 91.33 in attorneys' fees.[20]

- *Fischl v. Direct Merchants Credit Card Bank, N.A.* (CT 00-007129, Hennepin County, Minnesota) – This case involved allegations of overly aggressive fees and rates by a Minnesota credit card company. Under the settlement, class members received discount coupons with a retail value of $19.95, an $8 dollar donation in their name to the Boys and Girls Clubs of America, the right to apply for a 9.9 percent interest credit card and to join a promotional travel discount club. They also had the potential to receive between $10 and $70 in cash. The company agreed to change its practices, and the lawyers received *$5.6 million in fees*.[21]

III. INCREASED LIABILITY EXPOSURE: THE IMPACT ON INNOVATION

A. Innovation: A Matter of Survival

Innovation is crucial for economic growth. Figures as disparate as Karl Marx and Joseph Schumpeter recognized that innovation lies at the center of capitalism's capacity to create unparalleled wealth by generating new products and technologies.[22] A comparison of the booms of the late 1990s and the early/mid 1960s lays bare this point. The rise in expenditure on R&D in the 1990s was comparable to expenditures in the early 1960s; both periods witnessed similar outcomes arguably resulting from this increased expenditure—higher productivity and growth rates.[23] The principal difference between the two periods is that *the private sector accounted for a greater share of the growth in real R&D investment in the 1990s than in the 1960s*.[24] And herein lies a crucial reason why tort reform is increasingly necessary. Business spending on R&D, far more so than R&D spending by the government or universities, is sensitive to market pressures. Returns on R&D affect the rate of innovation in the private sector, as investors decide to allocate their finite resources across alternative uses (e.g., the decision to invest in a risky new product or in a well-known product). This is unlike research and development conducted by the government or non-profit institutions such as universities, who may be motivated by national security interests or pure knowledge. And as argued above, high liability costs lower the incentives to innovate and thereby reduce innovation in the private sector.

The role of research and development, especially in the information and electronics sectors, offers a strong reason to reform the current tort system. In the boom years of the late 1990s, information and communication technology investment

accounted for nearly half of business sector growth in the United States.[25] Moreover, the information and electronics sector accounted for more than 41% of research and development conducted by the 500 largest US firms but for only 24.7% of their total sales.[26]

> FOR SOME CORE SECTORS, HIGH LEVELS OF R&D GROWTH ARE NEEDED TO ACHIEVE MODERATE GROWTH IN SALES AND OFTEN TO SIMPLY PRESERVE MARKET SHARE.

There are sound reasons of business necessity that drive this level of R&D activity. The IT industry, as every survey of the past 2 decades attests, is characterized by routinized innovation. Firm survival depends not only on substantial improvements on products (faster, smaller, lighter computers, for example) but also on a regular stream of new products altogether (e.g., in recent years, PDAs, networking equipment, MP3 players). In this respect, the IT industry is characteristic of other industries where a high level of R&D activity is essential to remaining competitive.

Figure 3: Change in R&D expenditures and sales, 1996-97[27]

