



An Analysis of Gross Rates of Recovery in the Auto Salvage Marketplace

by Randy E. Dumm, Ph.D., CLU, James M. Carson, Ph.D., CLU,
and L. Lee Colquitt, Ph.D., CLU, ChFC

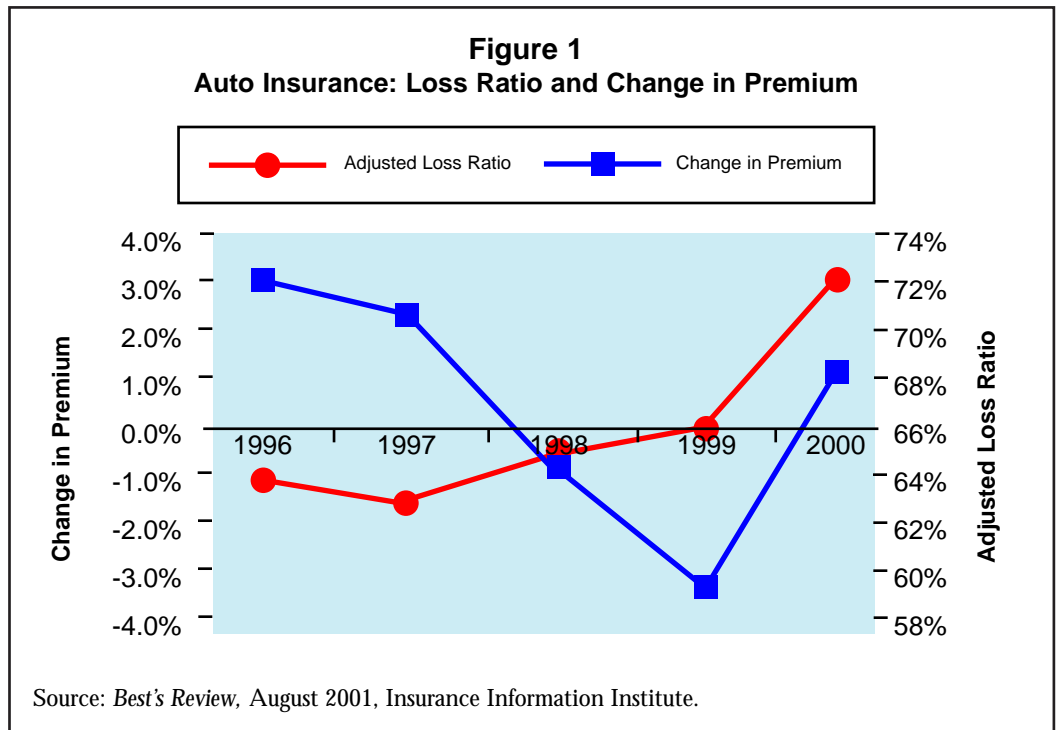
Introduction

In the property and casualty insurance industry, auto liability and physical damage lines combine for more than 46 percent of net premiums written (*Best's Aggregates and Averages, 2000*), making auto insurance an important product for many insurers. Thus, it is not surprising that numerous authors (e.g., Gilbert, 1995; Ryan, 1996; and Esters, 1997) have suggested that auto insurers operate in an environment characterized by increasingly intense price competition. Today, this competition comes from several directions: insurers that traditionally have been active in the auto insurance sector, insurers that have been active in other segments of the insurance industry (e.g., Lutheran Brotherhood), and financial institutions that recently have entered the auto insurance marketplace. Additionally, insurers are faced with the potential loss of business to companies that self-insure their auto insurance exposures, particularly in light of the current hardening property and casualty insurance markets.

All of these factors place additional pressure on auto insurers to price their products competitively. As Figure 1 illustrates, auto insurance premiums either grew at a decreasing rate or declined during most of the period 1996-2000. However, loss ratios during this time increased from 64 percent in 1996 to more than 72 percent in 2000. For the year 2001, State Farm reported an underwriting loss of \$5 billion, much of which was due to its auto insurance business (Oster, 2002). Although prices in the auto insurance marketplace appear to be rising and are likely to continue rising in 2002 (Hartwig, 2002), some observers suggest that competition is expected to limit these price increases (Titterton and Watson, 2002), and thus limit insurers' financial gains in this area as well.

Abstract

Insurers recoup more than \$5 billion annually in auto physical damage recoveries from subrogation and salvage efforts. Previous research on claims recoveries has focused largely on insurers' subrogation efforts, with scant attention paid to the potential for improved recoveries from auto salvage. This study examines gross rates of recovery (GRR) for auto salvage based on sales data for 66,670 autos sold via salvage pools. The research provides insight on relations between vehicle characteristics (age, type of vehicle, type of loss) and GRR. Depending on the type of vehicle, average GRRs range from 17 percent to 25 percent. Specifically, newer vehicles, trucks, and loss by theft are characteristics of vehicles associated with the highest GRRs. The findings of the study provide useful benchmark information that will allow insurers to gauge their relative performance in this important area of claims recoveries.



A consequence of the increased level of competition is the heightened importance of controlling costs. As such, improvements in operational efficiencies or higher auto physical damage recoveries will lead to a reduction in losses regardless of the level of prices. Porter (1980, p. 35) states that the firm that effectively controls costs to the point where it holds a low cost position is able to enjoy "above-average returns in its industry despite the presence of strong competitive forces." In this case, the low cost firm can earn a profit as price competition eliminates profits for higher cost firms. In examining competition and technological change in the automobile insurance industry, Hecht (1995) found that a significant long-term shift in market share toward the low cost carriers has occurred in the auto insurance market. For example, GEICO's share of the auto insurance market has increased from 2.5 percent to 4.1 percent between 1995 and 1999 (Bowers, 2001). Thus, the ability to manage costs provides the necessary flexibility to successfully meet the challenges of the marketplace.

