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Motor Vehicle MPG and Market Shares Report: Model Year 1985

Patricia S. Hu

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Energy Division

MOTOR VEHICLE MPG AND MARKET SHARES REPORT: MODEL YEAR 1985

Patricia S. Hu

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Prepared for
Office of Transportation Systems
Department of Energy

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FOREWORD

Several new features have been added to this issue. Some of the additions include:

- The trends in vehicle characteristics, such as interior space, wheelbase, curb weight, and engine size are shown in graph format (Figure 6).
- Monthly sales for three selected years are plotted in bar graph format (Figure 7).
- Market shares for domestic-sponsored imports and import-sponsored domestics are shown in bar graph format (Figure 9).
- The allocation of MPG differences between consecutive model years is shown for domestic automobiles (Table 5), for import automobiles (Table 7), for domestic light trucks (Table 31), and for import light trucks (Table 33).
- The twenty most popular light duty vehicles are presented (Table 8) and two of the seven top selling vehicles are light trucks.
- The top twenty selling automobiles for each model year from 1978 through 1985 are presented (Table 10).
- The light truck nameplates by class for all years are shown (Appendix D).
- All automobiles are listed in order of sales during the 12-month sales model year for all years (Appendix E) and the same is done for light trucks (Appendix F).

It is important to note that the ORNL data base uses monthly sales of vehicles by nameplate to estimate the changing fuel economy of new

vehicles by type and class. The ORNL estimates of MPG and sales by the sales model year (October through September) are not official and do not necessarily equal the official CAFE numbers produced by the Department of Transportation. The purpose of the ORNL MPG estimates is to provide a basis for analyzing the monthly, seasonal, and yearly trends in the fuel economy and other characteristics of vehicles purchased in the marketplace.

Data in this issue show that the compact car class is now the top selling car class, that the light truck share of light duty vehicle sales continues to grow, that there is a shift within the light truck sector to smaller trucks, and that the fuel economy of imported vehicles has not grown as much over the period from 1978 to 1985 as the fuel economic for domestic vehicles. Many more findings are noted in this issue. The reader can no doubt discover other trends that are not mentioned in the text by analyzing the numerous tables and figures in this report.

Philip D. Patterson

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In addition, the author wishes to express her gratitude to Ms. Lynn Till for her continual development of the program software and Mr. Phineas Donald for his assistance. Finally, special thanks goes to Ms. Stephanie Floyd for typing and formatting this report.

EXECUTIVE SUMMARY

Sales of automobiles jumped dramatically from 10,211,058 units in model year 1984 to 10,968,515 units in model year 1985, an increase of 7.4% (Figure 1). This trend of increasing automobile sales has continued since model year 1982. Domestic car sales increased by 5.9% from 7,908,294 units in model year 1984 to 8,380,378 units in model year 1985. A larger increase of 12.4% was observed for import cars. In the past, midsize cars had claimed the largest share of automobile market and compacts the second largest. However, the pattern was reversed in model year 1985: more compact cars were sold than midsize cars. The up-sizing of Nissan's Maxima and Toyota's Cressida from subcompact to compact, and the introductions of Volkswagen's compact-class Golf and GM's compact-class N cars (Oldsmobile Calais, Buick Somerset and Pontiac Grand AM) contributed significantly to the increased market share of compacts.

Light trucks had an even more striking increase in sales, rising 17.2% from the previous model year. The dramatic increases in domestic light truck sales and, to a lesser extent, in import light truck sales are illustrated in Figure 2. The market shares of mini vans, and small special purpose vehicles continued to climb at a considerable rate. Light trucks enjoyed a slightly larger share of the combined automobile and light trucks market, increasing from 26.1% in model year 1984 to 27.9% in this model year. The trend of light trucks gaining a larger part of the market continued. This was a result of the rapidly growing popularity of domestic light trucks (Figure 3).

The sales-weighted fuel economy for the entire automobile fleet continued to climb in model year 1985, from 26.3 mpg in model year 1984 to 27.0 mpg in this model year (Figure 4). Domestic cars showed an improvement of 0.8 mpg in sales-weighted fuel economy from the previous model year. The major reasons for the gains, in the overall fleet and in the domestics, were the introduction of more fuel efficient configurations (engine and trasmission mixes) within given nameplates, and the sales shift to more fuel efficient size classes. In contrast to their domestic counterparts, import cars experienced a loss of 0.8 mpg from the previous model year due to the introduction of less efficient configurations.

The sales-weighted fuel economies in light trucks have remained relatively constant since model year 1979 (Figure 5). The sales shifts toward more efficient configurations (engine and transmission mixes) within given nameplates, and sales shifts toward more efficient namelates within given size classes led to an improvement of 0.3 mpg in light trucks from the previous model year. Unlike the domestic light trucks, import light trucks had a loss of 1.8 mpg from the previous model year, mainly due to decreased fuel economies in continuing configurations.

The trends of various vehicle characteristics from model year 1978 through 1985 are illustrated in Figure 6 by unitizing the characteristics from 0 to 1 (for a given characteristic, the largest annual value is set equal to one and other annual values are expressed as relative proportions). Sales-weighted average engine sizes (cubic inches) dropped sharply from model year 1978 to model year 1982, and then tapered off.

The sales-weighted wheel bases (inches) and interior spaces (cubic feet) have remained relatively constant since model year 1978. The sales-weighted curb weights (lbs) dropped slightly from model year 1978 to 1980, and then have remained fairly stable.

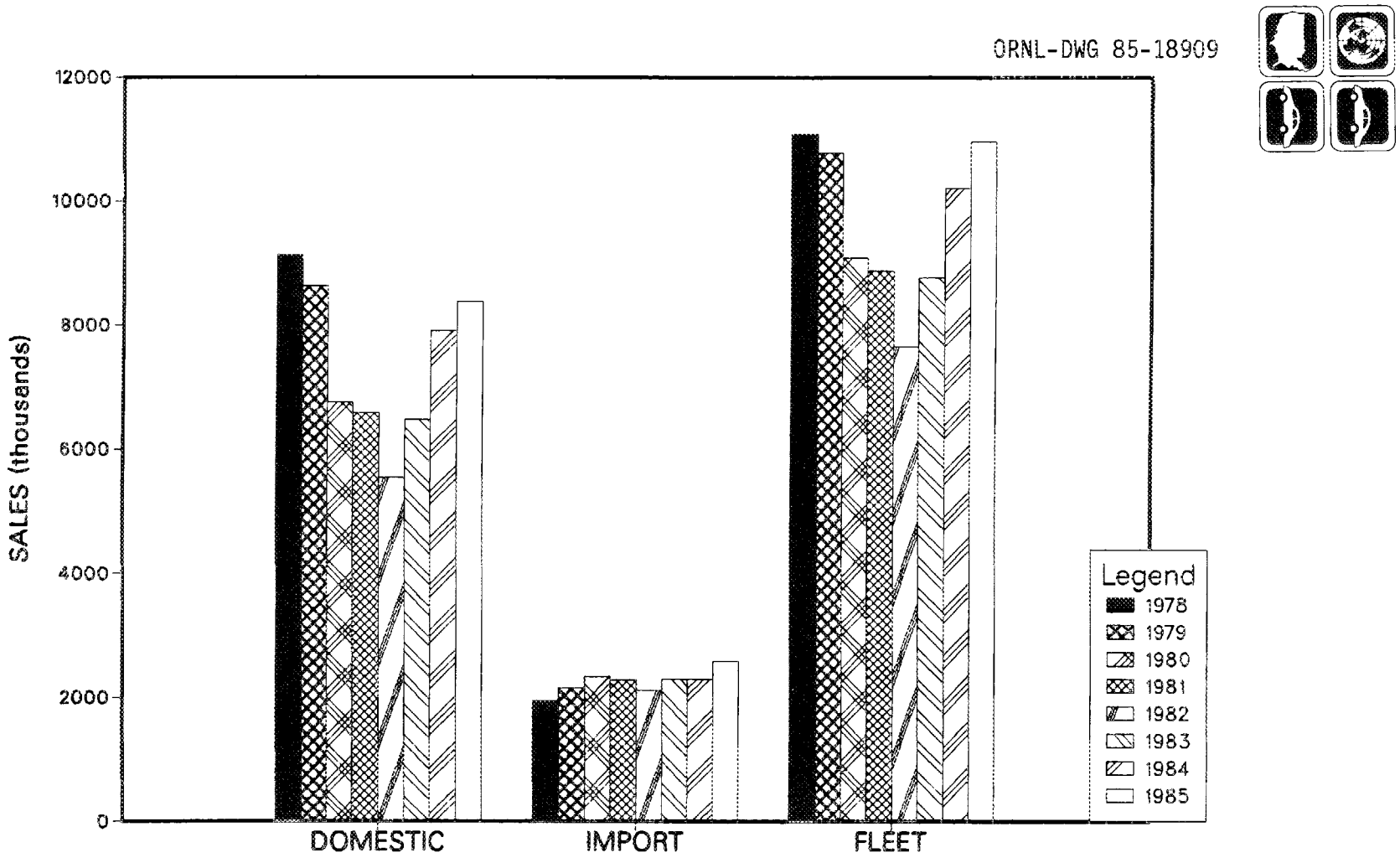

Fig. 1. Sales of Domestic and Import Automobiles, Model Years 1978–1985.

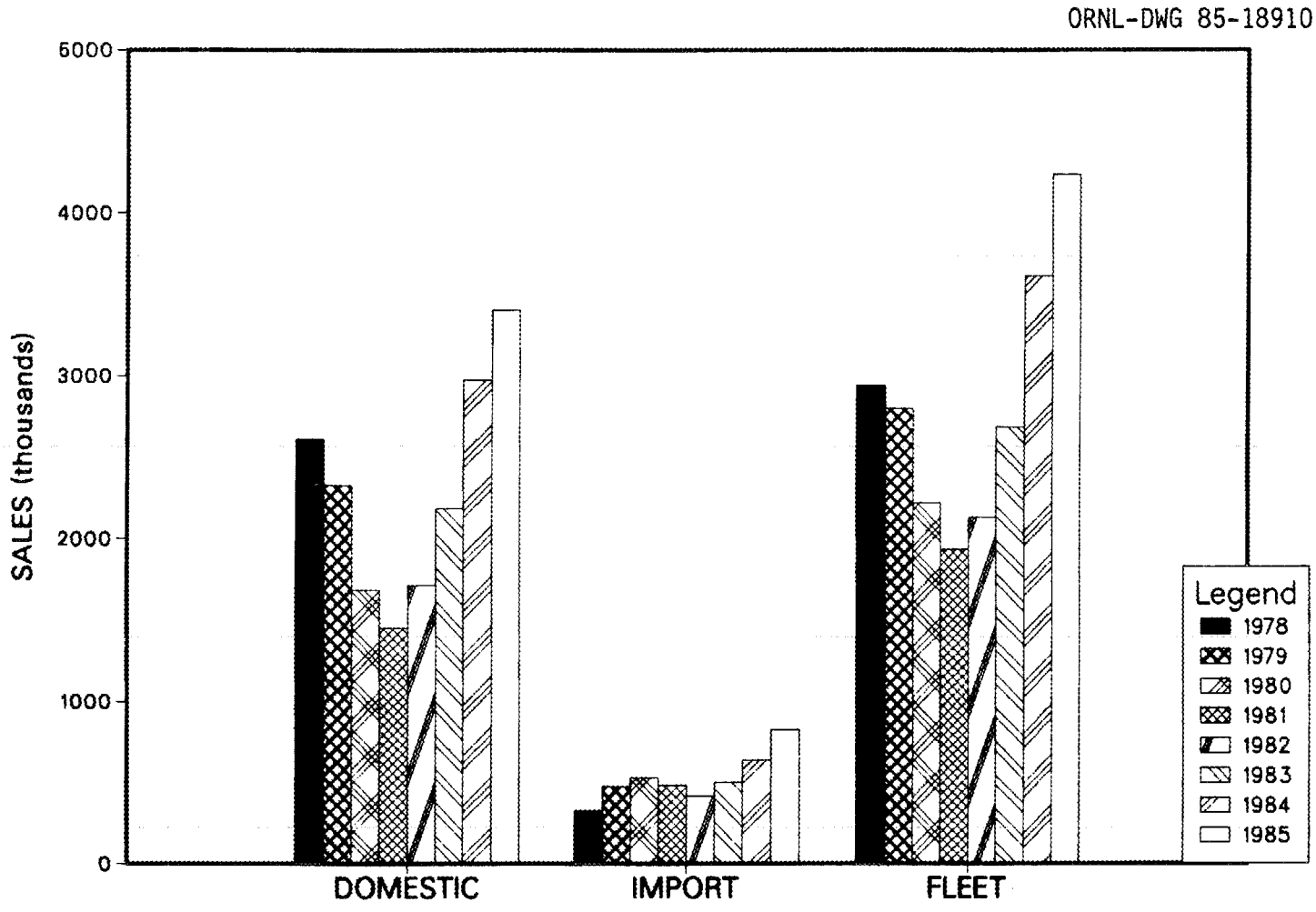

Fig. 2. Sales of Domestic and Import Light Trucks, Model Years 1978–1985.

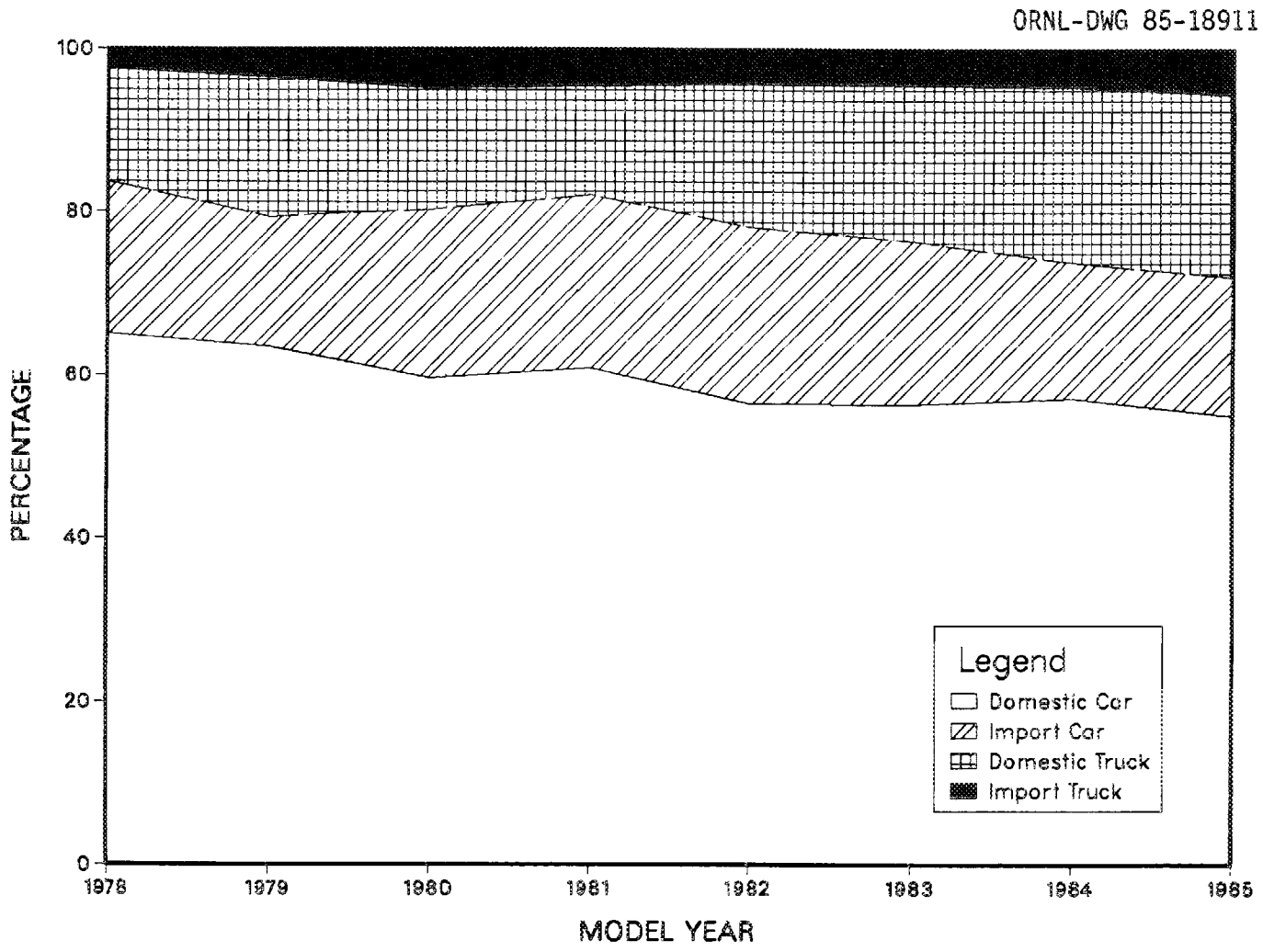

Fig. 3. Market Shares of Light-Duty Vehicles by Type, Model Years 1978–1985.

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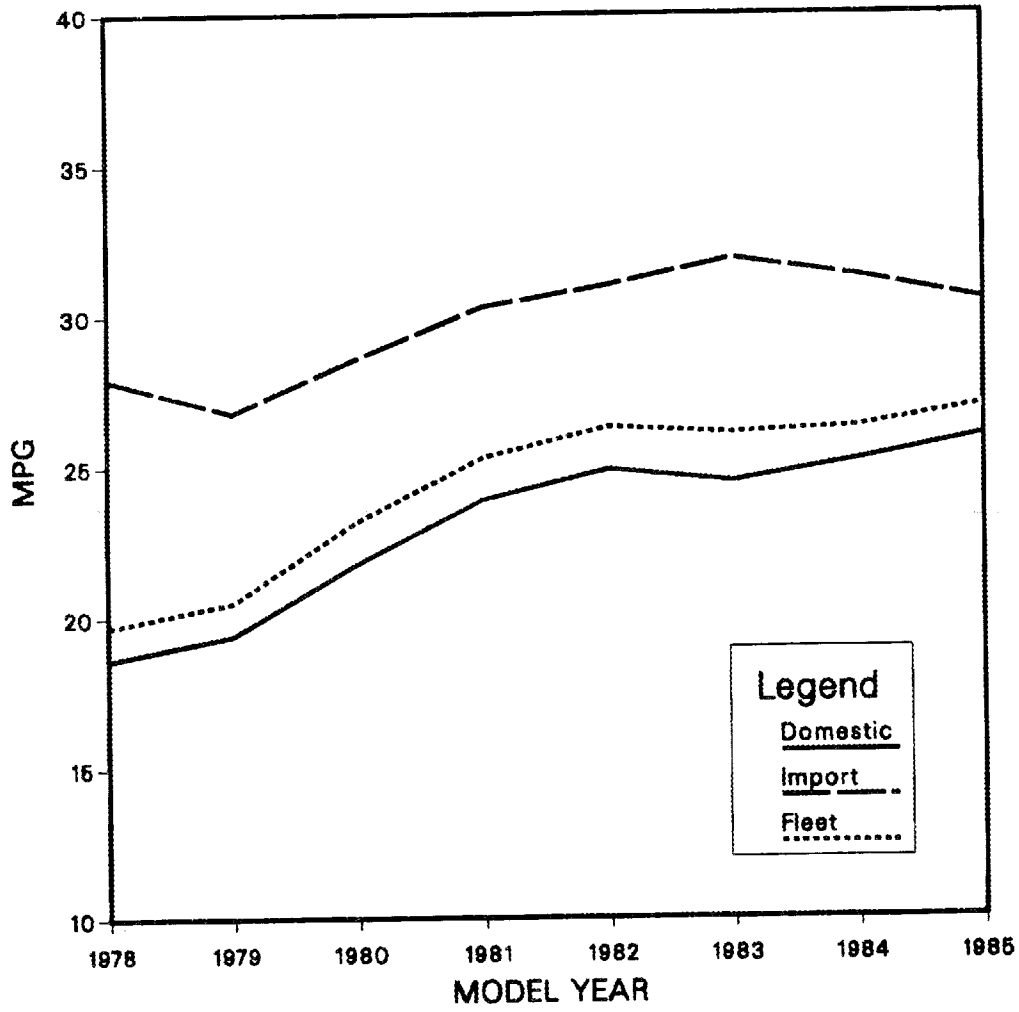

Fig. 4. Fuel Economies of Automobiles, Model Years 1978–1985.

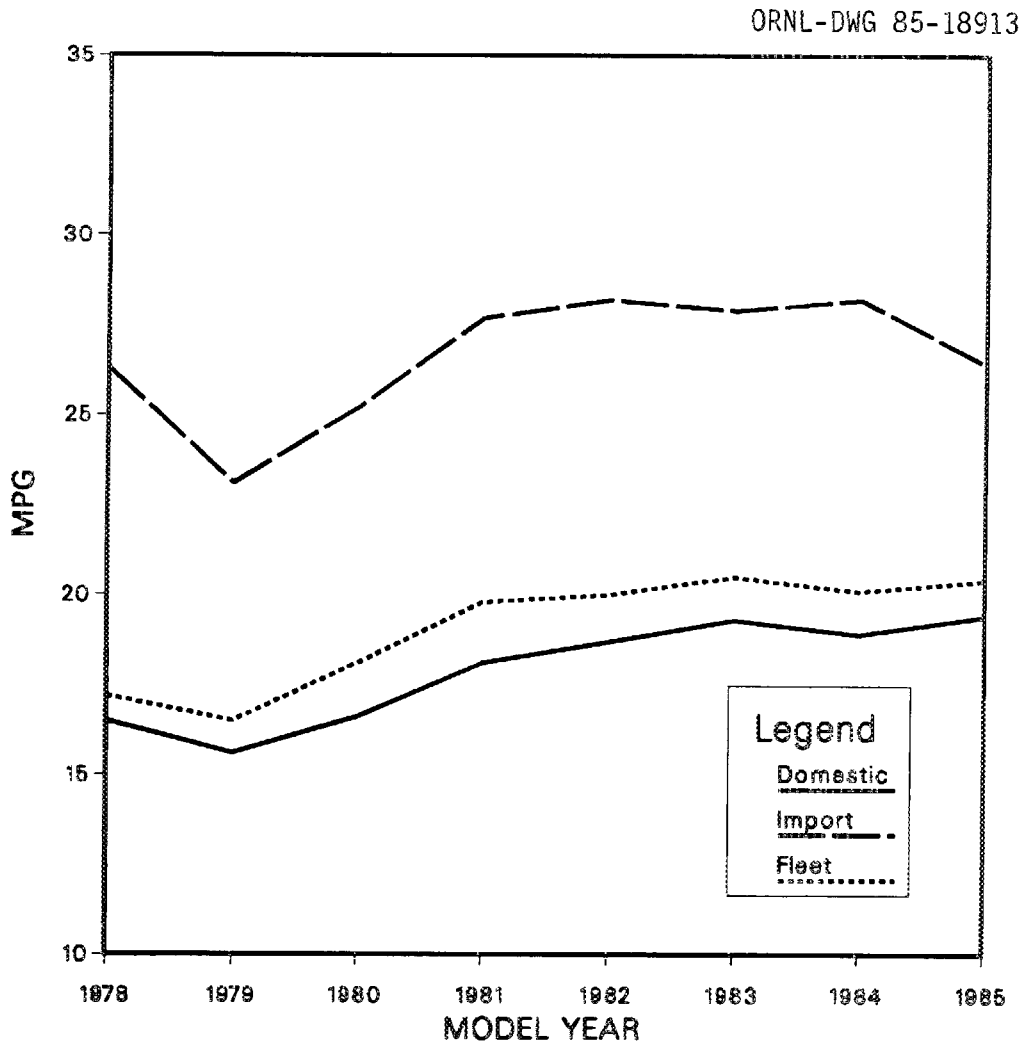

Fig. 5. Fuel Economies of Light Trucks, Model Years 1978–1985.

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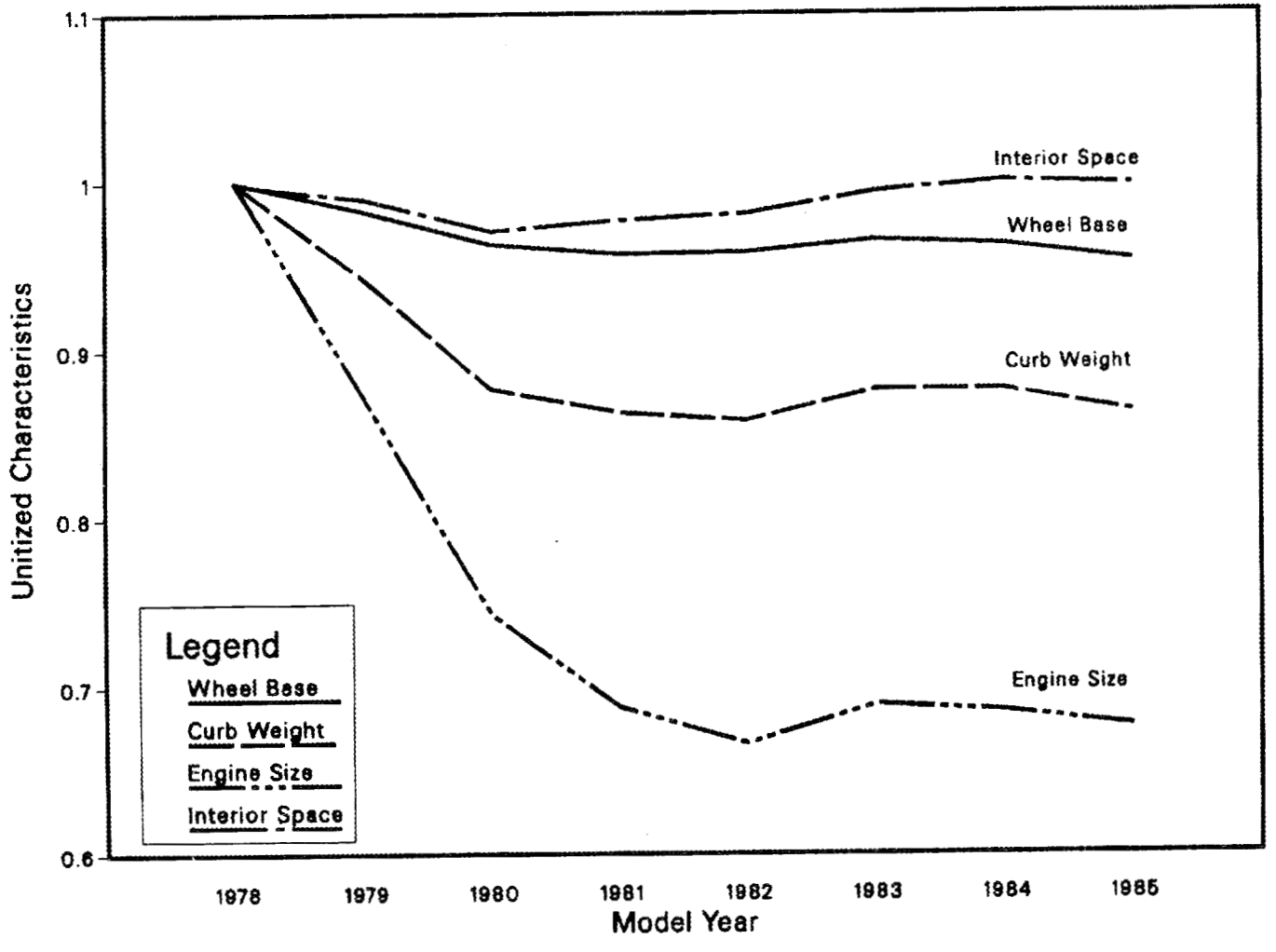

Fig. 6. Trend of Unitized Vehicle Characteristics for Domestic and Import Automobiles, Model Years 1978–1985.

ABSTRACT

This issue of Motor Vehicle MPG and Market Shares Report: Model Year 1985 reports the sales, market shares, estimated sales-weighted fuel economies, and other estimated sales-weighted vehicle characteristics of automobiles and light trucks for model years 1978 through 1985. Monthly vehicle sales data are used as weighting factors in the sales-weighted estimation procedure. This enables the estimates to reflect averages for the overall new vehicle fleet. Comparisons and observations are highlighted on the trends in these vehicles from one model year to the next. Analyses are carried out on the fuel economy changes to determine the factors which have caused the changes.

The definition of model year used in this report is the "sales" model year, instead of the "manufacturer" model year. Therefore, model year is defined as the period from October to the next September. One is, therefore, advised to be cautious when comparing the statistics in this report to the ones from other sources.

Automobile sales increased 7.4% in model year 1985 (October 1, 1984 to September 30, 1985), from 10,211,058 units in model year 1984 to 10,968,515 units in 1985. An even more striking increase of 17.2% was observed in the sales of light trucks, which continued to claim a larger share of the entire light-duty vehicle (automobiles and light-duty trucks) market. Approximately 28% of the light-duty vehicles sold in model year 1985 were light trucks.

The sales-weighted fuel economy for the entire 1985 new car fleet showed an improvement of 0.7 mpg from model year 1984; light trucks

gained 0.3 mpg on a sales weighted basis. The mpg gains were mainly due to the introduction of more efficient engine and transmission configurations in domestic automobiles (0.4 mpg) and domestic light trucks (0.2 mpg), and to sales shifts to more efficient configurations and nameplates (0.2 mpg) in domestic light trucks. Efficiencies of imported vehicles, both automobiles and light trucks, declined significantly.

1. INTRODUCTION

This publication reports the sales, market shares, estimated sales-weighted fuel economies and other estimated sales-weighted vehicle characteristics of automobiles and light trucks for each model year since 1978. Comparisons and observations are made on the trends from one model year to the next.

While there are other sources of new vehicle fuel economy estimates, a unique feature of this report is that it provides estimated fuel economies and other vehicle attributes, such as curb weight, engine displacement and interior space, all weighted by the monthly vehicle sales (refer to Appendix G and Appendix H for the detailed descriptions of the sales-weighted methodologies). These data are thus useful in describing and analyzing trends observed in the new vehicle fleet.

The definition of model year used in this report is the "sales" model year, instead of the "manufacturer" model year. Therefore, model year is defined as the period from October to the next September. One is, therefore, advised to be cautious when comparing the statistics in this report to the ones from other sources.

Data are given separately for domestic and import vehicles, and for automobiles and light trucks. "Domestic" vehicles are both domestics, and domestically manufactured, foreign-sponsored vehicles, such as Volkswagen's Golf and Nissan's Sentra-American; and "import" vehicles are both imports and foreign manufactured, domestic-sponsored vehicles, such as Chevrolet's Sprint and Ford's Merkur. The light truck size classifi-

cation system used is the one defined in the SAE paper (Series No. 841405) by S. L. Loos et al., of the U.S. Environmental Protection Agency. Under this classification, there are six light truck classes: small and standard pickups, mini and standard vans, and small and standard special purpose vehicles (see Appendix A for detailed glossary).

The reporting period for this issue of the report is from model year 1978 to model year 1985. The following section highlights the sales, market shares, and sales-weighted fuel economies of automobiles. Section 3 presents light-duty vehicle (both automobiles and light trucks) sales and sales-weighted fuel economies by make and model during model year 1985. Section 4 discusses the sales, market shares, and sales-weighted fuel economies of light trucks. Section 5 highlights the annual trends in some of the vehicle characteristics observed in the new vehicle fleets.

Included in the appendices are the glossary, the data sources of the ORNL MPG and Market Shares Data System, automobile nameplates by size classification, light truck nameplates by size classification, methodology for estimating sales-weighted fuel economy, methodology for estimating sales-weighted vehicle characteristics, and methodology for analyzing fuel economy changes.

2. AUTOMOBILE SALES, MARKET SHARES AND FUEL ECONOMIES

2.1 SALES AND MARKET SHARES OF **ALL** AUTOMOBILES

- Sales of automobiles jumped from 10,211,058 units in model year 1984 to 10,968,515 units in this model year, an increase of 7.4% (Table 1).
- The combined automobile sales for August and September showed an tremendous jump of 25%, from 1,542,167 units in the same months of the previous model year to 2,051,824 in this model year (Figure 7).
- Compacts and midsize cars are still dominating the automobile market, with their market shares of 32.1% and 28.4%, respectively (Table 1 and Figure 8). Their combined share of new vehicle sales increased from 57.1% in the previous model year to 60.5% in this model year.
- The trend of decreasing market shares continued in both subcompacts and midsizes, with a 2.9% drop in subcompacts and 1.6% in midsizes. Compacts continued to gain, increasing almost 5% in market share from model year 1984 (Table 1 and Figure 8).
- The market shares of automobiles, broken down by manufacturer corporate locations and vehicles' sponsorships, remained relatively constant throughout the years (Figure 9).

2.2 FUEL ECONOMIES OF **ALL** AUTOMOBILES

- Automobile sale-weighted fuel economy gained 0.7 mpg from 26.3 mpg for the previous model year to 27.0 mpg for this model year (Table 1).

Table 1
Model Year Sales, Market Shares, and Sales-Weighted Fuel Economies of Domestic and Import Automobiles, Model Years 1978–1985[a]

	1978	1979	1980	1981	1982	1983	1984	1985
MINICOMPACT								
Total sales, units	947,327	590,043	428,346	296,702	221,699	230,547	41,368	52,295
Market share, %	8.5	5.5	4.7	3.3	2.9	2.6	0.4	0.5
Fuel economy, mpg	27.3	27.5	29.4	33.3	36.5	36.5	29.0	32.2
SUBCOMPACT								
Total sales, units	2,104,483	3,312,825	3,441,480	2,927,574	2,404,489	2,353,847	2,510,930	2,382,339
Market share, %	19.0	30.7	37.8	33.0	31.4	26.8	24.6	21.7
Fuel economy, mpg	24.7	25.2	27.3	29.3	30.2	30.7	30.5	30.1
COMPACT								
Total sales, units	1,684,964	905,786	599,423	1,191,194	1,300,372	1,927,460	2,768,048	3,526,118
Market share, %	15.2	8.4	6.6	13.4	17.0	22.0	27.1	32.1
Fuel economy, mpg	20.2	19.9	22.3	27.8	30.1	29.9	30.6	29.6
MIDSIZE								
Total sales, units	3,664,381	3,651,304	3,073,103	3,113,806	2,533,121	2,779,178	3,059,647	3,117,817
Market share, %	33.1	33.8	33.8	35.1	33.1	31.7	30.0	28.4
Fuel economy, mpg	18.7	19.0	21.3	22.9	24.1	24.3	24.1	24.9
LARGE								
Total sales, units	2,467,808	2,097,084	1,336,190	1,107,627	995,561	1,275,939	1,502,097	1,516,249
Market share, %	22.3	19.4	14.7	12.5	13.0	14.5	14.7	13.8
Fuel economy, mpg	16.3	17.1	19.3	20.6	20.6	19.5	20.2	22.3
TWO SEATER								
Total sales, units	214,146	231,215	215,964	242,962	202,929	203,442	328,968	373,697
Market share, %	1.9	2.1	2.4	2.7	2.6	2.3	3.2	3.4
Fuel economy, mpg	19.6	19.4	21.0	24.1	25.1	23.7	26.5	27.6
FLEET								
Total sales, units	11,083,109	10,788,257	9,094,506	8,879,865	7,658,171	8,770,413	10,211,058	10,968,515
Market share, %	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Fuel economy, mpg	19.7	20.5	23.2	25.3	26.3	26.1	26.3	27.0

[a]These figures represent only those sales that could be matched to corresponding EPA fuel economy values.