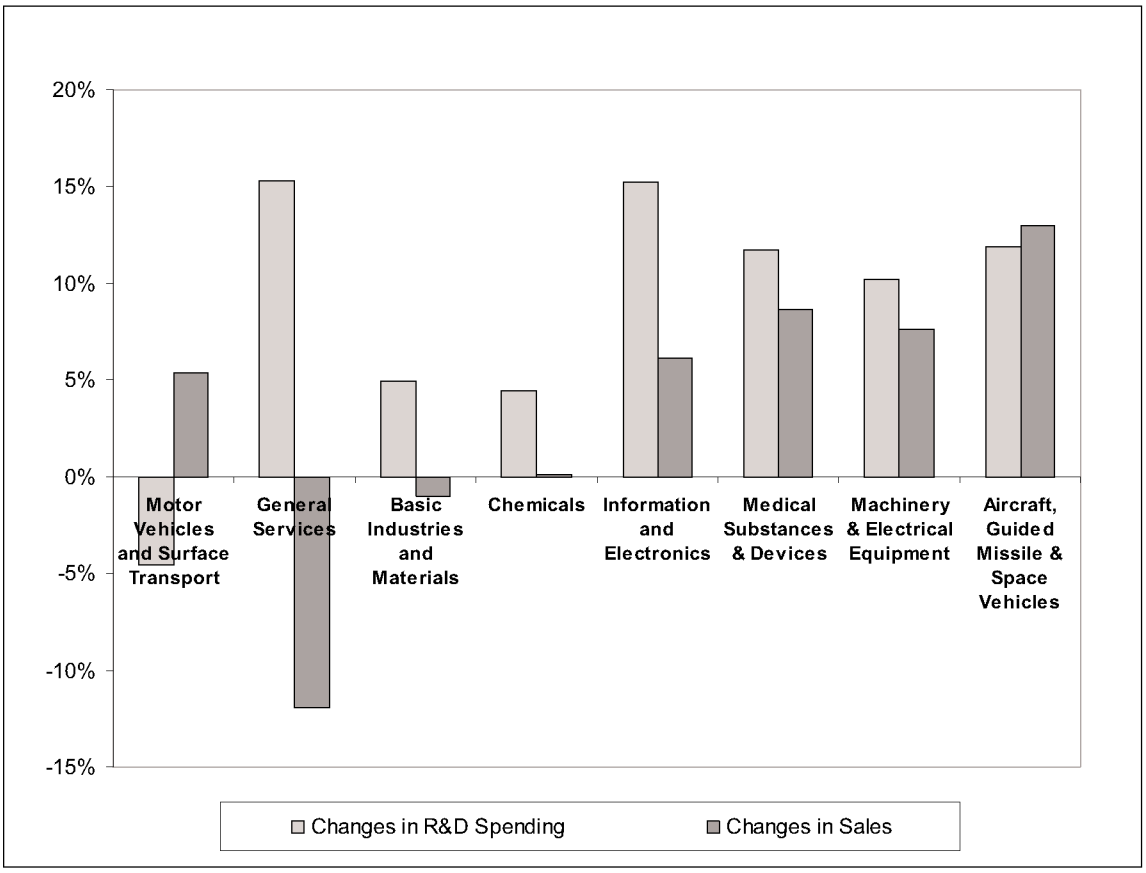


Figure 3 above suggests that *for some core sectors, high levels of R&D growth are needed to achieve moderate growth in sales and often to simply preserve market share.* Figure 3 depicts changes in R&D expenditure and changes in sales for 8 business sectors between 1996 and 1997. The large firms in these 8 sectors accounted for $2.6 trillion in sales in 1997. In all but two of them, R&D expenditure grew faster than sales. In information and electronics, substantial increases in R&D correlated with modest positive changes in sales.

Figure 4: R&D Expenditure as a Share of Sales, 1997[28]

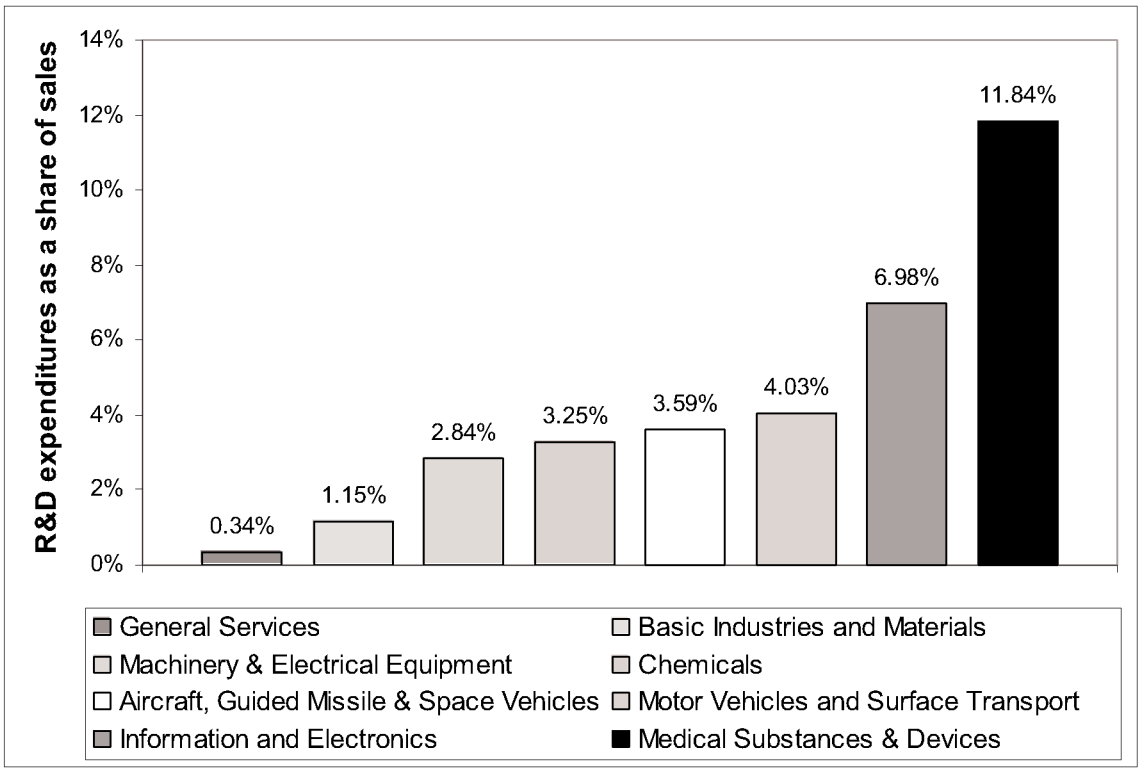


Figure 4 above shows that some of the sectors, particularly those located in high-tech, spend considerable shares of their sales revenue on R&D. It is not surprising that the firms in information and electronics and those in medical substances and devices spend considerable amounts of revenue on R&D. Risk taking in innovation is a condition of survival, not simply profit (as suggested by Figure 3). It is in this light that the consequences of Viscusi and Moore's findings must be evaluated. The remainder of this paper will examine how the liability system poses additional risks for innovation and new products.

