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“Market Share Recovery for Risk” as a Preemptive Remedy for Childhood Lead Poisoning

David P. Swenson*

Introduction

Lead paint poisoning may be the most pernicious environmental hazard threatening our nation's children today.¹ Federal authorities recently have noted that “[l]ead poisoning remains the most common and societally devastating environmental disease of young children,”² demanding “a major societal effort to eliminate it.”³ Over four million children across America may face exposure to dangerous levels of lead in their homes.⁴

Lead paint abatement costs may exceed \$2 billion in the Twin Cities alone.⁵ In the past, those who have borne the burden of these costs have not been the ones responsible for creating the lead paint menace. Injured victims and their families have primarily absorbed the burden in the form of medical costs, special education costs, and lifelong reductions in earnings. Taxpayers have increasingly assumed the financial burden through expanded government

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1. *New Fears Arise Over Lead Paint*, MINNEAPOLIS STAR TRIBUNE, Apr. 21, 1991 at S6. Exposure often leads to brain damage, coma, and death. AGENCY FOR TOXIC SUBSTANCE AND DISEASE REGISTRY, U.S. DEP'T OF HEALTH AND HUMAN SERVICES, *THE NATURE AND EXTENT OF CHILDHOOD LEAD POISONING IN CHILDREN IN THE UNITED STATES*, I-2 (1988) [hereinafter *NATURE & EXTENT*].

2. CENTERS FOR DISEASE CONTROL, U.S. DEP'T OF HEALTH AND HUMAN SERVICES, *STRATEGIC PLAN FOR THE ELIMINATION OF CHILDHOOD LEAD POISONING* xi (1991) [hereinafter *STRATEGIC PLAN*].

3. Dr. William Roper, Director of the Centers for Disease Control, stated, “We believe that lead poisoning is the No. 1 environmental problem facing America's children. Therefore, it will take a major societal effort to eliminate it.” Philip J. Hilts, *White House Shuns Key Role on Lead Exposure*, N.Y. TIMES, August 25, 1991 at A14.

4. *Id.* at 1.

5. See TASK FORCE ON LEAD ABATEMENT COSTS, MINNESOTA STATE PLANNING AGENCY, *THE NATURE AND EXTENT OF THE CHILD LEAD PROBLEM IN MINNESOTA* 1 (1990) [hereinafter *MINN. NATURE & EXTENT*]. See also *infra* § I.

screening, treatment, and abatement programs.⁶ Recently however, a trend has emerged of plaintiffs seeking to hold the lead paint industry itself responsible for the damage lead poisoning has caused them.⁷ Unfortunately, courts across the country have proven unprepared to resolve lead paint claims.⁸

This article forges a new framework for resolving lead paint claims — “market share recovery for risk.” This theory of liability combines the “recovery for risk” theory applied to asbestos cases in Minnesota with “market-share-based” theories courts have accepted in DES cases. Instead of relying on parents of injured children to sue lead paint manufacturers for compensatory damages, market share recovery for risk would recognize that lead paint property contamination is an injury itself and would create a cause of action for property owners to recover the costs of lead paint removal or abatement from paint manufacturers. Hence, market share recovery for risk would encourage property owners to take preventative measures for the benefit of current and future residents.⁹ Furthermore, market share recovery for risk suggests a

6. The state and federal reports cited in notes 1, 2, and 5 were specifically prepared to appraise the expected demand for public funding to fight the lead paint problem.

7. See *Hurt v. Philadelphiana Housing*, 1992 WL 221992 (E.D. Pa. Aug. 27, 1992); *Swartzbauer v. Lead Indus. Ass'n Inc.*, 794 F. Supp. 142 (E.D. Pa. 1992); *Santiago v. Sherwin Williams Co.*, 782 F. Supp. 186 (D. Mass. 1992); *Philadelphia v. Lead Indus. Assoc.*, 1992 WL 98482 (E.D. Pa. Apr. 23, 1992); *LeBlanc v. Sherwin Williams Co.*, 551 N.E.2d 30 (Mass. 1990).

8. Claims against lead paint producers have suffered from two major defects under standard tort law. First, plaintiffs have had difficulty identifying a particular paint manufacturer as the tortfeasor. Second, even where courts might hold a class of defendants liable, they have lacked a method for assessing and apportioning damages. At least three cities along with numerous individuals have sued producers of lead paint seeking to apply alternative forms of liability to reach paint producers. At least two commentators expect market share liability to become an accepted tool. James A. Henderson, Jr. & Aaron D. Twerski, *Stargazing: The Future of American Products Liability Law*, 66 N.Y.U. L. Rev. 1332 (1991) “The move to proportionalization in the law of torts has an inexorable quality about it,” Henderson and Twerski write. “[C]ourts will be pressed to utilize [probabilistic] information to help resolve causation issues on a proportional basis.” *Id.*, 1338-39. Two states have refused to adopt market share liability in this context. See *Santiago*, 782 F. Supp. at 194; *Hurt* 1992 WL 221992; *Lead Indus. Assoc.* 1992 WL 98482; *Swartzbauer* 794 F. Supp. at 146. (“Of particular significance” in *Santiago*, however, “is the fact that defendants here supplied lead pigment in bulk to paint manufacturers. They are not being sued as manufacturers or marketers of the allegedly offending paint. They, therefore, could not control all of the risks that the products may have presented to the public.” *Santiago*, 782 F. Supp. at 195.) These states’ primary justification is a firm belief in the inviolability of long-standing tort doctrine. *Hurt* at 17 (“the Pennsylvania courts have rejected them because of . . . the abandonment of the requirement of proximate causation”). A claim by the city of New Orleans awaits further action. *Gould v. Hous. Auth. of New Orleans*, 595 So.2d 1238, 1241 (La. Ct. App. 1992).

9. Unlike other market-share-based theories which only compensate injured children *after* they begin suffering the effects of lead poisoning, a contaminated prop-

method for removing the obstacles to recovery traditional tort doctrine presents to lead paint poisoning victims. In modifying the traditional tort notions of causation and damage apportionment, market share recovery for risk remains true to the policy goals tort law was created to effectuate. This theory minimizes the costs of lead paint to society by directing resources to preventing rather than remedying harm to children and distributes the costs to those who are at fault for creating them.

Section I of this article describes how lead paint poisons children and considers the costs associated with lead poisoning. Section II focuses on property owners as a class of plaintiffs in lead paint litigation and shows how three different theories of tort liability — recovery for risk, market share liability, and risk contribution theories — alter the causation and damages elements of traditional tort liability. This section also demonstrates the acceptance of the recovery for risk theory in Minnesota asbestos cases and the broad acceptance the market share liability and risk contribution theories enjoy outside Minnesota. Section III proposes market share recovery for risk theory and contends that it is a plausible theory for resolving lead paint claims in Minnesota. This section argues that recovery for risk extends to lead paint hazards and asserts that Minnesota case law does not preclude the adoption of a market-share-based liability theory.

I. Background: The Impact and Expense of Lead Poisoning

Lead poisoning poses a ubiquitous threat to young children.¹⁰ Because the lead exists in paint chips, paint dust, and soil contaminated by lead paint, children are at particular risk. Children regularly put their hands and other objects which may carry lead dust into their mouths, dramatically increasing their chances of lead intake and poisoning.¹¹ Since lead paint presents a widespread and

erty owner's claim based on market share recovery for risk ripens before children actually get hurt. See *infra* note 46 and accompanying text.

10. The fetus, which lacks any defenses to lead intake, also faces a danger from lead. NATURE & EXTENT, *supra* note 1, at I-2. Lead circulating in a pregnant woman's body, at levels harmless to her, passes through the placenta to the fetus. *Id.* at I-9. Pregnancy and associated physiological stresses release additional lead into the bloodstream from lead reservoirs in a woman's body. *Id.* at I-5. Lead may damage the fetus during its most vulnerable period, resulting in lower birth weights and relatively earlier births. *Id.* at I-7.

11. NATURE & EXTENT, *supra* note 1, at I-40, VI-49-54. Although the lead in a child's environment may originate in part from a source other than lead paint, particularly leaded gasoline, only lead paint is relevant in creating market share recovery for risk because it focuses on assigning liability for creating the risk that the toxin poses by its very existence in a child's environment. Market share recovery for

concentrated risk of harm to children, it is not surprising that lead paint causes most of the severe cases of lead poisoning in the United States.¹² Children who continually ingest contaminated soil may inadvertently elevate their lead levels well above the accepted threshold for lead poisoning in four to six months.¹³ Pica, a more severe manifestation of the childhood tendency to put things in one's mouth, places many children in aggravated danger.¹⁴

Regardless of the path lead takes into a body, the developing bodies of young children absorb lead faster and retain more of it than do mature bodies. Initially, children's higher metabolism and

risk scenarios do not require that plaintiffs trace personal injuries to precise exclusive medical causes. *Id.* at I-40.

12. *Id.* at VI-54.