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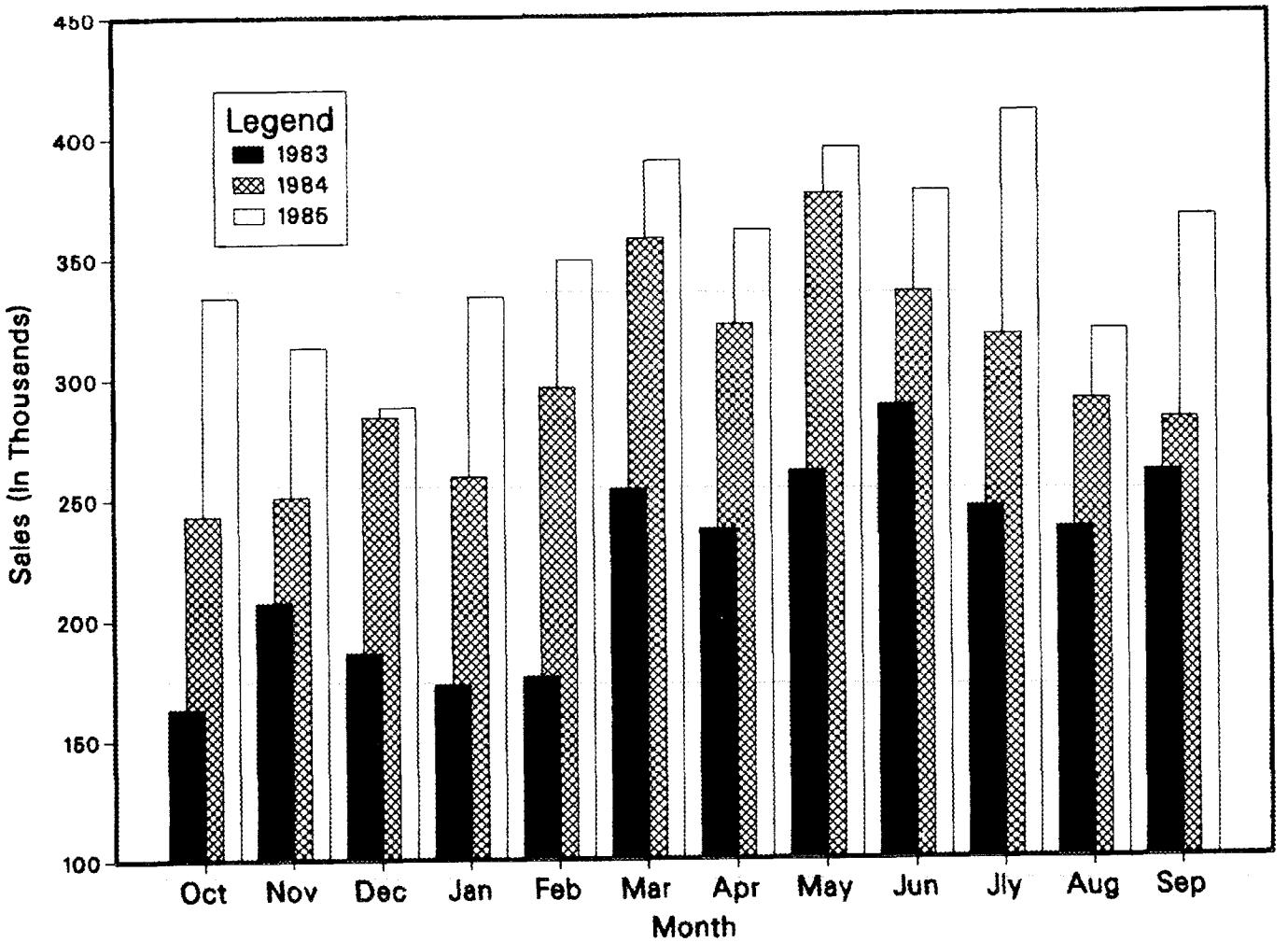

Fig. 7. Monthly Sales of Domestic and Import Automobiles, Model Years 1978–1985.

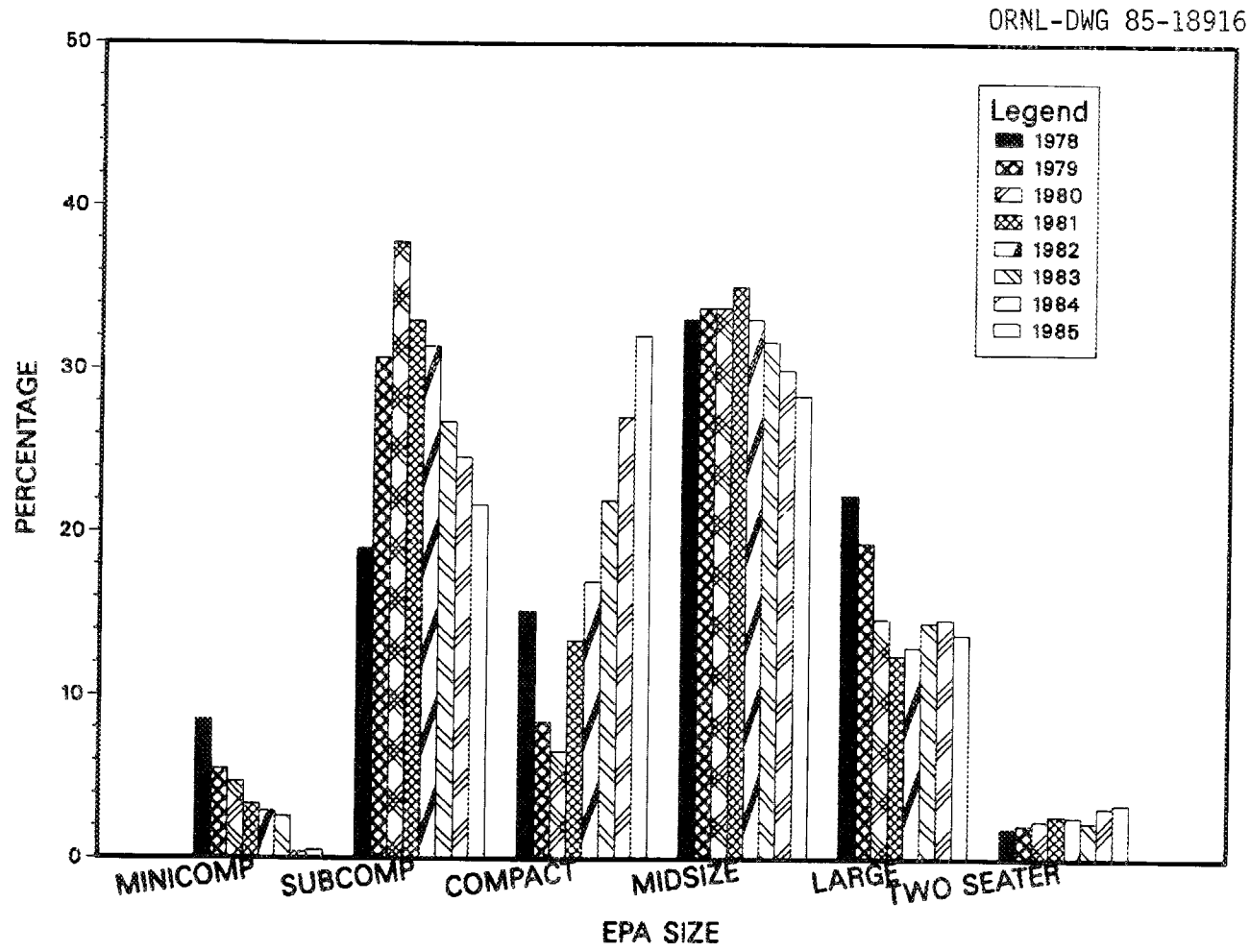

Fig. 8. Market Shares of Domestic and Import Automobiles by EPA Size Classification, Model Years 1978–1985.

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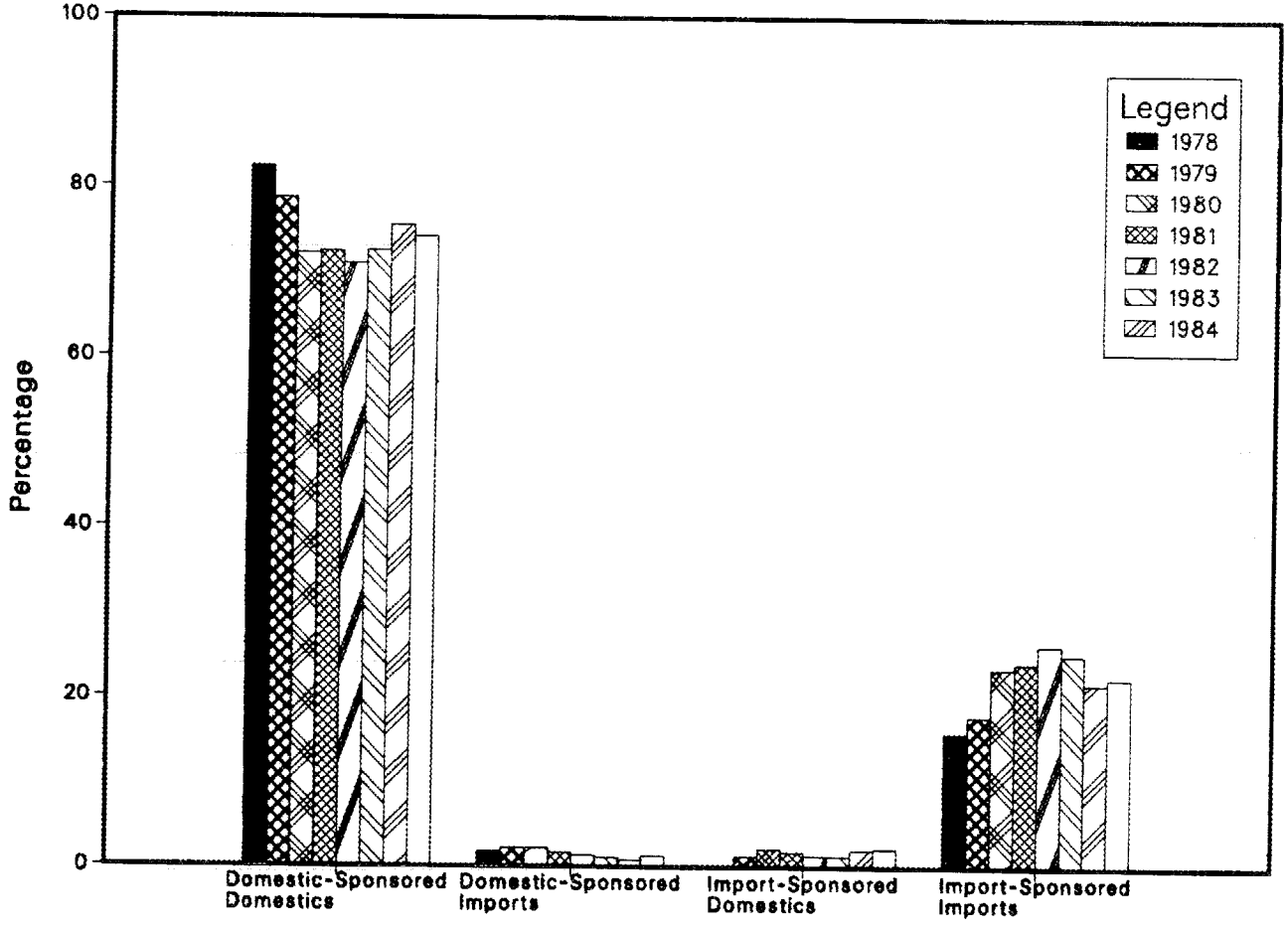


Fig. 9. Market Shares of Domestic and Import Automobiles by Manufacturer Location and Sponsorship, Model Years 1978–1985.

- Except for the subcompacts and compacts, all size classes of automobiles showed improvements in their fuel economies from the previous model year (Table 1 and Figure 10).
- The 0.7 mpg gain in the sales-weighted fuel economy can be attributed mainly to the introduction of more fuel efficient engine and transmission combinations (0.38 mpg), and the sales shifts toward more fuel efficient size classes (0.23 mpg). Although the sales shift away from more efficient nameplates within a given size class resulted in a drop of 0.16 mpg, it was not large enough to offset the gains (Table 2).
- Components of the fuel economy changes from model year 1978 through 1985 are summarized in Table 3 and Figure 11. Between model years 1981 and 1983, the consumers' buying behavior (as reflected in the three sales shift components in Table 3) toward less fuel efficient cars or engine and transmission configurations resulted in a total of 0.4 mpg loss.

2.3 SALES AND MARKET SHARES OF DOMESTIC AUTOMOBILES

- Domestic car sales increased by 6% from 7,908,294 units in model year 1984 to 8,380,378 units in model year 1985. The greatest sales volume increase of 21% was observed in domestic compacts whereas domestic subcompacts sales declined by 3% (Table 4).
- The market shares of domestic cars dropped for all size classes except for the domestic compacts which gained 4% in market share from 27.7% in the previous model year to 31.6% in this model year (Table 4 and Figure 12).

2.4 FUEL ECONOMIES OF **DOMESTIC** AUTOMOBILES

- Domestic cars showed an improvement of 0.8 mpg in sales-weighted fuel economy from the previous model year. Except for the subcompact and compact domestics, all domestic size classes improved their fuel economies (Table 4 and Figure 13).
- The main reasons for this 0.8 mpg improvement were: (1) the introduction of more efficient engine and transmission configurations (0.64 mpg), and (2) the sales shifts toward more efficient size classes (0.25 mpg) (Table 2).
- Components of the fuel economy changes in the domestic automobiles from model year 1978 through 1985 are summarized in Table 5 and Figure 14.

2.5 SALES AND MARKET SHARES OF **IMPORT** AUTOMOBILES

- Sales of import cars increased by 12.4% from 2,302,764 units in the previous model year to 2,588,137 units in this model year (Table 6).
- Except for subcompacts, the sales for all size classes of import cars jumped at least 24% (Table 6).
- Increased market share of import compacts was at the expense of import subcompacts, jumping from 25.2% for the previous model year to 33.8% for this model year (Table 6 and Figure 15).
- Although the import subcompacts still dominated the import car market by claiming 52.1% of the total, the trend of decreasing market shares continued in the import subcompacts (Tables 6 and Figure 15).

2.6 FUEL ECONOMIES OF IMPORT AUTOMOBILES

- For two consecutive model years, import cars experienced losses in sales-weighted fuel economy from the previous model years. The fuel economy of the import automobiles dropped from 31.3 mpg for the previous model year to 30.5 mpg for this model year (Table 6).
- The drop of 0.8 mpg from the previous model year can be attributed to: (1) the introduction of less efficient engine and transmission combinations (0.85 mpg), (2) the decreased fuel economy among some continuing engine and transmission combinations (0.22 mpg), and (3) the increased number of purchases of larger cars (0.22 mpg) (Table 2).
- Although all import size classes showed improvements in sales-weighted fuel economies except for subcompacts and compacts, the decreased fuel economies in these two popular classes resulted in a drop in fuel economy for total imports (Table 6 and Figure 16).
- Components of fuel economy changes in imports from model year 1978 through 1985 are summarized in Table 7 and Figure 17.

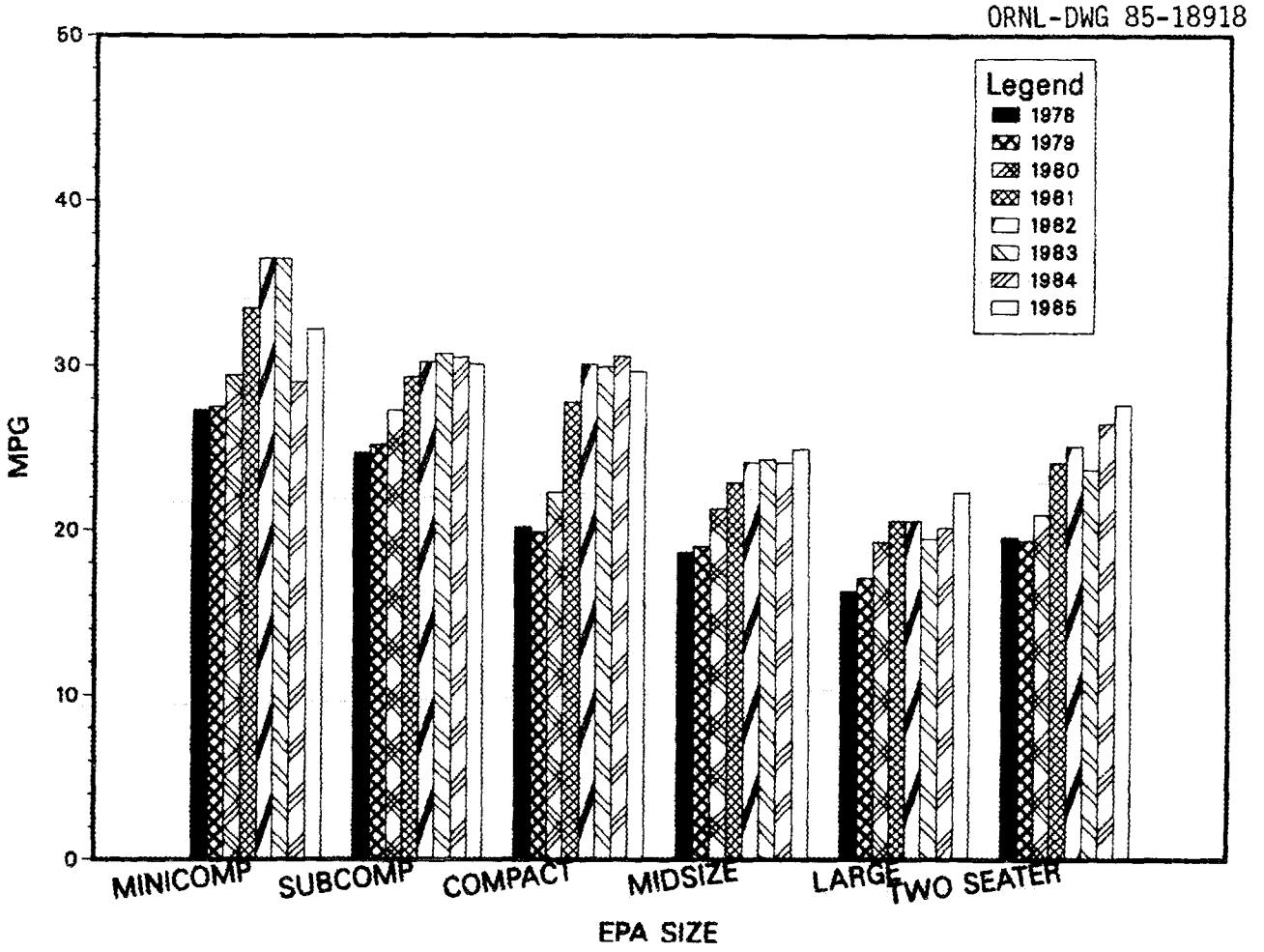


Fig. 10. Fuel Economies of Domestic and Import Automobiles by EPA Size Classification, Model Years 1978–1985.

Table 2
Allocation of MPG Differences of Automobiles Between Model Years 1984—1985

	1984 MPG	Difference in MPG due to: Sales shift: Between classes	Sales shift: Within classes	Configuration information: Improvements	Configuration information: Sales shift	Configuration information: Introduction	Configuration information: Discontinuation	Model introduction	Model discontinuation	Total change in MPG	1985 MPG
AMC	33.46		0.01	−2.33	0.05		0.01		0.04	−2.22	31.24
Chrysler	26.52	0.01	−0.60	0.26	0.06	0.41	0.03	0.07	−0.01	.19	26.72
Ford	25.22	0.03	0.12	−0.12	0.18	0.38	0.02			.61	25.83
GMC	24.35	0.38	−0.24	0.18		0.87	0.58	0.02		1.22	25.56
Other Domestic	35.24			−0.95	−0.04	−1.29	0.03	0.15	−0.01	−1.56	33.58
Total Domestic	25.18	0.25	−0.20	0.07	0.05	0.64	0.51	0.11	−0.08	.87	26.04
Japanese	33.00	0.13	−0.25	−0.37	0.01	−1.17	−0.13		−0.01	−1.14	31.86
European	25.98	−0.23	0.42	0.05	−0.12	−0.08	0.82	−0.01	−0.04	−.14	25.84
Other Import	36.67	0.80	0.32	0.11	−0.07	−1.67	0.32	0.62	0.24	1.17	37.85
Total Import	31.28	−0.22	0.18	−0.22	−0.03	−0.85	0.08	0.02	0.02	−.78	30.51
Fleet	26.33	0.23	−0.16	0.02	0.04	0.38		0.11	−0.06	.64	26.98

Table 3
Allocation of Automobile MPG Differences Between Consecutive Model Years 1978–1985

Beginning model year	Beginning MPG[a]	Difference in MPG due to: Sales shift: Between classes	Sales shift: Within classes	Configuration information: Efficiency improvement	Configuration information: Sales shift	Configuration information: Introduction	Configuration information: Discontinuation	Model introduction	Model discontinuation	Total change in MPG	Ending MPG[b]	Ending model year
1978	19.73	0.37	0.24	-0.13	0.14	-0.03	-0.01	0.17	0.03	0.79	20.52	1979
1979	20.52	0.44	0.59	0.89	0.25	0.30	0.03	0.10	0.12	2.72	23.24	1980
1980	23.24	-0.18	0.36	1.04	0.04	0.08	0.01	0.59	0.08	2.03	25.27	1981
1981	25.27	0.14	-0.19	0.63	-0.04	0.38	0.02	0.07	0.05	1.06	26.33	1982
1982	26.33	-0.08	-0.10	-0.07	-0.13		0.08	0.12	-0.05	-0.22	26.11	1983
1983	26.11	-0.13	0.13	-0.14	0.13	-0.01	0.11	-0.02	0.15	0.23	26.33	1984
1984	26.33	0.23	-0.16	0.02	0.04	0.38	0.08	0.11	-0.06	0.64	26.98	1985

[a]Fuel economy of the beginning model year.

[b]Fuel economy of the ending model year.

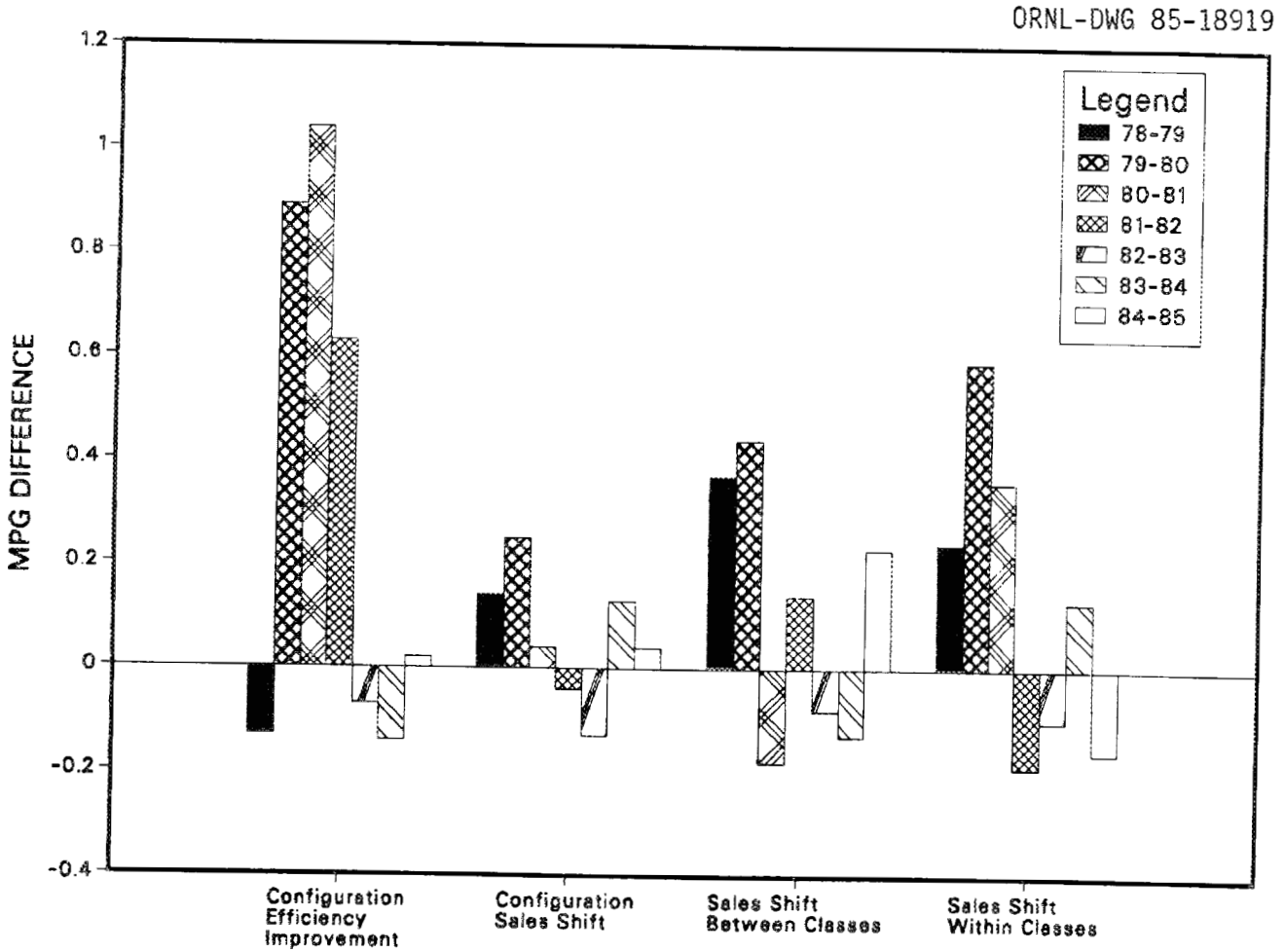
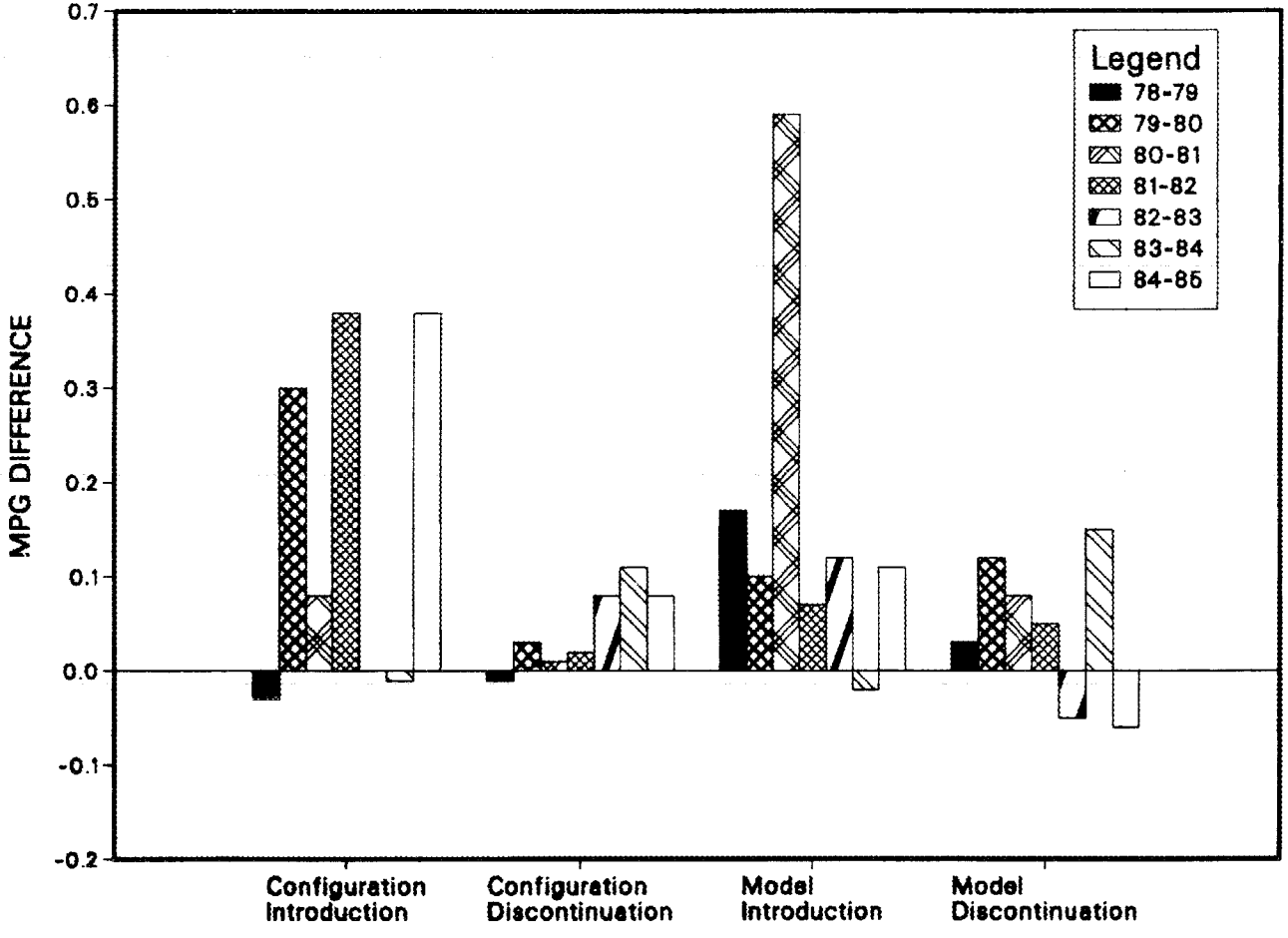


Fig. 11. Automobile MPG Differences Between Consecutive Model Years, Model Years 1978–1985.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Configuration Introduction
Configuration Discontinuation
Model Introduction
Model Discontinuation

Fig. 11. (Cont'd)

Table 4
Model Year Sales, Market Shares, and Sales-Weighted Fuel Economies of Domestic Automobiles, Model Years 1978–1985[a]

	1978	1979	1980	1981	1982	1983	1984	1985
MINICOMPACT								
Total sales, units	394,528	234,432	191,128	33,514				
Market share, %	4.3	2.7	2.8	0.5				
Fuel economy, mpg	23.2	24.1	26.9	26.9				
SUBCOMPACT								
Total sales, units	1,009,003	1,879,393	1,687,997	1,199,474	891,038	835,891	1,066,496	1,033,918
Market share, %	11.0	21.8	25.0	18.2	16.1	12.9	13.5	12.3
Fuel economy, mpg	21.1	23.4	25.1	27.1	27.7	26.6	27.6	27.0
COMPACT								
Total sales, units	1,562,138	742,627	447,214	1,042,988	1,047,620	1,529,311	2,187,539	2,651,206
Market share, %	17.1	8.6	6.6	15.8	18.9	23.6	27.7	31.6
Fuel economy, mpg	20.2	19.6	22.2	28.5	30.7	30.3	30.5	29.8
MIDSIZE								
Total sales, units	3,659,146	3,635,847	3,057,885	3,113,806	2,530,583	2,772,300	2,999,888	3,023,986
Market share, %	40.1	42.1	45.2	47.3	45.6	42.8	37.9	36.1
Fuel economy, mpg	18.7	19.0	21.3	22.9	24.1	24.3	24.2	24.9
LARGE								
Total sales, units	2,467,808	2,097,084	1,336,190	1,107,627	995,561	1,275,939	1,502,097	1,516,249
Market share, %	27.0	24.3	19.8	16.8	18.0	19.7	19.0	18.1
Fuel economy, mpg	16.3	17.1	19.3	20.6	20.6	19.5	20.2	22.3
TWO SEATER								
Total sales, units	43,106	39,816	37,471	88,969	79,724	61,309	152,274	155,019
Market share, %	0.5	0.5	0.6	1.4	1.4	0.9	1.9	1.8
Fuel economy, mpg	16.5	15.1	16.9	24.4	27.4	25.6	28.5	29.3
FLEET								
Total sales, units	9,135,729	8,629,199	6,757,885	6,586,378	5,544,526	6,474,750	7,908,294	8,380,378
Market share, %	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Fuel economy, mpg	18.6	19.4	21.8	23.9	24.9	24.5	25.2	26.0

[a]These figures represent only those sales that could be matched to corresponding EPA fuel economy values.

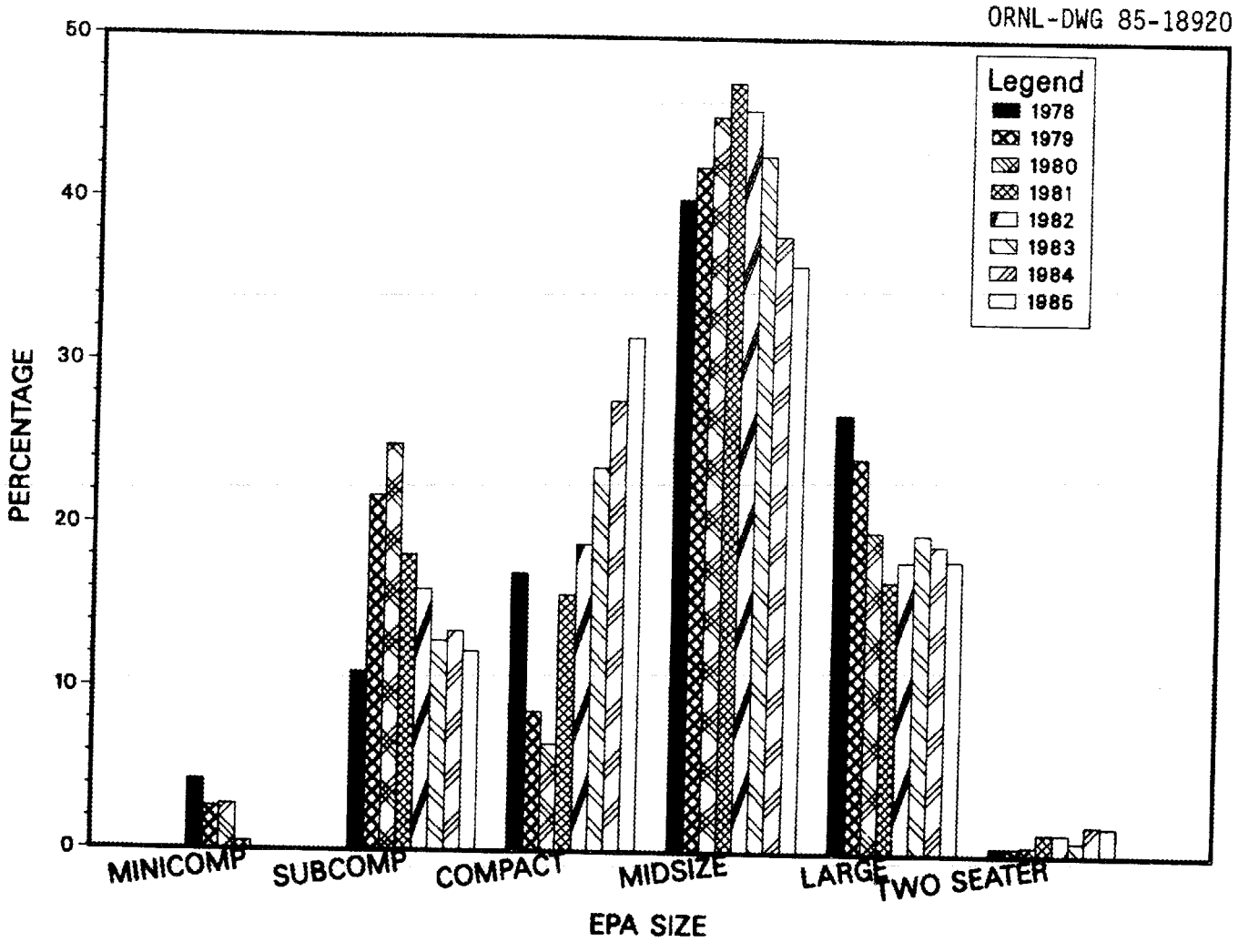


Fig. 12. Market Shares of Domestic Automobiles by EPA Size Classification, Model Years 1978–1985.

