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A REPORT ON ADVANCE DISPOSAL FEES

Conducted and prepared by

Arthur D. Little, Inc.

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TABLE OF CONTENTS

Foreword	ii
Summary	1
Report	2
Appendices:	
• List of Bills	13
• Glossary of Terms	21
Graphs:	
Figure 1: Package Manufacturer Channel Margins	5
Figure 2: Total Mark-Up By Product	6
Figure 3: Total Mark-Up By Material	6
Figure 4: Volume Estimates By Material	8
Figure 5: Post-Consumer Recycling and Recycled Content Rates	10

FOREWORD

Today's environmental challenges require that all sectors of society work together to develop solutions. To do this, we must share information to help each other better understand these environmental issues and to make the most of our limited resources.

Environmental Education Associates, Inc. (EEA) is an environmental firm that provides information, products and services addressing the multitude of environmental issues we are facing today. From teacher workshops and executive conferences to reports on state environmental programs, we work with all sectors of society committed to a healthier environment.

We recognize no one institution, company, government or citizen has the resources to examine every issue in a thoughtful and thorough way. Therefore, EEA compiles and distributes primary and secondary research reports to help provide facts and options on a variety of today's environmental concerns. In this way, EEA contributes to the flow of ideas and information critical to the environmental debate.

Advance disposal fees (ADFs) have become part of the solid waste management dialogue. This is a timely report prepared by Arthur D. Little, Inc., to provide new information on the impact of ADFs on solid waste management planning. We are pleased to have been granted permission from Arthur D. Little, Inc., to disseminate this report. We thank the Steel Can Recycling Institute for its support in underwriting Arthur D. Little's research and this distribution. And my personal appreciation goes to the EEA research staff for their contributions to this report.

We hope you find this report useful, and will feel free to share similar information with us.

Deborah L. Redmond
Executive Director

SUMMARY

Advance disposal fees (ADFs) are being presented as a method for reducing the disposal of certain materials and packages found in municipal solid waste and for securing funds to bolster the solid waste management infrastructure. Generally speaking, the theory behind ADFs is that the cost of waste management of a product should be borne by the manufacturer/producer and conveyed to the consumer in the product's price. In theory, an ADF provides an incentive for both the manufacturer/producer and the consumer to consider waste management in their product selection decisions.

Numerous states are considering ADFs along with many other approaches in an earnest attempt to find viable solutions for their solid waste management problems. Unfortunately, little is known about ADFs and their true value in meeting the waste reduction goals established by legislators and voters.

Arthur D. Little, Inc., examined 28 state legislative bills which were representative of the several types of ADFs currently under consideration in several states. Conducted in 1991, the study is an analysis of the different variables included in these bills; the degree of ease or difficulty for fair implementation; and the probable effectiveness of implementing the policies contained in these bills.

REPORT ON ADVANCE DISPOSAL FEES

I. Introduction

Over the past five years, solid waste has risen to the forefront of the environmental policy debate. Rising tipping fees, shrinking landfill capacity, increased difficulty in siting and establishing new disposal facilities, and individual awareness have all combined to elevate garbage to the front of the public mind. As a result, there have been a spate of legislative proposals to solve the problems presented by our trash. These proposals include mandatory recycling laws, source reduction initiatives, disposal restrictions, environmental labelling, and product and material bans. One set of policy initiatives has focussed on attempting to capture the environmental cost of solid waste in product prices. Commonly referred to as Advance Disposal Fees (ADFs), these proposals seek to attach a fee to products and packages commensurate with their impact on the solid waste disposal system. The theory behind such systems is that they would enable consumers to incorporate the solid waste impact of their purchases into their individual consumption decisions. Further, this consumption effect as well as the fees themselves, would provide incentives for manufacturers and packagers to choose and use materials that have relatively lower impacts on the solid waste streams. Finally, ADF systems are seen by many as a source of funds to invest in solid waste infrastructure.

Arthur D. Little, Inc. performed an analysis of ADF proposals. Conducted over a period of five months, the study looked at the full range of ADF bills and systematically analyzed the different approaches taken in each piece of legislation. The study then focussed on the impact of four different policy variables: wastes covered by the proposal; the point at which an ADF would be levied (Point of Levy); the basis upon which an ADF would be levied (Levy Basis); and the incentives in the bills for recycling, reuse and source reduction. The study was conducted in two phases, the first of which analyzed the various policy initiatives and the second analyzed the economic effects of the policy variables.

II. Analysis of Legislative Initiatives

In reviewing solid waste laws proposed in the 50 states and Washington, D.C. during 1990 and 1991, Arthur D. Little, Inc. developed a universe of over 280 different bills. Of these, 28 bore some resemblance to the generic ADF concept described above. (See Appendix I: List of Bills) Many of the bills in this subset, however, did not meet the criteria for a "true" ADF and were actually a derivative of deposit legislation. The basic differences between the two types of proposals are:

<u>Category</u>	<u>Deposit Bills</u>	<u>ADFs</u>
Refunds	Operates on a refund basis	Refunds, if any, are tied to raw material value.
Wastes	Covers packaging and hard-to-dispose of items.	Usually packaging only; can be all waste.
Point of Levy	Retailer.	Can be anywhere in the distribution chain.
Levy Basis	Per item.	Weight, volume, price or item.
Incentives	Usually none.	Recycling rate, recycled content, reuse.
Fee Collection	Retailer/consumer system.	Government collection system.
Use of Funds	Minimal amounts available as system is "self-clearing."	Solid waste system subsidy.