B. Balancing Liability and the Need to Innovate

The economic impact of the liability system is wide. Liability claims, in affecting costs, shape how resources are allocated and thereby affect the incentives to invest, produce, distribute, innovate and improve products. Econometric studies of state tort reforms during the period 1972-1990 show that reforms that increased liability exposure reduced labor productivity in the states that adopted them, while reforms that limit liability increased labor productivity.[29] The most contentious claim concerns the impact of the liability system on innovation (and the deployment of new technology). Does the risk of liability lead firms to spend more on new, safer technology? Or, does it lead them to withhold new inventions that can enhance production and welfare because these new products may expose them to larger liability risks? Given the importance of innovation in the current economic environment of fierce global competition, much hangs on the answer."

> AT VERY HIGH EXPECTED LEVELS OF LIABILITY COSTS, R&D EXPENDITURE ON NEW PRODUCTS FALLS FASTER THAN THE R&D SPENDING ON SAFETY GROWS. IN THE AGGREGATE, R&D AS A SHARE OF SALES FALLS.

The impact of rising liability on research and development has been examined systematically. W. Kip Viscusi and Michael J. Moore's 1991 and 1993 studies asses the impact of liability costs on innovation. Their studies are, to date, the most extensive econometric study of the relationship between the innovation and liability.[30] Given the long-run trends in liability and class action, Viscusi and Moore's analysis deserves renewed attention. Their analysis provides an empirical test of two competing views of the effect of liability costs on innovation: (i) whether tort liability increases incentives to innovate, especially on aspects of product safety, or (ii) if whether

tort liability discourages innovation by increasing the expected costs of innovative activity.

Viscusi and Moore's studies examine the R & D expenditures of large firms[31] and compare these expenditures to four proxies for liability burdens (all measured as a share of sales): bodily injury premiums; bodily injury losses; property damage premiums; and, property damage losses.[32] They found a non-linear relationship between product liability and innovation, measured by product R&D as a share of sales. That is, firms increase R&D spending as a percentage of sales with relatively moderate levels of expected liability and then reduce R&D spending as expected liability increases further. The logic behind the findings is that at moderate levels liability increases the incentives to make the product safer, leading to innovations that are safety enhancing. Safer products reduce the liability burden.

However, liability costs retard expenditure on the development of very new products.[33] The reason for this is that novelty inherently involves uncertainty. Many new products are complex and multifaceted--it is difficult to specify all possible aspects and uses of such products prior to product release. For many these products, characteristics that are encountered in rare uses become apparent only over time and not in the moment of design and production. *And at very high expected levels of liability costs, the disincentives to innovate (in the form of new products) overwhelm the incentives created by the liability system to innovate (in the form of making products safer).*

Some of these revealed aspects of products may sometimes involve safety risks. The pharmaceutical, aircraft manufacturing and chemical industries are replete with examples of products that were not introduced after development for fear of high product liability costs, especially seeing as these costs have soared. But another liability issue arises *in addition to product safety*: for novel products that involve little or no threat to

body and property but whose properties cannot be fully described *ex ante*, each facet that falls short of full expectations or is imperfectly described in advertising can be subject to liability claims.

For example, a semiconductor manufacturer may reasonably claim that a new chip is the fastest one on the market; and this claim may be made on the basis of all existing known uses, but may later be challenged along some new, unforeseen, or rare dimension and thereby provide a basis for a class action suit. This is simply a function of the complex nature of the products manufactured in certain industries. And these liability costs can offset gains from new technology and new processes. For this reason, very high liability costs can destroy the willingness of companies to introduce new products altogether, *even where the liabilities have nothing to do with product safety—the enhancement of which is ostensibly one of the key goals of tort liability*.

The relevant message here, especially for high-tech companies whose product may not involve large bodily liability or property damage, is *not* that they are on the increasing side of the hump—in other words, where liability costs still exert a positive influence on product safety. Instead, the upshot is that *because firms located in high-tech sectors frequently introduce new products—and indeed must do so to survive, owing to the competitive nature of their industries—they often have higher expected liabilities.* Experience suggests that unchecked product liability costs for such innovation-dependent sectors can negatively affect innovation and, at worst, devastate a whole industry.