Insurer efforts to significantly improve performance in the claims area is a relatively recent phenomenon. Since the 1970s, numerous trade press articles have appeared citing insurers' need to control claims costs in general (e.g., Barnes, 1979), and others more specifically addressing the area of subrogation (Hammon, 1979; Barnes, 1980; Wolf, 1986; Credle, 1992). Credle states in the title of her article that "subrogation is the key for financial success," and Wolf describes subrogation as an "unexplored way to ax claim cost," suggesting that "subrogation is one way of reducing loss ratios that deserves more attention than it now gets." Continuing in a similar vein in the mid-to-late 1990s, examples of titles on the subject include: "The Claims Gold Rush" (Carris and Bartlett, 1994a); "Many Insurers Overlook Advantages of Subrogation" (Wickert and Nelson, 1995); "Digging for Gold in Claims Departments" (Carris and Bartlett, 1995); and "Uncover a Gold Mine by Pursuing Subrogation" (Gebhardt, 1996). Also, Reich-Hale (1999) describes how insurers recently have outsourced some subrogation claims in an attempt to maximize their recoveries. In discussing claims recoveries, the vast majority of prior literature focuses on subrogation with little or no discussion of salvage recoveries. Recent articles continue this focus on subrogation to the virtual exclusion of salvage.

Motivation of the Study

Given the size of the auto salvage recovery marketplace (estimated at more than \$3 billion), any improvements in this area would result in substantial savings to an insurer. Since both subrogation and salvage recoveries reduce losses paid, improved salvage recoveries are directly reflected in lower net losses. If greater recoveries then are factored into lower expected losses, the improved salvage recoveries would allow an insurer to reduce premiums. In the competitive auto insurance market, an insurer's ability to reduce premiums should help to increase its market share.

Besides the potential to improve salvage recovery performance on an aggregate basis, insurers also benefit from more complete knowledge of how the composition of their own physical damage loss pool affects potential salvage recoveries. Through salvage and subrogation recovery efforts, insurers recover slightly more than 13 percent of paid auto physical damage losses (Mullins, 2001). It is likely that variation exists across vehicle-specific (e.g., type of vehicle) and loss-specific (e.g., type of loss) categories. If that is the case, then it would not be surprising to see variation in damage recoveries for Insurer A and Insurer B based on the characteristics of their respective insured autos. If variation in damage recoveries exists across insurers having similar insured autos, then an improved understanding of this variation allows insurers to determine where they excel or fall short, and leads to a more appropriate premium structure.

Besides the articles that have been published in trade publications, little research has been conducted in the area of claims recovery performance. Colquitt and Dumm (1999) examined claims recovery performance based on data from the auto physical damage schedule of insurer financial statements. They found that size and resources devoted to salvage and subrogation were positively related to recovery performance. However, they cautioned that other factors must be considered in evaluating insurer performance in this area.

The purpose of this study is to empirically examine the relation between vehicle types, loss types, and salvage recovery performance. This study also demonstrates that differences in salvage recoveries do indeed exist among insurers. Research of this type is particularly important given the paucity of research on auto salvage recoveries. The ability to competitively price auto insurance depends on the insurer's success in estimating net losses. With a deeper understanding of how vehicle characteristics ultimately impact the dollar amount of recoveries, the insurer can adjust its premium schedule accordingly. In turn, better information on the drivers of salvage recoveries will assist insurers in making better decisions regarding whether to repair or total their vehicles. This study also provides an overview of issues related to auto salvage and mechanics of the primary methods employed by insurers in disposing of auto salvage. Finally, this study provides important benchmarking information that will be especially useful to smaller insurers.

Overview of Various Disposal Methods for Automobile Salvage

Insurers use two primary methods to dispose of totaled vehicles. The first and most frequently used method is to dispose of vehicles through an auction process. The other primary method used is to sell salvage directly via contract.

Salvage Auctions

The responsibility of the salvage auction is to make the market between automobile salvage sellers (primarily insurers) and buyers. Vehicles usually are sold on a live auction basis, but some salvage auctions are now being conducted via the Internet. From the

Randy E. Dumm, Ph.D., CLU, is an assistant professor of risk and insurance at Florida State University. He has published in the *Journal of Risk and Insurance*, *Journal of Insurance Regulation*, *Journal of Insurance Issues*, *Journal of Financial Services Professionals*, *Risk Management and Insurance Review*, and *Best's Review*. He is a member of the American Risk and Insurance Association (ARIA), Southern Risk and Insurance Association (SRIA), Western Risk and Insurance Association (WRIA), and the American Society of Chartered Life Underwriters.

James M. Carson, Ph.D., CLU, ARM, earned his undergraduate and master's degrees in finance from the University of Nebraska, and completed his Ph.D. at the University of Georgia. Professor Carson's research is focused on mortality-contingent product and cost issues, empirical analyses of insurer solvency, and insurance applications of agency theory. His publications have appeared in *Journal of Risk and Insurance*, *North American Actuarial Journal*, *Journal of Multinational Financial Management*, *Journal of Insurance Regulation*, *Journal of Insurance Issues*, *Journal of Financial Service Professionals*, *CPCU Journal*, and *Best's Review*. He is co-author of the book, *Life Insurance Analysis: Company and Policy Performance*.