After assembling the smaller pool of ADF and ADF-like proposals, the study looked at each of the bills for its approach to the four key policy variables. This analysis was used to narrow the scope of detailed economic study performed on each of the policy variables.

A. Wastes Covered

Almost 60 percent of the bills focussed on packaging. These items represent roughly one-third of the municipal waste stream and have been the subject of heated political debate. While almost 40 percent of the ADF proposals focussed on other non-durable goods (tires, batteries, etc), these bills more closely resembled deposit systems with the intent of ensuring proper disposal and, in some cases, recycling. One bill studied dealt exclusively with durable products (appliances and furniture) and again was oriented toward ensuring proper disposal.

As a result of the review of the wastes covered in the various legislative proposals, Phase 2 analysis focussed on seven common consumer products and their packaging: apple juice, soda, coffee, hair spray, pet food, prepared vegetables, and cooking oil. In addition, office supplies (such as in/out boxes) and gasoline tanks were studied further to represent durable products.

B. Point of Levy

While half of the proposals specified the check-out counter as the point of levy, the balance of proposals covered virtually every point in the distribution chain.

Eighteen percent (18%) specified the wholesale level as the point of levy and the manufacturer and the waste generator were specified in just over 10 percent of the bills. Finally, two bills identified "the point of first sale" within a state as the point of levy.

Given the range of different points of levy that arose in the legislation, Phase 2 analysis focussed on all points in the distribution chain.

C. Levy Basis

Analysis of the different bases of levy indicate that most ADF proposals strove for administrative simplicity rather than to capture the impact of solid waste. Over half the proposals specified a fee per package or per item and another 43 percent specified a price-based fee. Only one proposal specifically mentioned a fee based upon the weight of a package or product, and no proposal specified volume as a basis for an ADF (volume is the best indicator of consumption of landfill space even though most solid waste tip fees are calculated by weight).

Phase 2 examined four different levy bases: weight, volume, per item or container, and price.

D. Incentives

Almost two-thirds of the bills contained no incentives for recycling, recycled content or source reduction. In the remaining bills, incentives that were included reward recycling rate (25 percent of the bills), recycled content (18 percent) and reuse (4 percent). There were no provisions for source reduction. Virtually all of the bills that included incentives provided either for a full rebate of the ADF, or an exemption from the fee, providing one or more of the incentive levels were met. Generally, the incentive provisions reward materials that achieve a 50 percent collection rate, or have recycled content of between 10 and 50 percent. The reuse incentive is only awarded to those packages that can be reused several times for their original purpose.

Phase 2 further analyzed recycling rate, recycled content, and reuse incentives.

III. Point of Levy Analysis

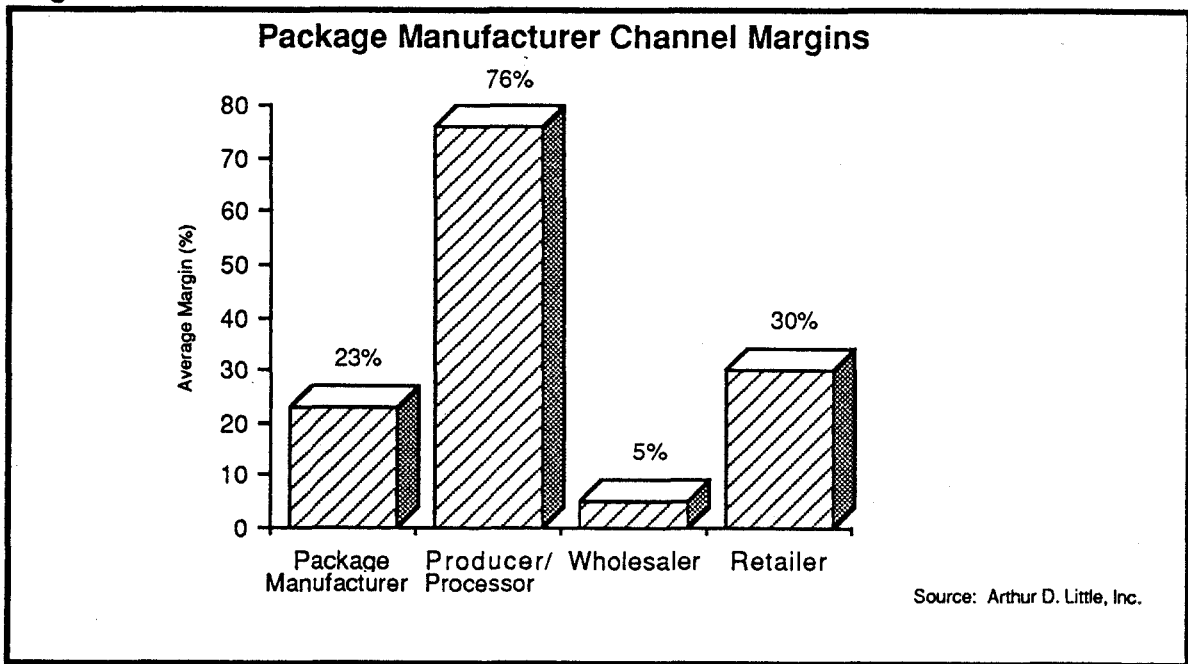
The key to the analysis of different levy points is the distribution chain. Every product, by the time it reaches the consumer, goes through a series of production and value-added steps that are performed by different companies in different industries. The product outputs of early steps in this chain become product inputs at later stages in the chain. At each step in the chain producers mark up the cost of their inputs to reflect the value they have added to their finished product. The amount of this mark-up varies broadly and is a function of a number of micro- and macro-economic factors. ADFs levied at any particular point in the distribution will effectively become an increased cost of operations to that point in the chain. That increased cost is, in turn, subject to a range of

possible decisions at each subsequent step in the chain: the cost can be absorbed through reduced profits, the cost can be passed through to customers at the level it was imposed, or the ADF can be marked up in line with the rest of input costs. Where on this spectrum of options a particular company will opt to fall is driven by competitive, market, economic and idiosyncratic factors. While guesses can be made as to how a particular company or industry will react to an ADF, they will remain guesses without any degree of certainty.