IV. CHILLING INNOVATION: CASE EXAMPLES

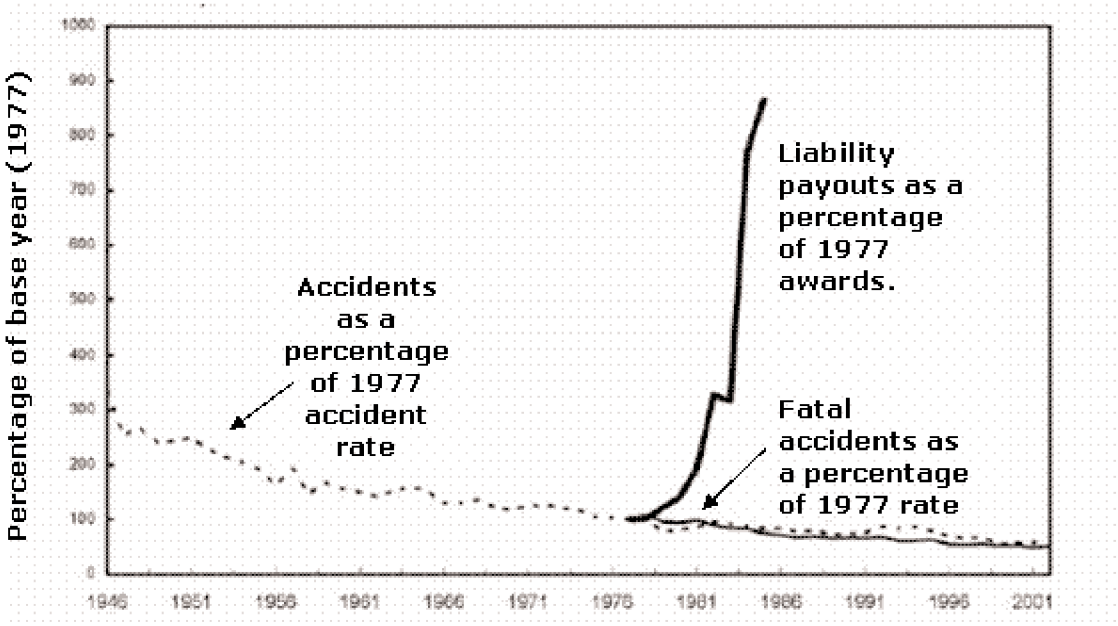
A. The General Aviation Industry

Industry-level studies and experiences confirm what Viscusi and Moore find at aggregate levels. The general aviation industry is a telling example. It may represent an extreme case in so much as the tort liabilities have nearly destroyed the sector, but its experience illustrates the perverse effects of the liability system on innovation. General aviation comprises the firms that produce commercial aircraft which are not large commercial airliners. A once vibrant industry that at one point produced 10,000 to 20,000 new airplanes per year, the general aviation industry was essentially moribund by the 1990s, with production down to approximately 1000 planes per year.

RISING LIABILITY COSTS RESULTED IN THE NEAR DISAPPEARANCE OF NEW AIRCRAFT DESIGNS. BEECH, CESSNA AND PIPER ROLLED OUT 22 NEW MODELS BETWEEN 1960 AND 1970, 14 NEW MODELS BETWEEN 1970 AND 1980, AND ONLY 7 NEW MODELS BETWEEN 1980 AND 1990

Rising liability costs have been largely responsible for all but destroying the industry. A 1963 California Supreme Court ruling helped to establish the principle of "strict liability", by which that all parties from the manufacturer to the vendor could be held liable for any defective product sold, without proof of negligence or fault. The easing of evidentiary requirements led to an explosion of claims which proved devastating to the general aviation industry. By 1977, Beech, Piper and, Cessna--the three leading manufacturers--faced claims *that exceeded the net worth of all three companies despite the fact that the accident rate for small aircrafts had steadily declined for 50 years*.[34] Liability payouts soared even as the number of accidents dropped.

Figure 5: General Aviation Liability Awards and Accident Rates, 1946-2001



Source: George L. Priest, "The Modern Expansion of Tort Liability: Its Source, Its Effects and Its Reform." *Journal of Economic Perspectives*, Summer 1991, and the General Aviation Manufacturers Association, cited in *Economic Report of the President* (Washington, DC: US Government Printing Office, February 2004) p. 213

In this build-up of claims, general aviation manufacturers diverted more and more resources to insurance and legal defense costs. Attempts to pass on prices to purchasers of airplanes led to a near collapse of the market, as demand fell drastically. The General Aviation Manufacturers' Association reported that deliveries fell to 928 units in 1994, as compared to 17,811 units sixteen years earlier in 1978, before "recovering" to 2,214 in 2002.[35] Beginning in 1985, the global insurance market, led by European insurance firms

> THE EFFECT OF LIABILITY CLAIMS ON GENERAL AVIATION WAS SO DEVASTATING THAT CONGRESS EXEMPTED IT FROM CERTAIN LIABILITY CLAIMS. THERE IS NOTHING TO PREVENT THIS SAME PATTERN FROM PLAYING OUT IN OTHER SECTORS IF THE TORT LIABILITY SYSTEM REMAINS UNCHANGED.

such as Lloyd of London, started to react and withdraw product liability insurance for US general aircraft producers. Piper found itself uninsured for product liability in 1987.

These liabilities accrued in spite of the fact that all designs must be certified by the FAA as safe after repeated tests. Furthermore, all aircraft accidents must be investigated by the NTSB and/or the FAA. An investigation conducted at the request of the House Aviation Subcommittee in 1987 of Beech found that almost no accident could be attributed to design defects.[36] Instead, they found that pilot error, maintenance and weather were responsible for the overwhelming majority of accidents. And yet, each accident brought large suits to the manufacturer. Regular and systematic safety improvements did *not* help the industry against rising liability.

The effect of increased liability costs on new aircraft design was devastating, and rising liability costs did not affect the trajectory of the accident rate that prevailed before the industry's liability exposure began to rise. Beech, Cessna and Piper rolled out 22 new models between 1960 and 1970, 14 new models between 1970 and 1980, and 7 new models between 1980 and 1990.[37] Moreover, many suppliers (of ignition systems, shock absorbers) withdrew from the industry altogether owing to liability risks. The net effect of liability claims was so devastating that Congress exempted general aviation aircrafts more than 18 years old from liability claims in an attempt to revitalize the industry[38]. The results have been modest. There is nothing to prevent this same pattern from playing out in other industries if the tort liability system remains unchanged.