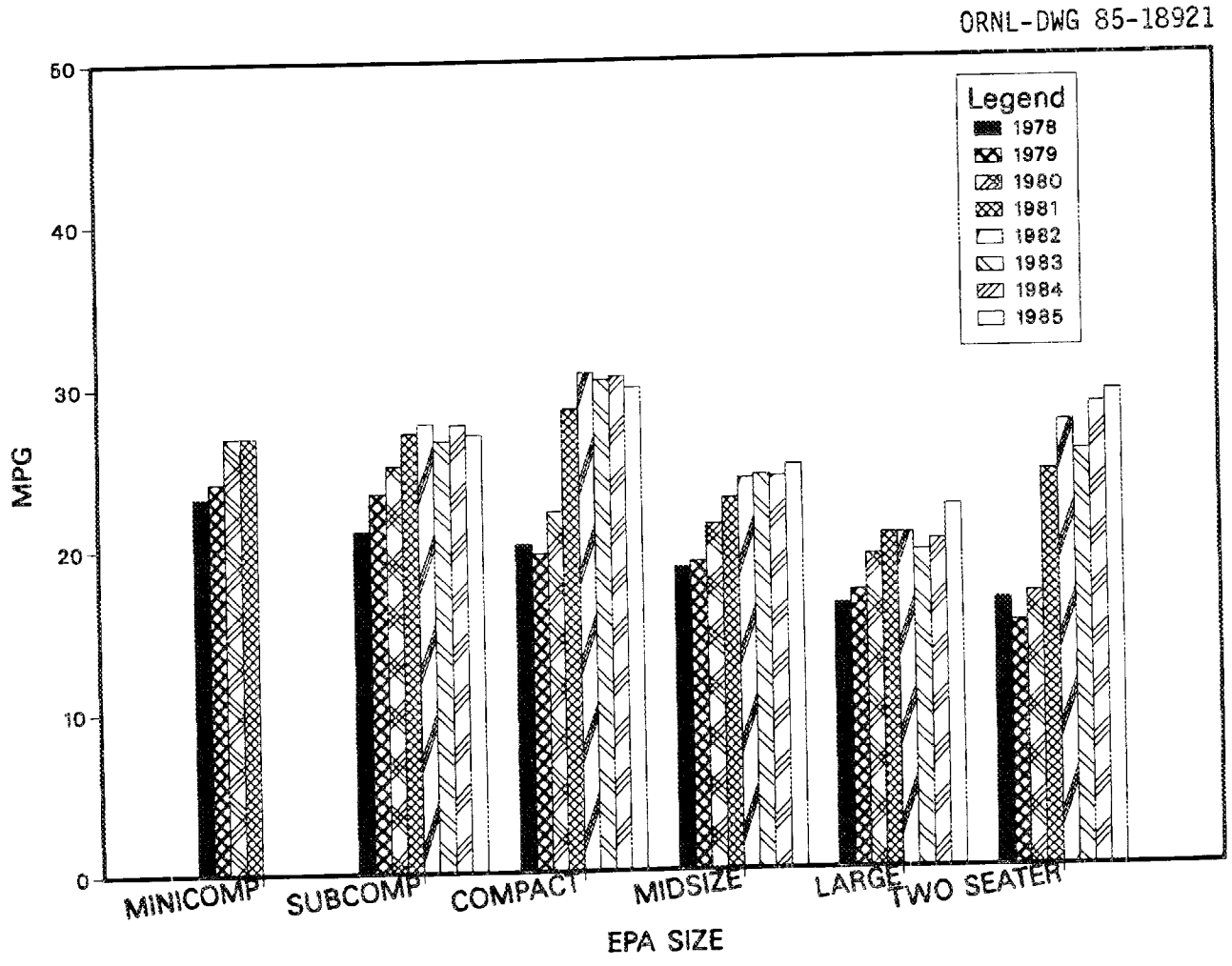


Fig. 13. Fuel Economies of Domestic Automobiles by EPA Size Classification, Model Years 1978–1985.

Table 5
Allocation of Domestic Automobile MPG Differences Between Consecutive Model Years 1978—1985

Beginning model year	Beginning MPG[a]	Difference in MPG due to: Sales shift: Between classes	Sales shift: Within classes	Configuration information: Efficiency improvement	Configuration information: Sales shift	Configuration information: Introduction	Configuration information: Discontinuation	Model introduction	Model discontinuation	Total change in MPG	Ending MPG[b]	Ending model year
1978	18.57	0.12	0.38	−0.01	0.14	0.01	−0.01	0.14	0.04	0.81	19.38	1979
1979	19.38	0.25	0.64	0.81	0.27	0.36	0.03	−0.01	0.11	2.45	21.38	1980
1980	21.83	−0.24	0.24	1.00	0.05	0.09	−0.01	0.85	0.07	2.06	23.89	1981
1981	23.89	0.06	−0.21	0.52	−0.06	0.45	0.01	0.18	0.04	1.00	24.89	1982
1982	24.89	−0.02	−0.12	−0.28	−0.17	−0.02	0.07	0.19	0.01	−0.36	24.54	1983
1983	24.54	0.24	0.18	−0.12	0.15	−0.01	0.13	−0.02	0.09	0.64	25.18	1984
1984	25.18	0.25	−0.20	0.07	0.05	0.64	0.03	0.11	−0.08	0.87	26.04	1985

[a]Fuel economy of the beginning model year.

[b]Fuel economy of the ending model year.

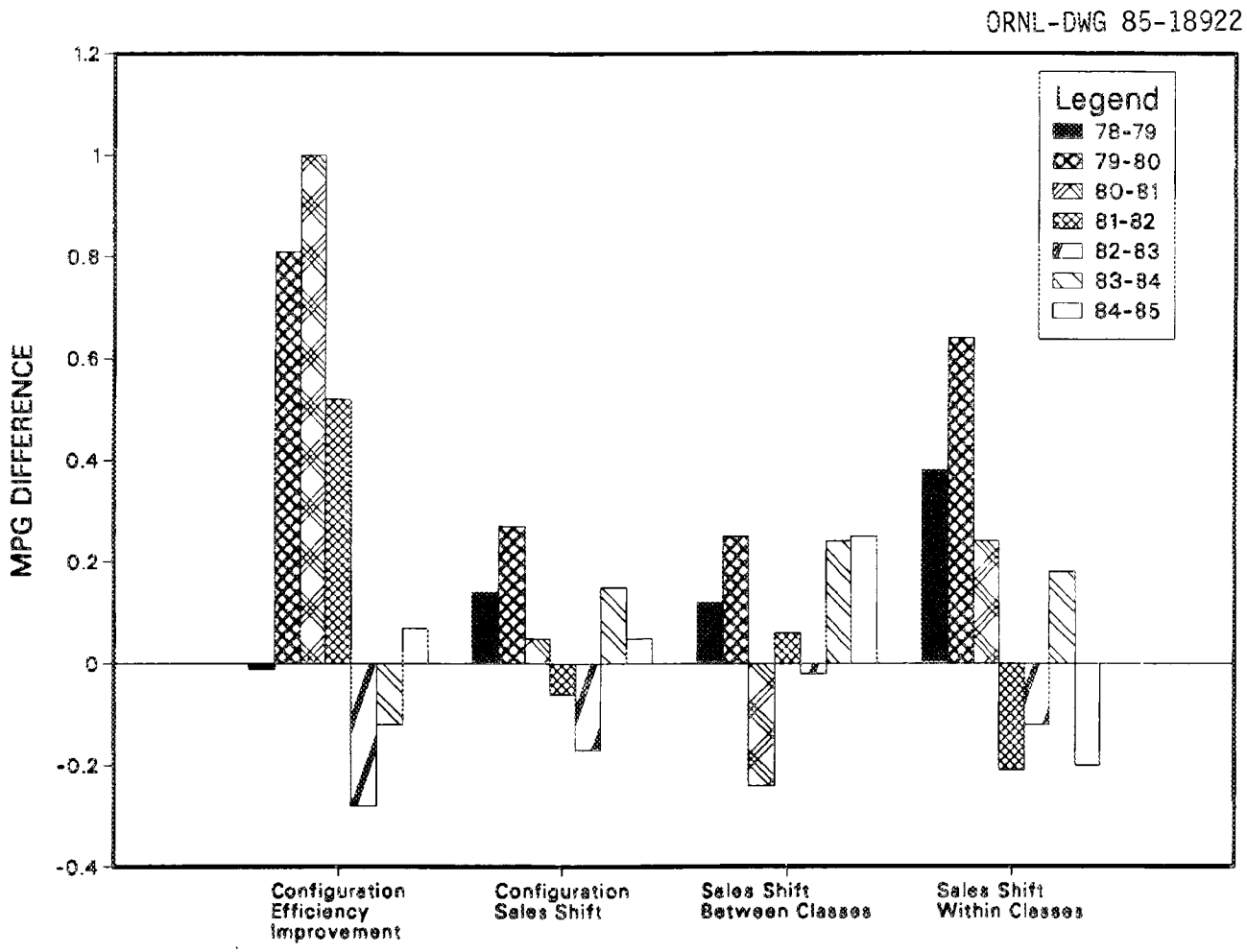
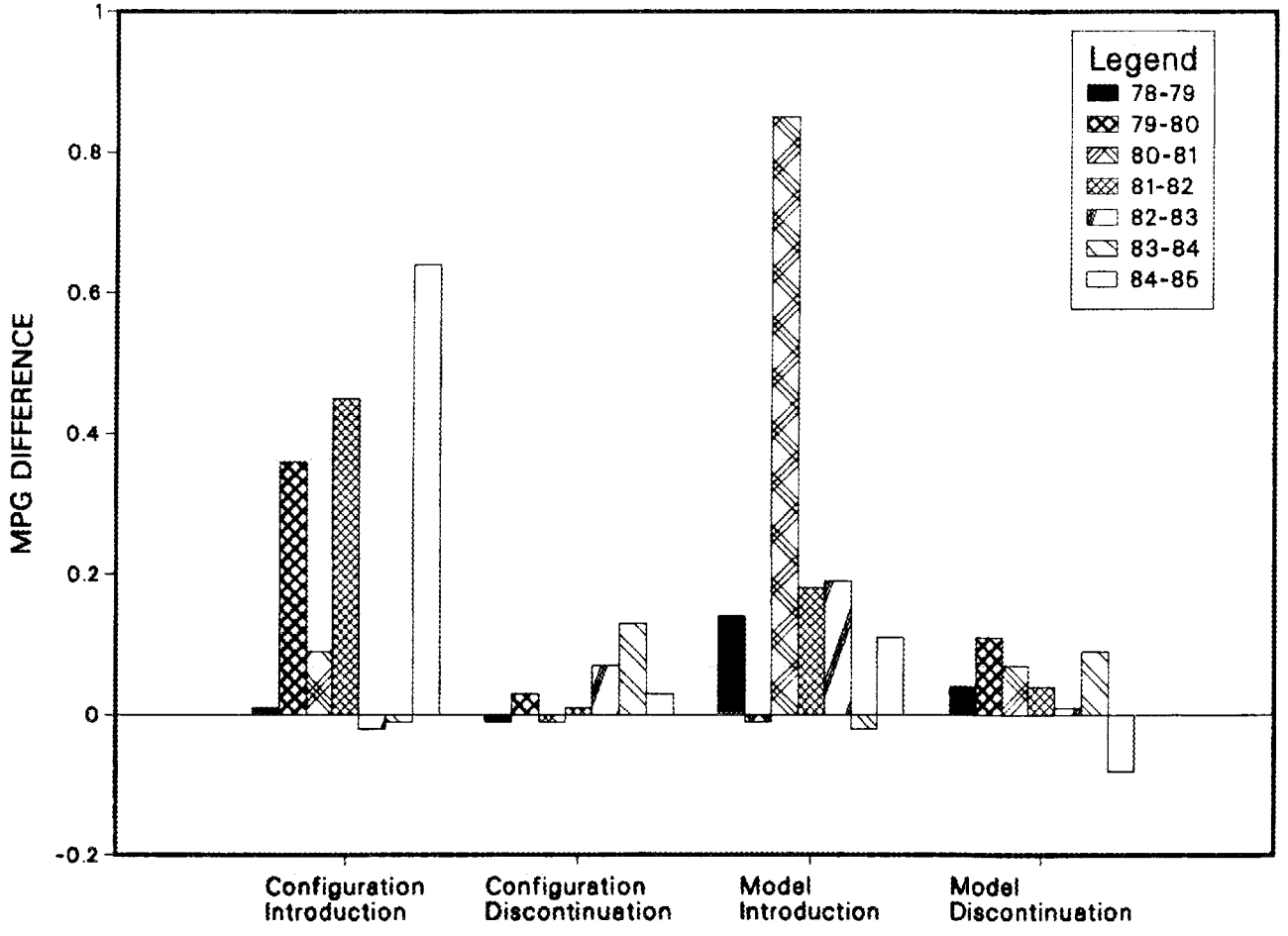


Fig. 14. Domestic Automobile MPG Differences Between Consecutive Model Years, Model Years 1978–1985.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Configuration Introduction
Configuration Discontinuation
Model Introduction
Model Discontinuation

Fig. 14. (Cont'd)

Table 6
Model Year Sales, Market Shares, and Sales-Weighted Fuel Economies of Import Automobiles, Model Years 1978—1985[a]

	1978	1979	1980	1981	1982	1983	1984	1985
MINICOMPACT								
Total sales, units	552,799	355,611	237,218	263,188	221,699	230,547	41,368	52,295
Market share, %	28.4	16.5	10.2	11.5	10.5	10.0	1.8	2.0
Fuel economy, mpg	31.3	30.3	31.8	34.6	36.5	36.5	29.0	32.2
SUBCOMPACT								
Total sales, units	1,095,480	1,433,432	1,753,483	1,728,100	1,513,451	1,517,956	1,444,434	1,348,421
Market share, %	56.3	66.4	75.0	75.3	71.6	66.1	62.7	52.1
Fuel economy, mpg	29.2	28.1	29.9	31.1	31.9	33.5	33.0	33.0
COMPACT								
Total sales, units	122,826	163,159	152,209	148,206	252,752	398,149	580,509	874,912
Market share, %	6.3	7.6	6.5	6.5	12.0	17.3	25.2	33.8
Fuel economy, mpg	20.5	21.7	22.5	23.9	27.5	28.6	31.1	29.1
MIDSIZE								
Total sales, units	5,235	15,457	15,218		2,538	6,878	59,759	93,831
Market share, %	0.3	0.7	0.7		0.1	0.3	2.6	3.6
Fuel economy, mpg	14.4	18.1	21.1		19.0	23.0	22.1	23.6
LARGE								
Total sales, units								
Market share, %								
Fuel economy, mpg								
TWO SEATER								
Total sales, units	171,040	191,399	178,493	153,993	123,205	142,133	176,694	218,678
Market share, %	8.8	8.9	7.6	6.7	5.8	6.2	7.7	8.4
Fuel economy, mpg	20.6	20.7	22.1	23.9	23.8	22.9	25.1	26.5
FLEET								
Total sales, units	1,947,380	2,159,058	2,336,621	2,293,487	2,113,645	2,295,663	2,302,764	2,588,137
Market share, %	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Fuel economy, mpg	27.9	26.8	28.6	30.3	31.0	31.9	31.3	30.5

[a]These figures represent only those sales that could be matched to corresponding EPA fuel economy values.

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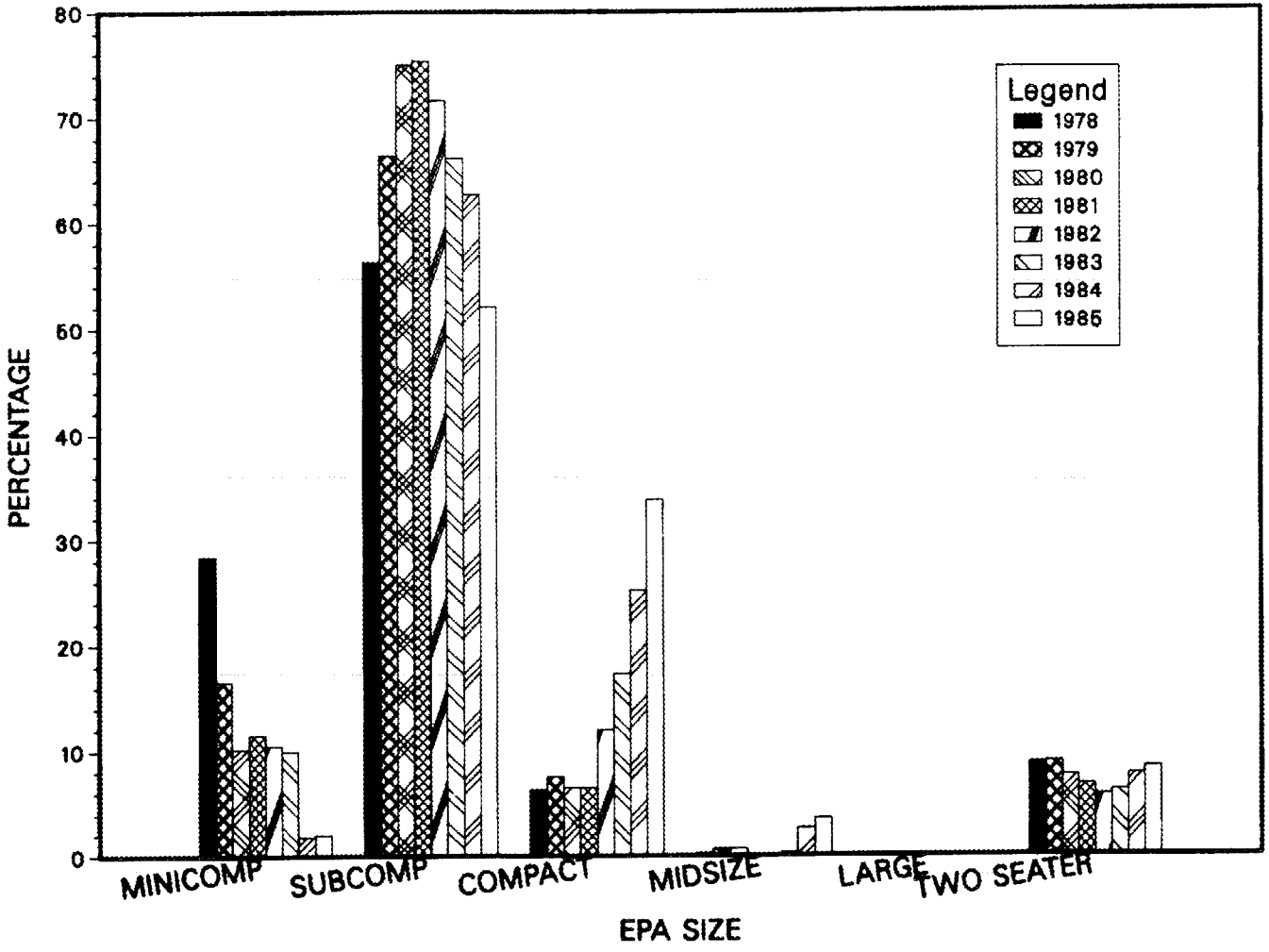

Fig. 15. Market Shares of Import Automobiles by EPA Size Classification, Model Years 1978–1985.

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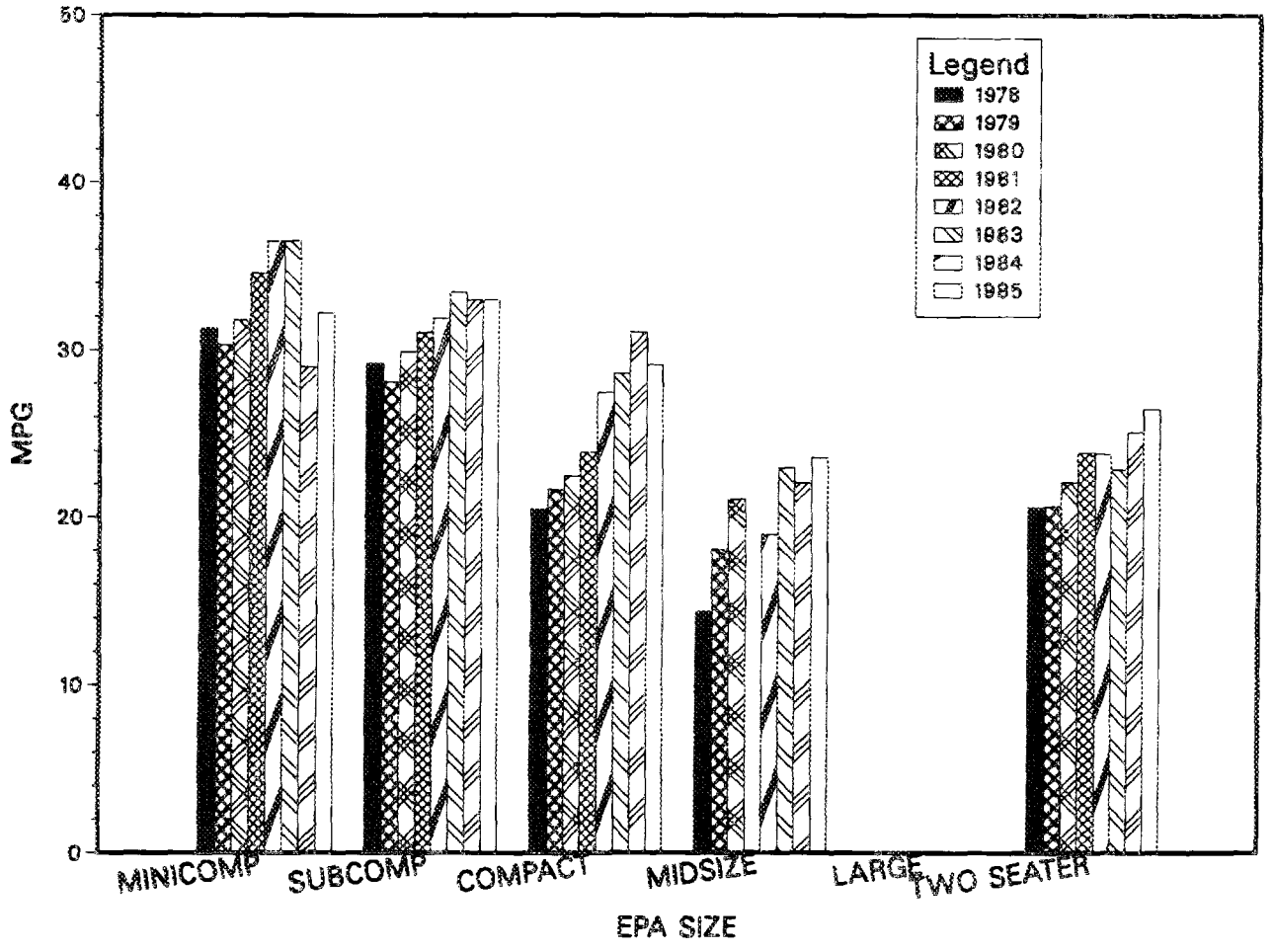


Fig. 16. Fuel Economies of Import Automobiles by EPA Size Classification, Model Years 1978–1985.

Table 7
Allocation of Import Automobile MPG Differences Between Consecutive Model Years 1978–1985

Beginning model year	Beginning MPG[a]	Difference in MPG due to: Sales shift: Between classes	Sales shift: Within classes	Configuration information: Efficiency improvement	Configuration information: Sales shift	Configuration information: Introduction	Configuration information: Discontinuation	Model introduction	Model discontinuation	Total change in MPG	Ending MPG[b]	Ending model year
1978	27.89	−0.55	0.57	−1.08	0.08	−0.35	0.01	0.01	0.25	−1.06	26.84	1979
1979	26.84	0.02	−0.12	1.33	0.15	−0.03	0.04	0.30	0.06	1.75	28.59	1980
1980	28.59	0.13	0.09	1.18	−0.01	0.04	0.07	0.17	0.01	1.68	30.27	1981
1981	30.27	−0.37	0.01	1.06	0.06	0.09	0.04	−0.13	0.02	0.78	31.04	1982
1982	31.04	−0.35	0.06	0.92	0.11	0.05	0.11	0.04	−0.13	0.82	31.86	1983
1983	31.86	−0.66	0.38	−0.23	−0.02	−0.02	0.03	−0.56	0.51	−0.58	31.28	1984
1984	31.28	−0.22	0.18	−0.22	−0.03	−0.85	0.32	0.02	0.02	−0.78	30.51	1985

[a]Fuel economy of the beginning model year.

[b]Fuel economy of the ending model year.

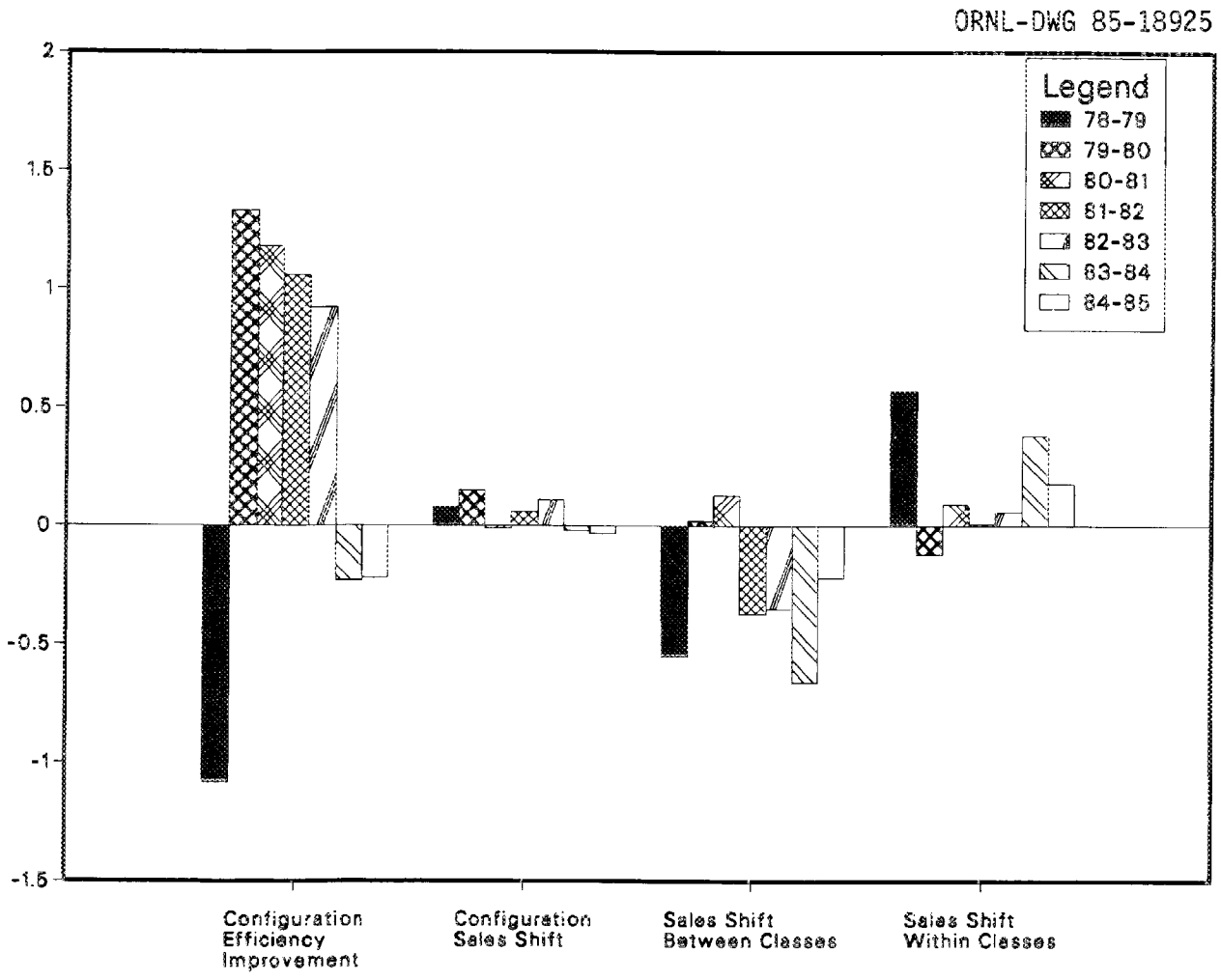
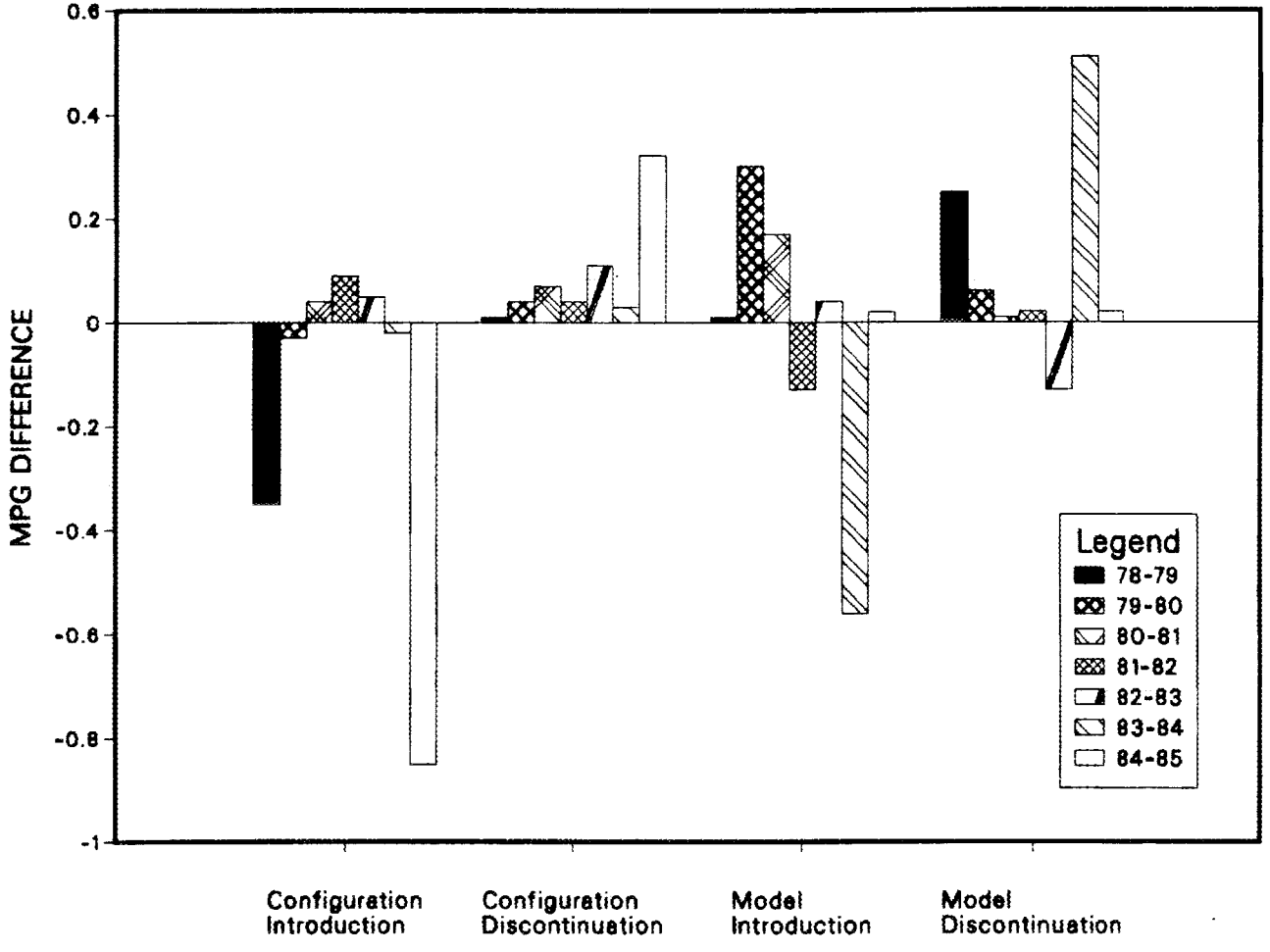


Fig. 17. Import Automobile MPG Differences Between Consecutive Model Years, Model Years 1978–1985.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Model Introduction
Model Discontinuation

Fig. 17. (Cont'd)

3. LIGHT-DUTY VEHICLE SALES AND SALES-WEIGHTED FUEL ECONOMIES BY MAKE AND MODEL, MODEL YEAR 1985

- The twenty most popular vehicles, of which fourteen were automobiles and six were light trucks, for model year 1985 are listed in Table 8.
- The sales of the twenty most popular automobiles for model year 1985 accounted for 42.2% of the total car sales (Table 9). Sales and fuel economies of the ten best selling automobiles are illustrated in Figure 18.
- The dynamics of the twenty most popular automobiles for individual model years since 1978 are summarized in Table 10. Only four nameplates - Chevrolet, Oldsmobile Supreme, Oldsmobile 88 and Toyota Corolla, appeared on the top 20 list for all eight years.
- The market shares of the twenty most popular cars dropped from 53.2% for model year 1978 to 42.2% for this model year (Appendix E includes all of the nameplates sorted by sales for individual model years since 1978).
- Automobile nameplates and their sales, market shares and fuel economies for this model year by EPA size class are summarized in Tables 11 through 16.
- The sales of the twenty most popular light trucks accounted for 73.3% of the total light truck sales for model year 1985 (Table 17). Standard pickups claimed seven of these rankings while small pickups claimed five.

- Sales and fuel economies of the ten best selling light trucks are illustrated in Figure 19.
- The market shares of the twenty most popular light trucks dropped from 97.8% for model year 1978 to 73.5% for model year 1985 (Appendix F includes all of the nameplates sorted by sales for individual model years since 1978).
- Light truck nameplates and their sales, market shares and fuel economies for this model year are summarized by size class in Tables 18 through 23.
- The total sales of the entire new vehicle fleet jumped 10% from 13,823,992 units in the previous model year to 15,203,880 units in model year 1985 (Table 24).
- The trend for light trucks to capture a larger part of the market than in the previous model year continued, from 26.1% of combined light truck and car sales in model year 1984 to 27.9% in model year 1985 (Table 24 and Figure 20).
- This growing trend was observed in both domestic and import light-duty fleets (Tables 25 and 26).