A variety of industries, including package manufacturing (aluminum, glass, paper, plastic and steel); food processing; soda and beer bottling; pet foods; personal care products; and durable product manufacturing, were researched and analyzed for their respective contribution to the distribution chain. Essentially, all consumer products go through a four step chain: package manufacturer to product manufacturer to wholesaler to retailer. While there is considerable variation to this model, it occurs mainly at the margin and does not affect the basic structure. The one notable exception to this model is soda, which generally follows a three-step process (skipping the wholesaler).

As shown by Figure, 1, average margins taken at each step in the distribution chain range from just over 20 percent at the package manufacturer level to 75 percent at the product manufacturer. The effect of these margins for different product and package combinations is to produce dramatically different changes between an original package price and that seen by the consumer.

Figure 1



As shown in Figure 2, hair spray increases approximately 375 percent between the original package price and the consumer while durable goods increase only about 225 percent.

Figure 2

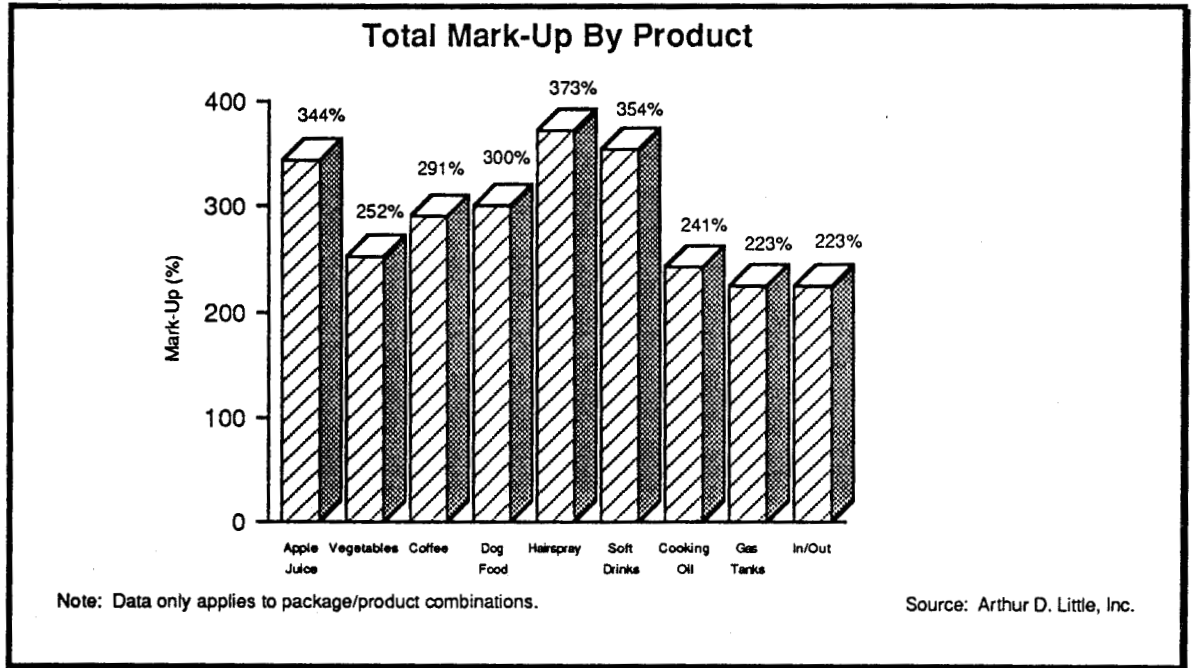
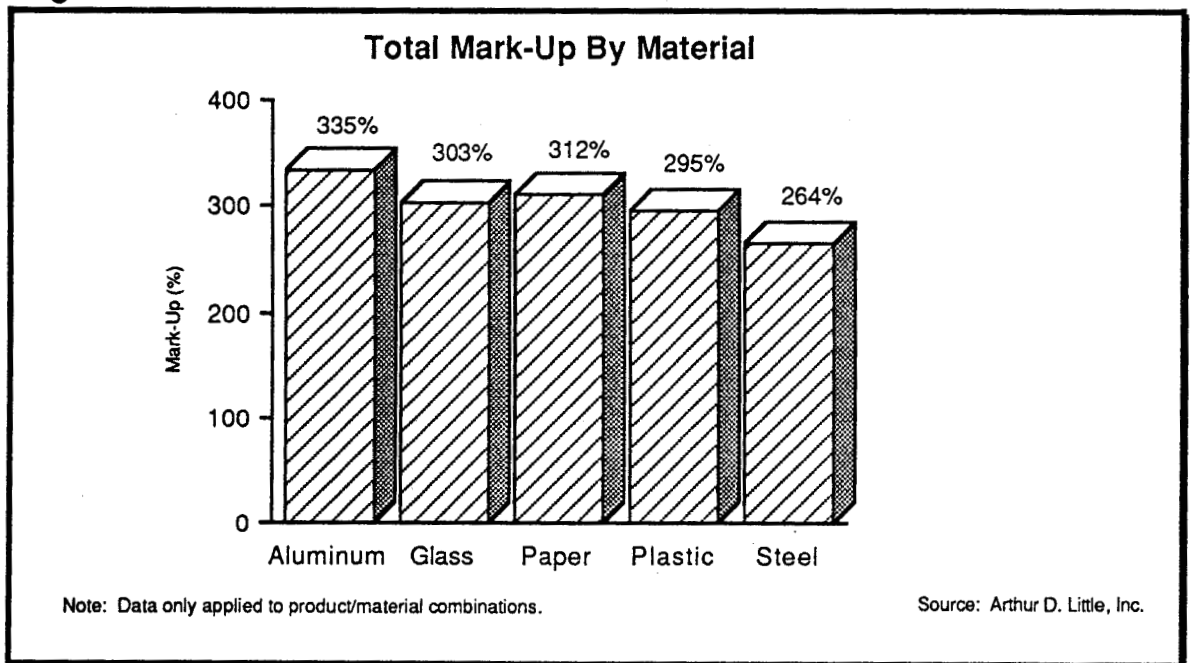