L. Lee Colquitt, Ph.D., CLU, is the associate professor of risk and insurance in the Finance Department at Auburn University. He received his doctoral degree from the University of Georgia, his CLU and ChFC from the American College, and has published articles in leading risk and insurance journals, including this journal, *Journal of Risk and Insurance*, *Journal of Insurance Issues*, *Journal of Insurance Regulation*, and the *North American Actuarial Journal*. He is an active member of ARIA, WRIA, SRIA, and the Risk Theory Society.

insurer's perspective, the primary advantage of the salvage auction is that it creates a market for the sale of salvage vehicles. If the salvage auction is effective in creating this market, then the sale price of the salvage should reflect the fair market value of that particular piece of salvage. Additionally, use of the auction process should reduce the possibility of collusion between insurer employees and salvage buyers that could lead to fraud against the insurer.

The organizations that conduct these auctions are known as salvage pools. For example, Insurance Auto Auction, Inc. (IAA) in Schaumburg, Illinois is the second largest salvage pool in the United States. It reports that of the vehicles that it processed in 2001, approximately 81 percent of them were sold via an auction process (IAA 2001 10K report).

At a minimum, the insurer pays a selling fee for each vehicle sold through this process. In addition to their primary role of making a market between the insurers and salvage buyers, the salvage pools also can provide other services for insurers including processing titles, prepaying expenses on behalf of the insurer (e.g., towing and storage fees), providing extended storage at a reduced cost, and providing estimates of salvage value for claims adjusters.

Salvage Contracts

A second method commonly used by insurers is to enter into a contractual agreement with salvage dealers or salvage pools. Under this arrangement, the value of the salvage is predetermined based on a percentage of the vehicle's actual cash value. Exceptions typically are made for vehicles that are damaged such that their only value is as scrap metal. In these circumstances, the contract will specify some minimum amount (e.g., \$45). The advantage for the insurer is that it knows precisely what the recovery is going to be based on the age of the vehicle, vehicle type, and type of damage. Additionally, the insurer does not incur the sale, storage, and towing expenses as it would under the salvage auction method. However, the insurer may face several disadvantages through the use of salvage contracts. First, it may enter into an unfavorable contract or face relatively low market prices for salvage. In either case, the insurer is receiving lower than expected recovery for the salvage. A second potential disadvantage of this approach is that the salvage buyer may not be able to satisfy the terms of the contract. Given the volume of salvage sold by the top auto insurers, it is quite possible that an individual salvage buyer would not have sufficient cash flow to satisfy the ongoing obligation to buy salvage. A final problem with this method is the potential for fraud that exists without effective management control.

Alternative Methods

There are several additional ways to dispose of salvage. One example of an alternative method is for the insurer to replace the salvage pool and create its own auction. In this setting, the insurer is both the seller and market-maker. This approach is preferable if the insurer can replicate the services that were provided by the salvage pool on a similar or more efficient basis. Thus, the insurer may eliminate the cost imposed by the salvage pool, but must be able to replicate the services that were performed by the salvage pool. One of the disadvantages of this method is the potential for price fixing and abuse. A second problem for the insurer/operator is the need to have a sufficient number of sales units to attract the requisite number of buyers. In addition to the methods discussed above, two other options for disposing of auto salvage include sale of salvage directly to insureds or sale of salvage to buyers through a sealed-bid process.

Research Design and Data

Based on the foregoing discussion, this study focuses exclusively on the results obtained from data on sales of auto salvage via the auction price (i.e., the salvage pool method). The salvage pool auction method is the most common disposal method in use, yet little information exists with respect to salvage sales in this market.

For an insurer to gauge its success in auto salvage recovery, measures of performance must be established. Measures of performance commonly used in this area are gross rate of recovery (GRR) and net rate of recovery (NRR). Gross rate of recovery is defined as follows:

$$\text{GRR} = \frac{\text{Salvage Price of Vehicle}}{\text{Actual Cash Value of Vehicle}}$$

Net rate of recovery reflects the net sales price after expenses and is the most common measure of salvage performance. Since we are interested primarily in providing broad information about the relation between sales price and actual cash value, as well as some of the factors that appear to impact on the selling price of the vehicle, GRR is used in this study rather than NRR. Also, one of the objectives of this study is to provide initial benchmark data on salvage recovery performance. As such, we incorporate an ACV-based measure of salvage recovery as opposed to the widely reported paid-loss measure because it provides a more direct measure (i.e., a standardized measure, with the denominator being equal for a given vehicle across insurers) of salvage recovery performance.