Table 8
Twenty Most Popular **Vehicles** for Model Year 1985

	Model year sales	Ratio of total sales	Sales weighted MPG	EPA size class
1) Chevrolet Cavalier	422,927	.028	28.4	Compact
2) Ford Escort	410,978	.027	34.5	Compact
3) Ford F100/	385,537	.025	17.1	Standard Pickup Truck
4) Chevrolet Celebrity	360,167	.024	26.9	Midsize
5) Oldsmobile Ciera	315,569	.021	26.7	Midsize
6) Ford Tempo	297,656	.020	31.3	Compact
7) Toyota Pickup	277,491	.018	26.7	Standard Pickup Truck
8) Chevrolet	251,666	.017	23.2	Large
9) Buick Century	239,570	.016	25.3	Midsize
10) Oldsmobile Supreme	234,242	.015	24.5	Midsize
11) Ford Ranger	232,298	.015	26.2	Small Pickup Truck
12) Oldsmobile 88	213,833	.014	22.6	Large
13) Chevrolet Camaro	206,082	.014	22.2	Subcompact
14) Ford LTD 83	205,889	.014	24.0	Midsize
15) Chevrolet S-10	203,234	.013	24.0	Small Pickup Truck
16) Ford Econoline	186,333	.012	15.6	Standard Van
17) Nissan Sentra (210)	184,706	.012	36.6	Subcompact
18) Ford LTD Crown Victoria	173,509	.011	19.5	Large
19) Ford Thunderbird	169,770	.011	23.1	Compact
20) Chevrolet C-10	167,300	.011	21.4	Standard Pickup Truck
	5,138,757	.338	24.5	

Table 9
Twenty Most Popular Cars for Model Year 1985

	Model year sales	Ratio of total sales	Sales weighted MPG	EPA size class
1) Chevrolet Cavalier	422,927	.039	28.4	Compact
2) Ford Escort	410,978	.037	34.5	Compact
3) Chevrolet Celebrity	360,167	.033	26.9	Midsize
4) Oldsmobile Ciera	315,569	.029	26.7	Midsize
5) Ford Tempo	297,656	.027	31.3	Compact
6) Chevrolet	251,666	.023	23.2	Large
7) Buick Century	239,570	.022	25.3	Midsize
8) Oldsmobile Supreme	234,242	.021	24.5	Midsize
9) Oldsmobile 88	213,833	.019	22.6	Large
10) Chevrolet Camaro	206,082	.019	22.2	Subcompact
11) Ford LTD 83	205,889	.019	24.0	Midsize
12) Nissan Sentra (210)	184,706	.017	36.6	Subcompact
13) Ford LTD Crown Victoria	173,509	.016	19.5	Large
14) Ford Thunderbird	169,770	.015	23.1	Compact
15) Toyota Corolla	166,568	.015	37.0	Compact
16) Subaru	161,587	.015	31.7	Subcompact
17) Ford Mustang	159,741	.015	24.0	Subcompact
18) Pontiac A6000	153,994	.014	26.9	Midsize
19) Honda Accord-American	149,674	.014	32.6	Subcompact
20) Mercury Grand Marquis	145,242	.013	21.0	Large
	4,623,370	.422	26.7	

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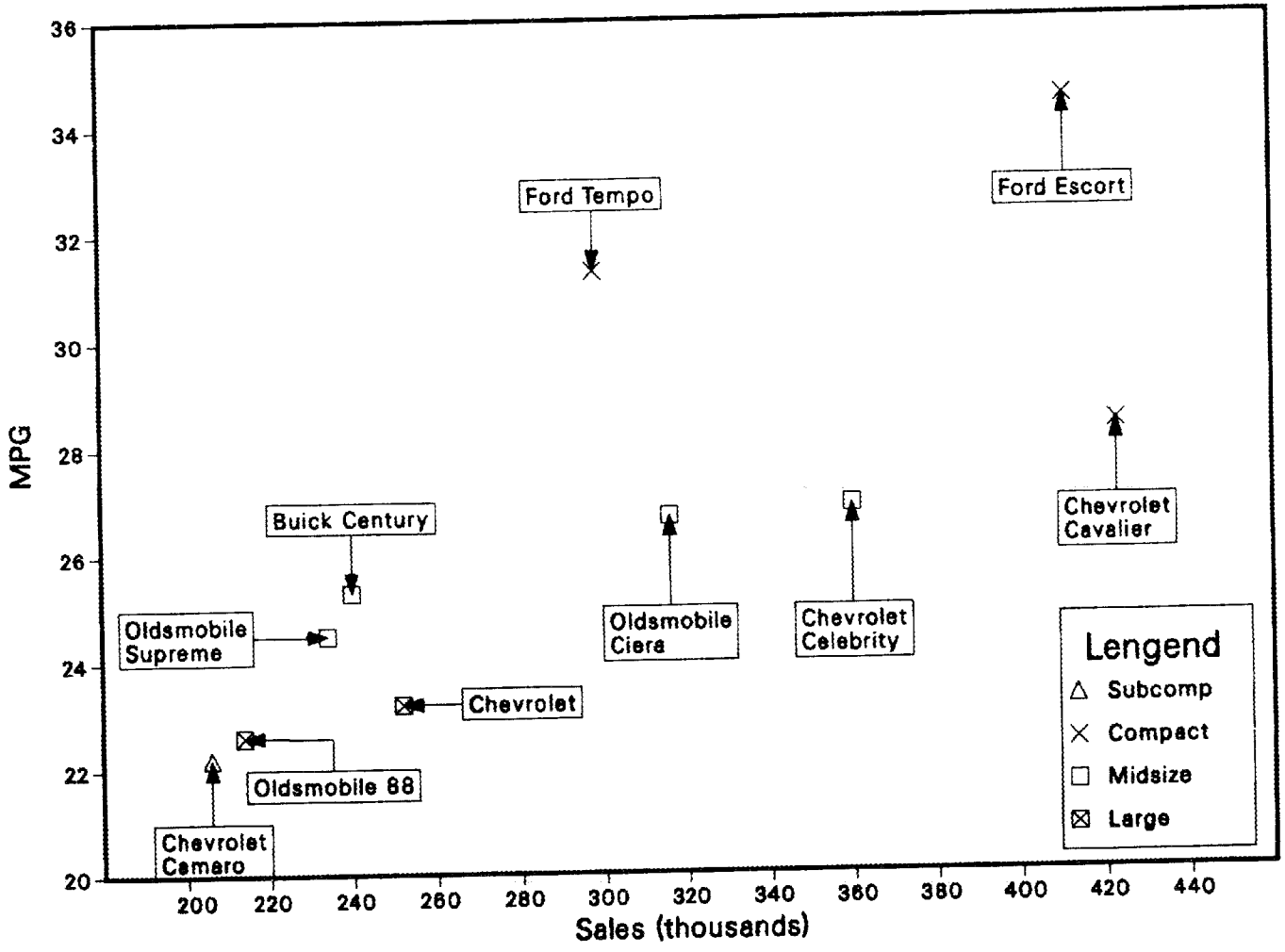

Fig. 18. Sales vs. Fuel Economies of 10 Best Selling Automobiles, Model Year 1985.

Table 10
Sales-Rankings, Fuel Economies and Market Shares of Top Twenty Automobile Nameplates, Model Years 1978—1985

Nameplate	Model year							
	1978	1979	1980	1981	1982	1983	1984	1985
Chevrolet (large)	1 17.3 5.7%	2 18.0 4.7%	4 20.2 3.4%	8 21.4 2.4%	5 21.3 2.7%	3 21.3 2.6%	5 20.2 2.6%	6 23.2 2.3%
Oldsmobile Supreme (midsize)	2 21.5 4.5%	1 20.6 5.0%	1 20.9 5.1%	1 22.4 5.5%	2 23.9 3.8%	2 23.3 3.6%	3 23.7 3.3%	8 24.5 2.1%
Ford Fairmont (midsize)	3 21.7 3.8%	5 20.7 3.2%	5 23.2 3.2%	7 23.5 2.5%	18 23.2 1.7%			
Chevrolet Malibu (midsize)	4 20.4 3.2%	3 19.7 3.4%	6 21.2 3.0%	6 22.2 2.7%	20 23.4 1.6%			
Chevrolet Monte Carlo (midsize)	5 20.4 3.2%	7 19.9 2.7%	12 20.3 1.9%	13 21.7 2.0%				
Ford LTD Crown Victoria (large)	6 15.9 3.0%	8 16.5 2.6%	15 19.2 1.8%				18 18.4 1.5%	13 19.5 1.6%
Ford Thunderbird (midsize)	7 15.6 2.9%	14 14.3 2.0%	14 20.6 1.8%				19 23.3 1.5%	14 23.1 1.5%
Chevrolet Nova (compact)	8 19.2 2.4%							
Chevrolet Chevette (subcompact)	9 30.2 2.4%	4 29.5 3.3%	3 28.3 4.1%	2 30.6 4.2%	3 32.6 3.1%	8 33.2 2.1%	15 34.7 1.8%	
Oldsmobile 88 (large)	10 17.1 2.4%	10 19.4 2.3%	18 20.7 1.7%	15 22.0 1.8%	9 21.0 2.2%	4 20.4 2.5%	6 20.7 2.5%	9 22.6 1.9%
Chevrolet Camaro (subcompact)	11 17.0 2.2%	12 17.9 2.2%			14 22.2 1.9%	10 21.5 2.0%	10 22.6 2.0%	10 22.2 1.9%
Cadillac DeVille (large)	12 14.5 2.2%	13 15.1 2.1%	19 18.7 1.6%		15 18.5 1.9%	11 15.1 2.0%	12 20.1 1.9%	
Ford Granada (compact)	13 20.3 2.2%							
Toyota Corolla (subcompact)	14 33.2 2.1%	11 29.1 2.3%	7 30.4 2.8%	5 31.1 2.9%	8 31.0 2.3%	18 35.7 1.6%	17 37.6 1.5%	15 37.0 1.5%
Plymouth Volare (compact)	15 20.1 2.0%	18 19.6 1.7%						
Pontiac Grand Prix (midsize)	16 20.0 2.0%	16 20.4 1.8%						
Buick Regal (midsize)	17 20.8 1.9%	9 20.9 2.5%	9 20.7 2.1%	9 22.6 2.4%	13 22.5 1.9%	7 23.0 2.3%	11 22.4 2.0%	
Pontiac (large)	18 17.3 1.9%	19 18.0 1.7%						
Buick LeSabre (large)	19 17.5 1.8%					20 20.6 1.6%	16 20.7 1.6%	
Ford Pinto (minicompact)	20 25.4 1.7%	17 24.1 1.8%	17 27.0 1.8%					
Ford Mustang (subcompact)		6 22.1 2.8%	8 23.5 2.7%	14 24.7 2.0%				17 24.0 1.5%

Table 10 (Cont'd)

Nameplate	Model year							
	1978	1979	1980	1981	1982	1983	1984	1985
Nissan Sentra (subcompact)		15 30.6 1.9%	11 33.6 2.1%	16 35.2 1.8%	7 36.3 2.3%	6 37.6 2.4%	14 37.6 1.9%	12 36.6 1.7%
Pontiac Firebird (subcompact)		20 17.6 1.6%						
Chevrolet Citation (midsize)			2 25.0 4.1%	3 26.0 3.6%	4 28.5 2.7%			
Volkswagen Rabbit-American (subcompact)			10 34.6 2.1%	17 39.1 1.8%				
Honda Accord (subcompact)			13 27.5 1.9%	11 28.4 2.1%	6 32.0 2.4%	9 35.5 2.0%		
Buick Skylark (compact)			16 24.3 1.8%	10 26.0 2.3%	10 28.0 2.1%			
Toyota Celica (subcompact)			20 24.6 1.6%					
Ford Escort (compact)				4 32.4 3.2%	1 33.8 4.2%	1 33.0 3.7%	2 34.2 3.3%	2 34.5 3.7%
Plymouth Reliant (midsize)				12 27.4 2.0%	12 27.7 2.0%	14 28.6 1.8%		
Honda Civic (minicompact)				18 36.1 1.8%	17 39.6 1.8%			
Subaru (subcompact)				19 32.0 1.7%	16 33.6 1.9%	16 34.3 1.7%	20 33.4 1.5%	16 31.7 1.5%
Buick Century (midsize)				20 22.0 1.7%	11 26.4 2.0%	13 25.5 1.9%	9 25.8 2.0%	7 25.3 2.2%
Toyota Tercel (subcompact)					19 35.4 1.7%	17 38.7 1.7%		
Chevrolet Cavalier (compact)						5 30.4 2.5%	1 32.2 3.6%	1 28.4 3.9%
Oldsmobile Ciera (midsize)						12 26.8 1.9%	8 26.7 2.5%	4 26.7 2.9%
Chevrolet Celebrity (midsize)						15 27.8 1.8%	4 26.0 3.0%	3 26.9 3.3%
Ford LTD 83 (midsize)						19 23.5 1.6%	13 24.0 1.9%	11 24.0 1.9%
Ford Tempo (compact)							7 31.3 2.5%	5 31.3 2.7%
Pontiac A6000 (midsize)								18 26.9 1.4%
Honda Accord-American (subcompact)								19 32.6 1.4%
Mercury Grand Marquis (large)								20 21.0 1.3%
Fuel economy Market share	19.3 53.2%	20.0 51.4%	23.5 50.9%	26.1 50.5%	27.1 46.1%	26.1 43.4%	25.7 44.7%	26.7 42.2%

Table 11
Minicompact Cars for Model Year 1985 Ranked by
Sales-Weighted MPG

	Model year sales	Ratio of total sales	Sales weighted MPG	Ratio of total car sales
1) Chevrolet Sprint	18,726	.358	53.1	0.002
2) Volkswagen Cabriolet	12,009	.230	30.4	0.001
3) Porsche 944	14,567	.279	25.8	0.001
4) Porsche 911	4,661	.089	24.0	
5) Porsche 928	2,332	.045	20.0	
	52,295	1.000	32.2	0.005

Table 12
Subcompact Cars for Model Year 1985 Ranked by
Sales-Weighted MPG

	Model year sales	Ratio of total sales	Sales weighted MPG	Ratio of total car sales
1) Chevrolet Spectrum	39,424	.017	43.2	0.004
2) Plymouth Colt	33,302	.014	39.1	0.003
3) Toyota Tercel	97,798	.041	38.2	0.009
4) Mercedes Benz 190 D 2.2	6,483	.003	37.9	0.001
5) Mazda GLC	49,503	.021	37.8	0.005
6) Honda Civic	145,074	.061	37.0	0.013
7) Nissan Sentra-American	21,077	.009	36.6	0.002
8) Nissan Sentra (210)	184,706	.078	36.6	0.017
9) Nissan Pulsar NX	44,825	.019	36.5	0.004
10) Chevrolet Chevette	135,261	.057	35.0	0.012
11) Pontiac T1000	24,180	.010	34.7	0.002
12) Dodge Colt Hatchback	36,120	.015	33.6	0.003
13) Mitsubishi Mirage	11,937	.005	33.6	0.001
14) Plymouth Turismo (TC3)	54,251	.023	33.1	0.005
15) Nissan 200SX	66,755	.028	33.0	0.006
16) Honda Accord-American	149,674	.063	32.6	0.014
17) Honda Accord	106,581	.045	32.5	0.010
18) Subaru	161,587	.068	31.7	0.015
19) Honda Prelude	72,011	.030	31.4	0.007
20) Volkswagen Scirocco	14,481	.006	30.8	0.001
21) Audi 4000	16,263	.007	30.6	0.001
22) Dodge Charger 024	58,969	.025	30.5	0.005
23) Toyota Celica	71,508	.030	30.3	0.007
24) Mitsubishi Cordia	8,662	.004	30.3	0.001
25) Isuzu I-Mark	9,958	.004	30.1	0.001
26) Mitsubishi Tredia	10,546	.004	30.0	0.001
27) BMW 325	11,846	.005	28.6	0.001
28) BMW 320 I	36,500	.015	28.6	0.003
29) Renault Fuego	5,810	.002	28.4	0.001
30) Renault 18I	2,429	.001	28.0	
31) Isuzu Impulse	14,955	.006	27.6	0.001
32) Chrysler Laser	54,758	.023	27.3	0.005
33) Dodge Daytona	51,299	.022	27.3	0.005
34) Mercury Capri	16,829	.007	25.1	0.002
35) Toyota Supra	27,419	.012	25.0	0.002
36) Audi Coupe	3,388	.001	24.6	
37) Mercedes Benz 190 E 2.3	17,495	.007	24.4	0.002
38) Ford Mustang	159,741	.067	24.0	0.015
39) Mitsubishi Starion	5,474	.002	24.0	
40) Plymouth Conquest(Sapporo)	2,634	.001	24.0	
41) Dodge Conquest	2,714	.001	24.0	
42) Audi 4000S Quattro	4,134	.002	23.0	
43) BMW 633 CSI	7,385	.003	23.0	0.001
44) Pontiac Firebird	101,797	.043	22.4	0.009
45) Chevrolet Camaro	206,082	.087	22.2	0.019
46) Audi Quatro	74		21.0	
47) Jaguar XJ/XJS	18,640	.008	18.4	0.002
	2,382,339	1.000	30.1	0.217

Table 13
Compact Cars for Model Year 1985 Ranked by
Sales-Weighted MPG

	Model year sales	Ratio of total sales	Sales weighted MPG	Ratio of total car sales
1) Toyota Corolla	166,568	.047	37.0	0.015
2) Chevrolet Nova	16,323	.005	36.9	0.001
3) Volkswagen Golf - American	71,496	.020	35.4	0.007
4) Volkswagen Jetta	69,567	.020	35.1	0.006
5) Mercury Lynx	84,870	.024	34.9	0.008
6) Toyota Camry(Corona)	116,555	.033	34.6	0.011
7) Ford Escort	410,978	.117	34.5	0.037
8) AMC Renault Encore	46,524	.013	34.1	0.004
9) AMC Renault Alliance	75,295	.021	33.4	0.007
10) Plymouth Horizon	88,513	.025	32.3	0.008
11) Mazda 626	77,387	.022	32.0	0.007
12) Ford Tempo	297,656	.084	31.3	0.027
13) Nissan Stanza (510)	56,570	.016	31.2	0.005
14) Dodge Omni	75,107	.021	31.1	0.007
15) Peugeot 505 (Diesel/Turbo)	3,077	.001	30.7	
16) Mercury Topaz	79,899	.023	30.6	0.007
17) Buick Skyhawk	90,700	.026	30.0	0.008
18) Pontiac J2000	120,207	.034	29.7	0.011
19) Buick Somerset	88,103	.025	29.4	0.008
20) Oldsmobile Calais	113,280	.032	29.4	0.010
21) Pontiac Grand AM	98,567	.028	29.4	0.009
22) Oldsmobile Firenza	52,760	.015	29.4	0.005
23) Peugeot 604	13		29.2	
24) Cadillac Cimarron	22,492	.006	28.5	
25) Chevrolet Cavalier	422,927	.120	28.4	0.039
26) Buick Skylark (X-Car)	78,359	.022	27.8	0.007
27) Oldsmobile Omega (X-Car)	1,708		27.2	
28) Mitsubishi Galant	11,964	.003	27.0	0.001
29) BMW 524 TD	10,829	.003	26.7	0.001
30) Mercedes Benz 300 D/300 CD	23,114	.007	26.5	0.002
31) Mercedes Benz 300 SD	14,884	.004	26.5	0.001
32) Volkswagen Quantum	15,597	.004	26.2	0.001
33) BMW 528 I	15,348	.004	25.5	0.001
34) Saab 900	36,948	.010	25.2	0.003
35) Toyota Cressida	43,840	.012	25.0	0.004
36) Volvo GLT	8,138	.002	24.5	0.001
37) Volvo DL	45,975	.013	24.4	0.004
38) Peugeot 505 (Gas)	15,010	.004	24.2	0.001
39) Volvo GL	25,673	.007	24.1	0.002
40) Mercury Merkur	6,384	.002	24.0	0.001
41) Mercury Cougar XR-7	129,997	.037	23.4	0.012
42) Ford Thunderbird	169,770	.048	23.1	0.015
43) BMW 733 I	6,177	.002	23.0	0.001
44) Nissan Maxima (810)	95,775	.027	22.5	0.009
45) AMC Eagle	15,675	.004	20.1	0.001
46) Mercedes 380 SE	7,598	.002	20.0	0.001
47) Mercedes 500 SEC	1,921	.001	17.0	
	3,526,118	1.000	29.6	0.321

Table 14
Midsize Cars for Model Year 1985 Ranked by
Sales-Weighted MPG

	Model year sales	Ratio of total sales	Sales weighted MPG	Ratio of total car sales
1) Chevrolet Citation (X-Car)	59,605	.019	28.8	0.005
2) Dodge Aries	117,742	.038	28.7	0.011
3) Plymouth Reliant	137,074	.044	28.7	0.012
4) Dodge Lancer	39,984	.013	27.3	0.004
5) Chrysler LeBaron GTS	55,740	.018	27.3	0.005
6) Pontiac A6000	153,994	.049	26.9	0.014
7) Pontiac Phoenix (X-Car)	2,353	.001	26.9	
8) Chevrolet Celebrity	360,167	.116	26.9	0.033
9) Oldsmobile Ciera	315,569	.101	26.7	0.029
10) Chrysler Le Baron	90,830	.029	26.2	0.008
11) Dodge 600	58,043	.019	25.9	0.005
12) Plymouth Caravelle	34,528	.011	25.9	0.003
13) Volvo 740 GLE	29,455	.009	25.4	0.003
14) Volvo 760 GLE	10,980	.004	25.4	0.001
15) Buick Century	239,570	.077	25.3	0.022
16) Chrysler New Yorker-E Class	59,623	.019	25.0	0.005
17) Oldsmobile Supreme	234,242	.075	24.5	0.021
18) Mercury Marquis	98,166	.031	24.1	0.009
19) Ford LTD 83	205,889	.066	24.0	0.019
20) Buick Regal	127,386	.041	24.0	0.012
21) Pontiac Grand Prix	61,924	.020	23.6	0.006
22) Pontiac Bonneville	55,795	.018	23.4	0.005
23) Audi 5000S	48,304	.015	23.2	0.004
24) Chevrolet Monte Carlo	105,568	.034	22.5	0.010
25) Oldsmobile Toronado	37,581	.012	22.1	0.003
26) Buick Riviera	55,546	.018	22.0	0.005
27) Lincoln Mercury Mark VII	20,198	.006	21.4	0.002
28) Lincoln Continental	28,799	.009	21.3	0.003
29) Cadillac Seville	32,986	.011	21.0	0.003
30) Cadillac Eldorado	66,863	.021	21.0	0.006
31) Chrysler New Yorker 5th Ave	112,137	.036	21.0	0.010
32) Plymouth Gran Fury	18,734	.006	18.2	0.002
33) Dodge Diplomat	37,350	.012	18.2	0.003
34) Mercedes Benz 380 SEL/500 SEL	5,092	.002	17.0	
	3,117,817	1.000	24.9	0.284

Table 15
Large Cars for Model Year 1985 Ranked by Sales-Weighted MPG

	Model year sales	Ratio of total sales	Sales weighted MPG	Ratio of total car sales
1) Oldsmobile 98	118,668	.078	24.5	0.011
2) Buick Electra	90,922	.060	24.5	0.008
3) Chevrolet	251,666	.166	23.2	0.023
4) Pontiac	73,109	.048	23.1	0.007
5) Cadillac DeVille	140,718	.093	23.0	0.013
6) Cadillac Fleetwood	47,883	.032	23.0	0.004
7) Buick Le Sabre	144,684	.095	22.8	0.013
8) Oldsmobile 88	213,833	.141	22.6	0.019
9) Lincoln Town Car	116,015	.077	21.0	0.011
10) Mercury Grand Marquis	145,242	.096	21.0	0.013
11) Ford LTD Crown Victoria	173,509	.114	19.5	0.016
	1,516,249	1.000	22.3	0.138

Table 16
Two-Seater Cars for Model Year 1985 Ranked by
Sales-Weighted MPG

	Model year sales	Ratio of total sales	Sales weighted MPG	Ratio of total car sales
1) Honda Civic CRX	54,755	.147	42.2	0.005
2) Toyota MR-2	23,800	.064	33.0	0.002
3) Pontiac Fiero	90,691	.243	33.0	0.008
4) Ford EXP	26,450	.071	32.6	0.002
5) Alfa Romeo	4,486	.012	28.0	
6) Nissan 300ZX	67,555	.181	23.1	0.006
7) Mazda RX-7	57,158	.153	22.0	0.005
8) Chevrolet Corvette	37,878	.101	21.8	0.003
9) Mercedes Benz 380 SL	10,319	.028	20.0	0.001
10) Ferrari	605	.002	13.0	
	373,697	1.000	27.6	0.034

Table 17
Twenty Most Popular Trucks for Model Year 1985

	Model year sales	Ratio of total sales	Sales weighted MPG	EPA size class
1) Ford F100/F150	385,537	.091	17.1	Standard Pickup Truck
2) Toyota Pickup	277,491	.066	26.7	Standard Pickup Truck
3) Ford Ranger	232,298	.055	26.2	Small Pickup Truck
4) Chevrolet S-10	203,234	.048	24.0	Small Pickup Truck
5) Ford Econoline	186,333	.044	15.6	Standard Van
6) Chevrolet C-10	167,300	.040	21.4	Standard Pickup Truck
7) Chevrolet K-10	167,300	.040	19.4	Standard Pickup Truck
8) Chevrolet Blazer "S"	166,370	.039	22.4	Small Special Purpose Vehicle
9) Ford F250	152,016	.036	14.1	Standard Pickup Truck
10) Nissan Pickup	151,380	.036	23.0	Standard Pickup Truck
11) Chevrolet Van	150,190	.035	18.8	Standard Van
12) Mazda Pickup	113,398	.027	30.1	Small Pickup Truck
13) Nissan Pickup-American	110,248	.026	29.7	Small Pickup Truck
14) Dodge Caravan	108,417	.026	23.6	Mini Van
15) Plymouth Voyager(FWD)	102,109	.024	23.2	Mini Van
16) Dodge D150	98,316	.023	17.1	Standard Pickup Truck
17) Ford Bronco II	96,906	.023	21.9	Small Special Purpose Vehicle
18) Jeep Cherokee XJ	88,148	.021	22.0	Small Special Purpose Vehicle
19) Chevrolet Astro Van	79,179	.019	25.0	Mini Van
20) Dodge Ram 50	66,745	.016	26.9	Small Pickup Truck
	3,102,915	.733	21.0	

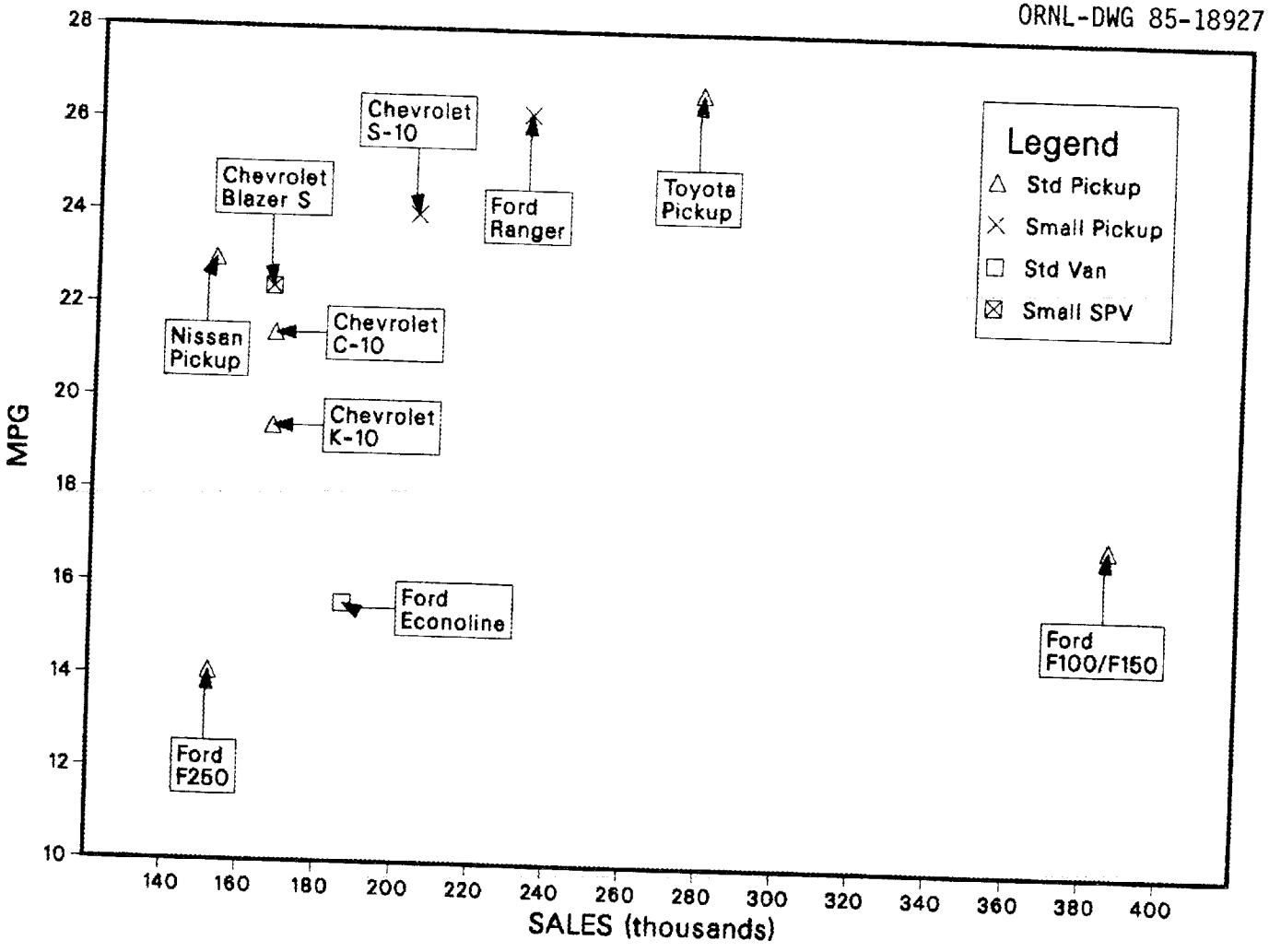

Fig. 19. Sales vs. Fuel Economies of 10 Best Selling Light Trucks, Model Year 1985.