Figure 3 shows mark-ups for packaging material/product combinations range from a low of 264 percent for steel, to 335 percent for aluminum.

Figure 3



Levying an ADF early in a distribution chain presents several public policy and political advantages. First, by imposing a fee on those making product and/or package material selections, it encourages these decision-makers to incorporate the environmental consequences, as represented by the ADF, into

their choice. Second, by imposing the fee on a variety of actors, it broadens the base of the fee and therefore potentially lessens its absolute amount. Third, not having the fee at the retail level makes it more politically palatable as it is both hidden from the consumer and not imposed at the same place as a sales tax.

However, there are a number of disadvantages as well. First, levying early in the distribution chain presents tremendous administrative challenges. Not only is there a far greater number of potential fee-payers than there would be at the retail level, but the number of items covered by most of the proposals examined expands the scope and complexity of administering the fee even further. Second, an issue of equity is presented. In-state manufacturers would have the levy applied earlier (or at more levels) than their out-of-state and out-of-country competitors. In the absence of their absorbing the fee entirely -- often an economic impossibility -- this would place them at a competitive disadvantage. Third, it would be very difficult, if not impossible, to calculate the amount of levy needed to raise the funds needed to support the solid waste system. This difficulty is created by differential behavior at the different points in the distribution chain. If the fee amount is calculated at the manufacturer level, and full margins are taken at every step in the chain, the consumer will end up paying three to four times the amount needed to fund solid waste with the balance going to corporations as profits they make on ADFs they have paid. If, on the other hand, the levy amount is calculated by the amount an ADF will be at the retail level assuming that channel margins are taken, then the risk is that, because some actors may only pass the ADF through, the program will not raise enough money to fund solid waste activities. Finally, levying an ADF prior to the retail level hides the information it contains from the consumer and therefore diminishes his/her power to make purchasing decisions which account for solid waste impacts.

IV. Levy Basis Analysis

In looking at the basis for an ADF, the study considered four possibilities: weight, volume, item and price. The first two options are "waste-based" levies as the ADF would be calculated based upon a measure of contribution to the solid waste stream. Item and price do not appear, at least on the surface, to be related to solid waste impact but, instead, are driven by administrative and programmatic simplicity. Each of the levy bases was analyzed separately.

In order to separate the effects of the levy basis from the point of levy, and therefore to remove margin effects and channel behavior from the analysis, each different levy basis was studied under the assumption that it would be levied at the retail level.

A. Weight-Based Levy

The amount of a weight-based levy was calculated using \$150 per ton as the assumed total cost of disposal. Actual disposal costs across the United States vary broadly and depend upon a number of factors including local supply and

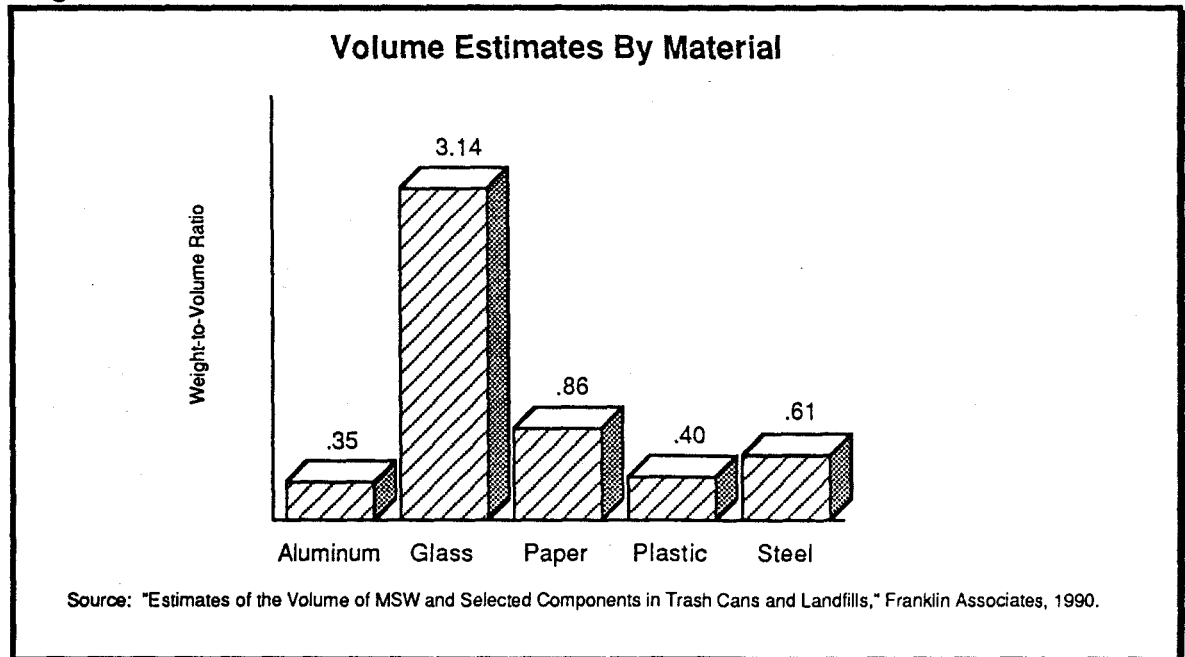
demand for disposal capacity, hauling modes and distance, types of disposal capacity available, and the regulatory requirements of disposal facilities. The figure of \$150 per ton, inclusive of both tipping and hauling, is at the high end of the distribution of disposal costs. This figure was selected, as opposed to a national average (which would have been \$50 to \$75 per ton less), to represent the extreme case of a region with significant stress on its disposal system. An ADF of \$150 per ton translates to roughly one half cent per ounce.