In terms of both quantitative impact and persistence of the hazard, as well as dispersal of the source into the population, leaded paint has been and remains a major source for childhood exposure and intoxication. . . . Following close to leaded paint as a troublesome and persistent lead source is dust/soil lead . . . Gasoline is declining significantly as a major lead source, particularly since the 1970s when it was adding about 40-50% to total Pb-B levels in the U.S. population.

Id.

13. A blood lead concentration exceeding 30 ug/g may arise from ingesting merely one-sixth gram of soil daily. See TASK FORCE ON LEAD ABATEMENT COSTS, MINNESOTA STATE PLANNING AGENCY, LEAD ABATEMENT SUBSIDIES: REPORT AND RECOMMENDATIONS FROM THE TASK FORCE ON LEAD ABATEMENT COSTS 12 (1991) [hereinafter TASK FORCE ON LEAD]. Interior and exterior lead paint decomposes. Paint chips and paint dust contaminate soil. NATURE & EXTENT, *supra* note 1 at I-40. Studies show a high correlation between lead exterior paint and elevated soil lead content. See *id.* at VI-54. Gasoline use introduced additional lead into the air. Research indicates substantial lead originating in gasoline may have settled into soil along major roadways. MINN. NATURE & EXTENT, *supra* note 5, at 12. The potential risk posed by gasoline lead has declined, however, as the phase out of leaded gasoline progresses. NATURE & EXTENT, *supra* note 1, at I-45.

14. Pica describes a tendency to eat non-food objects including soil and paint chips. *Id.* Researchers identified pica behavior in 87% of lead-intoxicated toddlers treated in one program. See Michael W. Shannon, *Lead Intoxication in Infancy*, 89 PEDIATRICS 87, 87 (1992). Habitual pica may increase a child's soil ingestion to 10-50 times normal. TASK FORCE ON LEAD, *supra* note 13, at 12. Pica-induced ingestion of lead paint chips offers the most expedient route to high blood lead levels. "A small paint chip containing 50% lead . . . when ingested by a toddler, will most likely produce acute poisoning." NATURE & EXTENT, *supra* note 1, at I-3. See also Michael D. McElvaine et. al, *Prevalence of Radiographic Evidence of Paint Chip Ingestion Among Children with Moderate to Severe Lead Poisoning, St. Louis, Missouri, 1989 Through 1990*, 89 PEDIATRICS 740, 740-42 (1992). Pica "is generally found among children who experience some kind of deprivation — either nutritional or emotional," IRWIN H. BILLICK & V. EUGENE GRAY, LEAD BASED PAINT POISONING RESEARCH: REVIEW AND EVALUATION 1971-1977, 71 (1978). Children with pica may comprise 20-30 percent of inner city children. U.S. DEP'T OF HOUSING AND URBAN DEV., COMPREHENSIVE AND WORKABLE PLAN FOR THE ABATEMENT OF LEAD-BASED PAINT IN PRIVATELY OWNED HOUSING 2.17 (1990). One recent radiograph study found lead paint chips in 26% of the children examined who suffered from severe lead poisoning and cautioned that the actual incidence of paint chip ingestion is probably higher. PEDIATRICS, at 740.

respiration rates introduce proportionally greater amounts of lead into their bodies.¹⁵ Children, unlike adults, absorb as much as fifty percent of the lead they ingest.¹⁶ Children also retain more of the lead they absorb.¹⁷ A greater fraction of the retained lead remains in the bloodstream of a child, while adults more efficiently sequester circulating lead in their bones.¹⁸

Lead poisoning strikes children of all races and classes, but the burden ultimately falls unevenly on poor and minority children.¹⁹ The particular children suffering disproportionately from lead poisoning — where factors including race, income, urbanization, malnutrition, and pica intersect — often must rely on government agencies, courts, or legislatures to protect them from contracting this preventable illness.²⁰ Many of these children come from precisely the economic strata of society least able to secure adequate prevention, medical care, or compensatory education.²¹ Families with greater incomes may avoid lead poisoning by abating their own homes, taking their children for regular screening, and simply by maintaining their yards and covering exposed soil. Hence, any proposed solution to the lead poisoning problem must contain an economic as well as a technical component.

Lead poisoning generates two categories of costs to society. The first category includes the various costs of treating and compensating lead-poisoned children following diagnosis.²² This category includes medical costs, special education costs, and lost future

15. NATURE & EXTENT, *supra* note 1, at I-5.

16. *Id.* at 13. Adults absorb approximately 8 percent of the lead they ingest. HOWARD W. MIELKE & JOHN L. ADAMS, ENVIRONMENTAL LEAD RISK IN THE TWIN CITIES 1 (1989).

17. NATURE & EXTENT, *supra* note 1, at I-5.

18. *Id.* at I-5.

19. *Id.* at I-47. The NHANES II found Black children in major cities were four times more likely than White children to be poisoned by lead. MINN. NATURE & EXTENT, *supra* note 5, at 1. Sixty-two percent of Black children in lower income families had unacceptable lead intoxication, compared to seventeen percent for metropolitan children overall. NATURE & EXTENT, *supra* note 1, at V-13 (Table V-7). Native American and Hmong Children also face heightened risks of lead poisoning. See MIELKE, *supra* note 16, at 2; TASK FORCE ON LEAD, *supra* note 13, at 7.

20. Nutrition plays a substantial role. "Numerous studies have shown that calcium status and iron status in young children are both inversely related to the level of lead absorption, that is, as either calcium or iron levels go down, lead levels tend to go up." NATURE & EXTENT, *supra* note 1, at I-31.

21. "Prevalences of elevated Pb-B levels are highest for inner-city, underprivileged Black children, while rates for other strata of city children, both Black and White, are intermediate. Suburban children above the poverty level have the lowest prevalences." *Id.* at I-47.

22. See MINN. NATURE & EXTENT, *supra* note 5, at 6; NATURE & EXTENT, *supra* note 1, at I-15-16.

earnings.²³ The Environmental Protection Agency estimated the total cost²⁴ of lead poisoning at \$16 billion for 1987.²⁵ The combined cost for Minnesota's three largest cities was estimated at \$11.5 to \$13.1 million annually.²⁶

The second category includes the cost of abatement — either removing the lead pursuant to strict safety guidelines or limiting the opportunity for exposure to the lead through procedures such as encapsulation of lead paint and exposed soil.²⁷ This second category includes costs for the temporary relocation of residents, regular sampling and monitoring during cleanup, specialized equipment, and disposal of the removed substances.²⁸ The Department of Housing and Urban Development proposed a nationwide five-year abatement plan at a cost of \$974 million.²⁹ In the Twin Cities, the cost of abating all pre-1950 lead-painted housing could exceed \$2 billion,³⁰ while the cost of abating merely housing with deteriorated lead paint could exceed \$220 million.³¹ These estimates of the costs of lead poisoning reveal the depth of the lead paint problem and the need for the remedy proposed in this article.

23. TASK FORCE ON LEAD, *supra* note 13 at 13; MINN. NATURE & EXTENT, *supra* note 5, at 4-7. Societal cost figures may underestimate the current cost because the problem compounds over time, "the count of children at a specific point in time . . . is actually multiplied manyfold over an extended period if the exposure source remains unabated." NATURE & EXTENT, *supra* note 1, at 1-15.

24. Costs in this context include both established costs such as the cost of hospitalization and "monetized social costs" which include less tangible costs such as lost future earnings which require estimation in current dollars. See MINN. NATURE & EXTENT, *supra* note 5, at 6.

25. *Id.* at 6. The EPA calculated medical and compensatory education costs totaled \$5.75 billion in 1987, plus "another 10+ billion was lost to the affected children through reduced future earnings." *Id.* HUD predicted abatement of all pre-1950 housing would result in avoidance of \$62 billion in social costs. STRATEGIC PLAN, *supra* note 2, at 12.

26. MINN. NATURE & EXTENT, *supra* note 5, at 6.

27. *Id.* at 16-17. See generally OFFICE OF POLICY DEV. AND RESEARCH, U.S. DEPT. OF HOUSING AND URBAN DEV., THE HUD LEAD-BASED PAINT ABATEMENT DEMONSTRATION (1991) [hereinafter ABATEMENT DEMONSTRATION]; STRATEGIC PLAN, *supra* note 2.

28. See MINN. NATURE & EXTENT, *supra* note 5, at 16-17. See generally ABATEMENT DEMONSTRATION, *supra* note 27.

29. See generally STRATEGIC PLAN, *supra* note 2.

30. MINN. NATURE & EXTENT, *supra* note 5, at 17.

31. *Id.* It may cost another \$13 million for landscaping to suppress dust contaminated with lead. *Id.* Minnesota's Task Force on Lead Abatement Costs suggested a limited abatement program might cost \$2 million annually for up to 20 years. *Id.* at 19.