Table 18

Small Pickup Trucks for Model Year 1985 Ranked by Sales-Weighted MPG

	Model year sales	Ratio of total sales	Sales weighted MPG	Ratio of total truck sales
1) Volkswagen Pickup — Diesel	2		43.5	
2) Isuzu Pickup	49,271	.057	31.5	0.012
3) Toyota 4Runner Truck	11,696	.014	31.3	0.003
4) Mazda Pickup	113,398	.131	30.1	0.027
5) Volkswagen Pickup — Gasoline	5		30.0	
6) Nissan Pickup-American	110,248	.128	29.7	0.026
7) Subaru Brat	5,284	.006	29.4	0.001
8) Mitsubishi Pickup	21,902	.025	28.5	0.005
9) Dodge Rampage	2,039	.002	27.4	
10) Dodge Ram 50	66,745	.077	26.9	0.016
11) Ford Ranger	232,298	.269	26.2	0.055
12) GMC S-15	45,578	.053	24.1	0.011
13) Chevrolet S-10	203,234	.235	24.0	0.048
14) Jeep Scrambler	1,884	.002	21.8	
	863,584	1.000	26.8	0.204

Table 19
Standard Pickup Trucks for Model Year 1985 Ranked by Sales-Weighted MPG

	Model year sales	Ratio of total sales	Sales weighted MPG	Ratio of total truck sales
1) Toyota Pickup	277,491	.164	26.7	0.066
2) Jeep Comanche	1,123	.001	25.9	
3) Nissan Pickup	151,380	.090	23.0	0.036
4) Chevrolet C-10	167,300	.099	21.4	0.040
5) GMC Caballero	2,504	.001	20.9	0.001
6) Chevrolet El Camino	20,233	.012	20.8	0.005
7) Chevrolet K-10	167,300	.099	19.4	0.039
8) GMC C-15	39,639	.023	19.1	0.009
9) GMC C-25	14,030	.008	18.8	0.003
10) Chevrolet C-20	54,619	.032	18.6	0.013
11) Chevrolet K-20	54,619	.032	17.9	0.013
12) GMC K-15	39,639	.023	17.7	0.009
13) Ford F100/F150	385,537	.228	17.1	0.091
14) Dodge D150	98,316	.058	17.1	0.023
15) GMC K-25	14,029	.008	16.1	0.003
16) Jeep J10	1,108	.001	16.0	
17) Dodge W150	23,574	.014	14.6	0.006
18) Dodge D250	17,292	.010	14.5	0.004
19) Dodge W250	8,075	.005	14.2	0.002
20) Ford F250	152,016	.090	14.1	0.036
21) Jeep J20	1,107	.001	14.0	
	1,690,931	1.000	19.0	0.399

Table 20
Mini Vans for Model Year 1985 Ranked by
Sales-Weighted MPG

	Model year sales	Ratio of total sales	Sales weighted MPG	Ratio of total truck sales
1) Plymouth Vista	10,079	.023	30.6	0.002
2) Dodge Vista	10,376	.024	30.6	0.002
3) Toyota Van	34,322	.078	26.6	0.008
4) Toyota Cargo Van	24,303	.056	26.4	0.006
5) Ford Aerostar Van	7,467	.017	25.3	0.002
6) GMC Safari	18,563	.042	25.0	0.004
7) Chevrolet Astro Van	79,179	.181	25.0	0.019
8) Dodge Caravan	108,417	.248	23.6	0.026
9) Dodge Mini Ram Van	25,756	.059	23.6	0.006
10) Plymouth Voyager(FWD)	102,109	.233	23.2	0.024
11) Volkswagen Vanagon	17,089	.039	21.5	0.004
	437,660	1.000	24.3	0.103

Table 21
Standard Vans for Model Year 1985 Ranked by
Sales-Weighted MPG

	Model year sales	Ratio of total sales	Sales weighted MPG	Ratio of total truck sales
1) Chevrolet Van	150,190	.280	18.8	0.035
2) GMC Vandura/Rally	41,653	.078	17.1	0.010
3) Chevrolet Sport Van	20,521	.038	16.4	0.005
4) Ford Econoline	186,333	.347	15.6	0.044
5) Dodge Ram Van	64,145	.120	15.6	0.015
6) Ford Club Wagon	33,349	.062	15.1	0.008
7) Dodge Ram Wagon	40,051	.075	15.1	0.009
	536,242	1.000	16.4	0.127

Table 22
Small Special Purpose Vehicles for Model Year 1985
Ranked by Sales-Weighted MPG

	Model year sales	Ratio of total sales	Sales weighted MPG	Ratio of total truck sales
1) Toyota 4Runner SR-5	6,373	.013	27.0	0.002
2) Isuzu Trooper	22,828	.048	23.0	0.005
3) Chevrolet Blazer "S"	166,370	.348	22.4	0.039
4) GMC Jimmy "S"	38,883	.081	22.4	0.009
5) Jeep Cherokee XJ	88,148	.185	22.0	0.021
6) Ford Bronco II	96,906	.203	21.9	0.023
7) Jeep CJ	36,950	.077	21.3	0.009
8) Mitsubishi Montero	2,807	.006	21.2	0.001
9) Jeep Wagoneer XJ	14,709	.031	21.2	0.003
10) Toyota Land Cruiser	3,732	.008	14.0	0.001
	477,706	1.000	22.1	0.113

Table 23
Standard Special Purpose Vehicles for Model Year 1985 Ranked by Sales-Weighted MPG

	Model year sales	Ratio of total sales	Sales weighted MPG	Ratio of total truck sales
1) GMC Suburban	17,324	.076	17.7	0.004
2) GMC Jimmy	8,349	.036	17.7	0.002
3) Chevrolet Blazer	44,480	.194	17.5	0.011
4) Chevrolet Suburban	56,479	.246	17.2	0.013
5) Ford Bronco	51,528	.225	17.1	0.012
6) Dodge Ram Charger	33,644	.147	14.7	0.008
7) Jeep Grand Wagoneer	17,438	.076	14.2	0.004
	229,242	1.000	16.6	0.054

Table 24
Light Duty Vehicle Sales, Market Shares, and Sales-Weighted Fuel Efficiencies, Domestic and Import

Model year	Automobile			Light trucks			Fleet		
	Sales	Mkt shr	MPG	Sales	Mkt shr	MPG	Sales	Mkt shr	MPG
78	11,083,109	.790	19.7	2,941,180	.210	17.2	14,024,289	1.000	19.1
79	10,788,257	.794	20.5	2,801,163	.206	16.5	13,589,420	1.000	19.5
80	9,094,506	.804	23.2	2,216,537	.196	18.1	11,311,043	1.000	22.0
81	8,879,865	.821	25.3	1,935,416	.179	19.8	10,815,281	1.000	24.1
82	7,658,171	.782	26.3	2,132,840	.218	20.0	9,791,011	1.000	24.6
83	8,770,413	.765	26.1	2,687,299	.235	20.5	11,457,712	1.000	24.5
84	10,211,058	.739	26.3	3,612,934	.261	20.1	13,823,992	1.000	24.3
85	10,968,515	.721	27.0	4,235,365	.279	20.4	15,203,880	1.000	24.8

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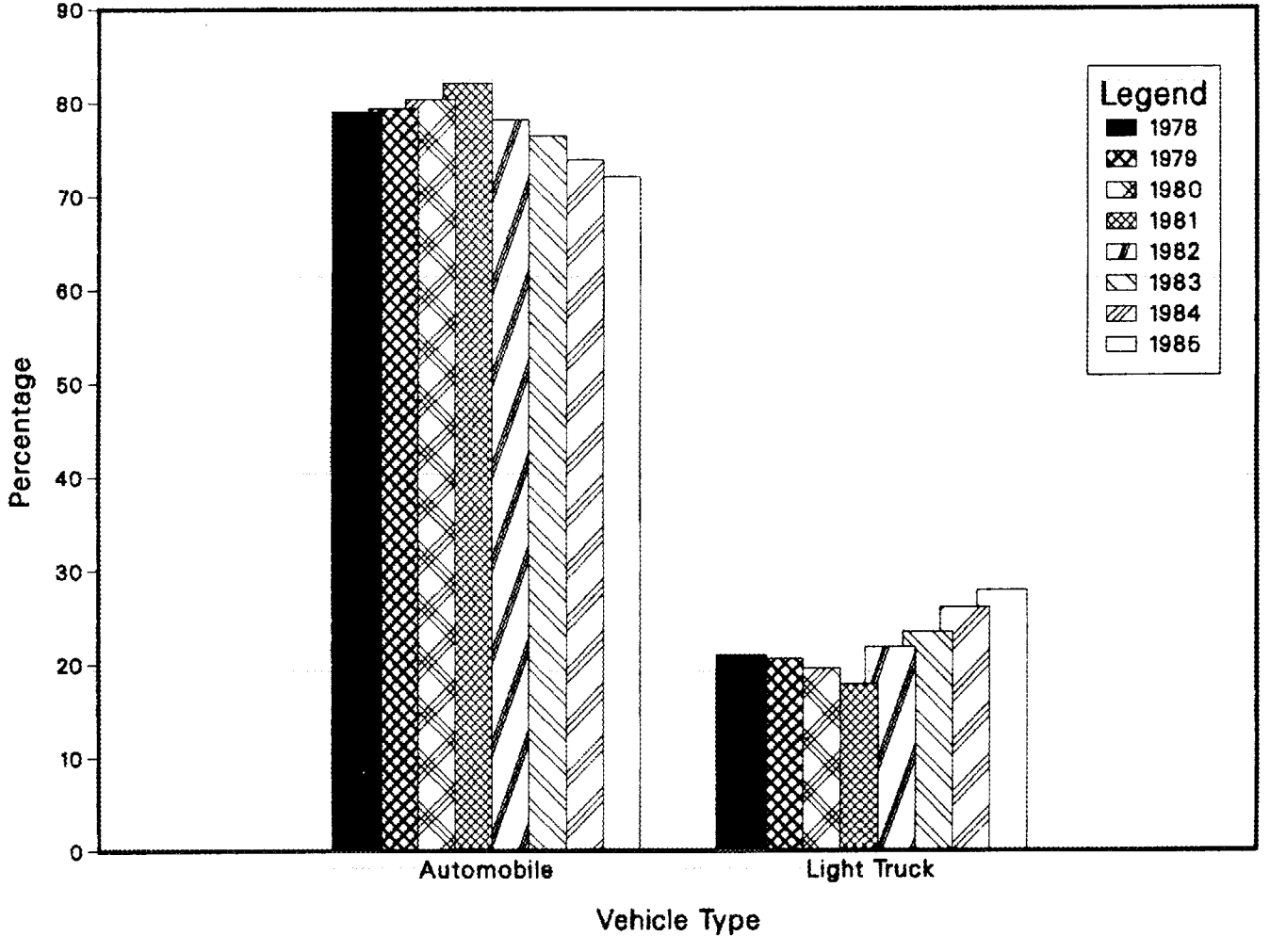

Fig. 20. Market Shares of Domestic and Import Light-Duty Vehicles, Model Years 1978–1985.

Table 25
Light Duty Vehicle Sales, Market Shares, and Sales-Weighted Fuel Efficiencies, Domestic

Model year	Automobile			Light trucks			Fleet		
	Sales	Mkt shr	MPG	Sales	Mkt shr	MPG	Sales	Mkt shr	MPG
78	9,135,729	.778	18.6	2,612,057	.222	16.5	11,747,786	1.000	18.1
79	8,629,199	.788	19.4	2,325,574	.212	15.6	10,954,773	1.000	18.4
80	6,757,885	.801	21.8	1,682,575	.199	16.6	8,440,460	1.000	20.5
81	6,586,378	.820	23.9	1,449,747	.180	18.1	8,036,125	1.000	22.6
82	5,544,526	.764	24.9	1,713,719	.236	18.7	7,258,245	1.000	23.1
83	6,474,750	.748	24.5	2,184,144	.252	19.3	8,658,894	1.000	23.0
84	7,908,294	.727	25.2	2,972,790	.273	18.9	10,881,084	1.000	23.1
85	8,380,378	.711	26.0	3,406,282	.289	19.4	11,786,660	1.000	23.7

Table 26
Light Duty Vehicle Sales, Market Shares, and Sales-Weighted Fuel Efficiencies, Import

Model year	Automobile			Light trucks			Fleet		
	Sales	Mkt shr	MPG	Sales	Mkt shr	MPG	Sales	Mkt shr	MPG
78	1,947,380	.855	27.9	329,123	.145	26.3	2,276,503	1.000	27.6
79	2,159,058	.819	26.8	475,589	.181	23.1	2,634,647	1.000	26.1
80	2,336,621	.814	28.6	533,962	.186	25.2	2,870,583	1.000	27.9
81	2,293,487	.825	30.3	485,669	.175	27.7	2,779,156	1.000	29.8
82	2,113,645	.835	31.0	419,121	.165	28.2	2,532,766	1.000	30.5
83	2,295,663	.820	31.9	503,155	.180	27.9	2,798,818	1.000	31.1
84	2,302,764	.782	31.3	640,144	.218	28.2	2,942,908	1.000	30.6
85	2,588,137	.757	30.5	829,083	.243	26.4	3,417,220	1.000	29.4

4. LIGHT TRUCK SALES, MARKET SHARES, AND FUEL ECONOMIES

4.1 SALES AND MARKET SHARES OF **ALL** LIGHT TRUCKS

- Model year 1985 experienced a dramatic increase of 17.2% in light-duty trucks sales, from 3,612,934 units in model year 1984 to 4,235,365 units in model year 1985 (Table 27).
- The most striking jump in sales volume was experienced by mini vans, increasing from 222,798 units in model year 1984 to 437,660 units in 1985, an increase of 96.5% (Table 27). Much of the gain is attributable to model year additions to the mini van fleet, such as the Chervolet Astro, GMC Safari and Ford Aerostar vans.
- Except for standard vans, every light truck class increased its sales volume from the previous model year (Table 27).
- Every light truck class lost its market share from the previous model year except for standard pickups, small special purpose vehicles, and mini vans (Table 27 and Figure 21).

4.2 FUEL ECONOMIES OF **ALL** LIGHT TRUCKS

- The sales-weighted fuel economy of light trucks showed an improvement of 0.3 mpg, from 20.1 mpg in model year 1984 to 20.4 mpg in 1985 (Table 27).
- All small versions of the light-duty trucks (small pickups, mini vans and small special purpose vehicles) showed losses in their sales-weighted fuel economies, while their standard counterparts experienced gains; the greatest increase of 0.9 mpg from the

previous model year was achieved by standard special purpose vehicles (Table 27 and Figure 22).

- The main reasons for the 0.3 mpg improvement in light truck sales-weighted fuel economy were: (1) sales shifts toward more fuel efficient engine and transmission configurations within given nameplates (0.38 mpg) and toward more efficient nameplates within given size classes (0.32 mpg), and (2) the introduction of more efficient engine and transmission configurations (0.21 mpg) (Table 28).
- Components of the sales-weighted fuel economy changes from model year 1978 through 1985 are summarized in Table 29 and Figure 23. The net effects of three components related to consumers' buying behavior (sales shifts between and within size classes, and sales shifts to different engine and transmission configurations) have been positive since model year 1981.

4.3 SALES AND MARKET SHARES OF DOMESTIC LIGHT TRUCKS

- Sales of domestic light trucks increased 14.6% from 2,972,790 units in model year 1984 to 3,406,282 units in model year 1985 (Table 30).
- Except for domestic standard vans, all domestic light truck classes had increases in their sales; and the largest increase in sales volume was experienced by mini vans, from 146,877 units in model year 1984 to 341,491 units in 1985 (Table 30).
- All domestic standard light-duty trucks (standard pickups, standard vans, and standard special purpose vehicles) together

with small pickups continued losing their shares in the light truck market, while mini vans and small special purpose vehicles continued capturing a larger part of the market (Table 30 and Figure 24).

4.4 FUEL ECONOMIES OF DOMESTIC LIGHT TRUCKS

- Domestic light trucks experienced a gain of 0.5 mpg in sales-weighted fuel economy from the previous model year (Table 30).
- All domestic light truck size classes showed improvements in their sales-weighted fuel economies, except for mini vans and small special purpose vehicles (Table 30 and Figure 25).
- The main reasons for the 0.5 mpg gain in domestic light trucks were: (1) The introduction of more fuel efficient engine and transmission configurations (0.24 mpg), (2) sales shifts toward more efficient engine and transmission configurations within given nameplates (0.23 mpg), and (3) sales shifts to more efficient size classes (0.20 mpg) (Table 28).
- Components of fuel economy changes in domestic light trucks from model year 1978 through 1985 are summarized in Table 31 and Figure 26). Before model year 1983, the sales-weighted fuel economy improvements were mainly the result of manufacturers' engineering implementations. However, after 1983 consumers' buying behaviors were the factors that kept changes in the light truck sales-weighted fuel economies on the positive side.

4.5 SALES AND MARKET SHARES OF IMPORT LIGHT TRUCKS

- Import light trucks experienced an impressive gain of 30% in sales volume from the previous model year, from 640,144 units in model year 1984 to 829,083 units in this model year (Table 32).
- The five-fold increase in sales of Isuzu Trooper from the previous model year resulted in the total sales of import small special purpose vehicles more than double the sales in the previous model year (Table 32).
- The reclassification of Nissan Pickup from small pickup to standard pickup significantly contributed to the increase of 91% in standard pickup sales from the previous model year (Table 32).
- Import small pickups lost much of their shares of the import light truck market to standard pickups and small special purpose vehicles. Standard pickups took the leading role in the import light truck market from small pickups (Table 32 and Figure 27).

4.6 FUEL ECONOMIES OF IMPORT LIGHT TRUCKS

- Contrasting with their domestic counterparts, import light trucks experienced a drop of 1.8 mpg in the sales-weighted fuel economy, from 28.2 mpg in model year 1984 to 26.4 mpg in 1985 (Table 32).
- The main reasons for this drop were: (1) decreased fuel economies in the continuing engine and transmission configurations (-3.19 mpg), and (2) sales shifts toward less fuel efficient size classes (-0.77 mpg). Although the sales shifts toward more efficient engine and transmission configurations (1.59 mpg) and more

efficient nameplates within given size classes (0.66 mpg) resulted in an improvement of 2.25 mpg in fuel economy, they were not large enough to compensate for the negative components (Table 28).

- Components of fuel economy changes in import light trucks are summarized in Table 33 and Figure 29. For all model years which showed fuel economy improvements from the previous model years, manufacturers' engineering actions were mainly responsible for the gains.

Table 27
Model Year Sales, Market Shares, and Sales-Weighted Fuel Economies of Domestic and Import Trucks, Model Years 1978–1985[a]

	1978	1979	1980	1981	1982	1983	1984	1985
SMALL PICKUP								
Total sales, units	308,790	451,548	516,412	472,611	579,263	894,432	857,804	863,584
Market share, %	10.5	16.1	23.3	24.4	27.2	33.3	23.7	20.4
Fuel economy, mpg	26.9	23.6	25.5	28.1	28.1	27.2	27.0	26.8
STANDARD PICKUP								
Total sales, units	1,886,782	1,635,745	1,115,248	967,242	1,000,772	958,408	1,375,948	1,690,931
Market share, %	64.2	58.4	50.3	50.0	46.9	35.7	38.1	39.9
Fuel economy, mpg	16.6	15.8	17.0	18.5	18.6	18.3	18.3	19.0
MINI VAN								
Total sales, units	19,476	18,153	13,649	11,007	11,964	13,716	222,798	437,660
Market share, %	0.7	0.6	0.6	0.6	0.6	0.5	6.2	10.3
Fuel economy, mpg	19.5	17.9	19.6	18.8	22.5	21.0	25.0	24.3
STANDARD VAN								
Total sales, units	670,453	580,883	328,065	327,730	379,110	484,349	545,595	536,242
Market share, %	22.8	20.7	14.8	16.9	17.8	18.0	15.1	12.7
Fuel economy, mpg	16.4	14.9	16.3	17.4	17.0	17.2	16.3	16.4
SMALL SPECIAL PURPOSE								
Total sales, units	11,588	61,796	79,776	42,813	31,226	174,982	399,611	477,706
Market share, %	0.4	2.2	3.6	2.2	1.5	6.5	11.1	11.3
Fuel economy, mpg	15.7	17.0	16.7	19.5	20.0	22.6	22.8	22.1
STANDARD SPECIAL PURPOSE								
Total sales, units	40,091	53,038	163,387	114,013	130,505	161,412	211,178	229,242
Market share, %	1.5	1.9	7.4	5.9	6.1	6.0	5.8	5.4
Fuel economy, mpg	15.3	15.2	14.6	16.1	17.0	16.9	15.7	16.6
FLEET								
Total sales, units	2,941,180	2,801,163	2,216,537	1,935,416	2,132,840	2,687,299	3,612,934	4,235,365
Market share, %	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Fuel economy, mpg	17.2	16.5	18.1	19.8	20.0	20.5	20.1	20.4

[a]These figures represent only those sales that could be matched to corresponding EPA fuel economy values.

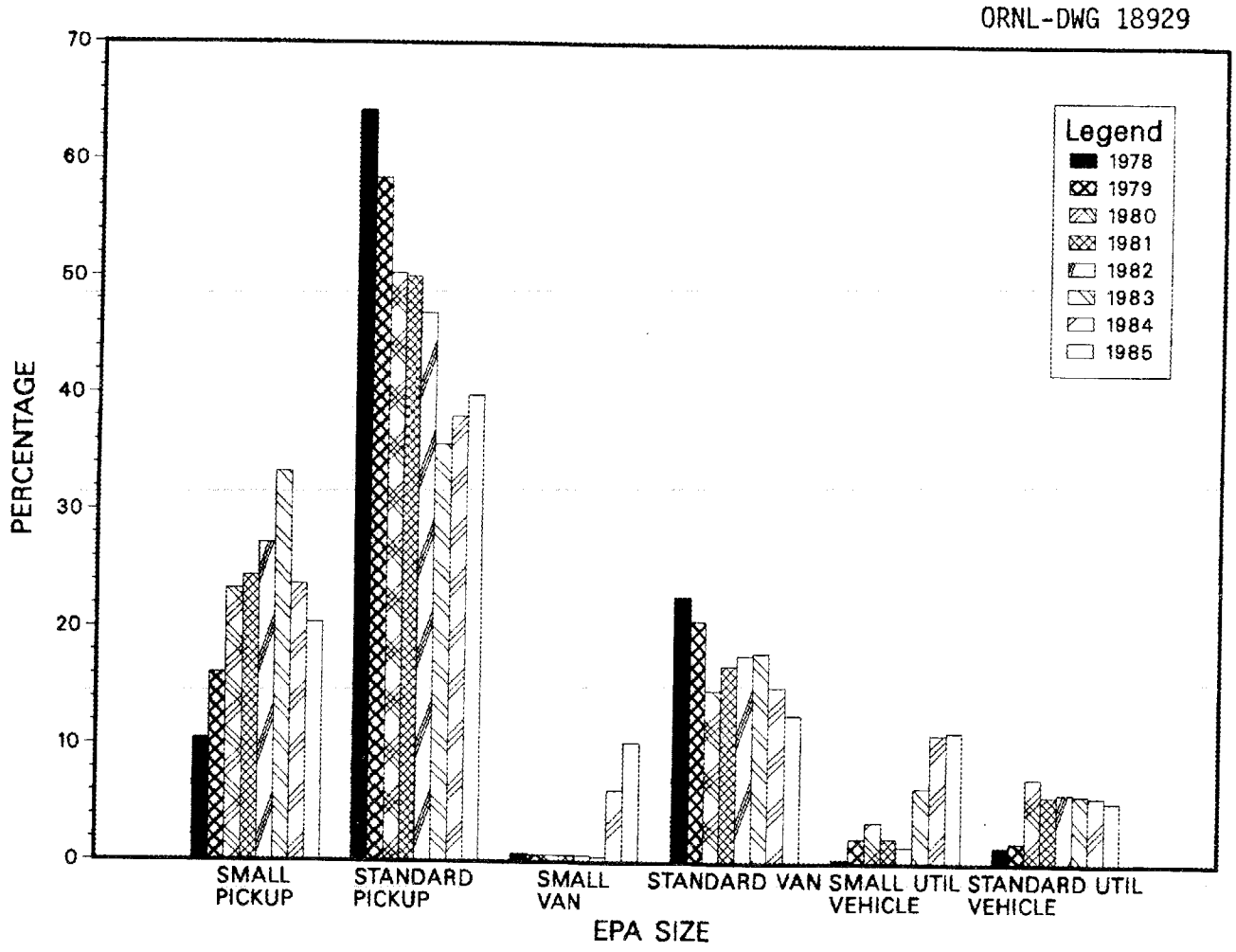

Fig. 21. Market Shares of Domestic and Import Light Trucks by Size Classification, Model Years 1978–1985.

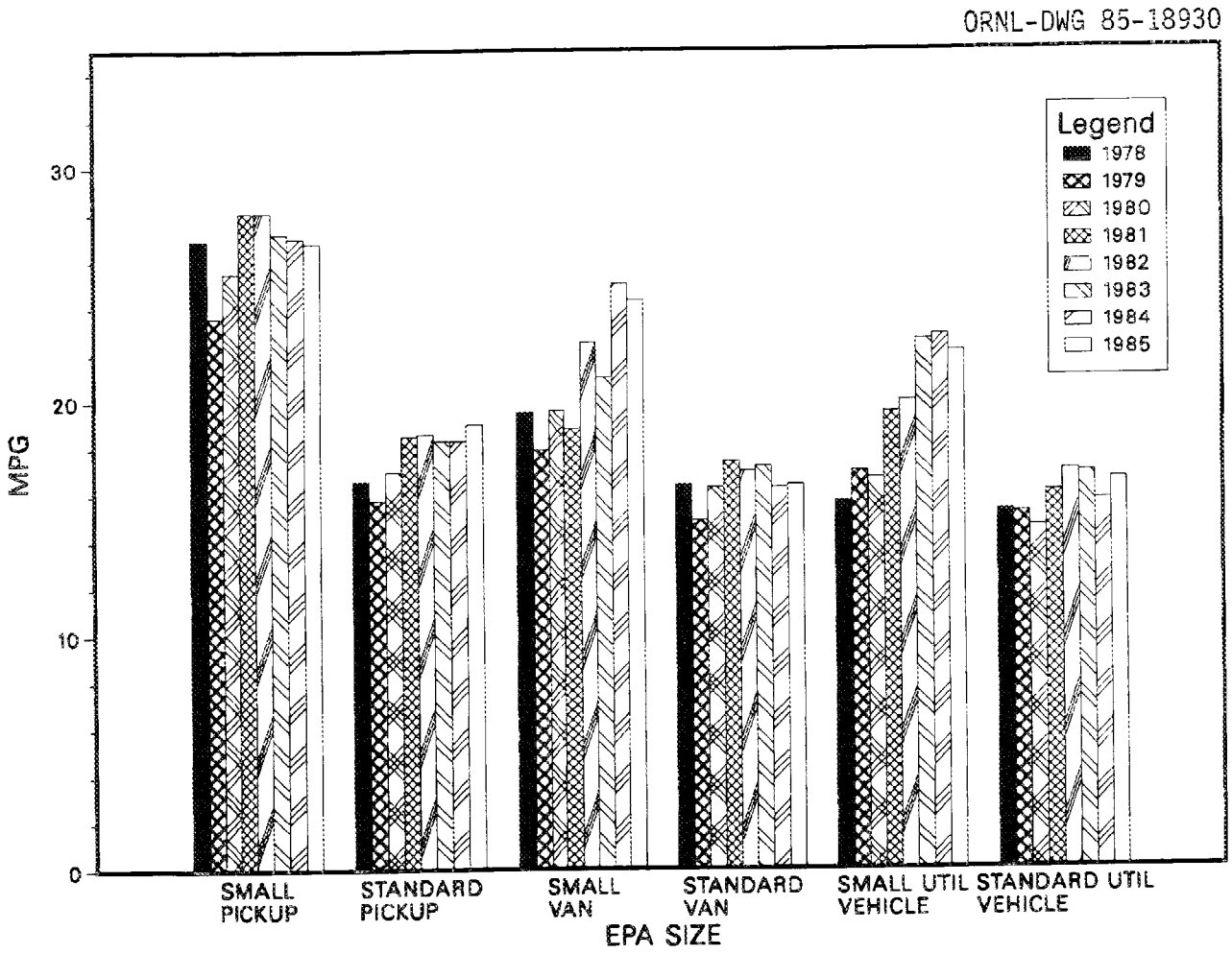

Fig. 22. Fuel Economies of Domestic and Import Light Trucks by Size Classification, Model Years 1978–1985.

Table 28
Allocation of MPG Differences of Light Trucks Between Model Years 1984—1985

	1984 MPG	Difference in MPG due to: Sales shift: Between classes	Sales shift: Within classes	Configuration information: Improvements	Configuration information: Sales shift	Configuration information: Introduction	Configuration information: Discontinuation	Model introduction	Model discontinuation	Total change in MPG	1985 MPG
AMC											
Jeep	21.19	0.54	0.06	-0.35	-0.51	-0.80	0.31	0.03		-0.72	20.47
Plymouth/Dodge	17.80	0.59	-0.01	-0.30	0.19	0.55	-0.35		-0.01	.66	18.46
Ford	17.76	-0.03	-0.01	-0.12	0.32	0.20	-0.26	0.03		.14	17.90
Chevrolet	19.70	0.09	-0.02	-0.13	0.24	0.36	0.04	0.29		.88	20.57
GMC	19.26	0.11	0.01	-0.27	0.18	-0.01	0.01	0.30		.33	19.59
Other Domestic	31.89			-1.75	-0.02	-0.82	0.40			-2.18	29.70
Total Domestic	18.89	0.20	-0.01	-0.20	0.23	0.24	-0.13	0.15		.48	19.37
Japanese	28.51	-1.02	0.80	-3.66	1.87	-0.04	-0.09			-2.13	26.38
European	21.05	-0.40		1.03	-0.22					.41	21.46
Other Import	28.49	-0.02		-0.57	-0.18				-0.05	-.82	27.67
Total Import	28.20	-0.77	0.66	-3.19	1.59	-0.03	-0.08		-0.01	-1.82	26.38
Fleet	20.06	0.01	0.32	-0.52	0.38	0.21	-0.13	0.10	-0.01	.37	20.43

Table 29
Allocation of Light Truck MPG Differences Between Consecutive Model Years 1978–1985

Beginning model year	Beginning MPG[a]	Difference in MPG due to: Sales shift: Between classes	Sales shift: Within classes	Configuration information: Efficiency improvement	Configuration information: Sales shift	Configuration information: Introduction	Configuration information: Discontinuation	Model introduction	Model discontinuation	Total change in MPG	Ending MPG[b]	Ending model year
1978	17.24	0.28	0.02	−0.93	−0.07	−0.04	−0.03	0.05		−0.72	16.52	1979
1979	16.52	0.43	−0.07	0.76	0.40		−0.02	0.06	0.01	1.56	18.08	1980
1980	18.08	0.14	0.05	1.19	0.18	0.17	0.01	−0.06	0.03	1.72	19.80	1981
1981	19.80	−0.33	0.04	−0.17	−0.08	0.27	0.04	0.45		0.24	20.04	1982
1982	20.04	0.10	−0.04	−0.32	−0.03	0.16	0.10	0.45		0.43	20.47	1983
1983	20.47	−0.29	0.41	−0.63	0.11	−0.13	0.01	0.11		−0.41	20.06	1984
1984	20.06	0.01	0.32	−0.52	0.38	0.21	−0.13	0.10	−0.01	0.37	20.43	1985

[a]Fuel economy of the beginning model year.

[b]Fuel economy of the ending model year.

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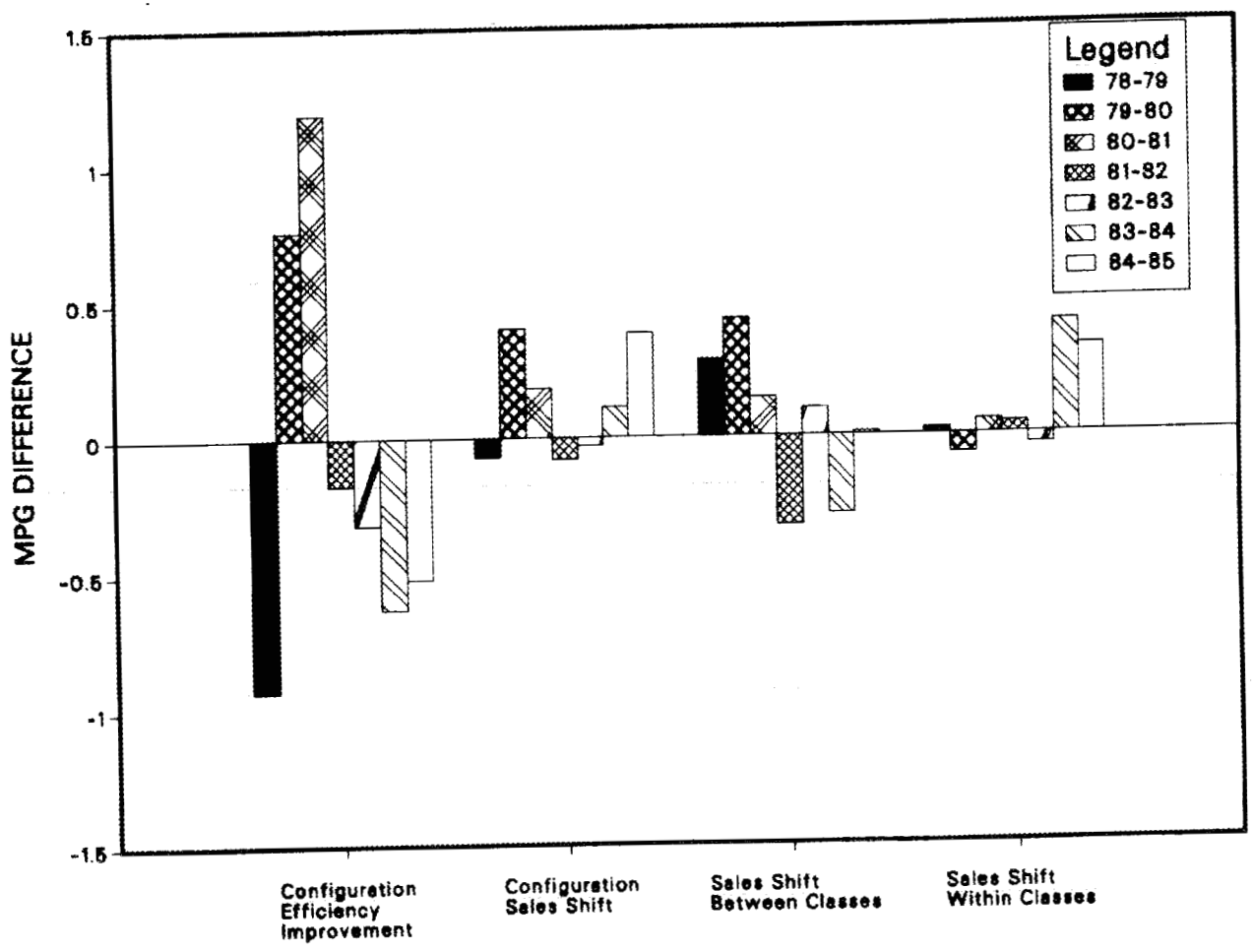

Fig. 23. Light Truck MPG Differences Between Consecutive Model Years, Model Years 1978–1985.

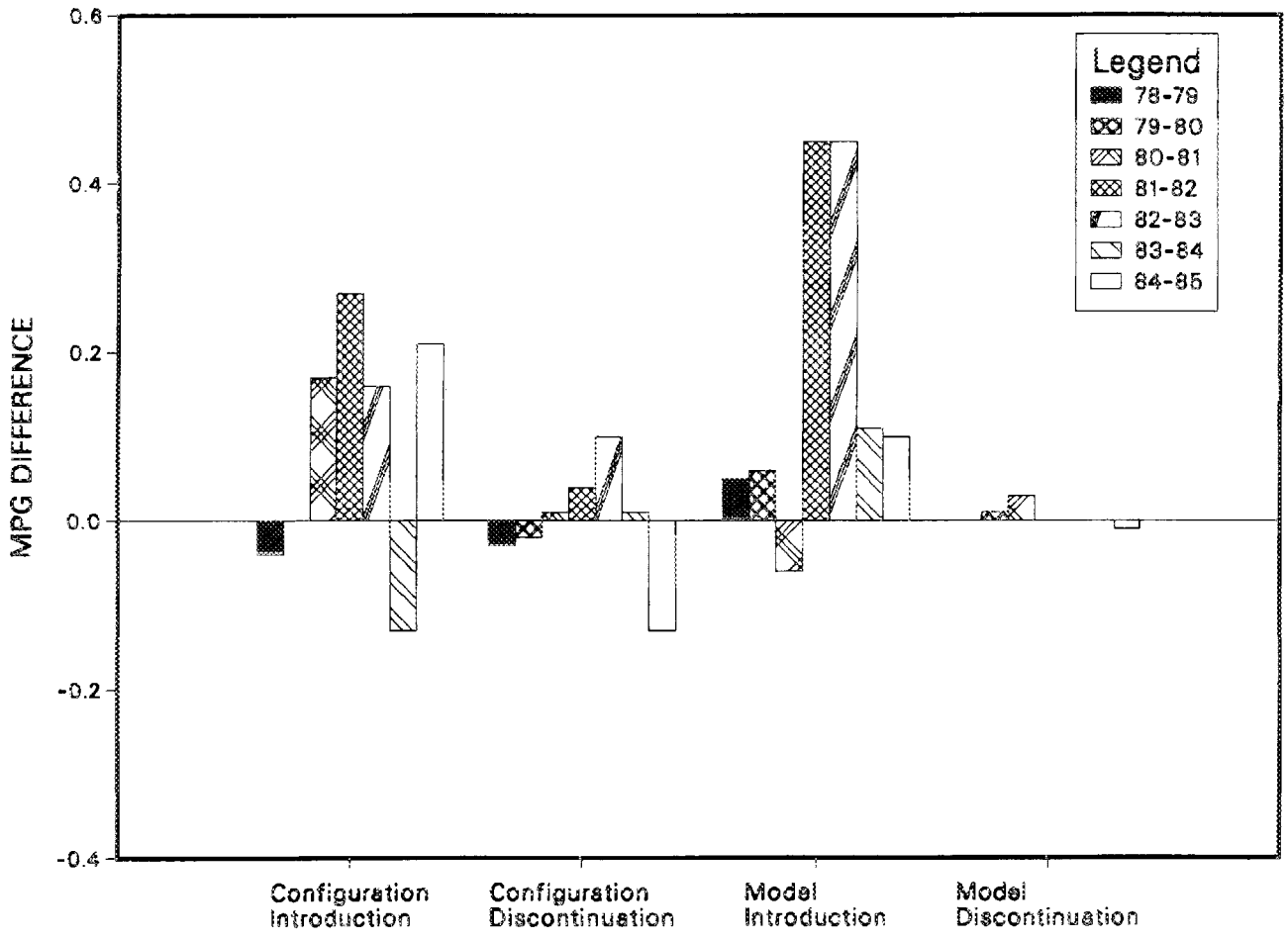
MPG DIFFERENCE
0.6
0.4
0.2
0.0
-0.2
-0.4
Legend
78-79
79-80
80-81
81-82
82-83
83-84
84-85
Configuration Introduction
Configuration Discontinuation
Model Introduction
Model Discontinuation

Fig. 23. (Cont'd)

Table 30
Model Year Sales, Market Shares, and Sales-Weighted Fuel Economies of Domestic Trucks, Model Years 1978–1985[a]

	1978	1979	1980	1981	1982	1983	1984	1985
SMALL PICKUP								
Total sales, units					174,956	409,847	533,068	595,281
Market share, %					10.2	18.8	17.9	17.5
Fuel economy, mpg					26.9	25.8	25.3	25.8
STANDARD PICKUP								
Total sales, units	1,886,782	1,635,745	1,115,248	967,242	1,000,772	958,408	1,151,696	1,262,060
Market share, %	72.2	70.3	66.3	66.7	58.4	43.9	38.7	37.1
Fuel economy, mpg	16.6	15.8	17.0	18.5	18.6	18.3	17.2	17.5
MINI VAN								
Total sales, units							146,877	341,491
Market share, %							4.9	10.0
Fuel economy, mpg							25.0	23.9
STANDARD VAN								
Total sales, units	670,453	580,883	328,065	327,730	379,110	484,349	545,595	536,242
Market share, %	25.7	25.0	19.5	22.6	22.1	22.2	18.4	15.7
Fuel economy, mpg	16.4	14.9	16.3	17.4	17.0	17.2	16.3	16.4
SMALL SPECIAL PURPOSE								
Total sales, units	10,731	55,908	75,875	40,762	28,376	170,128	384,376	441,966
Market share, %	0.4	2.4	4.5	2.8	1.7	7.8	12.9	13.0
Fuel economy, mpg	15.9	17.5	16.9	19.9	20.9	23.0	23.0	22.1
STANDARD SPECIAL PURPOSE								
Total sales, units	44,091	53,038	163,387	114,013	130,505	161,412	211,178	229,242
Market share, %	1.7	2.3	9.7	7.9	7.6	7.4	7.1	6.7
Fuel economy, mpg	15.3	15.2	14.8	16.1	17.0	16.9	15.7	16.6
FLEET								
Total sales, units	2,612,057	2,325,574	1,682,575	1,449,747	1,713,719	2,184,144	2,972,790	3,406,282
Market share, %	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Fuel economy, mpg	16.5	15.6	16.6	18.1	18.7	19.3	18.9	19.4

[a]These figures represent only those sales that could be matched to corresponding EPA fuel economy values.