A weight-based levy produces an average ADF of 1.7 cents for all the products and packages studied. This is the lowest absolute level of an ADF for all materials except glass. In addition, a weight-based levy favors aluminum and plastic packages due to their low density and generally thin-walled construction. Glass, due to its high weight-to-volume ratio, has the highest ADF under a weight-driven fee system.

B. Volume-Based Levy

To derive volume-based levy estimates, national data on the volume of packaging in landfills were used. As shown in Figure 4, all of the packaging materials studied except glass have weight to volume ratios of less than one. This means that they take up proportionately more space in a landfill than their weight would otherwise indicate.

Figure 4



To develop dollar estimates of an ADF based upon waste volume, the weight-based fees discussed above were adjusted by the weight-to-volume ratios in Figure 4. Not surprisingly, all materials, with the exception of glass, experienced higher fees with a volume-based levy; the amount of fee increases ranged from 20 percent to 300 percent. Glass, on the other hand, experienced

a decrease in the amount of its a ADF of over 65 percent. The average amount of an ADF under a volume-based levy remained at 1.7 cents for all products and packages studied, reflecting the fact that the increased fees on aluminum, paper, plastic and steel were offset by the large reduction in the fee on glass.

C. Item-Based Levy

Item-based ADFs were analyzed by applying a three cents per item fee on the products and packages analyzed. This figure was derived by examining the various legislative proposals using an item-based approach and calculating an average ADF. The most frequently proposed item-based ADF was five cents per item; however, a number of bills proposed fees of one or two cents, thus bringing down the average. A key problem with item-based levies is that they do not account for the vastly different sizes and values of products and packages. Therefore, an automobile gas tank or gallon container of cooking oil would have the same fee levied as would a six ounce can of pet food or a six ounce can of fruit juice.

As a result of these factors, the most relevant way to look at item-based ADFs is as a percentage of product price. Due to the differences in product sizes and prices, the item-based levies ranged from a low of less than 0.01 percent to a high of 9.5 percent. The average percent of price for an item-driven fee was 3.2 percent, roughly double that of both the weight and volume-based levies.

D. Price-Based Levy

Price-based ADFs were analyzed by applying a fee equal to four percent of the consumer price. As with the item-based analysis, this figure was derived from an average of the price-based ADF proposals. The key problem with a price-based levy is that it places a relatively higher fee on small, high value items. Consequently, a seven ounce plastic pump container of hair spray, which weighs roughly the same amount as a 16 ounce plastic soda bottle, but is more expensive, would be assessed a fee of 14 cents, almost three times as much as the soda bottle.

The average ADF based upon price was over 40 cents per product; over 25 times that under a volume or weight-based levy. However, this figure is skewed upward by the inclusion of durable products. When these are removed from the average, the average price-based levy drops to just under 10 cents per product; roughly six time that under a volume or weight-based levy.

V. Incentives Analysis

Three different incentive scenarios were developed and analyzed; recycling rate incentives, recycled content incentives, and reuse incentives. This analysis used a methodology, derived from the legislative proposals, where, if the product/package met the incentive criteria, the ADF would not be imposed or would be rebated. For purposes of evaluating recycling rate and recycled

content incentives, a 25 percent rate was used in both instances. For a product/package to meet the reuse incentive, it would have to be designed to be reused or refilled for its original purpose at least five times.

Figure 5 presents current estimates of recycling rates and recycled content for the five materials. While a number of materials meet the recycling rate targets on an aggregate basis, only two meet the recycled content targets. However, these aggregate data paint an inaccurate picture as many of the packages and products do not fall into aggregate categories. Indeed, some materials used in packaging have expanded markets which result in the use of these materials in non-packaging applications. For example, recycled glass containers are currently being used as a raw material in an asphalt substitute called glassphalt, and recycled steel containers have been used for years to produce other steel products such as construction materials, appliances and automotive parts.

The reuse incentive is oriented at "two-way," returnable bottle systems and none of the products or packages studied met this definition of reuse.

Figure 5

Post-Consumer Recycling and Recycled Content Rates							
	Aluminum	Glass	Paper	Plastic Bottles	Plastic Containers	Plastic Overall	Steel Cans
Recycling Rate	62%	31%	37%	9%	1%	6%	34%
Recycled Content	50 - 55%	20%	23%	0%	0%	0%	10%

Note: All figures are for post-consumer recycling; recycling rate figures reflect 1991 data except for plastic which reflects 1990 data; recycled content less than 5% was recorded as 0%. Recycled content figures reflect 1990 data. Glass recycling rate includes refillable bottles.