II. Components of a New Approach to Lead Paint Jurisprudence

In our contemporary complex industrialized society, advances in science and technology create fungible goods which may harm consumers and which cannot be traced to any specific producer. The response of the courts can be either to adhere rigidly to prior doctrine, denying recovery to those injured by such products, or to fashion remedies to meet these changing needs³²

This article focuses on owners of lead-paint-contaminated property as plaintiffs to suggest a theory to solve the lead paint problem that is preventative rather than remedial and that shifts the cost of the lead paint solution to those entities responsible for creating the problem. Traditionally, it has been parents of lead-poisoned children who have sued landlords and paint manufacturers to recover damages resulting from personal injury. Although these suits appropriately have sought to force the responsible parties to compensate the victims of lead paint poisoning, they have failed to ameliorate the dangers of lead poisoning before actual harm to children has occurred. In addition, these suits have proven inadequate since many property owners lack the resources to pay damages should courts hold them liable to a substantial number of lead poisoning victims.³³ In contrast, suits by property owners against paint manufacturers for abatement costs remove the risk of lead poisoning so there will be no victims to compensate. Furthermore, suits for abatement that prevent the need for later personal injury suits by victims will keep the amount of damages collected from paint manufacturers comparatively low.

Suits by property owners against lead paint manufacturers currently arise in two ways. First, paint poisoning victims may sue their landlords seeking monetary compensation for their children's injuries and removal of the hazard from their homes.³⁴ Landlords may then, in turn, implead manufacturers as third parties if they

32. *Sindell v. Abbott Lab.*, 607 P.2d 924, 925 (Cal. 1980), *cert. denied*, 449 U.S. 912 (1980).

33. The Minnesota Task Force on Lead Abatement Costs concluded that a primary obstacle to lead abatement in Minnesota was that "[n]o funds are available for property owners to comply with abatement orders when a child with an elevated blood lead level has been identified." MINN. NATURE & EXTENT, *supra* note 5, at 5. The City of New York sued lead-paint manufacturers after plaintiffs had filed at least 78 lawsuits against the Housing Authority and the city had spent nearly \$25 million to respond to lead-based paint hazards. William G. Krizan & Tom Ichniowski, *City Sues Lead Paint Makers, Alleges They Knew of Danger*, 222 E.N.R. 14 (1989).

34. See generally *Santiago v. Sherwin Williams Co.*, 782 F. Supp. 186, 186 (D. Mass. 1991); *LeBlanc v. Sherwin Williams Co.*, 551 N.E.2d 30, 31 (Mass. 1990); *Hurt v. Philadelphia Housing*, 1992 WL 221992 (E. D. Pa. Aug. 27, 1992).

were not already joined.³⁵ Second, property owners who are forced to ameliorate lead paint hazards on their property, by state law or agency determinations for example, may sue paint manufacturers to recover their abatement expenditures.³⁶

As a result, the paint industry has increasingly become the ultimate target of lead paint litigation.³⁷ For the most part, five companies constitute the lead paint market.³⁸ Plaintiffs allege these industry members knew the dangers of lead paint and failed to warn consumers for decades before Congress forced them to remove lead from their products in 1978.³⁹ Property owners who sue paint manufacturers must prove the manufacturers knew or should have known of the danger inherent in lead paint used in residences and that by continuing to market lead paint they breached a duty to foreseeable victims. Problems arise for property owner plaintiffs both because the economic loss doctrine stops plaintiffs from stating a claim in tort for what is really a breach of warranty case and because the identification element of causation in traditional tort doctrine forces plaintiffs to trace the paint on their walls to the manufacturer who produced it. Thus, before a new theory can succeed in providing a remedy for the lead paint problem by allowing property owners to sue paint manufacturers, the theory must recharacterize the lead paint hazard as a compensable injury, provide a method for identifying tortfeasors, and then explain how to apportion damages.

Courts face the problem of whether to impose liability on the manufacturers of lead paint for the damage collectively but anonymously caused by their products. Plaintiffs in lead paint cases generally join as many manufacturers as possible because they cannot trace the injurious paint to any one manufacturer. Those courts which adhere to traditional tort doctrine will dismiss such claims naming multiple defendants for lack of identification.⁴⁰ An attempt to modify traditional tort doctrine to meet the challenges presented

35. See generally *Gould v. Hous. Auth. of New Orleans*, 595 So.2d 1238, 1238 (La. Ct. App. 1992). The court ordered consolidation of eleven lead paint claims against the Housing Authority of New Orleans (HANO) and allowed HANO to proceed against paint manufacturers after HANO filed third party demands against three paint manufacturers and a trade group in each case.

36. See generally *City of New York v. Lead Industries Ass'n*, 1991 WL 284454 (N.Y. Sup. Ct. 1991). See also, *Krizan & Ichniowski*, *supra* note 33, at 14.

37. See, e.g., Andrew Blum, *Lead Paint Litigation Mushrooms; "Risk" Expands*, NAT'L LAW J., Nov. 4, 1991, at 3.

38. Neal B. Glick, *Lead Paint Liability Continues to Escalate*, MASSACHUSETTS LAWYERS WEEKLY, May 11, 1992, at 42.

39. See *Santiago*, 782 F. Supp. at 188; *LeBlanc*, 551 N.E.2d at 31-32; *Hurt*, 1992 WL 221992 at 4. See also *NATURE & EXTENT*, *supra* note 1, at VI-10.

40. See, e.g., *Philadelphia v. Lead Industries*, 1992 WL 98482, at *13.

by fungible products presents two questions: whether existing law currently recognizes a cause of action to attach liability to a manufacturer of lead paint *before* the paint has caused a personal injury and whether a state should adopt a nontraditional liability theory to extend accountability to defendants who cannot be linked directly to a specific incident of damage and to apportion liability among all the producers of a defective but fungible product. Thus, paint manufacturers may be liable to owners of lead-painted property if the plaintiffs can: 1) assert a cause of action against the manufacturers, 2) identify the manufacturers collectively as tortfeasors; and, 3) explain how to apportion liability among tortfeasors if a plaintiff successfully attaches liability to a group of manufacturers.

Tort law erects two potential barriers to claims by owners of lead-painted property against lead paint manufacturers.⁴¹ First, the economic loss doctrine prevents plaintiffs from recovering damages for losses that result from unsatisfied commercial expectations.⁴² Plaintiffs cannot recover "the diminution in the value of the product because it is inferior in quality and does not work for the general purpose for which it was manufactured and sold."⁴³ Courts generally deny recovery of pecuniary damages unless a compensable injury occurs: a personal injury or damage to property other than the product itself. An exception to the economic loss doctrine permits courts to award damages when the product poses a serious risk of personal injury by classifying the risk as property damage. Lead paint does not technically inflict damage on other property. Therefore, lead paint claims potentially trigger the economic loss doctrine as a bar to recovery. Prudent property owners claiming damages for the latent risk posed by lead paint must then rely on a court's willingness to recognize this exception to the economic loss doctrine.

41. 2 M. STUART MADDEN, *PRODUCTS LIABILITY* § 14.1-3, at 39-48 (2nd ed. 1988). See also David M. Schultz, *Market Share Liability in DES Cases: The Unwarranted Erosion of Causation in Fact*, 40 DEPAUL L. REV. 771, 778-82 (1991) (explaining the cause in fact doctrine and arguing it *should* control in DES cases). See generally Steven Bonanno, *Presumed Innocent: Illinois' Rejection of Market Share Liability in Smith v. Eli Lilly & Company is "Cause in Fact" to Celebrate*, 24 J. MARSHALL L. REV. 869 (1991) (arguing the cause in fact doctrine correctly prevented the use of market share liability in Illinois).

42. See MADDEN, *supra* note 41 § 22.21, at 334-37; James L. Connaughton, Comment, *Recovery for Risk Comes of Age: Asbestos in Schools and the Duty to Abate a Latent Environmental Hazard*, 83 N.W. U. L. REV. 512, 518 (1989). For the Minnesota Supreme Court's articulation of the economic loss doctrine in Minnesota, see *Hapka v. Paquin Farms*, 458 N.W.2d 683 (Minn. 1990); *Superwood Corp v. Siempelkamp Corp.*, 311 N.W.2d 159 (Minn. 1981).

43. MADDEN, *supra* note 41, at 334.

Second, the traditional notion of causation incorporates an identification requirement which effectively shields untraceable manufacturers from liability. To prove their case, plaintiffs must connect their injury to the defendant's conduct by establishing the two elements of causation: cause-in-fact (defendant's conduct was a substantial contributing factor in the injury) and proximate cause (the harm was a reasonably foreseeable consequence of the defendant's conduct).⁴⁴ Lead paint victims generally cannot trace the paint on their walls to a particular defendant and thus are unable to recover for failure to prove the cause-in-fact element of their cases.

Three modifications of traditional tort doctrine fit together to overcome these obstacles to a viable lead paint solution. First, recovery for risk theory alters the standard definition of compensable injury to make the presence of an unreasonable risk of injury an injury in itself, justifying the imposition of liability. The plaintiff's requested relief could then be an award of costs to abate the unreasonable risk. Second, market share liability circumvents the standard tort law notion of causation by shifting to the defendants the burden of proving that the fungible product did not cause the injury and then apportioning liability to each defendant based on market share. Finally, risk contribution theory relies on market share in assigning liability but goes beyond market share liability to predicate liability on the creation of an unreasonable risk. The change in emphasis embodied in risk contribution theory provides a theoretical bridge between the recovery for risk theory and the market share method of apportioning damages.