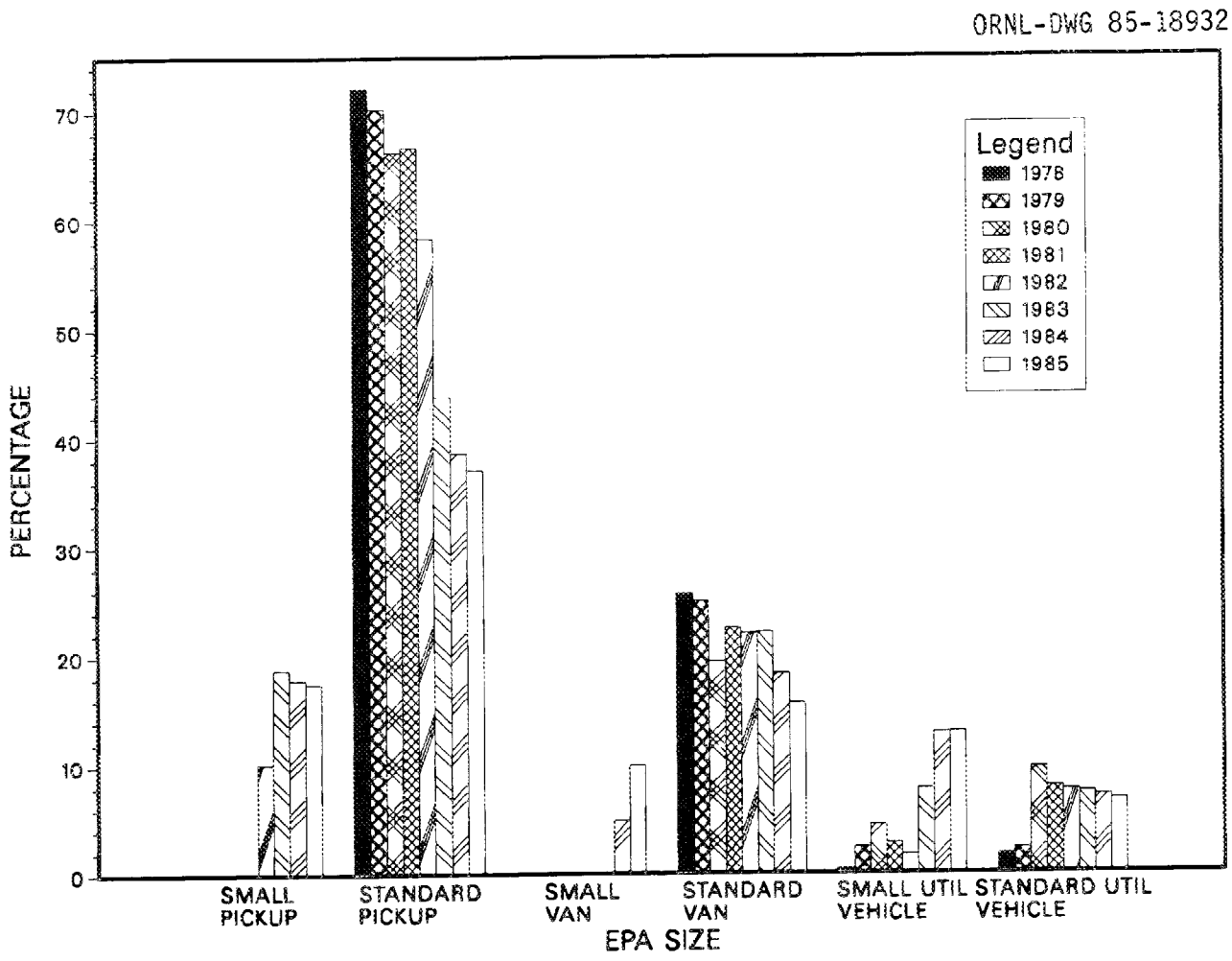

Fig. 24. Market Shares of Domestic Light Trucks by Size Classification, Model Years 1978–1985.

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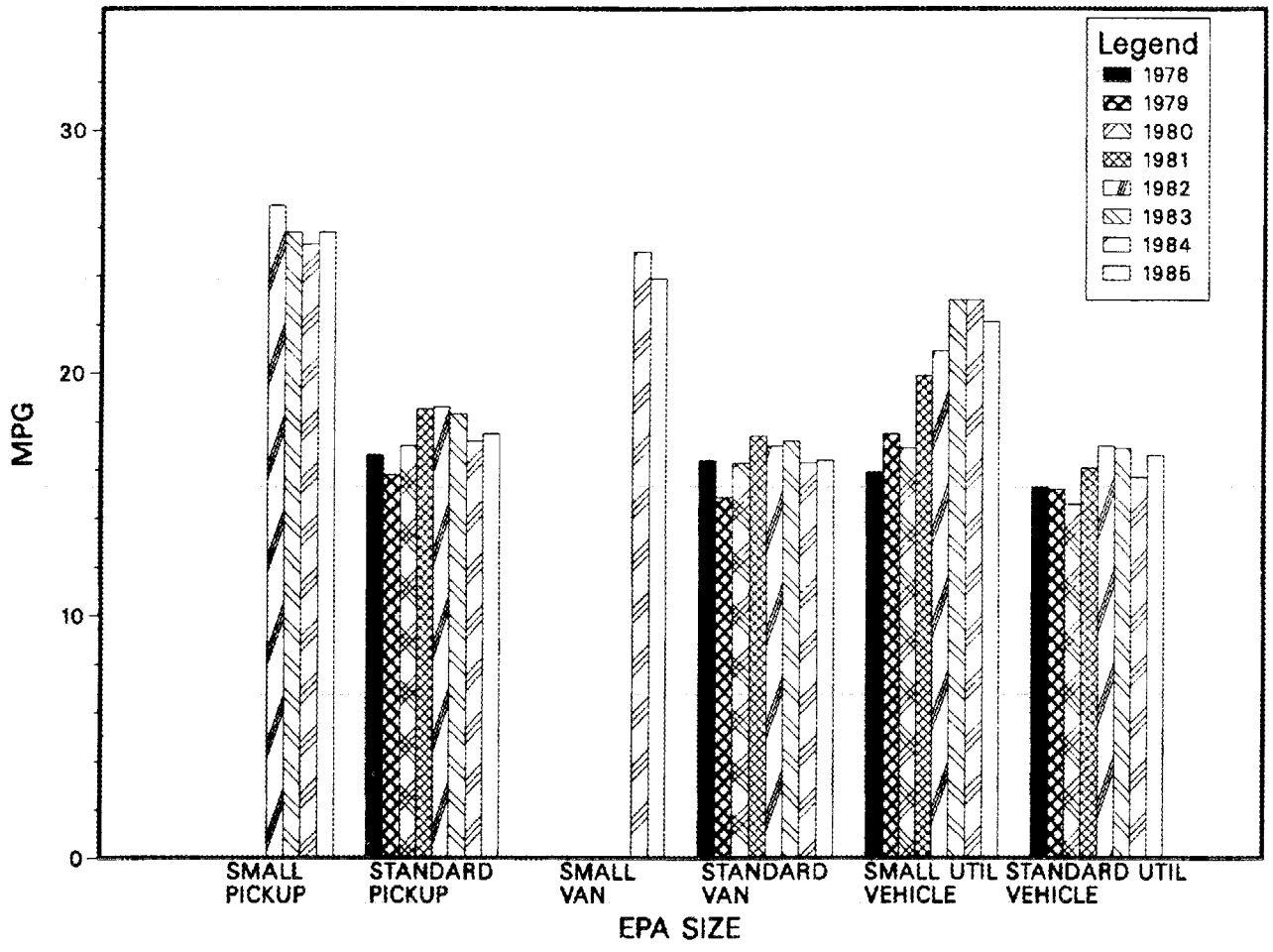

Fig. 25. Fuel Economies of Domestic Light Trucks by Size Classification, Model Years 1978–1985.

Table 31
Allocation of Domestic Light Truck MPG Differences Between Consecutive Years 1978–1985

Beginning model year	Beginning MPG[a]	Difference in MPG due to: Sales shift: Between classes	Sales shift: Within classes	Configuration information: Efficiency improvement	Configuration information: Sales shift	Configuration information: Introduction	Configuration information: Discontinuation	Model introduction	Model discontinuation	Total change in MPG	Ending MPG[b]	Ending model year
1978	16.52	−0.01	0.03	−0.86	−0.09	0.06	−0.03	−0.02		−0.91	15.61	1979
1979	15.61	0.01	−0.07	0.62	0.45		−0.02			0.99	16.60	1980
1980	16.60	0.05	0.03	1.06	0.18	0.18		−0.03	0.01	1.48	18.07	1981
1981	18.07	−0.05	0.04	−0.20	−0.11	0.29	0.04	0.63		0.65	18.72	1982
1982	18.72	0.03	−0.02	−0.35	−0.01	0.17	0.11	0.64		0.56	19.29	1983
1983	19.29	0.21	−0.16	−0.75	0.16	−0.13	0.01	0.26		−0.39	18.89	1984
1984	18.89	0.20	−0.01	−0.20	0.23	0.24	−0.13	0.15		0.48	19.37	1985

[a]Fuel economy of the beginning model year.

[b]Fuel economy of the ending model year.

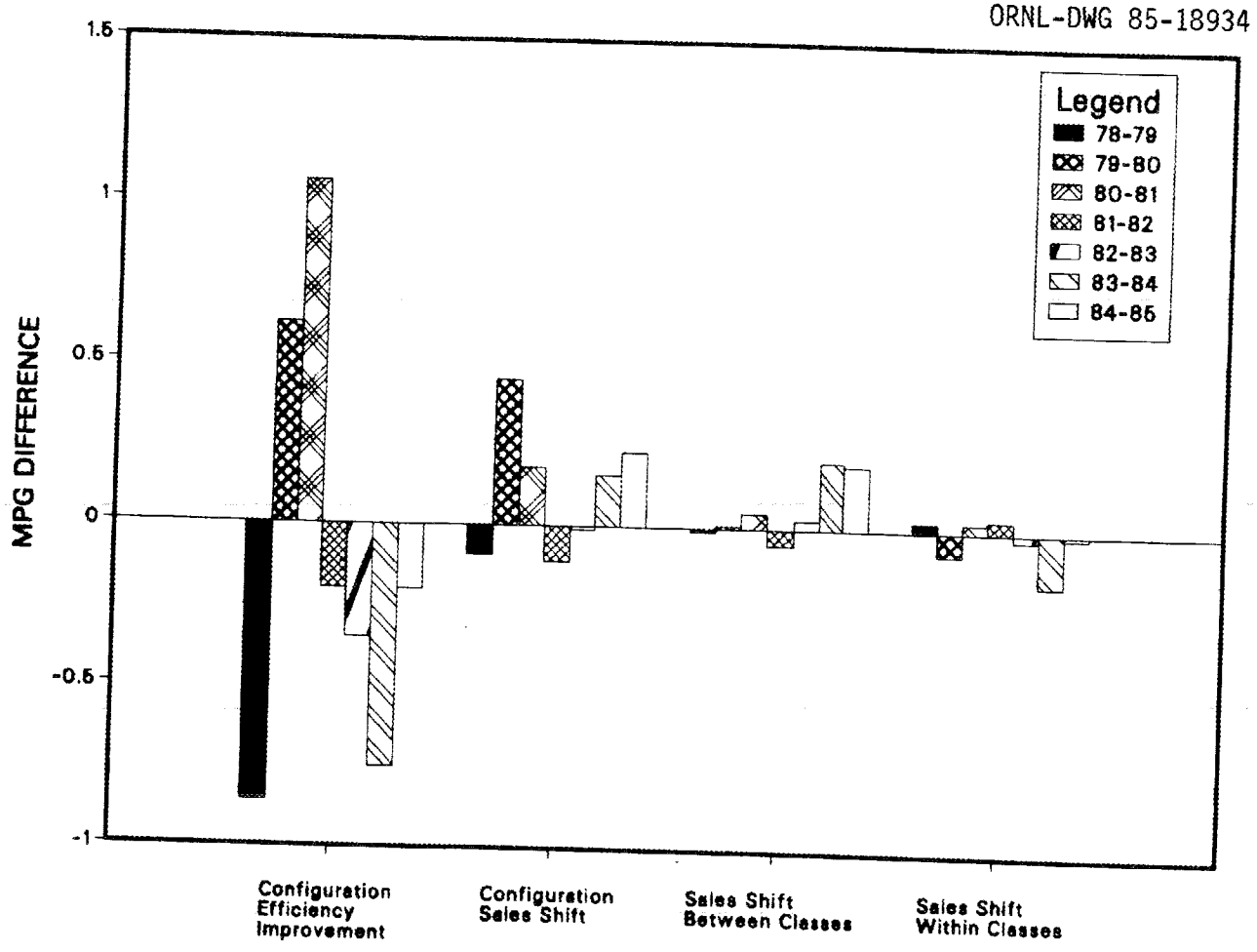

Fig. 26. Domestic Light Truck MPG Differences Betweeen Consecutive Model Years, Model Years 1978–1985.

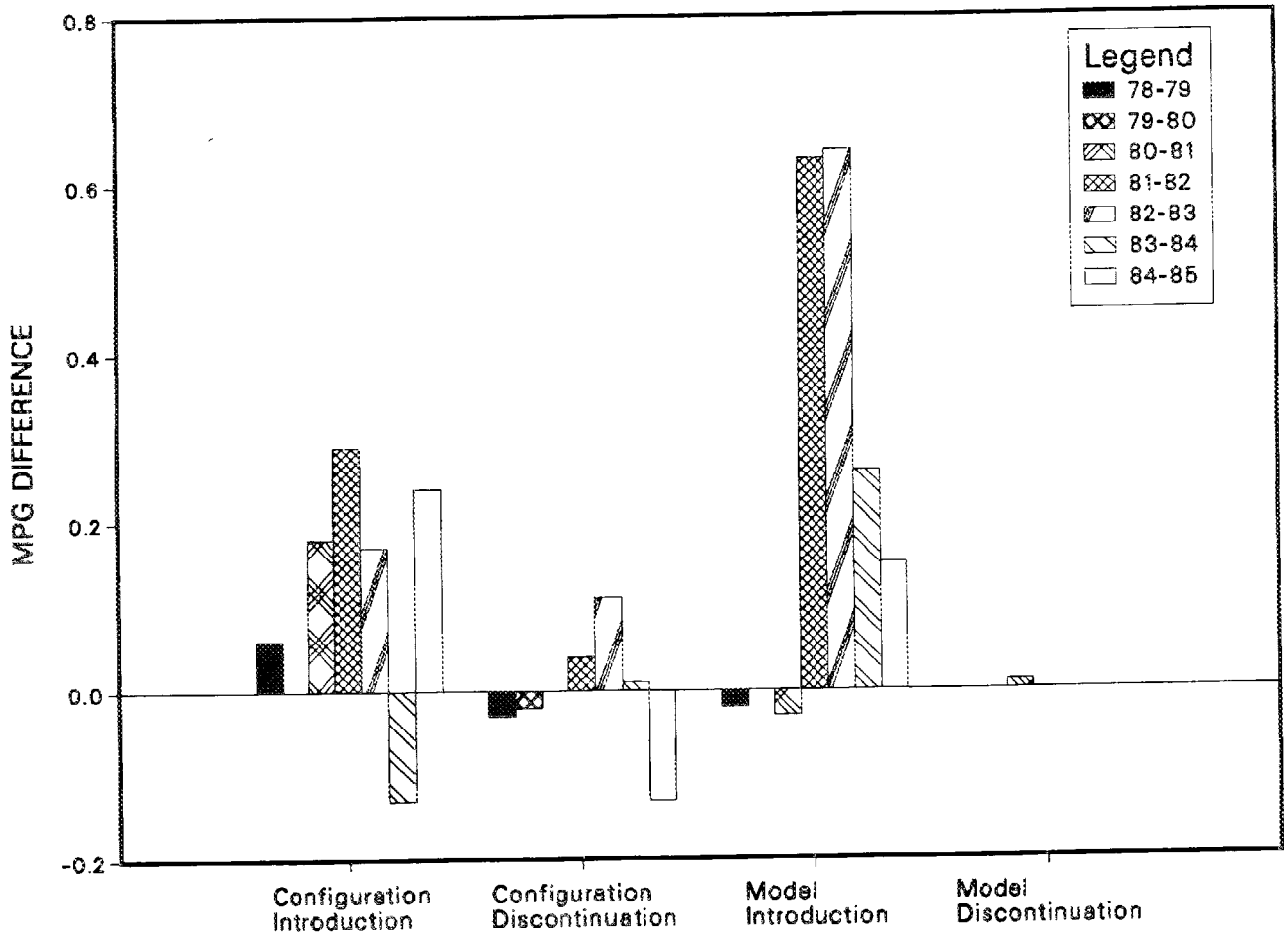
MPG DIFFERENCE
0.8
0.6
0.4
0.2
0.0
-0.2
Legend
78-79
79-80
80-81
81-82
82-83
83-84
84-85
Configuration Introduction
Configuration Discontinuation
Model Introduction
Model Discontinuation

Fig. 26. (Cont'd)

Table 32
Model Year Sales, Market Shares, and Sales-Weighted Fuel Economies of Import Trucks, Model Years 1978–1985[a]

	1978	1979	1980	1981	1982	1983	1984	1985
SMALL PICKUP								
Total sales, units	308,790	451,548	516,412	472,611	404,307	484,585	324,736	268,303
Market share, %	93.8	94.9	96.7	97.3	96.5	96.3	50.7	32.4
Fuel economy, mpg	26.9	23.6	25.5	28.1	28.6	28.4	30.5	29.4
STANDARD PICKUP								
Total sales, units							224,252	428,871
Market share, %							35.0	51.7
Fuel economy, mpg							27.2	25.2
MINI VAN								
Total sales, units	19,476	18,153	13,649	11,007	11,964	13,716	75,921	96,169
Market share, %	5.9	3.8	2.6	2.3	2.9	2.7	11.9	11.6
Fuel economy, mpg	19.5	17.9	19.6	18.8	22.5	21.0	25.2	26.2
STANDARD VAN								
Total sales, units								
Market share, %								
Fuel economy, mpg								
SMALL SPECIAL PURPOSE								
Total sales, units	857	5,888	3,901	2,051	2,850	4,854	15,235	35,740
Market share, %	0.3	1.2	0.7	0.4	0.7	1.0	2.4	4.3
Fuel economy, mpg	13.5	13.5	13.5	14.0	14.0	14.4	18.7	22.0
STANDARD SPECIAL PURPOSE								
Total sales, units								
Market share, %								
Fuel economy, mpg								
FLEET								
Total sales, units	329,123	475,589	533,962	485,669	419,121	503,155	640,144	829,083
Market share, %	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Fuel economy, mpg	26.3	23.1	25.2	27.7	28.2	27.9	28.2	26.4

[a]These figures represent only those sales that could be matched to corresponding EPA fuel economy values.

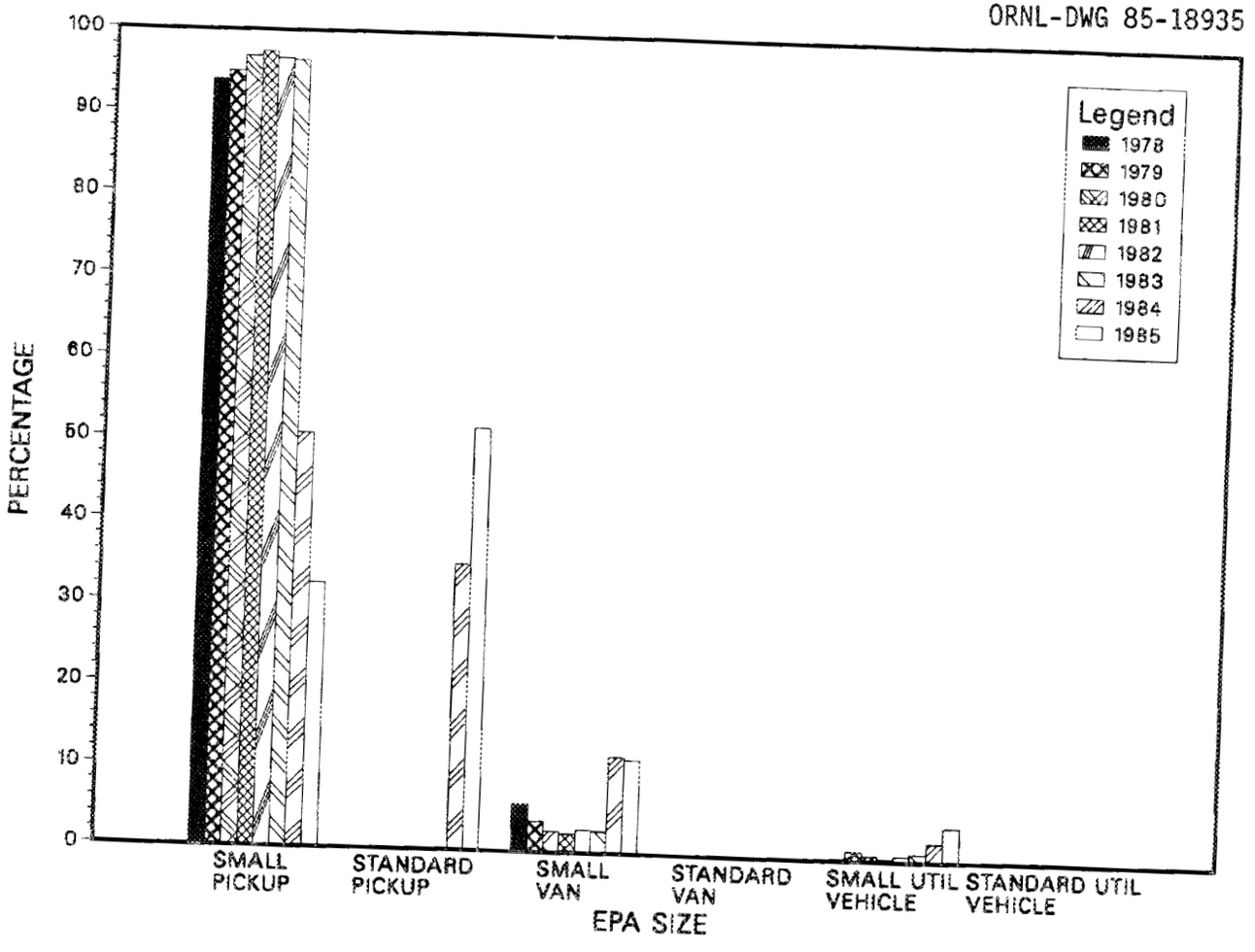

Fig. 27. Market Shares of Import Light Trucks by Size Classification, Model Years 1978–1985.

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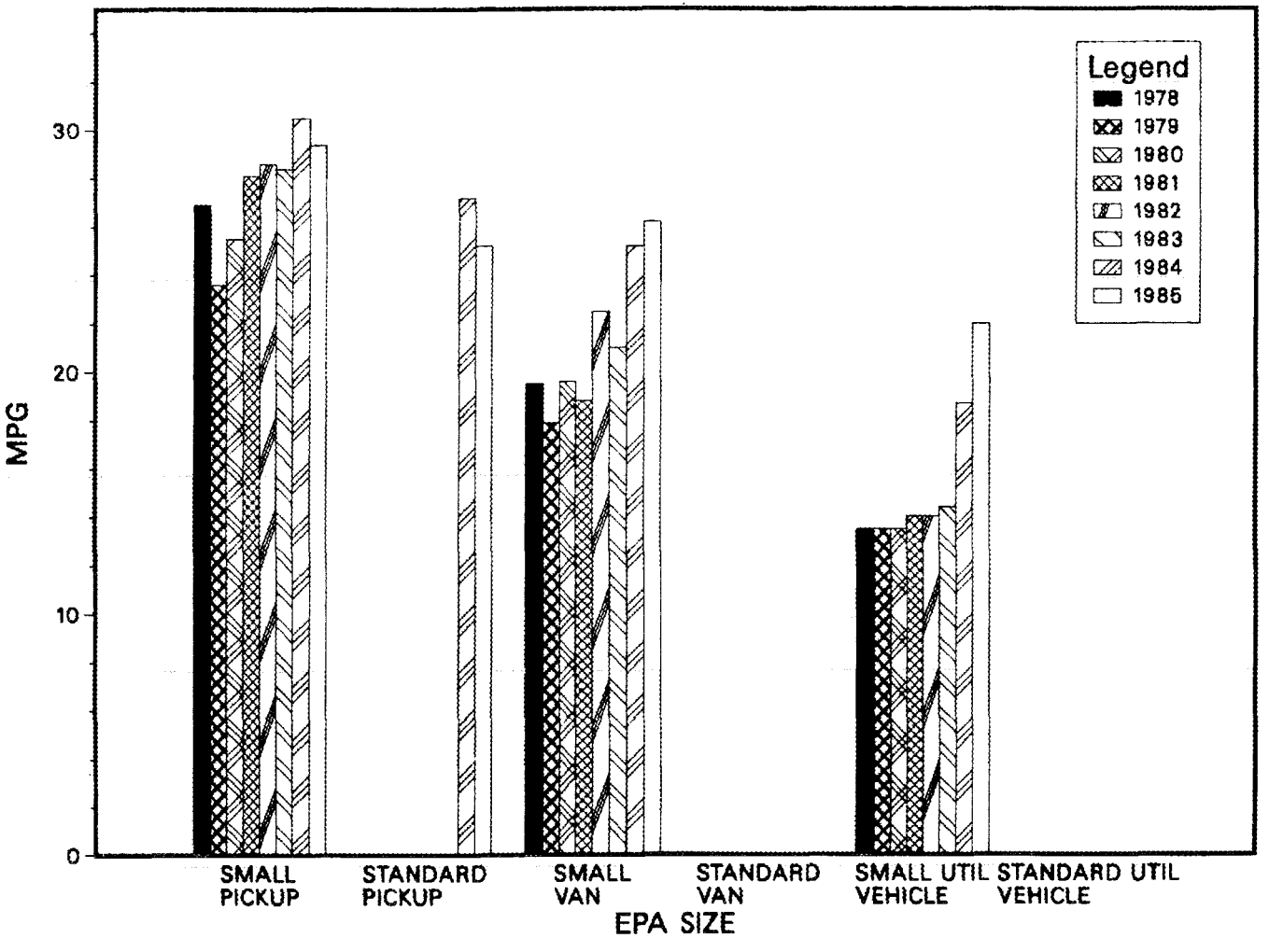

Fig. 28. Fuel Economies of Import Light Trucks by Size Classification, Model Years 1978–1985.

Table 33

Allocation of Import Light Truck MPG Differences Between Consecutive Model Years 1978—1985

Beginning model year	Beginning MPG[a]	Difference in MPG due to: Sales shift: Between classes	Sales shift: Within classes	Configuration information: Efficiency improvement	Configuration information: Sales shift	Configuration information: Introduction	Configuration information: Discontinuation	Model introduction	Model discontinuation	Total change in MPG	Ending MPG[b]	Ending model year
1978	26.29	−0.09	−0.06	−1.82	0.06	−1.14		−0.16		−3.22	23.07	1979
1979	23.07	0.17	−0.10	1.77	0.06			0.21		2.11	25.18	1980
1980	25.18	0.09	0.18	1.89	0.15	0.06	0.06	0.07		2.51	27.69	1981
1981	27.69	−0.16	0.09	0.21	0.25		0.04	0.03		0.46	28.15	1982
1982	28.15	−0.06	−0.08	0.03	−0.15	0.07	−0.04			−0.24	27.91	1983
1983	27.91	8.87	−8.69	0.73	−0.38	−0.07	−0.01	−0.18		0.29	28.20	1984
1984	28.20	−0.77	0.66	−3.19	1.59	−0.03	−0.08		−0.01	−1.82	26.38	1985

[a]Fuel economy of the beginning model year.

[b]Fuel economy of the ending model year.

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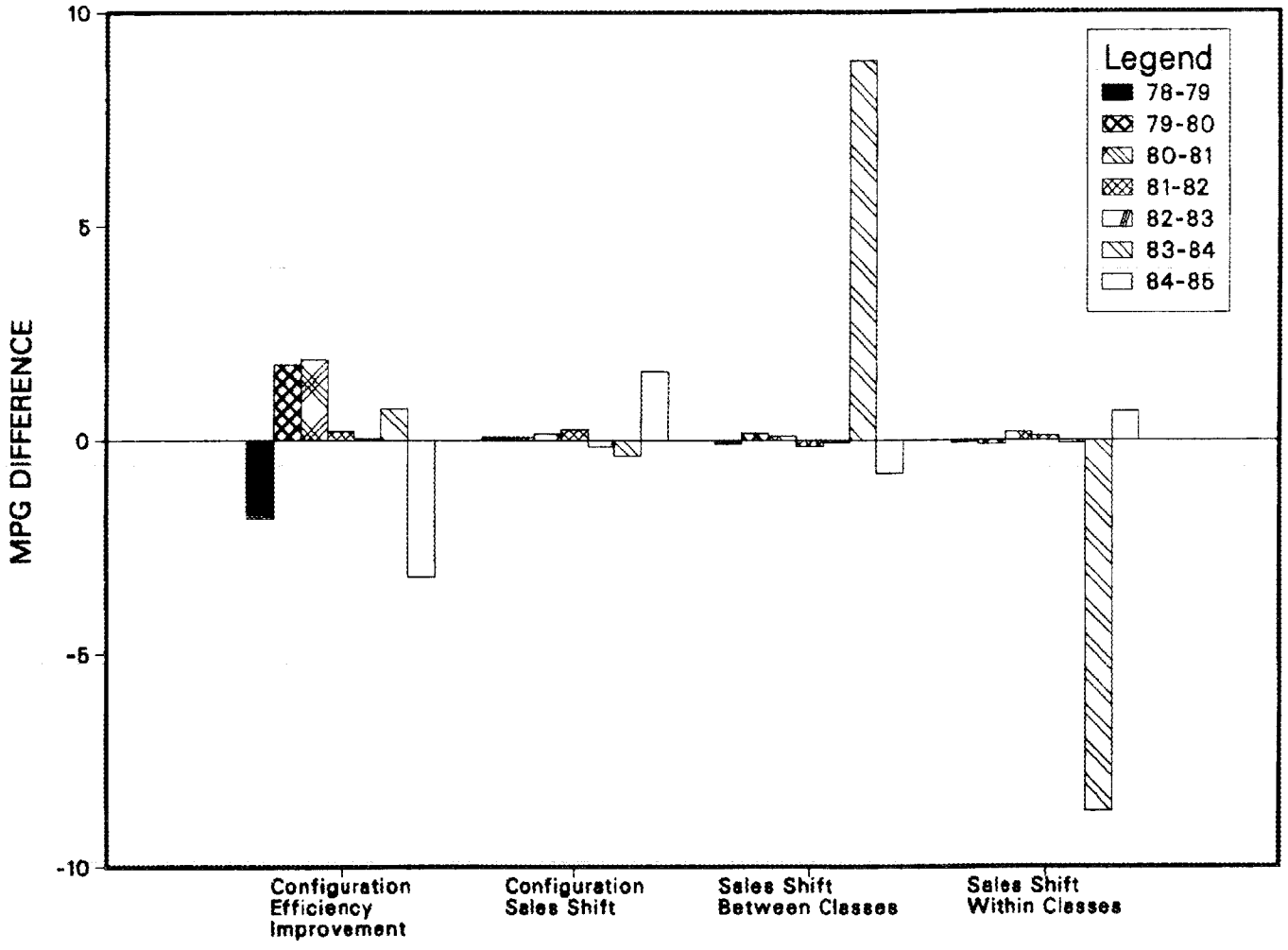

Fig. 29. Import Light Truck MPG Differences Between Consecutive Model Years, Model Years 1978–1985.