VI. Conclusions

This examination and analysis of ADF proposals leads to four key conclusions. These involve the level at which the fee is set; the trade-offs between simplicity of administering the fee and making it related to the solid waste stream; the drawbacks to setting the fee early in the distribution chain; and the total effect of an ADF on waste generation.

A. Level of the ADF

Of the four levy bases, two are directly related to a product or package's impact on the waste stream and two are not. Estimates for the two waste-based levies (weight and volume) were derived using estimates of waste disposal cost and the best evidence available for weight to volume ratios. Therefore, the waste-based estimates of an ADF program, while they are on the high side as a result of the disposal cost assumption of \$150 per ton, fairly represent the amount of a fee based on either weight or volume.

Estimates for item and price-based levies, on the other hand, were driven by provisions in the legislative proposals studied. As discussed above, these scenarios produced ADF levels that are between twice and six times as high as the waste-based fees. Therefore, if an item-based levy were to be selected, it should be set at approximately one cent per package/product to capture the economic impact of waste disposal. If a price-based levy were to be selected, it should be set at a level between 0.5 percent and one percent of the consumer price. These two levels more closely approximate the average dollar disposal cost of the products and packages examined. However, the number of products and packages included in this study represents only a small fraction of consumer items that could be subject to an ADF. Therefore, any final conclusions about ADF levels should be made based upon analysis of the universe of specific products included in an ADF program.

B. Trade-Offs

Clearly there are trade-offs between different options for each policy variable. Price and item-based levies will be easier to implement because they relate only to the number or price of items sold. Weight and volume-based fees, while they bear a closer correlation to waste impacts, will be far more difficult to administer as they require individual calculations of weight or volume for each of the millions of products and packages in the marketplace. This complexity is added to by the need to make the fee easy to calculate whether it is levied at a factory, wholesaler or retailer.

The same complexities exist with regard to the point of levy. Assessing the fee at the retail level would be relatively simple as the assessment could "piggy-back" on the existing sales tax system. However, this could be perceived, both politically and publicly, as an increase in the sales tax and would therefore engender opposition. On the other hand, levying the ADF at earlier points

within the distribution chain would require development of new taxing systems as there are relatively few corporate taxes based upon items and/or products.

C. Point of Levy Drawbacks

The point of levy creates additional issues. Levying early in the distribution chain broadens the base of fee-payers and insulates the fee program, at least to an extent, from the perception that it is an addition to the sales tax. However, inequities would be created for in-state firms as a result of any early levy. Specifically, in-state manufacturers competing with out-of-state manufacturers would suffer as they would have the fee levied on their products earlier (and perhaps more often) than their out-of-state counterparts. A variety of solutions to these inequities have been discussed (assessing the ADF only on larger companies, a gross receipts tax, etc.), however, they do not eliminate the inequity; they either lessen it or move it around.

D. Effects of ADFs on Waste Generation

ADFs have been proposed in order to promote source reduction and recycling. Implicit in their structure is the desire to provide incentives for consumers to switch their product and packaging purchases to products with relatively lower environmental impacts. These incentives would be provided by the elimination of the ADF for products meeting certain levels of recycling and by increasing the base prices to account for disposal costs. While the incentives for recycling and recycled content are clear, the effect on source reduction is less so.

Most of the products examined are food and personal consumption products. As such, they have relatively inelastic demand. Therefore, for a given percentage increase in price, a smaller percentage decrease in consumption can be expected. Given that the waste-based levies produce price increases of about one percent, we can expect demand decreases of less than that amount. If an average price elasticity of 0.5 for personal consumption products is assumed (research indicates that food products typically have an elasticity of less than 0.5), declines in demand of approximately one half percent can be expected. Given the packaging represents 30 to 40 percent of the waste stream, the source reduction effects of ADFs would be significantly less than one half percent of the total waste stream.

Appendix I: List of Bills

The following tables describe the 28 pieces of legislation used for this report and give their status at the time the research for the report was conducted. The sources for this information include:

1. State Action on Packaging and Source Reduction-Solid Waste Alternatives Project, Environmental Action Foundation.
2. State Index -- Selected Solid Waste Bills -- America Paper Institute
3. Nexus Lexus Data Search System
4. 86th General Assembly, State of Illinois 1989 and 1990
5. Florida Regulations, Part IV, CN 71-79
6. Washington Regulations, Chapter 70.93 RCW
7. The New Recycling Law (1989 Wisconsin Act 335)
8. Maine Waste Management Agency
9. Virginia Department of Waste Management
10. New Hampshire 1991 Session. Introduced by Rep. B Hall of Hillsborough Dist. 16, HB 699-FN
11. Nebraska Litter Reduction & Recycling Program, Annual Report to the Governor, Feb. 15, 1991
12. California Legislature, 1991-92, Regular Session