A. *Recovery for Risk*

For a property owner plaintiff to win an abatement case against a manufacturer, the plaintiff must show that the manufacturer breached a *duty* owed to the plaintiff and that the breach caused an *actual injury*. In traditional tort law, manufacturers have a duty not to market products they know are dangerous and that they know may require removal, or cause injury, or violate housing regulations. But because of the economic loss doctrine, which prevents suits in tort for what is in effect a breach of warranty contract claim, contamination is not an injury-in-fact. Recovery for risk avoids this problem in categorizing damages by shifting the focus away from personal injury to make unreasonable risk of personal injury an actual injury to the property owner.

44. See *supra* § I.C.

To achieve the necessary shift of focus, recovery for risk theory redefines the concept of compensable injury. Recovery for risk removes the emphasis from personal injury and "recognize[s] contamination itself to be an injurious occurrence for which the tortious contaminator should bear the ultimate burden of alleviating."⁴⁵ Therefore, under recovery for risk theory the issue of injury becomes whether the product created an unreasonable *risk* of injury which harmed the owner by contaminating the property, not whether the product has yet made anyone ill.⁴⁶ Abatement costs become the actual damages for property owners.⁴⁷ Recovery for risk avoids the definitional difficulty of determining whether harm to property constitutes compensable "property damage," or noncompensable "economic loss."⁴⁸ Recovery for risk looks instead to the risk created and the resulting potential for personal injury as the true grounds for liability.⁴⁹ Recovery for risk theory interprets recent decisions as imposing a common law duty on manufacturers to abate hazards created by their products.⁵⁰ This newly recognized duty is derived from the fundamental duty of manufacturers not to market products posing a substantial and unreasonable risk of harm.⁵¹ Courts have already applied this reasoning in asbestos cases.⁵² The obvious similarities between asbestos and lead paint cases militate for analogous treatment of lead paint claims.

By recognizing a manufacturer's duty to abate a hazard it generates, recovery for risk offers a new understanding of existing case law and a solid policy-based framework for analyzing future claims.⁵³ The theory suggests that in the future courts should look beyond the constraints of the economic loss doctrine.⁵⁴ Recovery for risk theory posits that as society becomes increasingly conscious of the dangers of toxic contamination, courts should articulate a theory that does not allow those in fact responsible for such contamination to escape liability through an anomaly in tort doctrine. To reach this goal, recovery for risk theory alters the traditional notion of injury but does so only to fulfill the very policies traditional tort doctrine was created to serve. First, it properly shifts the costs of remedying injuries to those entities who are at fault for causing

45. Connaughton, *supra* note 42, at 545.

46. *Id.* at 513.

47. *Id.* at 544.

48. *Id.* at 545.

49. *Id.* at 536-37.

50. *Id.* at 530-36.

51. *Id.* at 513-14.

52. *Id.*

53. *Id.* at 545.

54. *Id.* at 518-36.

those injuries. Second, it enhances the deterrence function of tort law by punishing willful or negligent manufacturers for marketing dangerous products and also by encouraging property owners to abate lead paint poisoning risks before personal injury results.⁵⁵ Risk creators cannot hope to escape liability simply because their tortious conduct failed to cause traceable personal injury. Recovery for risk also eliminates the discrepancy between an injured party who may be compensated and a property owner who eliminates the risk of injury to many potential victims at significant expense but may not receive compensation under traditional doctrines.⁵⁶ This theory recognizes the lack of a moral distinction between the manufacturers who supplied the product in either scenario. Finally, recovery for risk reduces the costs to all parties.⁵⁷ Paint manufacturers would become liable for easily ascertainable and relatively inexpensive abatement expenses rather than random damage awards. Recovery for risk theory provides a sound foundation for creating a cause of action for property owners against lead paint manufacturers.

Minnesota courts recognize the recovery for risk theory. Minnesota courts consistently sustain negligence and strict liability actions in tort against asbestos manufacturers without requiring antecedent personal injuries.⁵⁸ The courts have found that asbestos poses an unreasonable risk to all people exposed to it.⁵⁹ The costs of asbestos maintenance, removal, and replacement qualify as damages under Minnesota law.⁶⁰ The Minnesota Supreme Court has agreed that these damages accrue due to the risk inherent in the presence of asbestos, not because any particular person has suffered a health injury.⁶¹ These damages, however, do not fall into the category of "economic losses" for which recovery cannot be granted.⁶²

The mere presence of asbestos in a building in Minnesota creates an unreasonable risk and thus causes damage.⁶³ This damage

55. *Id.* at 538.

56. *Id.*

57. *Id.* at 544.

58. *Independent School Dist. Mo. 197 v. W.R. Grace & Co.*, 752 F. Supp. 286 (D. Minn. 1990). *See also* 80 S. Eighth St. v. Carey-Canada, Inc., 486 N.W. 2d 393 (Minn. 1992); *T.H.S. Northstar Assoc. v. W.R. Grace & Co.*, 767 F. Supp. 969 (D. Minn. 1991); *Federal Reserve v. Carey-Canada*, 1988 WL 220489 (D. Minn. 1988).

59. *See* 80 S. Eighth St., 486 N.W.2d at 398.

60. For a complete explanation of risk-based damages and abatement actions, see James L. Connaughton, *supra* note 42, (cited with approval in 80 South Eighth Street, 486 N.W.2d at 396).

61. *See* 80 S. Eighth St. 486 N.W.2d at 397-9.

62. *Id.* at 397.

63. *Id.*

provides the foundation for a tort claim in negligence or strict liability by a property owner.⁶⁴ A manufacturer owes a duty to everyone who comes within the potential range of the particular harm.⁶⁵ The manufacturer breaches its duty to consumers by releasing an unreasonably dangerous product into the marketplace.⁶⁶ This risk constitutes actual damage because the owner must abate the asbestos to remove the risk and avoid foreseeable personal injuries.⁶⁷ The costs of abating the hazard and obviating foreseeable injuries serves as a measure of damage.⁶⁸

Damage caused by the presence of asbestos does not constitute economic loss because the harm caused by asbestos does not constitute a failure to meet its bargained-for expectations as fire-retardant insulation. Thus, the economic loss doctrine protecting sellers in the sale of goods from suits based on a product's failure to meet expectations does not apply.⁶⁹ Courts generally expect experienced businesspersons to internalize the assorted risks of economic loss when negotiating the terms of a transaction.⁷⁰ Claims for economic losses may proceed under the Uniform Commercial Code or under warranty law but may not proceed under tort law.⁷¹ The economic damages associated with asbestos, the expense required to remove it and replace it or to effectively encapsulate it, do not arise out of the bargained-for function of asbestos.⁷² Consumers purchase asbestos-based materials for their fire-retardant properties. The health hazard does not diminish the fire-resistant qualities of asbestos.⁷³ The injury lies in the creation of a risk distinct from the primary purpose of asbestos. Thus, the property damage was not a risk implicitly allocated between the parties to a transaction, and a building owner may recover in tort for damages due to asbestos contamination.⁷⁴

B. Market Share Liability

Property owner plaintiffs who have established that a paint manufacturer has breached a duty owed to them and caused an ac-

64. See *id.* at 399; *T.H.S. North Star*, 767 F. Supp. at 973-74.

65. See *80 S. Eighth St.*, 486 N.W.2d at 399.

66. See *id.* at 397.

67. *Id.* at 398.

68. *Id.* at 399.

69. *Id.* at 397.

70. *80 S. Eighth St.*, 486 N.W.2d at 356.

71. *Id.* at 397; *T.H.S. North Star*, 767 F. Supp. at 972.

72. *80 S. Eighth St.*, 486 N.W.2d at 397.

73. *T.H.S. North Star*, 767 F. Supp. at 973.

74. *80 S. Eighth St.*, 486 N.W.2d at 399; *Independent School District Mo. 197, V.W.R. Grace & Co.*, 752 F. Supp. 286, 302 (D. Minn.).

tual injury will prevail if they can also show that the injury has cost the plaintiff a compensable amount of damages. In lead paint cases, however, many plaintiffs may find it problematic to show causation. Because it is often nearly impossible to trace old paint to the exact company that produced it, property owners are likely to be unable to show that any particular defendant paint manufacturer caused their injuries. Market share liability theory relieves plaintiffs from having to identify the exact manufacturer of the offending paint in order to recover.

Courts and commentators first devised market share liability as an answer to DES litigation in the late 1970s.⁷⁵ DES was a generic drug prescribed to prevent miscarriages prior to 1970, but ultimately it caused a rare form of cancer in patients' daughters.⁷⁶ Although more than three hundred companies produced DES, the products of each company were fungible; each dose contained the same chemical composition regardless of its source. Thus, existing tort law denied individual DES victims a remedy because their inability to trace their doses of DES to specific manufacturers meant that they could not prove that the specific defendant caused their injury.⁷⁷ Because of the formalistic strictures of conventional tort causation, DES manufacturers would have escaped liability entirely for the rare type of cancer they most surely caused in DES victims. In order to avoid this grossly unjust result, courts had to surmount two problems: relieving the plaintiff's burden of proving causation and finding a method of apportioning damages.