B. High Tech: Semiconductors and Disk Drives

Frivolous product liability claims are neither small nor infrequent. Each new product (new in the sense of novel) presents liability risks to the manufacturer. While some liability risks stem from the possibility and fact of damage, others are simply the result of the strategic opportunity that the legal system affords entrepreneurial lawyers. This opportunity arises because it is often difficult for firms to accurately specify all the properties of a new product before it is brought to market. This is particularly acute in high-tech industries because there are multiple benchmarks for measuring performance, owing to the new product's complicated and multifacted character. Claims are brought against manufacturers for "false advertising" or alleged "defects" that stem from the interaction of new products with other new products. These sorts of claims tend to offer consumers little compensation for alleged damages.

Two examples, one involving Intel's Pentium chip and the second involving Toshiba's laptop computer, illustrate the risks that arise from the conjunction of novel innovation and the liability system. These cases point to a pattern. Manufacturers of novel, innovative technologies are often forced to pay millions in settlements that provide little or no benefit to alleged victims, who, at any rate, suffer no harm, and that accrue largely to entrepreneurial lawyers.

The legal system discourages risk taking in innovation by providing entrepreneurial lawyers an opportunity to reap large returns, by adding significant costs to investment in innovation. The full consequences of this disincentive should not be overlooked. The spillover effects of many new products—enhanced productivity and welfare—may be lost, and these costs may in fact be far larger than the direct liability

costs themselves, in that the release of new and socially beneficial products are slowed or deterred altogether.

The Semiconductor Industry: The leading semiconductor manufacturer Intel's experiences lay bare the hurdles posed by tort liability to innovation. The initial version of Intel's Pentium processor contained an undetected flaw, revealed in continuing tests by the company and corrected quickly. There was a 1 in 9 billion chance (equivalent to once every 27,000 spreadsheet user years) that the problem would manifest itself in division operations. Only in one instance did a user encounter the defect. A mathematics professor conducting theoretical analyses of prime numbers found that in one calculation, the digit in the 9th decimal place was off. He alerted the public to the flaw. Within a month Intel announced a "lifetime replacement policy" and offered to "supply an updated version of the Pentium processor to replace the original version free of charge" to those who wanted one. The policy was publicized, a program to detect the flaw was distributed among users, and Intel's toll-free call center was expanded to address inquiries about this small flaw in the Pentium chip. Furthermore, Intel established a network of service centers across the country to help consumers replace the chip with a later version.

> THE PENTIUM CLASS ACTION SETTLEMENT REQUIRED INTEL DO NOTHING MORE THAN WHAT IT HAD ALREADY BEEN DOING WHEN THE CASES WERE FILED. FOR THIS SETTLEMENT, PLAINTIFFS' ATTORNEYS RECEIVED FEES OF $4,272,969.

Two class action lawsuits were filed and pursued quickly after it became known that the Pentium contained a flaw. Thirteen class action suits were filed across the country within three weeks of the notice—in state courts in Chicago, Detroit, Denver, Camden, New Jersey, and San Jose, California, as well as in the federal district courts in

Colorado and California. They all alleged the same facts and put forth nearly identical claims, and all were filed on behalf of the *same* set of consumers in the United States.

Intel reached a settlement on the primary cases in March 1995. The settlement required that Intel offer free replacements, maintain the service centers, operate the toll-free telephone numbers and provide the diagnostic computer programs – *actions which Intel had already undertaken at the time the cases were filed.* That is, the settlement only required that Intel do nothing more than what it had been doing since December 1994. In reaching this settlement, plaintiffs' attorneys received fees of $4,272,969 (in addition to costs of approximately $127,000). Intel's legal fees were also significant.

These events well illustrate the dilemma of innovation under the onerous burden of the present class action system. A new product whose uses are multiple and difficult to completely specify is introduced. A flaw is detected – a small flaw encountered by a miniscule class of users in very rare instances. Intel had an interest in compensating consumers for *possible* damages and did so, acting quickly to implement procedures that rectified the flaw. Yet, while possible and actual consumer concerns were already addressed, the small defect in the new Pentium chip presented lawyers an opportunity to extract millions of dollars from Intel.

The settlement in the case demonstrates an instance in which consumer concerns were addressed outside of the tort system in a fashion identical to the judgment yielded by the system itself. Because the resolution *agreed to* by all parties required Intel to do nothing for consumers beyond what they had already done prior to the legal action, the suit was a waste of resources.

IN A CLASS ACTION AGAINST TOSHIBA FOR ALLEGEDLY FAULTY DISK DRIVES, TOSHIBA SETTLED RATHER THAN RISK BILLIONS OF DOLLARS, EVEN THOUGH NOT ONE PROBLEM COULD BE ATTRIBUTED TO THE ALLEGED DEFECT. THE TOTAL COST TO TOSHIBA WAS $1 BILLION, $147.5 MILLION OF WHICH WENT TO PLAINTIFF'S LEGAL FEES.