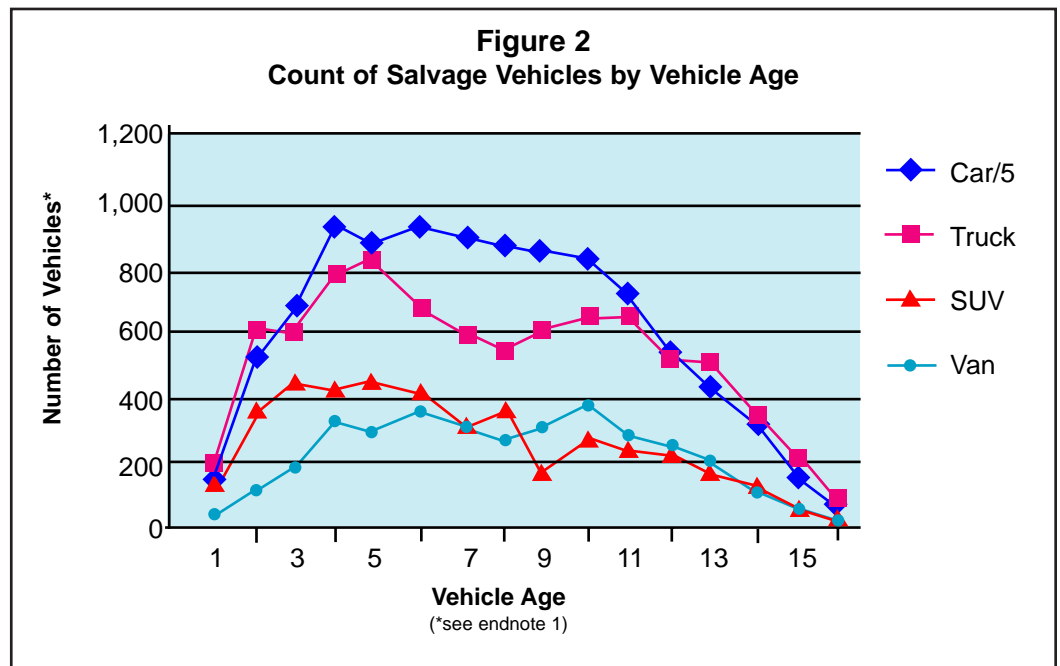
The data for the study consist of 66,760 vehicles that were sold through a salvage pool arrangement during 1998. Several screens were employed to reduce the data set down to 66,670. We include only those sellers who were insurers that sold at least 100 vehicles during 1998, which resulted in a sample of 55 insurers. Additionally, the vehicles were identified by make and model. All make and model combinations with fewer than 30 observations were deleted from the data set. This resulted in 247 different make and model combinations. Luxury cars were identified based on their inclusion in *Nation's Business* yearly articles on luxury automobiles (Candler, 1992-1998).

Results and Discussion

Table 1 provides information on the sample of vehicles examined in the study and the gross rate of recovery for the different classes of vehicles. The vast majority of the vehicles in the sample are cars (n=50,295 or 75.3%), followed by trucks (n=8,789 or 13.2%), SUVs (n=4,253 or 6.4%), and vans (n=3,423 or 5.1%) as shown in Figure 2.¹ Figure 3 illustrates that trucks lead all vehicles with an average GRR of 25%, followed by SUVs (22%), vans (18%), and autos (17%).² In every category, the newest vehicles have the highest GRRs. The GRRs of the vehicles generally decrease in years one through three, stabilize for a few years, and then, with the exception of cars, show a slight increase for the remaining years (through year 15).

Table 1
Gross Rates of Recovery by Vehicle Age and Type

Age	All		Cars		Trucks		SUVs		Vans	
	N	Mean	Count	Mean	Count	Mean	Count	Mean	Count	Mean
0	1,096	.24	729	.22	195	.27	131	.28	41	.21
1	3,786	.21	2,693	.19	606	.26	372	.25	115	.19
2	4,537	.20	3,300	.19	600	.24	466	.23	171	.20
3	6,276	.18	4,743	.17	796	.22	421	.22	316	.18
4	6,077	.18	4,499	.17	852	.23	445	.22	281	.17
5	6,241	.18	4,771	.17	686	.23	428	.21	356	.16
6	5,760	.19	4,568	.18	603	.24	307	.20	282	.17
7	5,622	.18	4,453	.17	549	.24	366	.20	254	.16
8	5,450	.18	4,415	.17	594	.26	149	.21	292	.14
9	5,412	.17	4,090	.16	672	.26	280	.20	370	.15
10	4,918	.18	3,723	.16	674	.27	237	.21	284	.16
11	3,782	.18	2,794	.16	536	.26	214	.21	238	.17
12	2,926	.18	2,095	.16	495	.26	150	.22	186	.18
13	1,921	.18	1,414	.16	303	.26	116	.23	88	.21
14	1,131	.19	813	.16	204	.27	64	.23	50	.18
15	595	.18	425	.16	106	.25	33	.24	31	.20
N	65,530		49,480		8,471		4,224		3,355	
AVG.		.19		.17		.25		.22		.18
16+	1,230	.22	815	.19	318	.26	29	.25	68	.21
N	66,760		50,295		8,789		4,253		3,423	
AVG.		.19		.17		.25		.22		.18