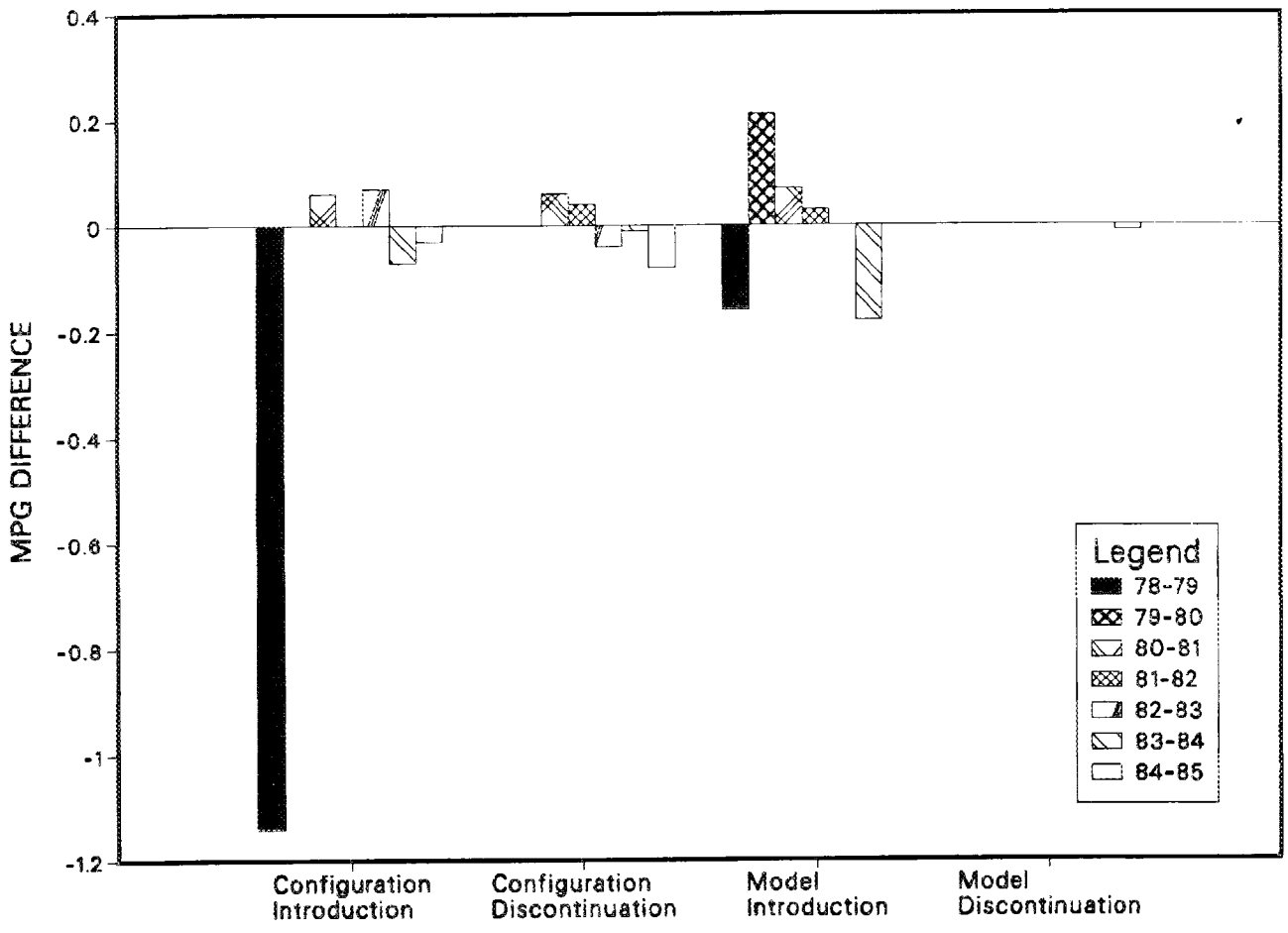
MPG DIFFERENCE
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1.2
Configuration Introduction
Configuration Discontinuation
Model Introduction
Model Discontinuation
Legend
78-79
79-80
80-81
81-82
82-83
83-84
84-85

Fig. 29. (Cont'd)

5. ANNUAL TRENDS IN SOME VEHICLE CHARACTERISTICS

5.1 TRENDS IN AUTOMOBILE ENGINE SIZE

- The sales-weighted engine size for the entire model year 1985 new automobile fleet dropped slightly, from 181.2 cubic inches in the previous model year to 178.8 cubic inches in 1985 (Table 34).
- Except for subcompact and compact automobiles, all size classes experienced drops in their engine sizes; the largest drop was observed in the minicompacts (Table 34 and Figure 30).
- The domestic automobile fleet reported a drop of 2.5 cubic inches in sales-weighted engine size. This drop can be attributed mainly to the enormous drop of 12.1 cubic inches in large cars, from 297.1 cubic inches in model year 1984 to 285.0 cubic inches in 1985 (Table 35).
- The trend of increasing engine size in import automobiles continued, from 119.1 cubic inches in model year 1984 to 120.6 cubic inches in model year 1985, despite the fact that among all size classes only import compacts managed to show increases in engine size (Table 36).
- The market shares of automobiles with engine sizes between 150 and 200 cubic inches continued to climb, whereas the ones with engine sizes greater than 200 cubic inches declined (Figure 31).

5.2 TRENDS IN AUTOMOBILE CURB WEIGHT

- The sales-weighted curb weight of the entire new automobile fleet showed a drop of 40.4 lbs from model year 1984. The biggest drop

of 165 lbs in the sales-weighted curb weight from the previous model year was observed in minicompact cars (Table 37).

- All of the size classes experienced losses in their sales-weighted curb weights, except for the subcompacts and compacts (Table 37 and Figure 32).
- Although domestic subcompacts and two-seaters all had increased sales-weighted curb weights, the losses experienced by three popular size classes (compact, midsize, and large) led to an overall drop of 60.3 lbs in sales-weighted curb weight for the entire domestic automobile fleet (Table 38).
- Contrasting with their domestic counterparts, import cars had a gain of 47.1 lbs in sales-weighted curb weight from the previous model year (Table 39).
- The difference between the sales-weighted curb weights of domestic and import cars has narrowed by 66%, from 1233.1 lbs in model year 1978 to 415.8 lbs in this model year (Tables 38 and 39).

5.3 TRENDS IN AUTOMOBILE INTERIOR SPACE

- Sales-weighted interior spaces (passenger and trunk spaces) have remained relatively constant throughout the years; only a slight drop of 0.2 cubic feet from the previous model year was observed in the entire automobile fleet (Table 40).
- The domestics experienced a small drop of 0.3 cubic feet in the sales-weighted interior space from the previous model year while their import counterparts showed a gain of 1.1 cubic feet (Tables 41 and 42).

- Like the phenomenon observed in the sales-weighted curb weight, the difference between the interior spaces of domestic and import cars has narrowed from 24.5 cubic feet in model year 1978 to 13.3 cubic feet in model year 1985 (Tables 41 and 42).

5.4 TRENDS IN AUTOMOBILE WHEEL BASE

- The sales-weighted wheel base of the entire automobile fleet had a small drop of 0.6 inches from the previous model year. Since model year 1980, the sales-weighted wheel bases have remained relatively stable (Table 43 and Figure 34).
- Domestic cars have continued to experience drops in sale-weighted wheel base since model year 1983, while their import counterparts have continued to show gains since model year 1978 (Tables 44 and 45).

Table 34
Sales-Weighted Engine Size of Domestic and Import Automobiles by Size Class
(cubic inches)

Model year	Minicompact	Subcompact	Compact	Midsize	Large	Two seater	Fleet
78	125.5	162.8	241.0	298.6	376.3	183.8	264.4
79	113.2	146.0	228.5	268.9	339.4	168.8	230.8
80	115.8	128.2	184.8	237.9	312.3	170.0	196.5
81	96.1	124.6	134.2	221.2	304.8	151.7	182.0
82	93.5	127.2	129.3	212.0	288.4	147.2	176.1
83	97.8	133.6	134.3	210.3	302.0	153.8	182.1
84	132.7	135.5	135.1	207.3	297.1	152.4	181.2
85	118.8	138.2	140.0	206.5	285.0	150.9	178.8

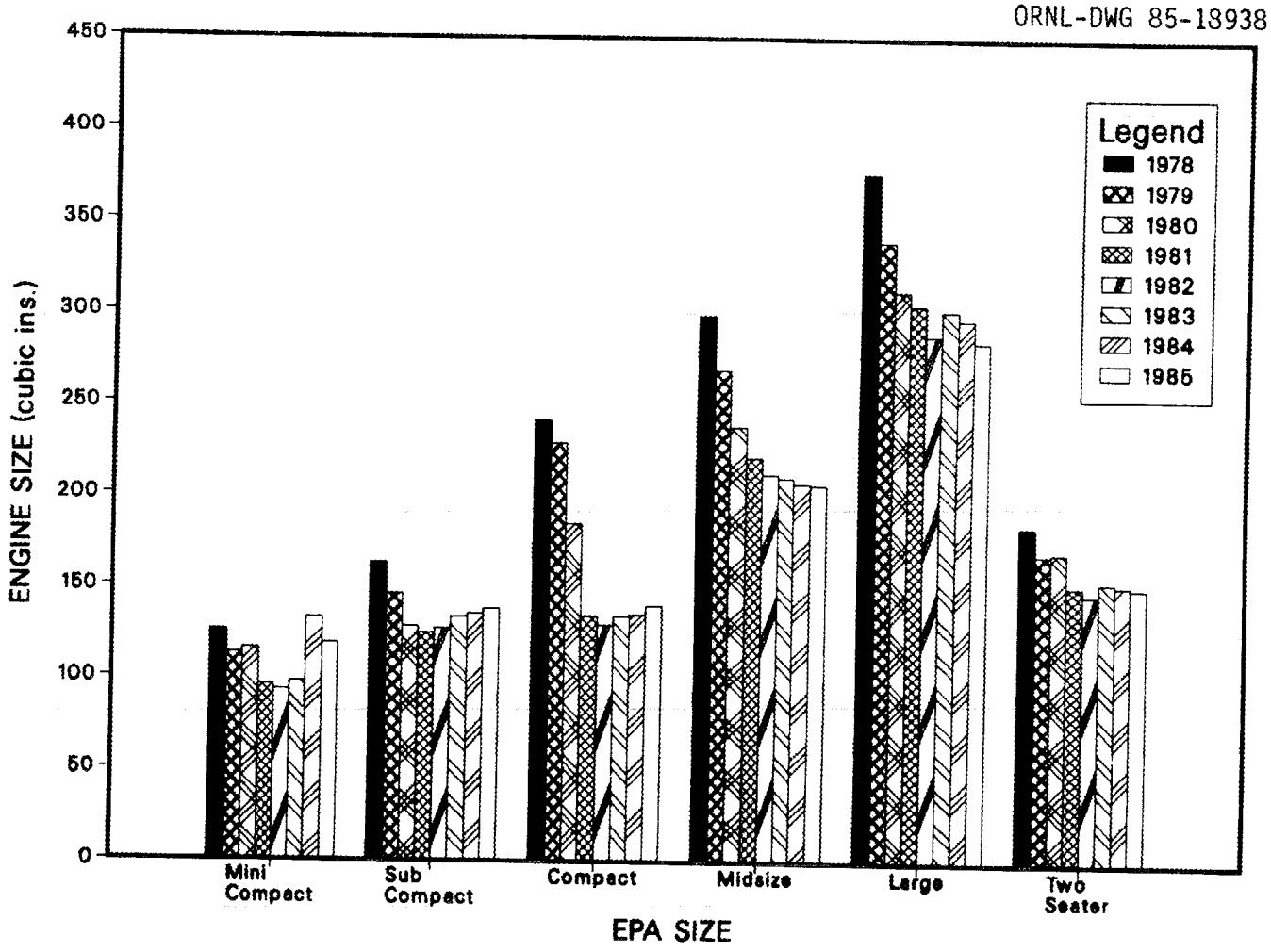

Fig. 30. Engine Size of Domestic and Import Automobiles, Model Years 1978–1985.

Table 35
Sales-Weighted Engine Size of **Domestic Automobiles** by Size Class
(cubic inches)

Model year	Minicompact	Subcompact	Compact	Midsize	Large	Two seater	Fleet
78	171.3	227.0	248.4	298.7	376.3	350.0	297.9
79	141.5	179.2	246.5	269.3	339.4	350.0	261.7
80	140.0	150.7	199.7	238.3	312.3	350.0	226.3
81	140.0	147.5	133.2	221.2	304.8	192.6	207.1
82		153.9	127.9	212.0	288.4	167.8	199.8
83		172.2	134.3	210.3	302.0	206.2	205.5
84		165.2	137.7	208.5	297.1	179.0	199.3
85		173.8	142.5	208.3	285.0	190.6	196.8

Table 36
Sales-Weighted Engine Size of Import Automobiles by Size Class
(cubic inches)

Model year	Minicompact	Subcompact	Compact	Midsize	Large	Two seater	Fleet
78	92.8	103.7	146.8	264.0		141.9	107.1
79	94.6	102.5	146.4	175.4		131.1	107.6
80	96.4	106.6	140.9	159.9		132.2	110.1
81	90.5	108.8	141.3			128.0	110.1
82	93.5	111.5	134.8	234.0		133.9	113.8
83	97.8	112.4	134.5	198.5		131.3	116.2
84	132.7	113.5	125.4	151.4		129.5	119.1
85	118.8	110.8	132.2	149.8		122.7	120.6

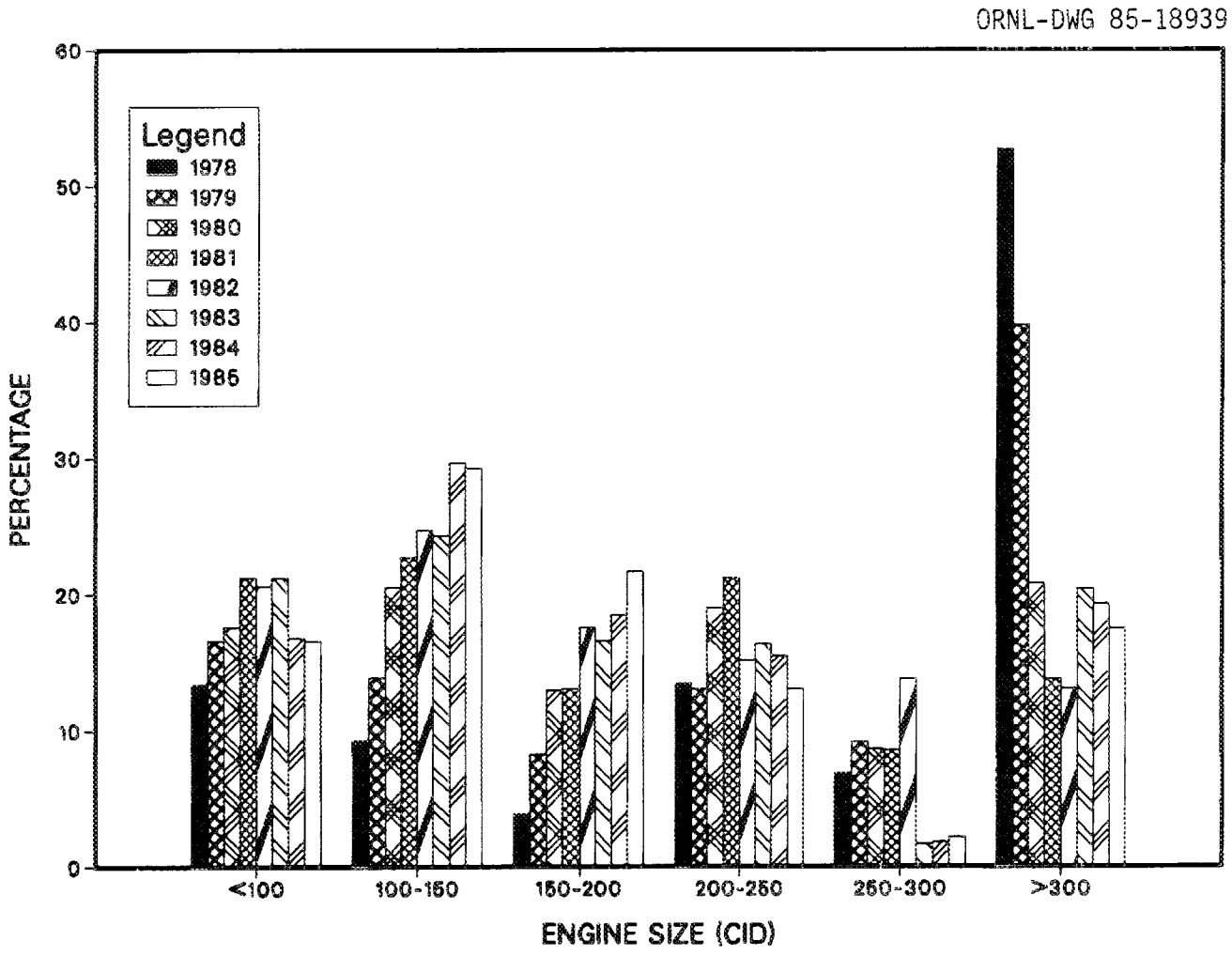

Fig. 31. Market Shares of Domestic and Import Automobiles by Engine Size, Model Years 1978–1985.

Table 37
Sales-Weighted Curb Weight of Domestic and Import Automobiles by Size Class
(lbs.)

Model year	Minicompact	Subcompact	Compact	Midsize	Large	Two seater	Fleet
78	2,199.6	2,444.1	3,137.5	3,391.9	3,955.1	2,762.5	3,181.7
79	2,120.1	2,366.7	3,048.0	3,286.7	3,763.4	2,699.1	3,000.4
80	2,154.3	2,270.4	2,812.5	3,080.9	3,667.4	2,713.6	2,790.3
81	1,919.8	2,370.5	2,381.7	2,995.7	3,671.8	2,583.0	2,744.3
82	2,002.1	2,301.7	2,421.8	2,991.9	3,702.8	2,524.8	2,729.8
83	2,072.0	2,333.9	2,441.3	3,026.5	3,779.0	2,662.5	2,787.9
84	2,375.9	2,379.8	2,453.7	2,990.0	3,733.6	2,559.3	2,787.6
85	2,210.8	2,400.4	2,474.6	2,953.6	3,571.4	2,538.6	2,747.2

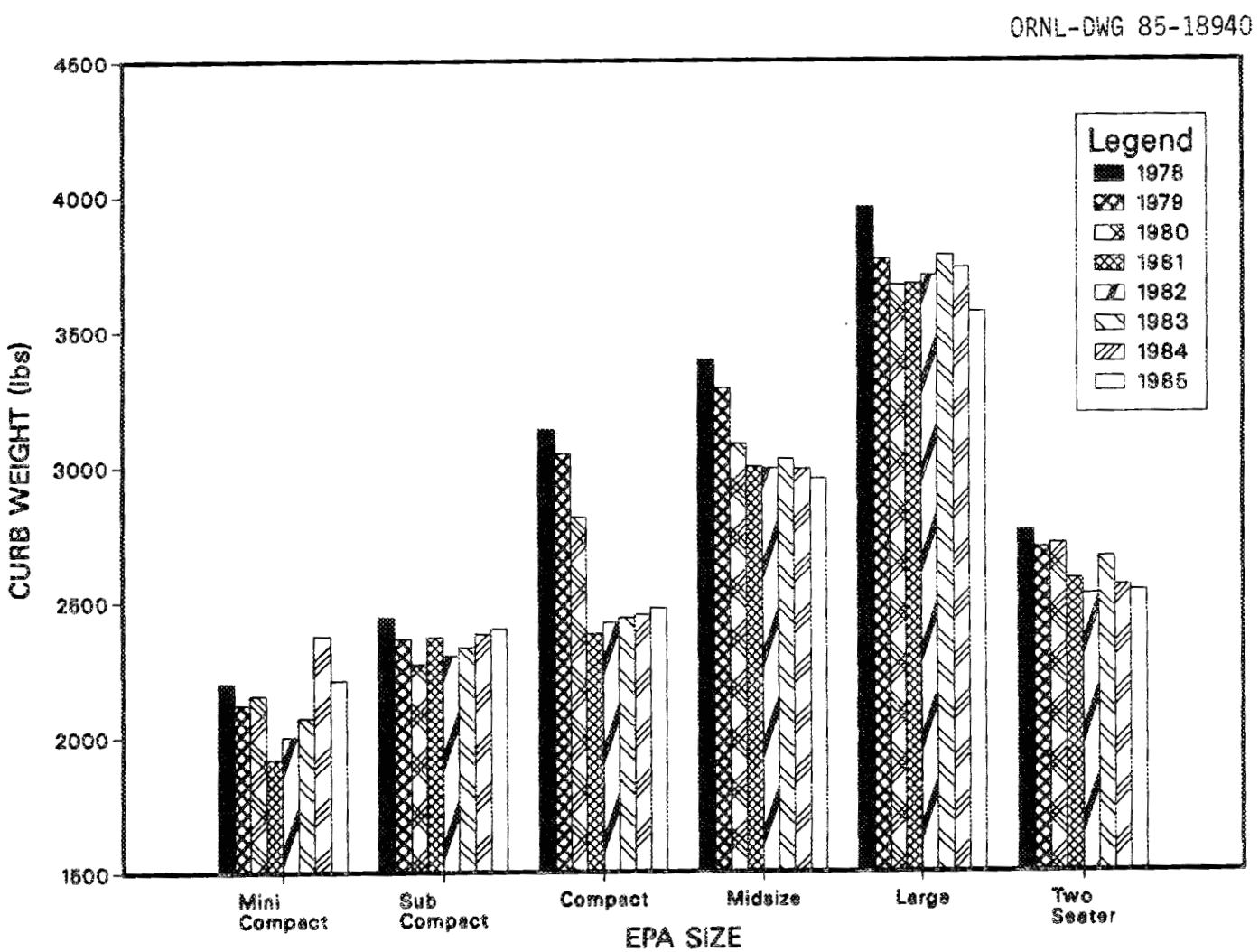

Fig. 32. Curb Weight of Domestic and Import Automobiles, Model Years 1978–1985.

Table 38
Sales-Weighted Curb Weight of Domestic Automobiles by Size Class
(lbs.)

Model year	Minicompact	Subcompact	Compact	Midsize	Large	Two seater	Fleet
78	2,554.4	2,799.6	3,147.7	3,391.0	3,955.1	3,572.0	3,401.4
79	2,462.2	2,574.1	3,053.6	3,287.2	3,763.4	3,503.0	3,206.1
80	2,495.7	2,434.5	2,750.5	3,081.3	3,667.4	3,334.0	2,998.6
81	2,496.0	2,626.9	2,289.2	2,995.7	3,671.8	2,576.9	2,922.2
82		2,424.5	2,330.8	2,991.3	3,702.8	2,471.4	2,895.7
83		2,525.1	2,367.0	3,025.5	3,779.0	2,594.2	2,949.8
84		2,552.8	2,420.9	2,987.6	3,733.6	2,553.7	2,905.6
85		2,594.8	2,419.5	2,953.0	3,571.4	2,596.0	2,845.3

Table 39
Sales-Weighted Curb Weight of Import Automobiles by Size Class
(lbs.)

Model year	Minicompact	Subcompact	Compact	Midsize	Large	Two seater	Fleet
78	1,946.5	2,116.6	3,007.5	3,972.1		2,558.4	2,168.3
79	1,894.6	2,094.7	3,022.4	3,175.2		2,531.3	2,178.2
80	1,879.2	2,112.4	2,994.6	3,001.0		2,583.1	2,187.9
81	1,846.4	2,192.5	3,032.9			2,586.6	2,233.6
82	2,002.1	2,229.4	2,799.3	3,640.0		2,559.3	2,294.6
83	2,072.0	2,228.5	2,727.0	3,422.6		2,692.0	2,331.5
84	2,375.9	2,252.1	2,577.0	3,109.3		2,564.1	2,382.4
85	2,210.8	2,251.4	2,641.7	2,972.8		2,497.9	2,429.5

Table 40
Sales-Weighted Interior Space of Domestic and Import Automobiles by Size Class
(cubic ft.)

Model year	Minicompact	Subcompact	Compact	Midsize	Large	Two seater	Fleet
78	79.4	89.8	105.3	112.9	128.5		107.9
79	80.0	90.2	105.8	113.4	130.1		106.9
80	82.4	89.9	105.4	113.5	130.8		104.9
81	83.3	90.2	103.6	113.7	130.6		105.5
82	83.1	91.3	102.9	113.9	130.4		106.0
83	82.7	93.3	103.0	113.1	131.3		107.3
84	77.0	93.8	103.0	113.3	130.7		108.0
85	77.8	93.9	103.1	113.5	129.8		107.8

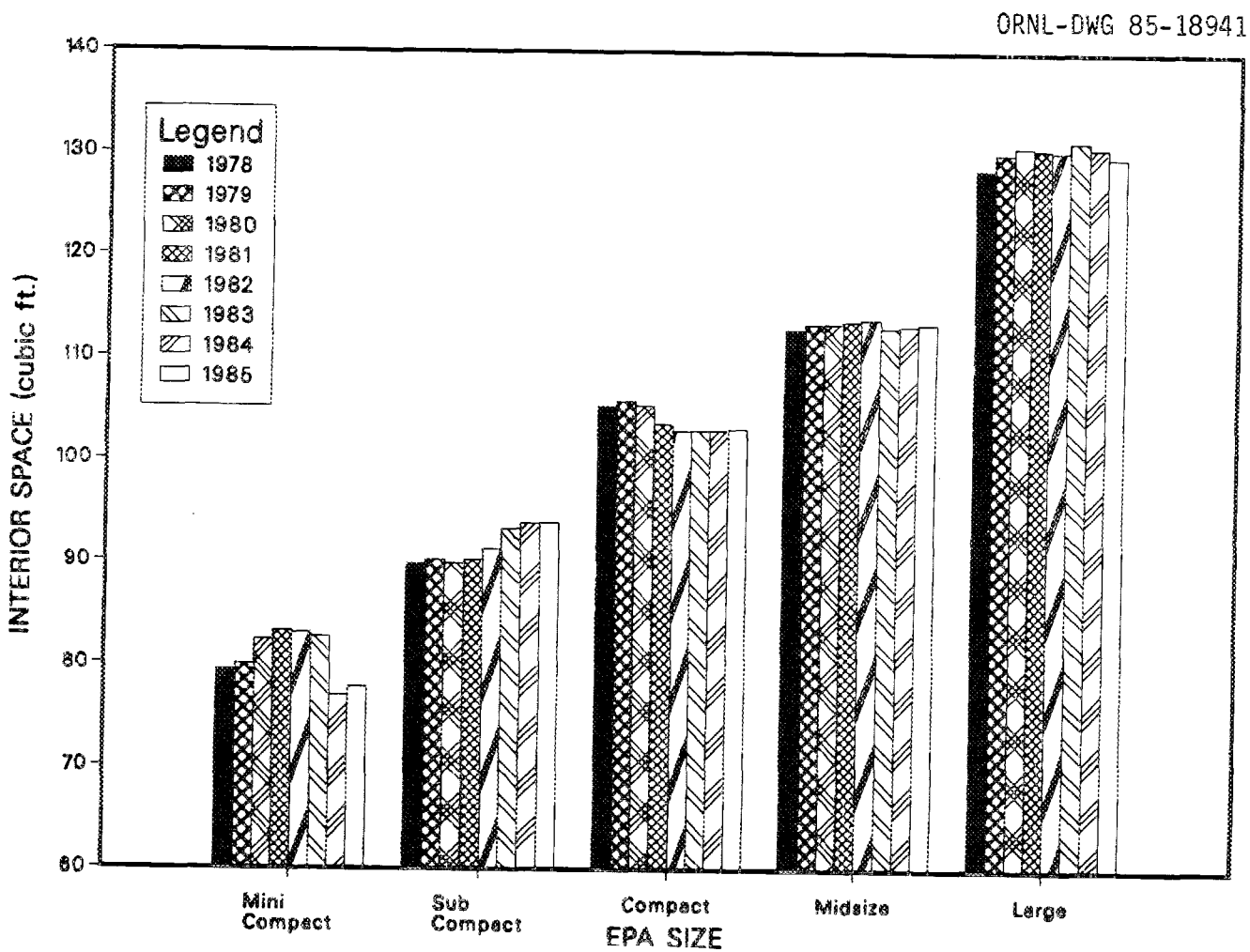

Fig. 33. Interior Space of Domestic and Import Automobiles, Model Years 1978–1985.

Table 41
Sales-Weighted Interior Space of **Domestic Automobiles** by Size Class
(cubic ft.)

Model year	Minicompact	Subcompact	Compact	Midsize	Large	Two seater	Fleet
78	81.6	89.2	105.4	112.9	128.5		111.9
79	83.0	91.6	106.4	113.4	130.1		111.3
80	83.0	90.9	106.6	113.5	130.8		109.9
81	83.0	91.3	103.6	113.7	130.6		110.7
82		92.4	102.5	113.9	130.4		111.4
83		93.1	102.6	113.1	131.3		111.7
84		94.5	102.7	113.3	130.7		111.1
85		95.0	102.9	113.5	129.8		110.8

Table 42
Sales-Weighted Interior Space of Import Automobiles by Size Class
(cubic ft.)

Model year	Minicompact	Subcompact	Compact	Midsize	Large	Two seater	Fleet
78	77.9	90.3	104.1	111.0			87.4
79	78.0	88.3	103.0	111.0			87.9
80	81.9	88.9	101.7	111.7			89.2
81	83.3	89.4	103.6				89.6
82	83.1	90.7	104.2	115.0			91.6
83	82.7	93.4	104.6	112.8			94.4
84	77.0	93.2	104.0	113.7			96.4
85	77.8	93.1	103.8	113.2			97.5

Table 43
Sales-Weighted Wheel Base of Domestic and Import Automobiles by Size Class
(inches)

Model year	Minicompact	Subcompact	Compact	Midsize	Large	Two seater	Fleet
78	93.5	97.9	108.5	109.9	118.7	92.1	107.6
79	93.0	97.2	108.0	109.4	117.1	91.9	105.8
80	92.4	96.3	106.5	107.8	116.7	92.8	103.6
81	90.4	96.5	100.8	106.9	116.8	93.3	103.0
82	91.7	97.2	100.4	106.6	117.0	93.7	103.1
83	92.9	97.3	100.4	107.0	117.3	93.7	103.8
84	93.0	97.5	100.2	106.2	116.8	92.8	103.5
85	92.0	97.4	100.2	106.1	114.6	92.6	102.9

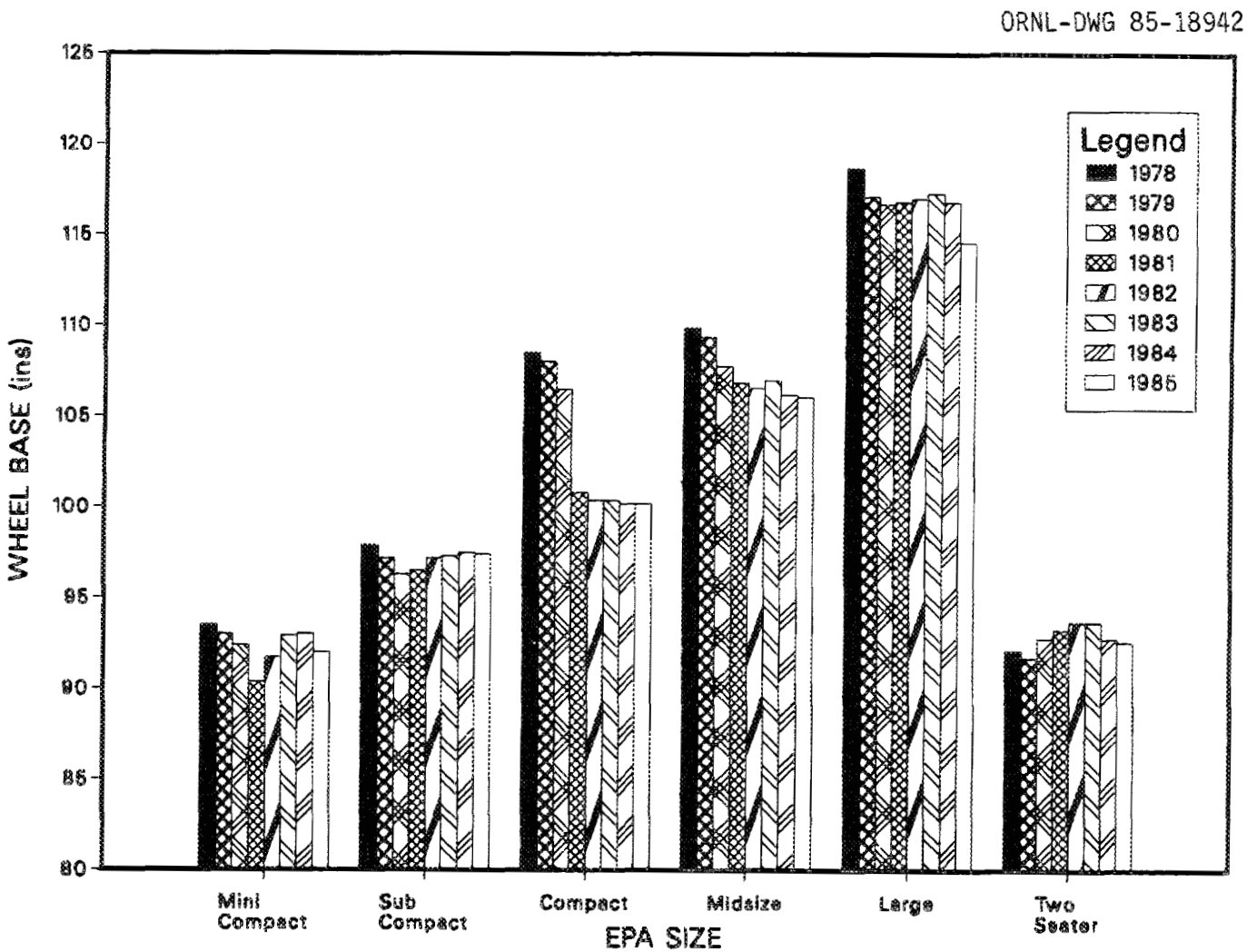

Fig. 34. Wheel Base of Domestic and Import Automobiles, Model Years 1978–1985.

Table 44
Sales-Weighted Wheel Base of Domestic Automobiles by Size Class
(inches)

Model year	Minicompact	Subcompact	Compact	Midsize	Large	Two seater	Fleet
78	95.3	100.9	108.7	109.9	118.7	98.0	110.4
79	94.5	99.3	108.4	109.5	117.1	94.3	108.5
80	94.5	98.2	106.8	107.8	116.7	98.0	106.7
81	94.5	98.3	100.0	106.9	116.8	95.6	105.7
82		97.6	99.5	106.6	117.0	95.3	105.5
83		98.6	99.7	107.0	117.3	95.0	106.1
84		98.4	100.0	106.2	116.8	94.0	105.2
85		98.7	100.0	106.0	114.6	94.2	104.5

Table 45
Sales-Weighted Wheel Base of Import Automobiles by Size Class
(inches)

Model year	Minicompact	Subcompact	Compact	Midsize	Large	Two seater	Fleet
78	92.3	95.0	105.5	110.1		90.7	94.6
79	91.9	94.4	105.8	104.9		91.3	94.7
80	90.8	94.6	105.7	103.8		91.8	94.7
81	89.9	95.3	106.2			92.0	95.1
82	91.7	97.0	103.9	96.9		92.7	97.0
83	92.9	96.6	102.9	115.7		93.1	97.1
84	93.0	96.8	100.8	107.5		91.7	97.6
85	92.0	96.4	100.7	108.1		91.4	97.8

APPENDIX

A. Glossary

B. Data Sources of ORNL MPG and Market Share Data System

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Appendix A

Glossary

- Curb weight - Weight of a vehicle including all standard equipment, spare tire and wheel, all fluids and lubricants to capacity, full tank of gasoline, and the weight of major optional accessories normally found on the vehicle. Curb weight is 300 pounds less than inertia weight.
- EPA size classifications for automobiles are derived by the interior size of each vehicle, while size classifications for light-duty trucks are grouped by capacity in terms of gross vehicle weight (GVW) which is truck weight plus carrying capacity. Note that the light truck size classification scheme is not the one cited in Gas Mileage Guide, EPA, but the one cited in SAE Paper 841405 (2).

Automobile Classes

Minicompact - Less than 85 cubic feet of passenger and luggage volume.

Subcompact - Between 85 and 100 cubic feet of passenger and luggage volume.

Compact - Between 100 and 110 cubic feet of passenger and luggage volume.

Midsize - Between 110 and 120 cubic feet of passenger and luggage volume.

Large - 120 or more cubic feet of passenger and luggage volume.

Two seater - Cars designed to primarily seat two adults.

Light-Duty Truck Classes

Small pickup - 2WD and 4WD trucks having GVW ratings under 4,500 pounds.

Standard pickup - 2WD and 4WD trucks having GVW ratings of 4,500 to 8,500 pounds.

Mini vans - As of model year 1985, all import cargo and passenger vans and the following domestic ones:

- Colt Vista
- Dodge Caravan/Ram
- Plymouth Voyager

Standard vans - As of model year 1985, all domestic cargo and passenger vans, with the exceptions as noted in Mini vans.