Market share liability solves the two problems of fungible toxin cases in the following way.⁷⁸ First, it removes the plaintiff's burden of showing traditional causation-in-fact by relaxing the re-

75. See generally Kathy Anne Biehl, *Proof of Causation in Multiparty Drug Litigation*, 56 TEX. L. REV. 125 (1977); *Sindell v. Abbott Lab.*, 607 P.2d 924, 924 (Cal. 1980), cert. denied, 449 U.S. 912 (1980). The concept of market-share liability first appeared in a 1977 Texas Law Review article. The author analyzed the inability of traditional tort law to compensate these deserving plaintiffs and suggested several liability commensurate with defendants' percentage market shares. The author proposed the use of market shares to shift the burden of proof to the defendants and as a rationale for apportioning liability based on a suggestion by Dean Page Keaton. Biehl, *supra* at 131 n.43. See also Naomi Sheiner, *DES and a Proposed Theory of Enterprise Liability*, 46 FORDHAM L. REV. 963 (1978) (proposing a similar theory based on enterprise liability).

76. For a concise history of DES see David M. Schultz, *Market Share Liability In DES Cases: The Unwarranted Erosion of Causation in Fact*, 40 DEPAUL L. REV. 771, 774-78 (1991).

77. *Id.* at 777-82.

78. Market-share liability also may serve a third function, increasing the viability of class action suits as an option by eliminating the barrier posed by the individual identification requirement. See Note, *Market Share Liability: An Answer to the DES Causation Problem*, 94 HARV. L. REV. 668, 675 (1981).

quirement that the plaintiff identify the specific manufacturer of the dose of toxin that caused the harm. Plaintiffs may instead establish a prima facie case by showing 1) the product was fungible; and, 2) the inability to identify the tortfeasor was not attributable to the plaintiff's own action or inaction.⁷⁹ This prong of market share liability then essentially creates a single umbrella defendant from the individual manufacturers named in the suit to which liability may attach under established tort doctrine. The court considers the causation element met because of the probability that the created aggregate defendant will include the individual company actually responsible for dispensing the injury-inducing dose to the plaintiff.⁸⁰ The defendants must cumulatively represent a large enough share of the relevant market to prove that it is likely that some member of the group actually caused the individual harm. The court then shifts the burden to each of the defendants to prove it did not cause the particular harm to the plaintiff.

The second prong of the market share liability theory follows from the first. Since, for the purpose of establishing liability, DES manufacturers are considered to collectively represent a defendant industry which inflicted harm on the plaintiff, the theory must then provide a rationale for apportioning liability among individual defendants for the purpose of determining damages. Because market share liability depends on the presence of a share of the market sufficient to represent the whole industry and on each market participant supplying a percentage of the product at issue, an obvious method for apportionment would be to attach liability to each defendant according to its share of the market. Courts adopting market share liability could then assume that, over time, a manufacturer's aggregate share of liability will accurately reflect the actual harm caused by the relative quantity of the fungible product the manufacturer produced.⁸¹ Thus, market share liability represents the necessary use of judicial artifice for the purpose of

79. Fungible means, "in law, designating goods, as grain, any unit or part of which can replace another unit, as in discharging a debt; capable of being used in place of another." WEBSTER'S NEW UNIVERSAL UNABRIDGED DICTIONARY 742 (1983). In the context of DES litigation and market share liability, fungible connotes a lack of distinctive elements. See *Sindell*, 607 P.2d at 936.

80. For example, if the plaintiff joined manufacturers which together produced 51% of the DES in the relevant market there would be a better than 50% probability that the defendants collectively caused the injury.

81. Under standard tort law, a defendant who actually caused 10% of the injuries would compensate each of its actual victims (10% of the total) in full (100% of the award) under standard tort law. Under market share liability, the defendant would instead pay 10% of the awards to 100% of the victims. Each method should lead to the same ultimate result; a manufacturer who actually caused 10% of the injuries pays 10% of the total damages awarded.

altering tort doctrine to reflect the realities of the modern manufacture of fungible toxins.⁸²

The California Supreme Court's 1980 adoption of market share liability in *Sindell v. Abbot Laboratories* sparked a revolution in the handling of DES cases.⁸³ South Dakota, Washington, and Florida have since incorporated market share liability into their laws.⁸⁴ The California court found the prospect of rendering victims of DES utterly unable to recover against a drug manufacturer sufficiently troubling to justify an exception to traditional tort doctrine.⁸⁵ DES plaintiffs generally could not identify the source of the DES they were given because DES was a widely produced generic drug without identifying properties.⁸⁶ Hundreds of independent manufacturers contributed DES to the market.⁸⁷ In response, the court shaped a new liability theory it called "market share liability."⁸⁸ This new theory relied on manufacturers' percentage shares of the DES market to circumvent two hurdles posed by existing California law.⁸⁹ First, it shifted the burden of proof of causation to defendants, relieving plaintiffs of the duty to identify the tortfeasor. Defendants became presumptively liable and were required to prove they could not have caused the injury. Second, it apportioned damages among the defendants based on market share.

Persuasive public policy justifications explicitly underlie *Sindell*. The court opened its discussion of market share liability with three policy statements: 1) "between an innocent plaintiff and negligent defendants, the latter should bear the cost of the injury," 2) "defendants are better able to bear the cost of injury;" and, 3)

82. See Randee S. Parlee, *Overcoming the Identification Burden in DES Litigation: The Market Share Liability Theory*, 65 MARQ. L. REV. 609, 630 (1982) (arguing market-share liability defendants will pay the same damages they would if victims could identify them and sue them directly).

83. *Sindell*, 607 P.2d at 924.

84. See *McElhaney v. Eli Lilly & Co.*, 564 F. Supp. 265 (D. S.D. 1983); *Martin v. Abbott Laboratories*, 689 P.2d 368 (Wash. 1984); *Conley v. Boyle Drug Co.*, 570 So. 2d 275 (Fla. 1990).

85. *Sindell*, 607 P.2d at 936.

86. *Id.*

87. The California Supreme Court found that "[a]t least 200 manufacturers produced DES." *Id.* at 935.

88. The phrase was first applied to name the theory by a dissenting Justice. *Id.* at 938 (Richardson, J., dissenting).

89. *Id.* at 936-38. The California Supreme Court uses a probability based argument to support shifting the burden of proof of causation to defendants. The court notes that the probability that one of the defendants made the actual DES which caused the injury theoretically matches the aggregate market share of the defendants. The court held the presence of a substantial percentage of the manufacturers can satisfy the causation requirement. The court then states that apportioning liability among defendants by market share follows logically from the joinder of a substantial share of the relevant market. *Id.*

"holding [the manufacturer] liable for defects . . . will provide an incentive to product safety."⁹⁰ The court went on to explain that market share liability satisfies fairness standards because, over time, each manufacturer's liability in DES cases will approximate the harm their specific products caused.⁹¹ The court asserted the fairness of its solution by emphasizing the limitation of liability to market share and by contrasting the results under market share liability to the alternative of leaving plaintiffs without a remedy.⁹² These underlying policy justifications also provided the basis for the adoption of market share liability in other states.

California's current market share liability theory incorporates several guidelines. A plaintiff must be unable to identify the source of the DES responsible for her injuries through no fault of her own.⁹³ The plaintiff must join manufacturers cumulatively responsible for a "substantial percentage" of the total DES supply,⁹⁴ although the court declined to articulate a threshold for meeting this requirement.⁹⁵ California ultimately adopted a national market as the basis for determining market shares.⁹⁶ California limits the liability of any defendant to its share of the DES market.⁹⁷ Courts may not inflate liability to make up for the absence of manufacturers who can not be joined or who no longer exist.⁹⁸ Finally, California allows manufacturers to exculpate themselves by showing they could not have produced the particular DES which caused the plaintiff's injuries.⁹⁹

The Washington Supreme Court, in 1984, confronted the DES dilemma in *Martin v. Abbott Laboratories*.¹⁰⁰ The court found the *Sindell* theory attractive but rejected it because of the substantial

90. *Id.* at 936.

91. *Id.* at 937-38.

92. *See id.*, at 936-38.

93. *Id.* at 936. The California Supreme Court implied that it provided this remedy because plaintiffs 1) could not identify the manufacturer; and, 2) this failure to identify was "through no fault of plaintiff." *Id.*

94. *Id.* at 937.

95. *Id.* The California Supreme Court declined to apply the 75-80% threshold suggested in the Fordham Comment. *Id.* The court later determined that 10% was not a substantial share of the market. *See* *Murphy v. E. R. Squibb & Sons, Inc.*, 710 P.2d 247 (Cal. 1985).