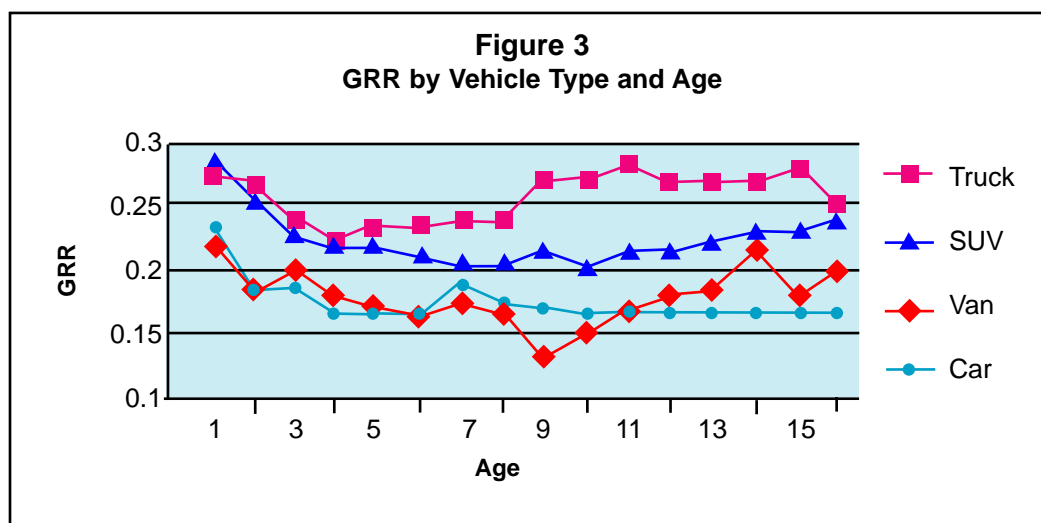


Table 2
Gross Rates of Recovery by Vehicle and Damage Type

	Fire		Collision		Other		Water		Theft	
	Count	GRR	Count	GRR	Count	GRR	Count	GRR	Count	GRR
Car	1,225	.13	42,427	.17	3,883	.18	1,095	.24	1,665	.30
Truck	369	.18	6,579	.25	1,325	.22	254	.35	262	.37
SUVs	186	.17	2,762	.22	996	.19	125	.29	184	.43
Van	181	.12	2,777	.17	328	.16	41	.17	96	.30
N	1,961		54,545		6,532		1,515		2,207	
AVG.		.14		.18		.19		.26		.32

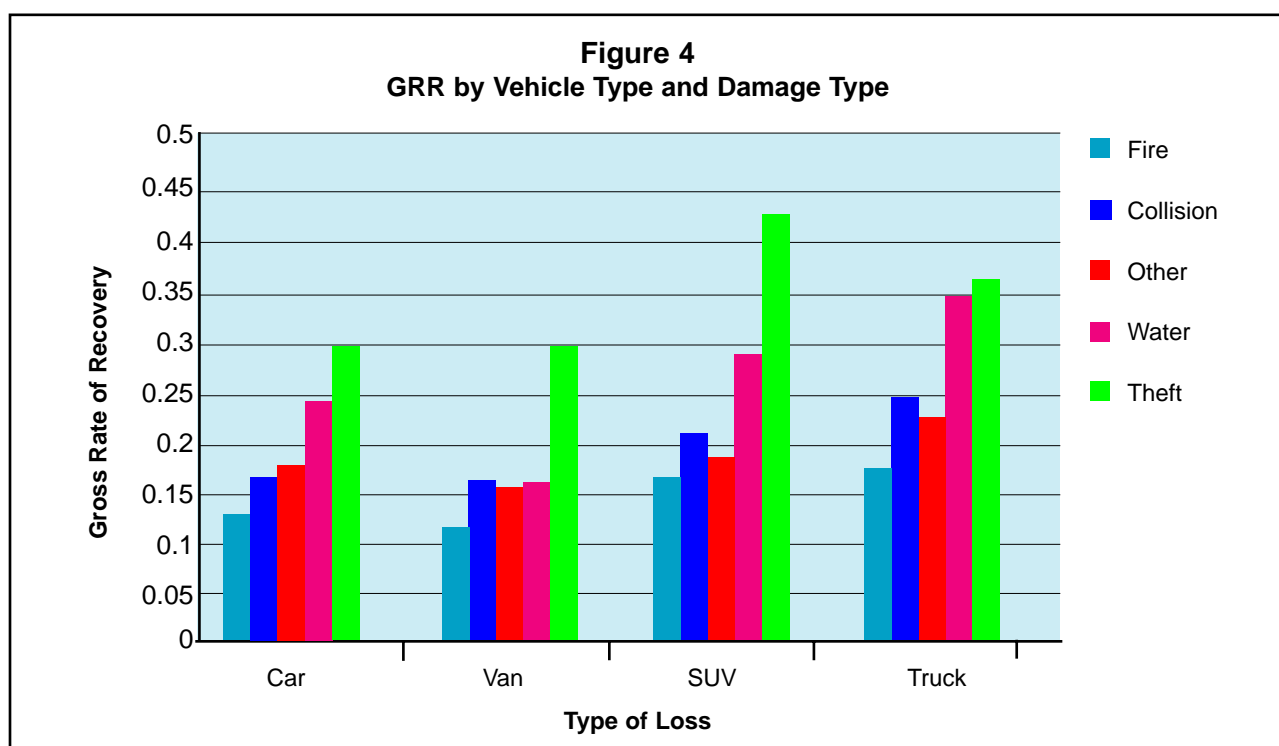


Table 2 and Figure 4 provide information on the GRRs of each category of vehicle by damage type. Table 2 shows that collision losses make up the most significant portion (n=54,545 or 89.2%) of the sample, followed by other (comprehensive) losses (n=6,532 or 9.8%), theft losses (n=2,207 or 3.3%), fire losses (n=1,961 or 2.9%), and water losses (n=1,515 or 2.3%). Figure 4 illustrates that theft losses consistently have the highest GRRs for all types of vehicles. Specifically, gross rates of recovery average 31.9% on theft losses. Water (flood) losses have the second highest GRR (26.1%), followed by comprehensive-other losses (18.9%), collision losses (18.2%), and fire losses (14.2%). The high GRR for theft losses reflects the fact that recovered theft vehicles generally are in better condition (i.e., less damage) than vehicles in the other loss classes. Vehicles that are stolen and stripped down for their parts are unlikely to be recovered.