State	Bill #	Status as of July, 1991	Level at Which Tax is Levied	Key Provisions	Bill Type
California	SB2292	Passed: In Ways & Means Committee	Retail	CA Integrated Waste Management Board introduces durability standards. If standards are not met then a fee will be imposed of 15% of the retail value. Purpose is to promote recycling.	Reg./Tax
California	SB2091	Passed: Introduced 3/2/90 Last Action 8/30/90	Manufacturer	Impose fees for the disposal of used tires and the purchase by state agencies of recycled paper products. Cities and counties are required to divert 25% of their solid waste from the landfills or transformation by 1/1/95. Establishes a 20% recycling goal of all solid waste. Forces the California Integrated Waste Management Board to submit to legislature by 1/1/91 a model on a disposal cost fee system. Recycle, reduce and reuse are the focus of the legislation. Manufacturers will be encouraged to have recycled content in all materials they use. Fees will be based on the cost of handling and processing material for recycling or disposal.	Fee
California	A2213	Pending: 4/4/91	Point of 1st sale	California's Integrated Waste Management Board establishes a recycling incentive fee. Funds are raised for a Recycling Incentive Account. (Part of the Integrated Waste Management Fund)	Fee
California	AB1397	Pending: Introduced 3/7/91	Distributor/Dealer	Impose a 2% tax on the sales price on all dog and cat products and containers sold in the state. Money is deposited in the Animal Control Fund.	Tax

State	Bill #	Status as of July, 1991	Level at Which Tax is Levied	Key Provisions	Bill Type
California	SB752	Pending: Introduced 3/6/91	Beverage Manufacturers	Department of Conservation is required to impose a processing fee for each beverage container with a specific scrap value. The fee will be paid by beverage manufacturers. This is related to the California Beverage Container Recycling and Reduction Act.	Fee
California	AB3580	Pending: Introduced 3/1/90 Last Action 9/27/90	Retail	City or County or both can impose a tax by ordinance on the sale of aerosol paint containers, containers of any other marking substance, felt tip markers with specified writing surfaces and any other marking device as defined.	Tax
Florida	Ch.88-130/ Sect. 72 (Florida Statute: 403.7197)	Passed: In effect 10/1/92	Retail	An "advanced disposal fee" applies to all containers > 5 oz. in capacity made from aluminum, glass, plastic, plastic coated paper or other metals. The fee is \$0.01/item if a 50% recycling rate is not met by 1992. By 1995 the fee will be increased to \$0.02/item.	Fee
Florida	H1913 (Florida Statute: 403.7195)	Passed: Introduced 1/1/89	Producer or Publisher (Based upon total weight of newsprint consumed in their publication.)	Imposed a waste disposal fee of \$0.10/ton on newsprint. If by 10/1/92 newsprint within the state is recycled at a rate of 50% or more, the fee shall be rescinded. If by 10/1/92 the recycling rate is less than 50% the fee will increase to \$0.50/ton.	Fee
Florida	SB1192	Passed: Introduced 1/90	Retail	Impose a fee of \$1.00/new tire purchased. The fee is paid to the Department of Revenue.	Fee

State	Bill #	Status as of July, 1991	Level at Which Tax is Levied	Key Provisions	Bill Type
Illinois	HB3634	Died 1991: Introduced 4/5/90	Receiving party when item enters Illinois for retail sales.	An "advanced disposal fee" of \$0.01/ item on single-use items and single-use diapers. The fee helps to fund grants and loans to research other reusable products.	Fee
Illinois	HB3980	Passed: Introduced 4/18/90 Effective 1/1/91	Retail	A Packaging and Recycling Act is created. Over the next four years the DOE and Natural Resources shall monitor the number of containers made from aluminum, glass, plastic, plastic coated paper and other metals that are sold in the state and are recycled. If by October 1, 1994 the percentage is less than 50% then an advanced disposal fee of \$0.05 per container will be imposed. Containers that are given a fee may be returned on the ADF in addition to payment for the market value of the product from which the container is made. By October 1, 1997 this fee will increase to \$0.10 per container.	Fee
Maine	Title 36 Section 4832	Passed: In effect 7/1/90	Retail/Consumer	Imposed an "advanced disposal fee" on new tires, new lead-acid batteries, new major appliances, new major furniture items, new bathtubs and new mattresses. The fee is \$1.00/tire or lead battery and \$5.00/major appliance, furniture item, bathtub or mattress. Major appliances = clothes dryers and washers; freezers; dishwashers; microwave ovens; ovens; refrigerators; window air conditioners; stoves. Major furniture = any unit of furniture with value of \$250.00 or more.	Fee

State	Bill #	Status as of July, 1991	Level at Which Tax is Levied	Key Provisions	Bill Type
Massachusetts	H2949	Pending: 3/2/1991 to Joint Committee on Taxation	Food Establishments	A "litter fee" on prepared foods sold in disposable wrappers or containers.	Fee
Nebraska	Sec. 81-1536 to 1564 (Litter Reduction & Recycling Act)	Passed: Currently underway as the Litter Reduction & Recycling Program	Manufacturers Wholesalers Retailers	An annual litter fee is imposed upon those responsible parties, contributing to the litter stream, whose annual gross proceeds are at least \$350,000. The fee is equal to \$150.00 for each \$1,000,000 of gross products. Products that contribute to the litter stream are: food for human and pet consumption, groceries, tobacco products, carbonated products, alcoholic beverages, household paper products, glass products, metal products, plastic or fiber containers made of synthetic materials and cleaning agents. Exemptions are magazines, periodicals, newspapers, and literary works.	Fee
New Hampshire	HB 699-FN	Pending: Re-referred back to Committee. Will be back in legislation next year.	Wholesaler	Impose a state surcharge of \$0.07/item paid by a wholesaler to the state waste management fund or the state incentive fund. If the recycling rate within the state is < 40% the fee will be increased to \$0.10/item. If the recycling rate within the state is > 40% the fee will decrease \$0.01 for every 10% above 40%. The wholesaler is allowed to add the amount of the surcharge on to the wholesale price of the item. The consumer can receive a \$0.05/item refund when the container is returned to a recycling center.	Surcharge