96. *See* Christopher J. McGuire, Note, *Market-Share Liability After Hymowitz and Conley: Exploring the Limits of Judicial Power*, 24 MICH. J.L. REF. 759, 760 (1991).

97. *Brown v. Super. Ct. (Abbott Laboratories)*, 751 P.2d 470, 486 (Cal. 1988) (resolving ambiguity concerning the type of liability under market share by declaring market share imposes only several liability).

98. *Id.* at 487. *See also Sindell*, 607 P.2d at 938.

99. *Sindell*, 607 P.2d at 936.

100. *Martin*, 689 P.2d 368 (Wash. 1984).

share threshold and the mistaken understanding that California would inflate defendants' liability to guarantee plaintiffs a complete recovery.¹⁰¹ *Martin* reflected a belief that DES manufacturers shared some level of culpability for marketing DES.¹⁰² The Washington court agreed with *Sindell* that drug companies rather than injured plaintiffs should absorb or distribute the cost of the injury¹⁰³ and responded by creating "market share alternate liability."¹⁰⁴ Washington's theory allows plaintiffs to proceed against a single defendant; it defines the market narrowly; it allows defendants to exculpate themselves by showing they did not participate in the defined market; and it imposes only several liability.¹⁰⁵ Washington presumptively assigns an equal share of the total market to each defendant who may then rebut this presumption and establish an actual share. If defendants prove they collectively represent less than the full market, a plaintiff may only recover a percentage of any judgment equal to the percentage of the market represented by the defendants.

The Florida Supreme Court began with Washington's market share alternate liability theory when it shaped its own remedy for DES plaintiffs.¹⁰⁶ The basic elements of Florida's market share alternate liability parallel those of Washington's theory. Florida requires only one defendant, defines the market narrowly, allows exculpation, and imposes only several liability.¹⁰⁷ The Florida court interjected three additional guidelines. First, a plaintiff under Florida law must show she "made a reasonable attempt to identify the manufacturer responsible for her injury."¹⁰⁸ Second, Florida's theory applies only in negligence actions.¹⁰⁹ Finally, de-

101. *Id.* at 381. The California Supreme Court cleared up this misconception in its *Brown* decision expressly limited liability to market share. *Brown*, 751 P.2d at 485.

102. *Martin*, 689 P.2d at 382. The Washington Supreme Court recognized the connection of culpability to risk but did not equate causation to risk creation. *Id.* The court rejected the risk contribution theory adopted in Wisconsin. *Id.* at 377.

103. *Id.* Washington's Supreme Court noted a manufacturer would either obtain liability insurance, pay the award itself, or spread the cost to consumers through pricing. *Id.*

104. *Id.* at 381. Plaintiffs under the Washington scheme must satisfy four threshold requirements to proceed: "that the plaintiff's mother took DES; that DES caused the plaintiff's subsequent injuries; that the defendant produced or marketed the type of DES taken by plaintiff's mother; and that the defendant's conduct . . . constituted a breach of a legally recognized duty to the plaintiff." *Id.* at 382.

105. *Id.*

106. *Conley v. Boyle Drug Co.*, 570 So.2d 275, 286 (Fla. 1990).

107. *Id.*

108. *Id.*

109. *Id.*

defendants may not implead insolvent or defunct companies to reduce their presumptive market shares.¹¹⁰

The Minnesota Supreme Court addressed market share liability in 1985. *Bixler v. J.C. Penney Co., Inc.*¹¹¹ involved a boy severely burned when his nightshirt explosively caught fire.¹¹² The family sued J.C. Penney Co. and the store's primary supplier of cotton flannelette.¹¹³ Although the two original parties settled, Bixler never successfully identified the actual manufacturer of the flammable fabric and later moved to add four additional suppliers of cotton flannelette to the complaint.¹¹⁴ The district court denied the motion and the supreme court affirmed the denial.¹¹⁵ Judge Sedgewick of the trial court, however, described market share liability as, "a product liability theory not yet adopted in this state . . . [and] inappropriate in this case,"¹¹⁶ and the supreme court held that, "any consideration of the issue of market share liability is premature."¹¹⁷ The supreme court also stated, "[w]e express no opinion as to whether we would adopt such a rule, particularly where the product involved is not entirely fungible with similar products on the market."¹¹⁸

The Minnesota Supreme Court found the cotton flannelette central to *Bixler* was not a fungible product as required under the market share theory.¹¹⁹ Several manufacturers produced similar products, but each had distinguishing fabric weaves, distinct patterns, and different properties.¹²⁰ One manufacturer demonstrated during discovery that it did not produce fabric with the same thread density and edge structure as fabric recovered from Bixler's nightshirt.¹²¹ Some manufacturers maintained complete pattern librar-

110. *Id.* Defendants may generally lower their potential liability by impleading additional defendants, but the court sought to prevent the inclusion of defunct or insolvent companies as a device to further lower presumptive market shares. *Id.*

111. 376 N.W.2d 209 (Minn. 1985).

112. *Id.* at 211.

113. *Id.* at 211-12.

114. *Id.* at 212.

115. *Id.*

116. *Bixler*, 376 N.W.2d at 212. The district court order included a memorandum opinion which asserted, "[n]o compelling reason exists here, as opposed to circumstances in cases cited by plaintiff, where courts have permitted the market share theory, to shift the burden to the manufacturers." Sedgewick Order, July 27, 1982 at 2, *Bixler*, 376 N.W.2d at 209 (No. 769246).

117. *Id.* at 214.

118. *Id.* at 214 n.1.

119. *Id.*

120. For a review of background facts in *Bixler*, see *Bixler v. Avondale Mills*, 405 N.W.2d 428, 429-30 (Minn. Ct. App. 1987).

121. *Id.* at 430.

ies wherein Bixler could not find a match.¹²² The facts failed to support the assertion that more than one manufacturer placed defectively flammable flannel on the market because numerous factors could affect flammability.¹²³

The Minnesota Court of Appeals, on subsequent review, further distinguished the above scenario from successful market share claims.¹²⁴ The court found the inability to identify a tortfeasor resulted partially from Bixler's own inaction, not due to circumstances beyond Bixler's control as required under the market share theory.¹²⁵ The court stated "that the 11-year delay between the accident and the suit exacerbated the difficulty of discovering the manufacturer of the fabric."¹²⁶ Had Bixler acted in a timely fashion, he may have identified the fabric's source. Although market share liability was not available to Bixler, Minnesota case law does not preclude the use of market share liability to resolve a claim which does not succumb to the criticisms leveled at Bixler by the Minnesota courts.

C. Risk Contribution

Risk contribution theory serves the same essential functions as market share liability: it attaches liability to manufacturers of fungible products *which have inflicted personal injury* and apportions damages among the manufacturers according to percentage of market share. But, risk contribution achieves these ends by changing the basis of liability altogether, whereas, market share liability merely constructs a credible exception to standard tort doctrine. Risk contribution presumes the existence of "a substantial, identifiable, identical, and . . . mathematically divisible aggregate risk";¹²⁷ it, like recovery for risk, relies on the premise that the creation of an unreasonable risk of injury is culpable behavior. Risk contribution theory, however, stops short of embracing the redefinition of compensable injury which is fundamental to recovery for risk theory, so it does not treat the risk of injury as an injury *per se*. Risk contribution theory then presumes that percentage market shares represent the portion of the overall risk each manufacturer creates

122. *Id.*

123. *Id.* at 431.

124. *Id.*

125. *Avondale Mills*, 405 N.W.2d at 431.

126. *Id.*

127. Andrew G. Celli, Jr., *Toward a Risk Contribution Approach to Tortfeasor Identification and Multiple Causation Cases*, 65 N.Y.U. L. REV. 635, 651 (1990) (citing Glen O. Robinson, *Multiple Causation in Tort Law: Reflections on the DES Cases*, 68 VA. L. REV. 713, 751 (1982)).

for each consumer. It equates liability with the creation of an unreasonable risk to all consumers equally, not with the probability that a manufacturer injured any particular plaintiff.

Risk contribution theory satisfies the policy expectations of tort law more effectively than market share liability. Costs are taken from their most concentrated point, the impact on a single victim, and dispersed to the greatest extent practicable, to everyone who augmented the risk. Risk contribution offers a fair solution. The theory treats all defendants equally based on their "creation of a risk that society deems unreasonable, not whether anyone was injured by it."¹²⁸ Tortfeasors will not escape responsibility in a liability lottery by gambling that no one will be injured by their unreasonably dangerous product or that injured parties will fail to identify them as the source of the product. Finally, risk contribution deters future harm by focusing on the risk-creating conduct itself, not the individual incidence of personal injury. Risk contribution facilitates preemptive claims preventing aggravated harm later on. Under this theory, owners of property containing lead paint could bring an action for abatement before the lead harmed children.