The 10 vehicles with the highest GRRs in each vehicle category are found in Tables 3A through 3D. Of the top 10 cars, five are luxury cars and two are high-performance sports cars. Lexus has four cars in the top five with regard to GRR. The average GRR of the top 10 cars is .28. The range of GRRs for the top 10 trucks is fairly narrow (between .30 and .28), with an average GRR of .29. However, there is a fairly significant range between the GRR of the highest SUV (Toyota Land Cruiser; .47) and that of the SUV in the tenth position (Isuzu Trooper, .24). Finally, the top 10 vans have the lowest average GRR of any vehicle class with an average GRR of .18. Note that the high GRRs associated with theft losses help to explain some of the findings in this table.

Table 3A
Gross Rates of Recovery Top 10 Cars

Rank	Make	Model	N	GRR
1	Lexus	L Series	85	.35
2	Lexus	GS Series	37	.31
3	Chevrolet	Impala	50	.30
4	Lexus	S Series	41	.27
5	Lexus	ES Series	114	.27
6	Chevrolet	Corvette	162	.26
7	Infiniti	Q45	39	.26
8	Porsche	911_940	39	.25
9	Toyota	Corolla	1,954	.25
10	Toyota	Camry	1,687	.24
Average				.28

Table 3B
Gross Rates of Recovery Top 10 Trucks

Rank	Make	Model	N	GRR
1	Chevrolet	Silverado	44	.30
2	Dodge	1500	29	.30
3	Toyota	T100	30	.29
4	Isuzu	Pickup	350	.29
5	Toyota	4Runner	250	.28
6	Toyota	Tacoma	167	.28
7	GMC	1500	136	.28
8	Mazda	B2200	95	.28
9	Ford	F100	32	.28
10	Ford	F350	86	.28
Average				.29

Note: Specific model information was not available for some salvage vehicles. For this table, Toyota trucks that were not identified in the data set as to a specific model of truck were categorized as "pickup." The gross rate of recovery for these 685 trucks was 32%.

Table 3C
Gross Rates of Recovery Top 10 SUVs

Rank	Make	Model	N	GRR
1	Toyota	Land Cruiser	32	.47
2	Ford	Expedition	36	.35
3	Mitsubishi	Montero	54	.35
4	Chevrolet	Tahoe	31	.32
5	Jeep	Wrangler	152	.30
6	Jeep	Grand Cherokee	37	.28
7	Chevrolet	Suburban	116	.28
8	Toyota	RAV4	45	.25
9	Suzuki	Sidekick	105	.24
10	Isuzu	Trooper	94	.24
Average				.30

Table 3D
Gross Rates of Recovery Top 8 Vans*

Rank	Make	Model	N	GRR
1	Toyota	Van	57	.25
2	Mercury	Van	55	.20
3	Chevrolet	Van	574	.19
4	GMC	Van	102	.18
5	Plymouth	Van	509	.17
6	Dodge	Van	937	.17
7	Ford	Van	1,143	.15
8	Oldsmobile	Van	46	.15
Average				.18

* The data contained only eight distinct makes of vans.

Table 4A and Table 4B provide information on the insurers that have the highest and lowest GRRs, respectively. The tables also include the average age of the insurers' vehicles, the percent of vehicles that are luxury autos, and the distribution of their salvaged vehicles by auto type. As shown in Tables 4A and 4B, the highest GRR of any insurer is 22 percent and the lowest GRR of any insurer is 15 percent. The average GRR of the top 10 insurers is 21 percent and the average GRR of the bottom 10 insurers is 16 percent. These findings demonstrate that there may be ample room for improvement in auto salvage for many insurers. Additionally, these findings indicate that vehicle and loss type differences also impact insurer GRR.

Table 4A
Gross Rates of Recovery
Top 10 Insurers and Distribution of Salvaged Vehicles

Rank	Insurer ID	GRR	Age	Luxury	Distribution of Car Type			
					Cars	Trucks	SUVs	Vans
1	13	.22	7.35	.11	.72	.20	.07	.01
2	39	.21	5.15	.13	.77	.12	.06	.05
3	11	.21	6.06	.07	.64	.15	.11	.10
4	32	.21	7.27	.04	.71	.16	.07	.06
5	59	.21	6.34	.04	.57	.26	.08	.09
6	53	.20	6.33	.15	.78	.08	.07	.06
7	57	.20	7.53	.09	.80	.13	.05	.02
8	15	.20	6.83	.11	.69	.17	.07	.08
9	54	.20	6.67	.10	.70	.14	.07	.08
10	35	.20	6.77	.10	.74	.14	.08	.03
Average		.21	6.63	.09	.71	.15	.07	.06

Note: From sample of 54 insurers.

Table 4B
Gross Rates of Recovery
Bottom 10 Insurers and Distribution of Salvaged Vehicles

Rank	Insurer ID	GRR	Age	Luxury	Distribution of Car Type			
					Cars	Trucks	SUVs	Vans
45	12	.17	7.69	.06	.80	.12	.05	.03
46	58	.17	6.82	.05	.66	.2	.09	.05
47	42	.17	7.74	.05	.75	.15	.05	.05
48	17	.16	8.78	.04	.84	.07	.03	.06
49	46	.16	6.53	.07	.78	.10	.07	.05
50	6	.16	7.3	.15	.91	.04	.03	.02
51	55	.16	7.87	.06	.76	.13	.08	.04
52	44	.16	7.55	.10	.76	.12	.08	.05
53	29	.16	8.11	.04	.81	.12	.03	.04
54	19	.15	8.88	.07	.84	.11	.02	.03
Average		.16	7.73	.07	.79	.12	.05	.04

Note: From sample of 54 insurers.