Computer disk drives: The class action filed against Toshiba in Beaumont, Texas (*Shaw and Moon vs. Toshiba*) for allegedly defective floppy drive controllers on its laptop computers is another case in which demonstrable consumer harms were non-existent. Not one problem could be attributed to the alleged defect. Yet, Toshiba settled, offering 1.8 million consumers between $210 and $443.21 in rebates, 3.5 million consumers received coupons for discounts of $100 or more, $25,000 to the two original plaintiffs, and $147.5 million for plaintiff's legal fees. The total cost to Toshiba was $1 billion.[39] When the identical suit was brought against Compaq (along with other laptop manufacturers), Compaq fought the suit rather than settle.[40] The case was dismissed because no injury was demonstrated. Compaq did incur substantial legal costs as a result, however.

The rising frequency of claims, the emergence of county courts at the state level that specialize in these lawsuits and are willing to certify "national class" cases, and the possibility of windfalls for attorneys all point to growing costs of innovation and thus a disincentive to innovate. The long-term cumulative effect of an unreformed class action system could be immeasurable; the gains from new products--greater consumer welfare, higher productivity, new investment--could be delayed or lost altogether.

V. CONCLUSIONS

The variables affecting the risk/reward equation that business managers across the entire spectrum of industry must account for on a daily basis are vast and complex. This report looks at just one variable—tort costs—and its impact on decisions concerning the trajectory of innovation as measured by relative research and development intensity. Perhaps the most important contribution of this undertaking is to revisit an academic debate that raged over a decade ago, the findings of which are undiminished in terms of their policy relevance. **There are three primary conclusions drawn from the findings of this report. They are:**

(1) **Excessive tort costs dampen the incentive to innovate.** Rising tort costs—increasingly driven by "magnet" state and county courts that are willing to certify class action suits under relaxed evidentiary standards and approve costly settlements—provide a disincentive to invest in novel research and development in the United States. At a certain threshold, additional liability costs result in less overall investment in R&D. Expenditures on the type of R&D that yields radical new innovations are especially diminished. This is particularly true in the current era in which the private sector's rate of R&D growth is larger than that of either the government or universities and in which R&D expenditure in the private sector is crucial for economic well-being. In all likelihood, frivolous and excessive state class action lawsuits are causing palpable harm to the country's engine of growth—namely, innovation.

(2) **Current class action rules cause real harm to U.S. high-tech industries.** The tort system has produced an environment which has crippled entire high-tech industries (general aviation) and threatens others despite there being little evidence of any economic or non-economic harm to classes of plaintiffs. In this environment, firms that must expend considerable amount of resources in R&D simply to maintain market share, face more than the loss of profits and risk their very position in the sector and economy.

(3) **America's future competitiveness is closely linked to reforms of the tort liability system.** This paper has shown how R&D intensity for U.S. high-tech firms has been negatively impacted by ever-escalating tort system costs. But what of firms trying to ride the next innovation wave? By their very nature, next generation innovations are likely to be more, and not less vulnerable to frivolous class action lawsuits. That is because projected commercial applications in bio-technology and nano-technology—the two fields currently showing the most promise as sources for potential innovation waves—involve direct physical contact with human beings. Without tort reform to deter gaming of the system, the risk level for these two industries remains high. The substantial costs associated with potential lawsuits, as this paper has shown, affect the incentive to invest in novelty R&D. At a minimum, this could slightly retard the arrival of significant innovations, and at a maximum it could place U.S. industries at a competitive disadvantage vis-à-vis foreign competitors that are unencumbered by such high liability risks.

Future Directions for Research

The research cited in this study represents the state of the art on the relationship between tort system costs and the investments in innovation as measured by research and development intensity in the United States. Viscusi and Moore's study remains the most rigorous econometric assessment of the relationship between tort costs and innovation. While whole new industries have emerged in the decade since Viscusi and Moore first published their results, there is every reason to believe that the logic they describe still holds. Further research is needed to test what the impact of rising torts costs have been on R&D expenditure since the beginning of the information revolution. In fact, it could be argued that the findings of Viscusi and Moore have become more relevant as a technological revolution has brought a host of radically new products.

Moving forward, more specific attention needs to be paid to understanding policy variables that influence the direction of innovation. Even in the context of tort reform—with the strength of Viscusi and Moore's seminal analysis—the debate is not over and deserves further consideration. Although more research is warranted, as this

paper highlights, evidence is mounting that the cumulative effect of the gaming of the U.S. tort system by entrepreneurial lawyers—particularly in state courts—is having a palpable impact on the trajectory of innovation in U.S. high-tech industries. One goal of any reform of the tort system should be to recalibrate it so that it encourages safer products and punishes negligence without depressing incentives to produce new, innovative products. It is clear, however, that the system is in need of reform as each radically new product brings liability costs that are unconnected to any damages done to consumers.