The elements of risk contribution theory flow logically from the theory itself. Risk contribution assumes a national market because it assesses a defendant's risk creation to consumers at large. However, it allows plaintiffs to proceed against a single defendant because that defendant's risk-creating activities directly represent individual culpability. Further, it imposes only several liability because of the independence of each actor's risk-creating activity. Risk contribution does not allow exculpation unless the manufacturer was entirely absent from the national market during the relevant time period.

In 1984, Wisconsin became the first state to expand the role of market share percentages in DES cases beyond merely representing the probability a manufacturer caused a plaintiff's injury. Wisconsin formulated a risk contribution theory and became the first state to truly link culpability to risk creation.¹²⁹ New York and Hawaii have followed Wisconsin's lead and fashioned theories explicitly imposing liability for the creation of a risk to society.¹³⁰ Wisconsin's supreme court relied in part on an article authored by

128. Robinson, *supra* note 127, at 739.

129. *Collins v. Eli Lilly Co.*, 342 N.W.2d 37 (Wis. 1984), *cert. denied*, 469 U.S. 826 (1984).

130. See *Hymowitz v. Eli Lilly Co.*, 539 N.E.2d 1069 (N.Y. Ct. App. 1989); *Smith v. Cutter Biological, Inc.*, 823 P.2d 717 (Haw. 1991).

Professor Oscar Robinson concerning risk contribution¹³¹ to shift the foundation of liability to "relative fault" using Wisconsin's comparative negligence doctrine.¹³² Relative fault depends on "the percentage of causal negligence attributable to each defendant."¹³³ In relative fault, market share percentage emerges as one of seven factors in determining culpability.¹³⁴ The analysis begins by recognizing a manufacturer's duty to ensure the reasonable safety of its products¹³⁵ and the need to fashion adequate remedies for injured plaintiffs left uncompensated under traditional tort law.¹³⁶ Although this scheme may assign liability to some innocent defendants, "[Wisconsin] accept[s] this as the price the defendants, and perhaps ultimately society, must pay to provide the plaintiff an adequate remedy under the law."¹³⁷ Plaintiffs alleging negligence or strict products liability under Wisconsin law may proceed against one or more defendants.¹³⁸ Wisconsin defines the market narrowly, allows defendants to exculpate themselves, and applies a comparative negligence analysis to apportion damages.¹³⁹

The New York Court of Appeals cast aside all previous incarnations of market share liability and risk contribution theory in *Hymowitz v. Eli Lilly*, by connecting market share to risk and equating risk with culpability.¹⁴⁰ *Hymowitz* embodied a choice "to apportion liability so as to correspond to the over-all culpability of each defendant, measured by the amount of risk of injury each defendant created to the public-at-large . . . not causation in a single case."¹⁴¹ The theory delineated by the court of appeals was as follows: national market shares indicate defendants' overall risk creation;¹⁴² exculpation is unavailable because the link from a manufacturer's product to a victim is irrelevant to overall risk crea-

131. Robinson, *supra* note 127 at 140 ; *see supra* § II.B.

132. *See Collins*, 372 N.W.2d at 49-53.

133. *Id.*

134. For a list of the seven factors Wisconsin uses to apportion liability, *see id.*

135. *Id.* at 52.

136. *Id.* at 45. The Wisconsin Supreme Court finds authority in the state constitution to fashion new remedies for injured persons entitled to a legal remedy. *Id.* (citing WISC. CONST. art. I, § 9).

137. *Id.* at 52. The Wisconsin Supreme Court explicitly recognized that damages assessed to a manufacturer may be passed on to consumers as a business expense. *Id.* at 49.

138. Plaintiffs in Wisconsin must first meet four criteria which match those adopted by the Washington Supreme Court. *See supra* note 104 and accompanying text.

139. *Collins*, 342 N.W.2d at 48-53.

140. *See Hymowitz*, 539 N.E.2d 1069, 1076-78 (N.Y. Ct. App. 1989).

141. *Id.* at 1078.

142. *Id.*

tion;¹⁴³ only several liability applies; and, liability shall not inflate to guarantee plaintiffs' full recoveries.¹⁴⁴ The court anchored *Hymowitz* on risk because, unlike the *Sindell* court, it refused to rely on the likelihood that liability will reflect actual causation over time.¹⁴⁵ The *Hymowitz* court defined the market nationally because variations of market share liability which reject a nationwide market engender disparate results among states, undermining the anticipated congruence of liability and actual causation in each state.¹⁴⁶ *Hymowitz* also disposed of Wisconsin's approach, refusing to accept that national market share could represent the risk actually posed to a *particular* plaintiff.¹⁴⁷

The Hawaii Supreme Court, resolving a claim against blood product manufacturers,¹⁴⁸ adopted New York's risk contribution theory in 1991.¹⁴⁹ *Smith v. Cutter Biological, Inc.* held "culpability for marketing the product is a better policy" after considering *Sindell's* market share liability as well as the risk contribution approach articulated in *Hymowitz*.¹⁵⁰ The court divided its opinion into three parts. First, *Smith* defined the appropriate market as the national market.¹⁵¹ Next, *Smith* held defendants would only be severally liable.¹⁵² The court declined to require plaintiffs to join more than a single defendant but did urge plaintiffs to do so because defendants' shares would not be inflated to compensate for absent manufacturers.¹⁵³ Finally, *Smith* followed *Hymowitz* in declining to allow exculpation, based on the theory that culpability for risk creation does not require a substantiated link between the manufacturer and any particular plaintiff.¹⁵⁴

143. *Id.*

144. *Id.*

145. *Hymowitz*, 539 N.E.2d at 1078.

146. *Id.* at 1077-78. Results will vary across states under a national assignment of market shares because a company's actual share in one state may be less than its national percentage, while its actual share in another state may be greater than its national percentage. Thus, a company may pay less than its local share in one state, but more in another. If all states adopted national market shares, liability would ultimately balance out, matching each defendant's overall (national) market participation.

147. *Id.*

148. *Smith v. Cutter Biological, Inc.*, 823 P.2d 717, 717 (Haw. 1991). The defendants in *Cutter* marketed fungible blood coagulation products to hemophiliacs. The plaintiff, a hemophiliac, allegedly contracted AIDS after exposure to the virus through the blood products. *Id.* at 721.

149. *See id.* at 728.

150. *Id.*

151. *Id.*

152. *Id.* at 729.

153. *Smith*, 823 P.2d at 729.

154. *Id.* The court in *Smith* noted that an exception exists for defendants that had no relevant product on the market at the time of injury. *Id.*

Minnesota courts have not taken a position on risk contribution. In the *Bixler* case, the Minnesota Supreme Court held that market share liability did not apply but expressly left open the possibility of adopting a market share liability theory in the future if a case arose which merited it. Presumably, since current Minnesota law accepts the recovery for risk theory which focuses on risk creating behavior, it would require only a small additional step for a Minnesota court to apply the risk contribution theory in resolving a case.

III. The Market Share Recovery for Risk Proposal

The modern law extrapolates from small number to large number situations in a mechanical way that is largely insensitive to the problems of scale and which neglects the importance of transaction costs.¹⁵⁵

Minnesota courts should fashion a market share recovery for risk cause of action for owners of lead-contaminated property to use in suits to recover abatement costs from paint manufacturers. Lead abatement claims under market share recovery for risk would proceed initially under the recovery for risk theory because the presence of lead paint creates a risk comparable to the risk asbestos creates. However, lead paint claims also involve identification problems analogous to those encountered in DES cases. This distinguishes lead paint claims from asbestos claims making an additional step necessary. The second stage of a market share recovery for risk action would overcome the identification problem and impose liability by using market share as was done in DES litigation.¹⁵⁶ In formulating a new theory, courts should draw from the application of recovery for risk in recent Minnesota asbestos litigation and from the various market-share-based theories developed in other states. This new theory should base culpability for risk creation on actual and constructive estimations of manufacturers' national market share, should impose only several liability, and

155. Richard A. Epstein, *Two Fallacies in the Law of Joint Torts*, 73 GEO. L.J. 1377, 1378 (1985).

156. See discussion *infra* note 76 and accompanying text. The asbestos cases share a prerequisite. The Minnesota Legislature passed a revival statute circumventing a possible time bar posed by the statute of limitations. New York passed a similar revival statute to permit the pursuit of DES claims. This article declines to examine the precise implications of the statute of limitations. Lead paint litigation may require similar initial legislation. This requires experience with actual lead paint cases, and judicial evaluation of the accrual of causes of action and the relevant applications of Minnesota Statutes. This should not serve as a deterrent to litigation, however, since the Minnesota legislature has demonstrated deep concern over the lead paint problem and has shown a willingness to clear a path for meritorious litigation in the past.

should allow plaintiffs to sue one or more manufacturers of a fungible product in a single action. Market share recovery for risk theory should not allow defendants to seek exculpation by attempting to disprove the link between the product and the damages based on traditional notions of causation-in-fact.