Not surprisingly, the average vehicle age of the top 10 insurers is one full year less than that of the bottom 10 insurers, consistent with the findings that newer cars typically have the highest GRRs. In addition, the average percent of autos that are considered luxury for the top 10 and bottom 10 insurers is .09 and .07, respectively. Finally, the difference in the percentage of trucks and SUVs of the two groups is consistent with the findings in Table 1, where trucks and SUVs are shown to generally have higher GRRs than do autos.

Table 5A and Table 5B show the top 10 and bottom 10 insurers with regard to GRRs and their distribution of vehicles according to the type of loss. While collision is the most frequent type of loss for all insurers, the percent of loss by theft and water is twice as high among the top 10 insurers as it is in the lowest 10 insurers. This is consistent with the findings presented earlier in Table 2, where theft and water damage were, by a significant margin, the two causes of loss with the highest GRRs.

Table 5A
Gross Rates of Recovery
Top 10 Insurers and Distribution of Loss Type

Rank	Insurer ID	GRR	Distribution of Loss Type				
			Collision	Fire	Theft	Water	Other
1	13	.22	.84	.05	.02	.01	.08
2	39	.21	.63	.02	.06	.09	.19
3	11	.21	.78	.00	.10	.02	.10
4	32	.21	.90	.01	.02	.01	.07
5	59	.21	.83	.02	.03	.01	.11
6	53	.20	.82	.03	.04	.01	.10
7	57	.20	.83	.05	.02	.01	.08
8	15	.20	.86	.03	.02	.01	.08
9	54	.20	.86	.03	.02	.01	.08
10	35	.20	.85	.05	.02	.01	.07
Average		.21	.82	.03	.04	.02	.10

Note: From sample of 55 insurers.

Table 5B
Gross Rates of Recovery
Bottom 10 Insurers and Distribution of Loss Type

Rank	Insurer ID	GRR	Distribution of Loss Type				
			Collision	Fire	Theft	Water	Other
46	12	.17	.79	.08	.01	.02	.10
47	58	.17	.81	.00	.05	.00	.14
48	42	.17	.87	.02	.01	.01	.09
49	17	.16	.83	.05	.03	.01	.08
50	46	.16	.81	.01	.04	.01	.13
51	6	.16	.86	.02	.03	.02	.07
52	55	.16	.88	.04	.00	.00	.08
53	44	.16	.91	.02	.01	.01	.05
54	29	.16	.82	.02	.03	.01	.12
55	19	.15	.95	.00	.01	.00	.04
Average		.16	.85	.03	.02	.01	.09

Note: From sample of 55 insurers.

Summary and Conclusions

This study examines gross rates of recovery for auto salvage based on sales data for a large sample of autos sold via the salvage auction method. While several methods are used by insurers to dispose of auto salvage, the salvage pool method is the most common. The research identifies relations between vehicle characteristics (age, type of vehicle, type of loss) and gross rates of recovery; provides an overview of issues related to auto salvage and the mechanics of the primary methods employed by insurers in disposing of auto salvage; and provides important benchmarking information that should be especially useful to smaller insurers. GRR is measured as the ratio of salvage price of the vehicle to actual cash value of the vehicle.

Depending on the type of vehicle, GRRs range from 17 percent to 25 percent. Results indicate that newer vehicles, trucks, and loss by theft are characteristics of vehicles associated with higher GRRs. Thus, insurers whose books of business are comprised of higher (lower) proportions of these types of vehicles would be expected to have higher (lower) average GRRs. While insurers do not have specific information regarding the vehicles it will dispose of through liability claims, insurers do have specific data with regards to the composition of the vehicles that they insure for physical damage. Armed with the benchmark information for GRRs from this study, insurers can gauge their relative performance with respect to auto salvage. The ACV-based measure of salvage recovery, as opposed to the widely reported paid-loss measure, provides a more direct measure of salvage recovery performance.

The ability of an insurer to competitively price auto insurance depends, in part, on its ability to estimate net losses. With a deeper understanding of vehicle characteristics and recoveries from auto salvage, insurers will be able to set prices more accurately. In this vein, results suggest that auto insurance prices should include factors to account not only for recoveries based on ACV but also for variation in salvage recoveries across

vehicle type, model, and age, etc. That is, to minimize cross-subsidization, price adjustments to account for varying salvage recovery rates would seem appropriate. The relative importance and actual use of salvage recoveries in auto insurance pricing is left for future research. In addition, future research is needed to detect if GRRs vary across auto salvage disposal methods (e.g., salvage contracts, sale to owners, online auctions). Future research also should seek to identify differences in GRRs across geographical regions and by insurer characteristics (size, product focus, organizational form, etc.). As such, it is hoped that this study will lead to additional research in this important area that has, so far, remained largely unexamined in the literature.