NOTES

[1] Tillinghast-Towers Perrin. "U.S. Tort Costs: 2003, Trends and Findings on the Costs of the U.S. Tort System." February 2003.
[2] Tillinghast-Towers Perrin. "U.S. Tort Costs: 2003, Trends and Findings on the Costs of the U.S. Tort System."
[3] Viscusi and Moore pursue this line of reasoning extensively in their paper, W. Kip Viscusi and Michael J. Moore, "Product Liability, Research and Development, and Innovation." *The Journal of Political* Economy. Vol. 101, No. 1 (February 1993) 161-184. Their research is discussed at length later in this analysis. Also see W. Kip Viscusi and Michael J. Moore, "An Industrial Profile of the Links between Product Liability and Innovation." pp. 81-119. in Peter Huber and Robert Litan, eds. *The Liability Maze*. (Washington, DC: The Brookings Institute, 1991).
[4] David Luban. "A Flawed Case Against Punitive Damages." *Georgetown Law Journal.* November 1998.
[5] Tillinghast-Towers Perrin. "U.S. Tort Costs: 2003, Trends and Findings on the Costs of the U.S. Tort System." February 2003.
[6] Council of Economic Advisers, "Who Pays for Tort Liability Claims? An Economic Analysis of the U.S. Tort Liability System." April 2002. www.whitehouse.gov/cea/tortliabilitysystem_apr02.pdf
[7] The CEA study deals with "transaction costs"—in other words the costs that would be associated with administering any comparable system—by using the administrative costs associated with Worker's compensation as a benchmark for administrative costs that are not excessive. This assumption sets "fair" administrative costs as 23 cents on the dollar.
[8] Council of Economic Advisers, "Who Pays for Tort Liability Claims? An Economic Analysis of the U.S. Tort Liability System." p. 12.
[9] Recalculation of CEA estimates based on 2002 data from Tillinghast-Towers Perrin. "U.S. Tort Costs: 2003, Trends and Findings on the Costs of the U.S. Tort System." February 2003.
[10] W. Kip Viscusi and Michael J. Moore, "Product Liability, Research and Development, and Innovation."
[11] See Deborah R. Hensler, et al. *Class action dilemmas : pursuing public goals for private gain.* (Santa Monica, CA : Rand, 2000); Federalist Society, *Class Action Watch*. Vol. 1, no. 2. Spring 1999. American Tort Reform Association, "Bringing Justice to Judicial Hellholes, 2003." www.atra.org/reports/hellholes/report.pdf ., John H. Beisner, et al. "One Small Step for a County Court . . . One Giant Calamity for the National Legal System." *Civil Justice Report*. No. 7. (New York: Manhattan Institute, April 2003) www.manhattan-institute.org/cjr_07.pdf. For a suggestion that it has not grown see National Center for State Courts (NCSC). The National Center for State Courts (NCSC) survey of eight states (Oregon, Wyoming, Missouri, Wisconsin, Connecticut, Rhode Island, Alabama and Ohio) found that product liability cases to have declined by 20% between 1996 and 2000. But none of these states appear to rank high by other surveys. www.ncsconline.org/D_Research/csp/1999-2000_Files/1999-2000_Tort-Contract_Section.pdf
[12] Deborah R. Hensler, et al. *Class action dilemmas : pursuing public goals for private gain.* (Santa Monica, CA : Rand, 2000). pp. 62-63
[13] RAND, *Class Action Dilemmas*. pp. 62-63.
[14] Federalist Society, *Class Action Watch*. Vol. 1, no. 2. Spring 1999. p. 3.
[15] RAND, *Class Action Dilemmas*. Pp. 62-63.
[16] John H. Beisner, et al. "One Small Step for a County Court . . . One Giant Calamity for the National Legal System." *Civil Justice Report*. No. 7. (New York: Manhattan Institute, April 2003) p. 31. www.manhattan-institute.org/cjr_07.pdf.
[17] Source: Tillinghast-Towers Perrin. "U.S. Tort Costs: 2003, Trends and Findings on the Costs of the U.S. Tort System." February 2003.
[18] *Judge OKs Blockbuster Plan On Fees*, Associated Press, Jan. 11, 2002.
[19] Miles Moore, *BFS Settles Nationwide Class Action Suit; Tire Maker to Modify Certain Models, Launch Education Program,* Rubber & Plastics News, August 4, 2003.