State	Bill #	Status as of July, 1991	Level at Which Tax Is Levied	Key Provisions	Bill Type
New Jersey	A2218	Pending: Introduced 1/18/90	Retail (seller level)	Imposes a \$0.03/container retail tax on rigid containers 6 oz. or greater. Exempts certain containers.	Tax
New Jersey	A4428	Pending: Introduced 1/24/91	Retail/Consumer Level	Exempts disposable household paper products and certain household cleaners from sales tax.	Sales tax exemption
New Mexico	H481	Pending: 3/14/91 to Judiciary	Retail/Consumer	New Mexico Recycling Act: promulgate regulations that require packaging to be reusable, recyclable or made of recyclable materials. Fees may be charged to packagers who do not meet the above standards.	Fee
North Carolina	S229	Pending: Introduced 3/13/91 in Senate Environment	Retail	An "advanced disposal fee" of \$0.01/container will be imposed on those containers that do not meet the 50% recycling rate in the state. This includes containers made of aluminum, glass, plastic, plastic coated paper, or other metals. This fee is currently being studied. An interim report will be presented to the 1992 Session of the 1991 General Assembly.	Fee
Ohio	H36	Pending: 3/1/91 to House Committee on State Government	Retail	Fee on containers, packaging material and newsprint that enter the waste stream. Grants will be given to recycling programs and enterprises that make recycled products.	Fee and Grant
Oklahoma	S262	Pending: 2/7/91 to Senate Committee on Finance	Retail/Consumer	Exempts certain containers, labels, wrapping, packing, packaging supplies and materials from sales tax.	Sales Tax Exemption

State	Bill #	Status as of July, 1991	Level at Which Tax is Levied	Key Provisions	Bill Type
Pennsylvania	H222	Pending: Introduced 2/4/91 to House Committee on Conservation	Retail/Consumer	Excludes the sale of recyclable material from municipal personal property sale restrictions and from the sales tax.	Sales Tax Exemption
Vermont	S326/ Section 7	Passed: Introduced 1/90	Retail	Doubles the state sales tax from \$0.04 to \$0.08 on disposable or single use products. Disposable products = those that have parts essential to their operation: batteries, razors; Single-use products = disposable cups, plates, napkins.	Tax
Virginia	"Litter Tax" Section 10.11415	Passed: 1/1/78	Businesses who operate as a manufacturer, wholesaler, distributor or retailer. (The tax does not apply to consumers.)	A "litter tax" of \$10.00 annually is imposed on packages, wrappings and containers that constitute litter. The \$10.00 tax applies to each Virginia establishment from which business is conducted. Businesses involved in the sale of groceries, soft drinks, carbonated waters, beer and other malt beverages must pay an additional \$15.00 annually (total \$25.00/yr). Money is deposited into the state's general fund.	Tax
			Brewery, bottler or wholesaler who sells to the retailer.	Tax is imposed on those persons who sell beer and malt beverages to a retailer. The rates are \$0.15/barrel, \$0.05/bottle up to 12 oz., and 0.02 mils (thousandths)/oz. for bottles over 12 oz.	Tax
Virginia	Chapter 6, Sec. 58.1-641	Passed: 1/1/90	Retail/Consumer	A tax of \$0.50/tire is imposed on the consumer for every new tire purchased.	Tax

State	Bill #	Status as of July, 1991	Level at Which Tax is Levied	Key Provisions	Bill Type
Washington	Chapter 70.93 RCW Section 70.93.120	Passed	Manufacturer Wholesaler Retailer	An annual litter assessment which is equal to the value of products manufactured and sold within the state. This includes by-products. The fee for manufacturers is multiplied by one and one-half hundredths of 1% and equal to the gross proceeds of the sales of the business within the state multiplied by one and one-half hundredths of 1% for sales at wholesale and retail levels.	Fee
Wisconsin	Act 335 Section 159.31	Passed	Publisher of newspaper	A newspaper recycling fee is created to be paid annually. The recycled content must be 19% by 1992, 25% by 1994 and 45% by 2001 and beyond. The fee imposed will be 1% of the total cost of the newsprint used to print the newspaper during the year multiplied by the "recycling status." The "recycling status" is equal to the target recycled content minus the average of the recycled content of all newsprint used by that publisher during the year to print that newspaper.	Fee
Wisconsin	Act 335 Section 77.51-54	Passed: Effective 7/1/90	Retail	A sales and use tax exemption is created for charges made by diaper services for cleaning and providing cloth diapers. An exemption also exists for the sale, lease, rental and storage of cloth diapers.	Exemption

Appendix II: Glossary of Terms

advance disposal fee (ADF) - a fee on a product intended to capture the cost of waste disposal of that product

distribution chain - the series of steps a product goes through from manufacturing to point-of-sale

incentive provision - a clause providing ADF relief for a product or service if certain environmental standards are met

item-based levy - an ADF determined by an identical fee on every product

levy - a tax or fee imposed and collected

levy basis - the product or package characteristic used to define a levy (e.g. weight, volume, price, item)

mark-up - the percentage increase in price of materials from one point in a distribution chain to the next point in the distribution chain

point of levy - the point in the distribution chain where the ADF is to be imposed

price-based levy - an ADF determined by a percentage of the sales price of the product

volume-based levy - an ADF determined by calculating the cost of a product or package's space in a landfill

waste-based levy - an ADF determined using either the cost of volume or weight in a landfill

weight-based levy - an ADF determined by calculating the cost of a product or package's weight in a landfill