Endnotes

1. Note that in Figure 2, for scaling purposes in the graph, the number of cars for each year has been divided by five.
 2. Averages are equally weighted averages unless otherwise noted.
-

References

- Anonymous (2001), "Ups and Downs," *Best's Review*, 102, p. 48.
- Barnes, J. J. (1979), "Raising the Sights on Property Loss Adjusting," *Best's Review - P/C*, 80, p. 4.
- Barnes, J. J. (1980), "Subrogation: How Well Are You Doing?," *National Underwriter - P/C*, 84, p. 47.
- Best, A.M. (2001), *Best's Aggregates and Averages, Property/Casualty*, Oldwick, N.J., A.M. Best Co., Inc.
- Bowers, Barbara (2001), "State Farm: Behind the Veil," *Best's Review*, 102, pp. 63-7.
- Candler, Julie (1992), "Cars for Buyers Who Want the Best," *Nation's Business*, 80, p. 58, 4 pages.
- Candler, Julie (1993), "The Extras You Enjoy with a Luxury Car," *Nation's Business*, 81, p. 44, 4 pages.
- Candler, Julie (1994), "Luxury Cars for 1995," *Nation's Business*, 82, p. 57, 5 pages.
- Candler, Julie (1995), "Top of the Line for 1996," *Nation's Business*, 83, p. 35, 5 pages.
- Candler, Julie (1996), "Luxury Cars for 1997," *Nation's Business*, 84, p. 61, 5 pages.
- Candler, Julie (1997), "The 1998 Luxury Cars," *Nation's Business*, 85, p. 61, 6 pages.
- Candler, Julie (1998), "1999 Luxury Cars: Wheels of Progress," *Nation's Business*, 86, p. 52, 4 pages.
- Carris, R. and B. Bartlett (1994a), "The Claims Gold Rush," *International Insurance Monitor*, 48, pp. 12-13.
- Carris, R. and B. Bartlett (1994), "Benchmarking Claims Performance," *Risk Management*, 41, pp. 30-38.
- Carris, R. and B. Bartlett (1995), "Digging for Gold in Claims Departments," *Best's Review - P/C*, 74, pp. 76-77.
- Colquitt, Lee L. and Randy E. Dumm, "Treasure Hunt," *Best's Review*, Volume 101, Number 1, February 2001.
- Colquitt, Lee L., and Randy E. Dumm, "Determinants of Claims Efficiency Among Writers of Auto Physical Damage Coverage: Empirical Evidence," *Journal of Insurance Issues*, Volume 23, Number 1, Spring 2.
- Credle, F.E. (1992), "Subrogation Recovery Is Key for Financial Success," *National Underwriter - PC*, 96, pp. 9-1.
- Esters, S.D. (1997), "Independent Auto Agents Face Growing Competition," *National Underwriter (Property & Casualty/Risk & Benefits Management)*, 101, pp. 27, 34.
- Gebhardt, K. A. (1996), "Uncover a Gold Mine by Pursuing Subrogation," *Best's Review - P/C*, 97, p. 82.
- Gilbert, E. (1995), "Auto Competition Expected to Heat Up," *National Underwriter (Property & Casualty/Risk & Benefits Management)*, 99, p. 41.
- Hammon, S. (1979), "Recouping Losses through Subrogation," *National Underwriter - P/C*, 83, p. 37.
- Hartwig, Robert (2002), 2002 Outlook for Auto and Homeowner Insurance Rates, Insurance Information Institute: Hot Topics & Insurance Issues, www.iii.org/media/hottopics, pp. 3.
- Hecht, J. (1995), "Competition and Technological Change in the Personal Automobile Insurance Industry," *CPCU Journal*, 48, pp. 240-254.

- Mullins, Ronald G. (2001), "Insurers Discover Profit in Subrogation," *Erisk*, August 15, 2001, www.erisk.com, pp. 2.
- Oster, Christopher (2002), "State Farm Reports \$5 Billion Loss, Cites Auto, Home Units," *The Wall Street Journal*, March 4, 2002, C11.
- Porter, M.E. (1980), *Competitive Strategy: Techniques for Analyzing Industries and Competitors*, New York: The Free Press.
- Quirin, D.G., P.J. Halpern, B.A. Kalymon, G.F. Mathewson and W.R. Walters (1974), "Competition, Economic Efficiency and Profitability in the Canadian Property Casualty Insurance Industry," study for the Insurance Bureau of Canada, Toronto.
- Reich-Hale, D. (1999), "Restoration Services Help Insurers Cut Costs," *National Underwriter - P/C*, 103, pp. 3-4.
- Ryan, D.J. (1996), "Auto Profits Weather Intense Competition," *Best's Review (Property & Casualty)*, 97, pp. 32-37.
- Titterton, Charles and Donald S. Watson (2001), "Personal Lines Outlook 2002: Benefits of Market Turnaround Diminished by Continued Heavy Competition," *Standard and Poor's RatingsDirect*, www.standardandpoors.com/ratingsdirect, December 18, 2001, pp. 2.
- Weinstock, I. (1993), "Using Statistics to Project Values for Business Income Insurance," *CPCU Journal*, 46, pp. 222-231.
- Wickert, G.L. and S.F. Nelson (1995), "Many Insurers Overlook Advantages of Subrogation," *Best's Review - P/C*, 96, pp. 84-85.
- Wolf, J.M. (1986), "Subrogation: Unexplored Way to Ax Claim Cost," *National Underwriter - P/C*, 90, pp. 11-14.

© 2002 CPCU Society
CPCU eJournal, Vol. 55 No. 10, December 2002
www.cpcusociety.org
(800) 932-2728, option 4