[20] *Prevailing Plaintiffs In Mortgage Class Action Lawsuit Lose Challenge To Their Lawyers $8.5 Million Fee Award*, Chicago Daily Law Bulletin, Aug. 9, 1996.
[21] *Soft Firm: Too Often, The SF Law Firm Of Lieff, Cabraser, Heimann & Bernstein Strikes Settlements That Give The Firm Millions Of Dollars In Legal Fees – And Its Class Action Clients Too Little*, SF Weekly, May 29, 2002.
[22] The central role of innovation in economic growth has been one of the lessons of the 1990s and the information revolution. "Under capitalism, innovative activity – which in other types of economies is fortuitous or optional – becomes mandatory, a life-and-death matter for the firm," notes William Baumol. The point is convincingly argued in his book, *The Free Market Innovation Machine: Analyzing the Growth Miracle of Capitalism*. (Princeton, NJ: Princeton University Press, 2002) p. 1. And "those innovations that have never been born do constitute a loss to society." p. 142. A second way in which the liability system may retard innovation is by creating disincentives to adopt new, even safer technologies. The adoption of safer technologies can be used as evidence (even an admission!) indicating that the technology they replaced was unsafe. The liability system thus can act as a disincentive for even safety enhancing innovation.
[23] The period from 1961-66 saw R&D spending grow by 8% per annum and the economy grow by 6%; for the period 1995-2000, the figures were 9% and 4%, respectively. Barbara M. Fraumeni and Sumiye Okubo, "R&D in the National Income and Product Accounts: A First Look at its Effect on GDP." Washington, DC. Bureau of Economic Analysis, U.S. Department of Commerce, Working Papers, WP2002-01 April 26-27, 2002. Table 1. p. 48.
[24] Barbara M. Fraumeni and Sumiye Okubo, "R&D in the National Income and Product Accounts: A First Look at its Effect on GDP."
[25] Similarly, Canadian and Finnish growth in the late 1990s was heavily the result of investment in new information and communication technologies. Several countries in which information and communication technology did not account for a substantial share of economic growth, such as Japan, Italy, France and Germany, were characterized by stagnant growth rates in the1990s. Alessandra Colecchia and Paul Schreyer, "ICT Investment and Economic Growth in the 1990s: Is the United States a Unique Case? A Comparative Study of Nine OECD Countries." OECD, Directorate for Science and Technology. (Paris: OECD, October 25, 2001) Pp. 17-19.
[26] National Science Foundation, *US Corporate R&D Vol. 1: Top 500 Firms in R&D by Industry Category*. (Arlington, VA: National Science Foundation, September 1999) Table 1.
[27] National Science Foundation, *U.S. Corporate R&D: Vol. 1. Top 500 firms in R&D by Industry Category*. pp. 21-22.
[28] National Science Foundation, *U.S. Corporate R&D: Vol. 1. Top 500 firms in R&D by Industry Category*. pp. 21-22.
[29] Thomas Campbell, Daniel Kessler and George Shepherd, "The Link Between Liability Reforms and Productivity: Some Empirical Examples." *Brookings Papers on Microeconomics*. 1998.
[30] The quantitative evidence covers the time period between 1980 and 1984, when product liability costs had increased substantially over the preceding decades largely as a result of the expanded scope of product liability to design and the adoption of strict liability that expanded instances in which companies could be held to be responsible. If anything, product liability costs and the number of cases have since grown, as noted above. A study by Theodore Eisenberg and Geoffrey Miller uses data from class action cases filed in federal courts to argue that average awards and attorneys' fees have not grown during the 1992-2003 period. Theodore Eisenberg and Geoffrey Miller, "Attorneys Fees and Class Action Settlements: An Empirical Study." *Journal of Empirical Legal Studies*. Vol. 1, no. 1 (March 2004) pp. 27-78. However, by the authors' own admission, the study does not really examine cases in state courts or the state "magnet" court phenomenon. See Ralph Lindeman, "Study Disputes Rising Attorneys' Fees, Recoveries in Class Action Settlements." *Class Action Litigation Report*. Vol. 5, No. 2 (January 2004) litigationcenter.bna.com/pic2/lit.nsf/id/BNAP-5V8MY3?OpenDocument

[31] As a percentage of sales, tracked by the Strategic Planning Institute's Profit Impact of Marketing Strategies (PIMS).

[32] Full liability would include more, e.g., legal fees and uncovered costs. There is also no reason that liability that stems from source other than bodily and property damage, e.g., advertising claims especially of products with multiple dimensions that cannot all be clearly specified, will not adhere to this logic and reasons to believe that it actually will do so. ISO data is aggregated into four-digit (SIC) industry groups where possible and three-digit ones where not. Firm size should be considered when drawing implications from Viscusi and Moore's studies. The restriction to large firms helps to strengthen the argument. Given increasing returns to scale, R&D as a share of sales may vary by firm size, as unit costs fall with volume. Controlling for size strengthens the claim.

[33] Note that for many industries (notably, the computer and computer related industries), product safety concerns are relatively small and expenditure on the development of new products constitutes a relative larger share of R&D. For the dynamics segments of the economy, novelty plays a larger role for firms' survival and industry growth.

[34] 59 Cal. 2d 57, 377 P.2d 897, 27 Cal. Rptr. 697 (1963).

[35] General Aviation Manufacturers' Association, *General Aviation Statistical Databook, 2002*. www.gama.aero/dloads/2002StatisticalDatabook.pdf.

[36] Robert Martin, "General Aviation Manufacturing: An Industry Under Siege." pp. 484-485.

[37] Robert Martin, "General Aviation Manufacturing: An Industry Under Siege." p. 492.

[38] The General Aviation Revitalization Act of 1994. *Public Law* 103-298

[39] For terms and costs see Toshiba press release, "Toshiba Reaches Settlement of U.S. Lawsuit Regarding Floppy Disk Controllers in Notebook PCs." www.toshiba.co.jp/about/press/1999_10/pr2902.htm

[40] The other companies were Hewlett-Packard, NEC and e-Machines. Michael Fitzgerald and Michael Zimmerman , "PC makers hit with 'copycat' suits." zdnet.com.com/2100-11-51634 4.html?legacy=zdnn

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