Lead paint poisoning raises challenges to traditional tort doctrine analogous to those raised in the DES cases. Lead paint plaintiffs, like DES plaintiffs, will have trouble identifying the specific manufacturer of the paint on the walls of their properties because paint, once applied, cannot be traced to its source — especially when multiple layers of paint have accumulated over several decades.¹⁵⁷ Plaintiffs generally have not lost their credibility due to a time lapse in filing suits. Lead paint continues to strike new victims every day, giving rise to fresh claims. Market-share-based liability theories stand to operate at least as effectively in lead paint cases as they have in DES cases. Market share liability and risk contribution worked to apportion damages in DES cases that involved hundreds of manufacturers. The task of assigning liability in lead paint cases through market share liability theory presents a much smaller administrative challenge because the industry was essentially comprised of five companies.¹⁵⁸

Whether addressing DES or lead paint claims, five practical issues arise in implementing a market-share-based liability theory. First, courts must define the relevant market. Market share could be determined locally, within a particular state, or nationally. Second, courts must decide whether to impose a minimum joinder requirement on plaintiffs initiating suits under market share liability. Suits could proceed against a single defendant representing a small share of the market, or courts could require plaintiffs to join a specified percentage of the overall market before proceeding. Third, courts must decide whether they should hold defendants jointly and severally liable or whether defendants should only be severally liable. The kind of liability to which defendants are subjected may work to prevent plaintiffs from recovering the full amount of their judgments. Fourth, courts must similarly decide how to presumptively assign market shares in the absence of complete information and whether to inflate the liability of defendants with unascertained shares to provide a full recovery. Fifth, courts

157. Paint manufacturers sought dismissal of a suit brought by the Housing Authority of New Orleans (HANO) because after four years and voluminous discovery HANO could not trace the paint in each apartment to the specific producer, and "will never be able to prove this fact." *Gould v. Hous. Auth. of New Orleans*, 595 So.2d 1238, 1242 (La. Ct. App. 1992).

158. See *supra* note 38 and accompanying text.

must develop standards for exculpating defendants claiming they could not have caused the plaintiff's injury.

A discussion of the optimal formulation of market share recovery for risk requires the incorporation of an economic analysis of prior market-share-based theories. Two types of costs arise in applying these theories. Administrative costs to society include all costs of the litigation itself. Complex litigation results in a substantial expenditure of public money on judicial resources. Error costs include the cost of a plaintiff failing to recover some or all of the damages sustained and the cost of forcing a defendant to compensate for damages it objectively did not create. Excess administrative and error costs accrue primarily from defining a narrow market, imposing joint liability to ensure a full recovery for the plaintiff, and permitting additional proceedings to consider exculpation. The market share recovery for risk theory proposed in this article minimizes these costs.

National market share is the proper basis for apportionment. A narrower definition of the relevant market would unduly encumber the discovery process and may produce anomalies in the ultimate nationwide apportionment of liability. An assessment of national market shares would require establishing only once the total quantity of lead-based paint disseminated by a defendant. On the other hand, determinations of local market shares would necessitate never-ending inquiries into the precise distribution of defendants' products in each relevant market however defined and constrained in an individual case. A court must also arrive at a method for initially allotting presumptive shares and then implement a mechanism for calibrating shares reflecting information adduced in the proceedings.

Several liability in market share recovery for risk cases is a superior method of liability assignment to joint and several liability. Several liability is implicit in a risk-based theory because it limits each defendant's liability to the actual amount of risk it caused and at the same time reduces the potential error costs (EC).¹⁵⁹ Under a probability-based theory courts can choose to hold defendants either severally or jointly and severally liable. Even in the probability-based framework, though, opting for several liability reduces error costs. Probability-based theories rely on the likelihood that *one* of the liable defendants caused a plaintiff's *entire* harm. As a result, under a probability-based system with joint and

159. In this discussion the variable "EC" represents one mathematical unit of error cost. For the purpose of evaluating the correct assignment of liability EC would be based on the total amount of damages.

several liability, a guilty-in-fact defendant may mistakenly avoid paying any damages (an error cost of $1 * EC$ because that defendant should have paid the entire award), while another defendant found jointly liable bears an equivalent error cost due to the misplaced liability (also an error cost of $1 * EC$ because this defendant then pays the entire award). The total error cost in this worst case adds up to $2 * EC$, in effect making an innocent-in-fact defendant act as a *de facto* insurer for the industry.¹⁶⁰

In contrast, several liability in a probability-based framework reduces potential error costs to $1 * EC$.¹⁶¹ It achieves this reduction because if a court excuses a defendant from liability, it cannot inflate the remaining defendants' liability to guarantee a full recovery to the plaintiff. Several liability therefore declines to make each manufacturer a *de facto* insurer. When the basis for liability changes to risk, these error costs are reduced to zero because each defendant pays for the risk it created and liability no longer depends on which defendant's product actually caused the personal injury. In a risk-based framework, a defendant can be absolved of liability only if it did not create any risk. However, the removal of a defendant in these circumstances would not produce error costs because the liability would be correctly reallocated to the remaining defendants who did contribute to the risk. Thus, several liability as part of a risk-based framework eliminates the potential for error costs to accrue due to misplaced liability.

Market share recovery for risk should facilitate claims against a single manufacturer as well as allow a plaintiff to sue more than one manufacturer. Exclusive several liability shields a manufacturer from inflated liability as a sole defendant. The plaintiff clearly will have an incentive to include as many manufacturers as possible in the original suit because in any given suit the plaintiff may only recover damages equivalent to the percentage of the market represented by the defendants. Also, the manufacturer will undoubtedly plead additional manufacturers where it determines it appropriate to do so. The manufacturer can shift some of the burden of production to fellow manufacturers to delineate the breakdown of market shares where it cannot adequately demonstrate its own market share. In this situation, if the defendant declines to

160. An innocent manufacturer becomes a *de facto* insurer to the industry when it is forced to pay a damage award under joint-and-several liability for an injury which it did not in fact cause.

161. A guilty-in-fact defendant may pay only 10% of its true liability if it held a 10% market share. In this case, other "innocent-in-fact" defendants would contribute the remaining 90% to reach 100%. This, however, only yields an error cost of $0.90 * EC$, less than $1 EC$.

implead other manufacturers, it may expose itself to excess liability and generate error costs because of its inability to demonstrate the actual scope of its risk creation.¹⁶² Alternatively, if the manufacturer can prove it occupied only a small share of the market, it may choose to settle the claim without going to trial, or to rely on the several liability limitation to provide a fair resolution, thus avoiding costs for the use of judicial resources. In this fashion, defendant manufacturers will select optimal allocations of administrative costs in each case based on the specifics of the situation and implicit assessments of the potential error costs pertinent to them.

Liability predicated on risk precludes exculpation unless a manufacturer can prove it did not sell any lead paint. Where liability depends on risk creation, introducing any lead paint into the national market is sufficient to inculcate a defendant because the mere introduction of lead paint into the market is the behavior that creates the risk of harm. Proof that the defendant did not produce the actual paint on the plaintiff's property thus becomes irrelevant to the question of liability. Hence, where a plaintiff proves that a manufacturer did introduce lead paint into the national market, defendants will not be able to defend by showing that their products were not marketed in the plaintiff's geographical area or that the defendant never sold to the plaintiff's supplier. By rendering detailed, technical exculpation evidence irrelevant to the issue of liability, market share recovery for risk significantly lowers litigation costs. Moreover, precluding exculpation avoids error costs over time because when a manufacturer is allowed to avoid liability on any grounds other than non-participation in the market, either the plaintiff fails to recover a percentage matching the manufacturer's market share, or the remaining defendants make up the difference by paying a larger share. Therefore, market share recovery for risk ensures that plaintiffs receive their due recoveries and that defendants pay their fair shares while also maximizing the administrative efficiency of lead paint litigation

Conclusion

Manufacturers of injurious products must not attain "safety in the anonymity of numbers." Lead paint injures children as the paint deteriorates and children ingest paint dust or paint chips.

162. This theory assumes that courts must assign some presumptive market share to defendants before they prove their actual share. Error costs could arise if the presumptive share was larger than the actual share but the defendant failed to demonstrate its actual market share. Impleading other manufacturers would require them to also prove their market shares, thus limiting the remaining market share which the court could presumptively assign to the first defendant.

Previous solutions have failed to remove the lead paint threat. The most beneficial solution is to allow property owners to sue paint companies who placed a dangerous fungible product on the market. The goal of a suit by a property owner is to diffuse the hazard once and for all, before tenants suffer irreversible harm. Market share recovery for risk combines recovery for risk and market-share-based liability theories to provide a mechanism for identification of lead paint manufacturers as tortfeasors and for apportionment of liability. Market share recovery for risk builds on existing Minnesota case law incorporating economic and public policy concerns to hold lead paint producers liable for the harm caused by their products, while also minimizing administrative and error costs associated with the proceedings. This approach provides a remedy to deserving plaintiffs but does not impose an unwieldy new form of haphazard insurance on manufacturers. Market share recovery for risk respects the need for judicial economy but recognizes the responsibility of the law to evolve congruently with an increasingly complex world. Finally, this theory offers a solution to the intractable public policy predicament posed by lead paint poisoning.