Small special purpose vehicles (SPVs) - All other light duty vehicles not in a car or truck class are classified as special purpose vehicles (SPVs). As of model year 1985, all import SPVs and the following domestic ones are small SPVs:

- AMC Cherokee/Wagoneer
- AMC CJ
- Ford Bronco II
- GM S10 Blazer 2WD
- GM S10/S15 Utility
- GM S15 Jimmy 2WD/4WD

- GM T10 Blazer 4WD
- GM T10 Jimmy 4WD

Standard special purpose vehicles - All domestics SPVs, with the exceptions as noted Small SPVs.

Appendix B

Data Sources of ORNL MPG and Market Shares Data System

- Sales for domestic and domestic-sponsored automobiles:

  "Ward's Automobile Reports," monthly, Ward's Communication, Inc., Detroit, Michigan.

- Sales for import and import-sponsored automobiles:

  "Ward's Automobile Reports," monthly, Ward's Communication, Inc., Detroit, Michigan.

- Sales for light-duty trucks, domestic and import:

  "Ward's Automobile Reports," monthly, Ward's Communication, Inc., Detroit, Michigan.

- Fuel economies, annual fuel cost, engine displacement, cylinder, transmission type, interior/truck spaces:

  "Gas Mileage Guide Computer Listing," annual, Environmental Protection Agency, Washington, D.C.

- Wheel base, curb weight, length, width, height, price:

  "Automobile News Market Data Book," annual, Crain Communication, Inc., Detriot, Michigan.

Appendix C

Automobile Nameplates by EPA Size Classification

Model year 1985

Minicompact	Subcompact	Compact	Midsize	Large	Two seater
Chevrolet Sprint*†	Aston Martin†	AMC Eagle	Audi 5000S†	Buick Electra	Alfa Romeo†
Porsche 928†	Audi Coupe†	AMC Renault Alliance	Buick Riviera	Buick LeSabre	Chevrolet Corvette
Porsche 911†	Audi 4000†	AMC Renault Encore	Buick Century	Cadillac Fleetwood Brougham*	Ford EXP
Porsche 944†	Audi Quattro†	BMW 524TD*†	Buick Regal	Cadillac Limousine	Honda Civic Coupe†
Volkswagen Cabriolet†	Audi 4000S Quattro†	BMW 528I†	Cadillac Seville	Cadillac DeVille	I.A.I. Bertone†
	BMW 320 I†	BMW 733I†	Cadillac Eldorado	Chevrolet	I.A.I. Pininfarina†
	BMW 633 CSI†	Buick Riviera Convertible	Chevrolet Monte Carlo	Ford LTD Crown Victoria	Lotus†
	BMW 325†	Buick Skyhawk	Chevrolet Citation (X-Car)	Lincoln Town Car	Mazda RX-7†
	Chevrolet Camaro	Buick Skylark (X-Car)	Chevrolet Celebrity	Mercury Grand Marquis	Mercedes Benz 380SL†
	Chevrolet Chevette	Buick Somerset	Chrysler Executive Sedan/Limousine	Oldsmobile 88	Nissan 300ZX†
	Chevrolet Spectrum*†	Cadillac Eldorado Convertible	Chrysler LeBaron	Oldsmobile 98	Pontiac Fiero
	Chrysler Laser	Cadillac Cimarron	Chrysler LeBaron GTS*	Pontiac	Toyota MR-2*†
	Chrysler LeBaron Convertible	Chevrolet Cavalier	Chrysler New Yorker 5th Ave		
	Dodge Conquest†	Chevrolet Nova*	Chrysler New Yorker-E Class		
	Dodge Daytona	Dodge Omni	Dodge Diplomat		
	Dodge Colt Hatchback†	Ford Tempo	Dodge Aires		
	Dodge Charger 024	Ford Thunderbird	Dodge 600		
	Ford Mustang	Ford Escort	Dodge Lancer*		
	Honda Accord-American*	Mazda 626†	Ford LTD 83		
	Honda Civic†	Mercedes Benz 300SD†	Lincoln Continental		
	Honda Accord†	Mercedes Benz 300D/300CD†	Lincoln Mercury Mark VII		
	Honda Prelude†	Mercedes 500SEC†	Mercedes Benz 380SEL†		
	Isuzu†	Mercedes 380SE†	Mercury Marquis		
	Isuzu Impulse†	Mercury Topaz	Oldsmobile Toronado		
	Jaguar XJ/XJS†	Mercury Cougar XR-7	Oldsmobile Supreme		
	Mazda GLC†	Mercury Lynx	Oldsmobile Ciera		
	Mercedes Benz 190D 2.2†	Mercury Merkur*†	Plymouth Caravelle		
	Mercedes Benz 190E 2.3†	Mitsubishi Galant	Plymouth Gran Fury		
	Mercury Capri	Nissan Maxima†	Plymouth Reliant		
	Mitsubishi Cordia†	Nissan Stanza†	Pontiac Bonneville		
	Mitsubishi Mirage†	Oldsmobile Calais	Pontiac Grand Prix		
	Mitsubishi Starion†	Oldsmobile Omega (X-Car)	Pontiac Phoenix (X-Car)		
	Mitsubishi Tredia†	Oldsmobile Firenza	Pontiac A6000		
	Nissan Sentra†	Peugeot 604†	Rolls Royce Silver Sprint†		
	Nissan Sentra-American*	Peugeot 505†	Volvo 740 GLE**		
	Nissan 200SX†	Plymouth Horizon	Volvo 760 GLE†		
	Nissan Pulsar NX†	Pontiac Grand Am			
	Nissan 300ZX 2+2†	Pontiac J2000			
	Plymouth Conquest (Sapparo)†	Rolls Royce Camargue†			
	Plymouth Arrow Champ†	Saab 900†			
	Plymouth Turismo (TC3)	Toyota Corolla†			
	Pontiac Firebird	Toyota Camry†			
	Pontiac Sunbird Convertible	Toyota Cressida†			
	Pontiac T1000	Volkswagen Golf-American**			
	Renault 18I†	Volkswagen Jetta†			
	Renault Fuego†	Volkswagen Quantum†			
	Rolls Royce Corniche†	Volvo DL†			
	Subaru†	Volvo GL†			
	Toyota Celica†	Volvo GLT†			
	Toyota Supra†				
	Toyota Tercel†				
	Volkswagen Scirocco†				

Appendix C (Cont'd)

Minicompact	Subcompact	Compact	Midsize	Large	Two seater
		Changed size class in model year 1985			
	Nissian Maxima* Toyota Cressida* Volkswagen Jetta*	Nissan Maxima** Toyota Cressida** Volkswagen Jetta** AMC Eagle**			
		Nameplates discontinued from model year 1984 to 1985			
Toyota Starlet Renault LeCar Volkswagen Rabbit-Convertible	Mitsubishi Precis Toyota Corolla Sport Volkswagen Rabbit-American				
		Model year 1984			
		New nameplates for model year 1984			
Volkswagen Cabriolet	Audi 4000S BMW 325 Chrysler Laser Dodge Conquest Dodge Daytona Mercedes Benz 190D Mercedes Benz 190E Mitsubishi Mirage	AMC Renault Encore Buick Somerset Cadillac Eldorado Convertible Ford Tempo Mercedes Benz 500SEC Mercedes Benz 380SE Mercury Topaz Mitsubishi Galant Oldsmobile Calais Pontiac Grand AM	Audi 5000S Lincoln Mercury Mark VII Plymouth Caravelle	Cadillac Limousine	Honda Civic Coupe Nissan 300 ZX
		Changed size class in model year 1984			
Honda Civic* Honda Prelude*	Honda Civic** Honda Prelude** Toyota Corolla*	Toyota Corolla**			
		Namepiates discontinued from model year 1983 to 1984			
Porsche 924	Mitsubishi Sapporo Volkswagen Dasher	Mercury Cougar	Ford Granada Ford Fairmont Mercury Zephyr	Lincoln Continental Mark VI	Nissan 240ZX Pontiac Catalina
		Model year 1983			
		New nameplates for model year 1983			
Porsche 944	Audi Quatro Chrysler Laser Dodge Daytona Isuzu Impulse Mercedes Benz 190D2.2 Mitsubishi Cordia Mitsubishi Starion Mitsubishi Tredia Nissan Pulsar Nissan Pulsar NX	Ford Tempo Mercury Topaz Renault Alliance Renault Encore Volvo GLT	Chrysler New Yorker-E Class Dodge 600 Ford LTD 83 Mercury Marzuis	Lincoln Town Car	Pontiac Catalina Pontiac Fiero
		Changed size class in model year 1983			
Volkswagen Rabbit-Convertible**	Mazda 626* Oldsmobile Firenza* Toyota Camry* Volkswagen Rabbit-Convertible*	Ford Thunderbird** Mazda 626** Mercury Cougar** Mercury XR-7** Oldsmobile Firenza** Toyota Camry** Volvo 760 GLE*	Ford Thunderbird* Mercury Cougar* Mercury XR-7* Volvo 760 GLE**		

Appendix C (Cont'd)

Minicompact	Subcompact	Compact	Midsize	Large	Two seater
		Nameplates discounted from model year 1982 to 1983			
Volkswagen Convertible	Datsun 210 Datsun 310 Datsun 810 Fiat Brava	Datsun 510 Fiat Strada	Checker		
		Model year 1982			
		New nameplates for model year 1982			
	Oldsmobile Firenza Renault Fuego	Cadillac Cimarron Chevrolet Cavalier Peugeot 604 Pontiac J-2000 Volkswagen Quantum	Chevrolet Celebrity Chrysler New Yorker Dodge 400 Pontiac A6000		Ford EXP Mercury LN7
		Changed size class in model year 1982			
	BMW 528i** Datsun 510** Jaguar*	BMW 528i* Datsun 510* Jaguar**	Gran Fury** Lincoln Continental**	Gran Fury* Lincoln Continental*	
		Nameplates discounted from model year 1981 to 1982			
Ford Pinto Mercury Bobcat Plymouth Arrow	Chevrolet Monza Ford Fiesta Pontiac Sunbird	AMC Pacer JRT Rover Mercury Versailles	Dodge Aspen Plymouth Volare Pontiac LeMans	Chrysler Dodge St. Regis	JRT MG JRT Triumph
		Model year 1981			
		New nameplates for model year 1981			
Porsche 911 Porsche 924 Toyota Starlet	Isuzu Pontiac T-1000 Renault 18i	Ford Escort Mercury Lynx	Chrysler Imperial Dodge Aires Mercury Cougar Plymouth Reliant		
		Changed size class in model year 1981			
	Dodge Omni-024** Plymouth Horizon**	Dodge Omni* Plymouth Horizon* Ford Granada* Saab 900*	Ford Granada** Saab 900**		Ford EXP Mercury LN7
		Nameplates discontinued from model year 1980 to 1981			
	Buick Skyhawk Oldsmobile Starfire	Mercury Monarch Volvo GLE			
		Model year 1980			
		New nameplates for model year 1980			
Honda Prelude	AMC Spirit Audit 4000 Toyota Tercel Volkswagen Jetta		Dodge Mirada Mercury Cougar XR-7	Plymouth Gran Fury	

Appendix C (Cont'd)

Minicompact	Subcompact	Compact	Midsize	Large	Two seater
		Changed size class in model year 1980			
Datsun 200SX**	Datsun 200SX*	BMW 528i**	Cadillac Seville*	Continental Mark VI*	
Dodge Colt**	Dodge Colt*	Cadillac Seville**	Continental Mark V**		
Subaru**	Subaru*				
	BMW 528i*				
		Nameplates discontinued from model year 1979 to 1980			
Renault Gordini	Audi Fox	Chevrolet Nova	Dodge Magnum		Porsche 930
	Buick Opel	Peugeot 504	Ford LTD II		
	Fiat 128				

*New nameplate for model year.

†Import and domestic-sponsored import nameplates.

*Old size classification.

**New size classification.

°Import-sponsored domestic nameplates.

Appendix D

Light Truck Nameplates by Size Classification

Small pickup	Standard pickup	Mini van	Standard van	Small Special Purpose Vehicle	Standard Special Purpose Vehicle
		Model year 1985			
Ford Ranger	Ford F100/F150	Dodge Caravan	Ford Econoline	Chevrolet Blazer "S"*	Chevrolet Suburban
Chevrolet S-10	Toyota Pickup†	Plymouth Voyager†	Chevrolet Van	Ford Bronco II	Ford Bronco
Mazda Pickup†	Chevrolet C-10	Chevrolet Astro*	Dodge Ram Van	Jeep Cherokee XJ	Chevrolet Blazer
Nissan Pickup-American*	Chevrolet K-10	Toyota Van†	GMC Vandura/Rally	GMC Jimmy "S"	Dodge Ram Charger
Dodge Ram 50†	Ford 250	Dodge Mini Ram Van	Dodge Ram Wagon	Jeep CJ	GMC Suburban
Isuzu Pickup†	Nissan Pickup†	Toyota Cargo Van†	Ford Club Wagon	Isuzu Trooper	Jeep Grand Wagoneer
GMC S-15	Dodge D150	Volkswagen Vanagon†	Chevrolet Sportvan	Jeep Wagoneer XJ	GMC Jimmy
Mitsubishi†	Chevrolet K-20	GMC Safari*		Toyota 4Runner SR-5†	
Toyota 4Runner Truck†	Chevrolet C-20	Dodge Vista†		Toyota Land Cruiser†	
Subaru Brat†	GMC C-15	Plymouth Vista†		Mitsubishi Montero†	
Dodge Rampage	GMC K-15	Ford Aerostar*			
Jeep Scrambler	Dodge W150				
Volkswagen Pickup — Gasoline†	Chevrolet El Camino				
	Dodge D250				
	GMC C-25				
	GMC K-25				
	Dodge W250				
	GMC Caballero				
	Jeep J10				
	Jeep J20				
	Jeep Comanche*				
		Change size class in model year 1985			
Nissan Pickup†,*	Nissan Pickup†,**	Plymouth Voyager**	Plymouth Voyager*		
		Nameplates discontinued from model year 1984 to 1985			
Chevrolet LUV†					
Plymouth Scamp					
		Model year 1984			
		New nameplates for model year 1984			
Nissan Pickup-American*	Chevrolet K-10	Dodge Caravan		Isuzu Trooper†	
Toyota 4Runner Truck†	Chevrolet K-20	Dodge Mini Ram Van		Toyota 4Runner SR-5†	
	GMC K-15	Plymouth Voyager†			
	GMC K-25	Toyota Cargo Van†			
		Change size class in model year 1984			
Toyota Pickup†,*	Toyota Pickup†,**				
		Nameplates discontinued from model year 1983 to 1984			
Ford Courier					
Plymouth Arrow Pickup†					
		Model year 1983			
		New nameplates for model year 1983			
Dodge Rampage		Dodge Vista†		Chevrolet Blazer "S"	
Ford Ranger		Plymouth Vista†		Ford Bronco II	
Mitsubishi†		Toyota Van†		GMC Jimmy "S"	
Plymouth Scamp				Jeep Cherokee XJ	
Subaru Brat†				Jeep Wagoneer XJ	
				Mitsubishi Montero†	

Appendix D (Cont'd)

Small pickup	Standard pickup	Mini van	Standard van	Small Special Purpose Vehicle	Standard Special Purpose Vehicle
		Nameplates discontinued from model year 1982 to 1983			
				Plymouth Trail Duster	
		Model year 1982			
		New nameplates for model year 1982			
Chevrolet S-10 GMC S-15 Jeep Scrambler Volkswagen Pickup — Gasoline†					
		Model year 1981			
		New nameplates for model year 1981			
Isuzu Pickup†			Dodge Ram Wagon Chevrolet Sportvan Ford Club Wagon		
		Nameplates discontinued from model year 1980 to 1981			
		Model year 1980			
		New nameplates for model year 1980			
Volkswagen Pickup — Diesel†	Dodge W150 Dodge W250 Jeep J10 Jeep J20				Chevrolet Suburban Chevrolet Blazer GMC Jimmy GMC Suburban Jeep Grand Wagoneer Ford Bronco
		Model year 1979			
		New nameplates for model year 1979			
Dodge Ram 50† Plymouth Arrow Pickup†				Jeep CJ Plymouth Trail Duster Toyota Land Cruiser†	Dodge Ram Charger

*New nameplate for model year.

†Import and domestic-sponsored import nameplates.

'Old size classification.

**New size classification.

°Import-sponsored domestic nameplates.

Appendix E

Model Year Automobile Nameplates Sorted by Sales, Model Years 1978-85

Table E.1
131 Cars for Model Year 1978 Ranked by Sales

	Model year sales	Ratio of total sales	Sales weighted MPG	EPA size class
1) Chevrolet	627,480	.057	17.3	Large
2) Oldsmobile Supreme	491,346	.044	21.5	Midsize
3) Ford Fairmont	417,932	.038	21.7	Midsize
4) Chevrolet Malibu	356,070	.032	20.4	Midsize
5) Chevrolet Monte Carlo	355,660	.032	20.4	Midsize
6) Ford LTD Crown Victoria	327,970	.030	15.9	Large
7) Ford Thunderbird	319,328	.029	15.6	Midsize
8) Chevrolet Nova	267,268	.024	19.2	Compact
9) Chevrolet Chevette	265,689	.024	30.2	Subcompact
10) Oldsmobile 88	259,657	.023	17.1	Large
11) Chevrolet Camaro	247,437	.022	17.0	Subcompact
12) Cadillac DeVille	246,781	.022	14.5	Large
13) Ford Granada	243,282	.022	20.3	Compact
14) Toyota Corolla	226,695	.020	33.2	Subcompact
15) Plymouth Volare	225,483	.020	20.1	Compact
16) Pontiac Grand Prix	220,122	.020	20.0	Midsize
17) Buick Regal	211,388	.019	20.8	Midsize
18) Pontiac	210,033	.019	17.3	Large
19) Buick Le Sabre	193,814	.017	17.5	Large
20) Ford Pinto	184,667	.017	25.4	Minicompact
21) Ford Mustang	179,039	.016	21.1	Minicompact
22) Pontiac Firebird	175,607	.016	17.3	Subcompact
23) Dodge Aspen	170,606	.015	19.9	Compact
24) Toyota Celica	164,932	.015	24.8	Subcompact
25) Ford LTD II	158,199	.014	16.4	Midsize
26) Mercury Cougar XR-7	152,591	.014	16.4	Midsize
27) Volkswagen Rabbit	146,139	.013	32.8	Subcompact
28) Nissan Sentra (210)	143,871	.013	31.6	Minicompact
29) Mercury Grand Marquis	142,349	.013	15.0	Large
30) Honda Civic	138,037	.012	32.5	Minicompact
31) Chevrolet Monza	136,333	.012	23.0	Subcompact
32) Buick Electra	129,520	.012	16.9	Large
33) Mercury Zephyr	121,705	.011	21.7	Midsize
34) Chrysler Le Baron	118,583	.011	17.6	Midsize
35) Oldsmobile 98	116,722	.011	16.7	Large
36) AMC Concord	116,252	.010	18.9	Compact
37) Pontiac Le Mans	114,577	.010	20.7	Midsize
38) Honda Accord	114,252	.010	35.3	Subcompact
39) Chrysler Cordoba	112,560	.010	15.7	Midsize
40) Buick Skylark	99,494	.009	20.7	Compact
41) Subaru	99,330	.009	35.3	Minicompact
42) Buick Century	99,302	.009	21.1	Midsize
43) Lincoln Continental	94,242	.009	13.9	Large
44) Plymouth Horizon	90,398	.008	27.2	Compact
45) Pontiac Sunbird	84,549	.008	23.2	Subcompact
46) Mercury Monarch	83,794	.008	20.1	Compact
47) Ford Fiesta	81,273	.007	38.0	Subcompact
48) Lincoln Continental Mark V	74,996	.007	14.5	Midsize
49) Chrysler	73,465	.007	13.5	Large
50) Plymouth Fury	73,241	.007	14.2	Midsize
51) Dodge Omni	66,851	.006	27.2	Compact
52) Nissan 280ZX	65,713	.006	20.5	Two seater
53) Pontiac Phoenix	62,455	.006	19.7	Compact
54) Dodge Diplomat	59,057	.005	17.6	Midsize
55) Nissan Stanza (510)	57,674	.005	27.3	Subcompact
56) Mazda GLC	56,436	.005	36.8	Subcompact
57) Cadillac Seville	54,148	.005	16.3	Compact
58) Dodge Magnum	51,209	.005	15.3	Midsize
59) Dodge Colt Hatchback	47,931	.004	32.3	Minicompact
60) Dodge Monaco	47,000	.004	14.2	Midsize
61) Cadillac Eldorado	46,292	.004	11.0	Midsize
62) Chevrolet Corvette	43,106	.004	16.5	Two seater
63) Oldsmobile Omega	42,337	.004	20.4	Compact
64) Mercury Cougar	39,927	.004	16.4	Midsize
65) Toyota Camry(Corona)	37,458	.003	21.9	Subcompact
66) Volvo DL	37,382	.003	22.4	Compact
67) Nissan 200SX	32,788	.003	26.3	Minicompact

Table E.1 (Cont'd)

	Model year sales	Ratio of total sales	Sales weighted MPG	EPA size class
68) Mercury Bobcat	30,822	.003	24.7	Minicompact
69) Volkswagen Scirocco	29,483	.003	28.7	Subcompact
70) JRT MG	28,488	.003	20.0	Two seater
71) Plymouth Arrow	26,501	.002	30.9	Minicompact
72) Volkswagen Dasher	26,417	.002	25.7	Subcompact
73) Nissan Maxima (810)	25,161	.002	18.6	Subcompact
74) Oldsmobile Toronado	25,039	.002	15.0	Large
75) AMC Spirit	24,857	.002	20.9	Subcompact
76) AMC Pacer	24,709	.002	18.6	Compact
77) Nissan F-10	24,638	.002	33.0	Subcompact
78) Buick Skyhawk	22,422	.002	21.1	Subcompact
79) AMC Gremlin	21,326	.002	20.8	Subcompact
80) BMW 320 I	21,193	.002	21.7	Subcompact
81) Buick Riviera	20,575	.002	16.9	Large
82) Audi Fox	20,364	.002	25.8	Subcompact
83) Fiat Mirafiori	18,942	.002	20.5	Subcompact
84) JRT Triumph	18,812	.002	22.9	Two seater
85) Buick Opel	18,801	.002	27.0	Subcompact
86) Mercedes Benz 116	18,293	.002	19.8	Compact
87) Audi 5000 (Gas)	17,909	.002	18.7	Compact
88) Oldsmobile Starfire	17,050	.002	21.4	Subcompact
89) Lincoln Versailles	15,061	.001	18.0	Compact
90) Fiat Spider	14,625	.001	22.0	Two seater
91) Saab 99	14,260	.001	22.7	Compact
92) Dodge Challenger	14,196	.001	28.7	Minicompact
93) Fiat 128	14,173	.001	23.0	Minicompact
94) AMC Matador	13,877	.001	14.0	Midsize
95) Renault Le Car	13,365	.001	31.0	Minicompact
96) Toyota Cressida	13,044	.001	22.0	Subcompact
97) Volvo 760 GLE	12,137	.001	18.7	Compact
98) Porsche 924	10,978	.001	22.8	Two seater
99) Fiat X 1/9	10,812	.001	23.0	Two seater
100) Volkswagen Beetle	10,661	.001	24.0	Minicompact
101) Plymouth Conquest(Sapporo)	10,192	.001	28.5	Minicompact
102) Mercury Capri	8,914	.001	22.3	Subcompact
103) BMW 530 I	7,765	.001	17.0	Subcompact
104) Mercedes Benz 450 SL(107)	7,583	.001	14.0	Two seater
105) Mercedes Benz 123	7,010	.001	22.1	Compact
104) Mercedes Benz 450 SL(107)	7,583	.001	14.0	Two seater
105) Mercedes Benz 123	7,010	.001	22.1	Compact
106) Peugeot 504	6,880	.001	23.1	Compact
107) Alfa Romeo	6,452	.001	23.0	Two seater
108) Porsche 911	5,100		16.1	Two seater
109) Volkswagen Rabbit-American	4,819		32.4	Subcompact
110) Mercedes Benz 450 SEL	4,764		14.0	Midsize
111) Jaguar XJ/XJS	4,375		14.0	Compact
112) Checker	4,184		15.1	Midsize
113) Lancia Beta	3,045		20.0	Subcompact
114) Mazda RX-7	2,335		20.7	Two seater
115) Peugeot 604	1,785		17.2	Compact
116) Fiat Brava	1,672		25.2	Subcompact
117) Porsche 928	1,032		13.5	Minicompact
118) Mercedes Benz 300 D/300 CD	882		25.0	Compact
119) Renault Gordini	722		25.0	Minicompact
120) BMW 528 I	632		20.0	Compact
121) Mercedes Benz 240 D	541		30.4	Compact
122) Saab 900	436		22.0	Midsize
123) Mercedes Benz 300 SD	293		26.0	Compact
124) Mercedes Benz 280 E	227		16.0	Compact
125) Dodge St Regis	161		15.9	Large
126) BMW 733 I	155		15.6	Compact
127) Mercedes Benz 450 SLC	131		14.0	Two seater
128) BMW 633 CSI	96		15.5	Subcompact
129) Mercedes Benz 280 SE	65		16.0	Compact
130) Mercedes Benz 450 SEL 6.9	35		12.0	Midsize
131) Porsche 930	11		15.0	Two seater
	11,083,109	1.000	19.7	

Table E.2
142 Cars for Model Year 1979 Ranked by Sales

	Model year sales	Ratio of total sales	Sales weighted MPG	EPA size class
1) Oldsmobile Supreme	536,929	.050	20.6	Midsize
2) Chevrolet	510,080	.047	18.0	Large
3) Chevrolet Malibu	362,103	.034	19.7	Midsize
4) Chevrolet Chevette	352,632	.033	29.5	Subcompact
5) Ford Fairmont	340,590	.032	20.7	Midsize
6) Ford Mustang	302,309	.028	22.1	Subcompact
7) Chevrolet Monte Carlo	296,007	.027	19.9	Midsize
8) Ford LTD Crown Victoria	284,589	.026	16.5	Large
9) Buick Regal	266,168	.025	20.9	Midsize
10) Oldsmobile 88	245,327	.023	19.4	Large
11) Toyota Corolla	244,714	.023	29.1	Subcompact
12) Chevrolet Camaro	233,802	.022	17.9	Subcompact
13) Cadillac DeVille	221,880	.021	15.1	Large
14) Ford Thunderbird	219,465	.020	14.3	Midsize
15) Nissan Sentra (210)	202,005	.019	30.6	Subcompact
16) Pontiac Grand Prix	192,272	.018	20.4	Midsize
17) Ford Pinto	190,243	.018	24.1	Minicompact
18) Plymouth Volare	188,132	.017	19.6	Midsize
19) Pontiac	183,471	.017	18.0	Large
20) Pontiac Firebird	170,497	.016	17.6	Subcompact
21) Ford Granada	160,881	.015	18.3	Compact
22) Chevrolet Monza	155,772	.014	23.5	Subcompact
23) Honda Civic	150,926	.014	32.4	Minicompact
24) Toyota Celica	147,428	.014	21.0	Subcompact
25) Honda Accord	147,332	.014	28.0	Subcompact
26) Buick Le Sabre	145,454	.013	18.1	Large
27) Chevrolet Citation (X-Car)	145,323	.013	23.5	Midsize
28) Plymouth Horizon	140,145	.013	28.2	Subcompact
29) Volkswagen Rabbit-American	136,663	.013	32.4	Subcompact
30) Dodge Aspen	132,497	.012	19.5	Midsize
31) Mercury Cougar XR-7	130,062	.012	14.7	Midsize
32) Chevrolet Nova	128,409	.012	18.7	Compact
33) Subaru	123,821	.011	31.0	Minicompact
34) Pontiac Le Mans	119,709	.011	20.9	Midsize
35) Dodge Omni	117,998	.011	28.2	Subcompact
36) Chrysler Le Baron	115,847	.011	17.3	Midsize
37) Oldsmobile 98	107,235	.010	17.4	Large
38) Mercury Grand Marquis	103,891	.010	17.3	Large
39) Mercury Zephyr	101,663	.009	20.5	Midsize
40) Buick Electra	98,911	.009	16.5	Large
41) Pontiac Sunbird	92,404	.009	23.9	Subcompact
42) Chrysler	90,932	.008	15.8	Large
43) Mercury Capri	89,176	.008	22.3	Subcompact
44) AMC Concord	86,461	.008	19.6	Compact
45) Mazda GLC	82,399	.008	34.2	Subcompact
46) Ford Fiesta	77,733	.007	32.0	Subcompact
47) Lincoln Continental	74,037	.007	12.5	Large
48) Chrysler Cordoba	70,970	.007	15.8	Midsize
49) Nissan 280ZX	70,228	.007	20.2	Two seater
50) Volkswagen Rabbit	69,288	.006	36.0	Subcompact
51) Buick Skylark (X-Car)	67,653	.006	23.5	Compact
52) Mercury Monarch	62,252	.006	18.8	Compact
53) Cadillac Eldorado	61,049	.006	17.6	Midsize
54) Dodge Colt Hatchback	60,646	.006	37.6	Subcompact
55) Lincoln Continental Mark V	56,277	.005	12.5	Midsize
56) Buick Century	55,509	.005	20.9	Midsize
57) Dodge Diplomat	54,837	.005	18.5	Midsize
58) Nissan 310	54,722	.005	31.0	Subcompact
59) Pontiac Phoenix (X-Car)	50,950	.005	24.6	Compact
60) Buick Riviera	50,449	.005	18.0	Midsize
61) Nissan Stanza (510)	47,463	.004	26.4	Subcompact
62) AMC Spirit	47,392	.004	20.9	Subcompact
63) Oldsmobile Toronado	46,434	.004	18.8	Midsize
64) Cadillac Seville	45,886	.004	17.1	Compact
65) Mercury Bobcat	44,189	.004	24.0	Minicompact
66) Volvo DL	43,735	.004	21.8	Compact
67) Ford LTD II	43,523	.004	14.9	Midsize
68) Chevrolet Corvette	39,816	.004	15.1	Two seater
69) Toyota Camry(Corona)	34,329	.003	21.4	Subcompact
70) Buick Skylark	32,538	.003	21.1	Compact
71) Mazda RX-7	32,476	.003	20.7	Two seater
72) Oldsmobile Omega (X-Car)	31,298	.003	23.5	Compact
73) Pontiac Phoenix	30,402	.003	19.6	Compact

Table E.2 (Cont'd)

	Model year sales	Ratio of total sales	Sales weighted MPG	EPA size class
74) Audi 5000 (Gas)	28,668	.003	19.8	Compact
75) Dodge St Regis	27,816	.003	15.9	Large
76) Volkswagen Scirocco	27,714	.003	29.8	Subcompact
77) Volkswagen Dasher	26,826	.002	30.3	Subcompact
78) Dodge Magnum	26,401	.002	15.8	Midsize
79) JRT MG	26,177	.002	20.6	Two seater
80) Plymouth Arrow	23,514	.002	27.7	Minicompact
81) BMW 320 I	23,236	.002	21.8	Subcompact
82) Plymouth Colt	21,747	.002	37.6	Subcompact
83) Nissan 200SX	21,534	.002	25.7	Minicompact
84) Toyota Supra	20,521	.002	22.0	Subcompact
85) Buick Skyhawk	20,373	.002	21.5	Subcompact
86) Oldsmobile Starfire	20,230	.002	22.1	Subcompact
87) Oldsmobile Omega	20,001	.002	20.9	Compact
88) Mazda 626	19,846	.002	27.7	Subcompact
89) Dodge Challenger	19,140	.002	26.0	Subcompact
90) Buick Opel	17,049	.002	29.3	Subcompact
91) Plymouth Conquest(Sapporo)	16,896	.002	26.0	Subcompact
92) Renault Le Car	16,847	.002	31.5	Minicompact
93) Fiat Brava	16,307	.002	25.2	Subcompact
94) Lincoln Versailles	15,942	.001	16.0	Compact
95) Fiat Spider	15,530	.001	23.3	Two seater
96) Volvo 760 GLE	13,256	.001	19.0	Compact
97) Nissan Maxima (810)	13,188	.001	22.6	Subcompact
98) Mercedes Benz 300 D/300 CD	12,993	.001	25.0	Compact
99) JRT Triumph	12,966	.001	22.3	Two seater
100) Toyota Cressida	11,515	.001	21.0	Subcompact
101) Audi Fox	10,911	.001	26.6	Subcompact
102) Fiat 138 Strada	10,607	.001	31.5	Compact
103) Saab 900	10,495	.001	22.0	Midsize
104) Fiat X 1/9	10,102	.001	31.0	Two seater
105) Mercedes Benz 240 D	10,039	.001	30.4	Compact
106) Volkswagen Beetle	9,979	.001	24.0	Minicompact
107) AMC Pacer	9,954	.001	18.7	Compact
108) Fiat 128	9,614	.001	24.0	Subcompact
109) Peugeot 504	9,345	.001	23.3	Compact
110) Mercury Cougar	9,293	.001	14.7	Midsize
111) Mercedes Benz 300 SD	8,984	.001	26.0	Compact
112) Porsche 924	8,694	.001	19.0	Two seater
113) BMW 528 I	6,802	.001	20.0	Compact
114) Mercedes Benz 450 SL(107)	6,535	.001	14.0	Two seater
115) Dodge Monaco	5,982	.001	14.3	Midsize
116) Saab 99	4,655		23.3	Compact
117) Alfa Romeo	4,493		20.5	Two seater
118) Checker	4,490		14.7	Midsize
119) Mercedes Benz 450 SEL	4,455		13.5	Midsize
120) Jaguar XJ/XJS	4,237		13.9	Compact
121) Mazda RX-3	3,568		21.4	Minicompact
122) Mazda RX-4	3,568		20.4	Subcompact
123) Porsche 911	3,534		18.0	Two seater
124) Lincoln Continental Mark VI	3,461		18.5	Large
125) Dodge Mirada	3,252		17.8	Midsize
126) BMW 733 I	2,841		15.6	Compact
127) Mercedes Benz 280 E	2,781		16.0	Compact
128) Honda Prelude	2,696		27.6	Minicompact
129) Lancia Beta	2,100		22.4	Subcompact
130) Mercedes Benz 450 SLC	1,850		14.0	Subcompact
131) Porsche 928	1,810		13.4	Minicompact
132) Mercedes Benz 280 S	1,608		16.0	Compact
133) Mazda Cosmo	1,364		20.4	Subcompact
134) Audi 4000	1,111		25.3	Subcompact
135) Mercedes Benz 280 SE	956		16.0	Compact
136) Peugeot 604	918		15.0	Compact
137) Renault Gordini	916		25.0	Minicompact
138) BMW 633 CSI	870		15.5	Subcompact
139) Peugeot 505 (Gas)	734		20.3	Compact
140) Porsche 930	664		15.0	Two Seater
141) AMC Matador	614		14.0	Midsize
142) Mercedes Benz 450 SEL 6.9	507		11.0	Midsize
	10,788,257	1.000	20.5	

Table E.3
128 Cars for Model Year 1980 Ranked by Sales

	Model year sales	Ratio of total sales	Sales weighted MPG	EPA size class
1) Oldsmobile Supreme	467,683	.051	20.9	Midsize
2) Chevrolet Citation (X-Car)	377,089	.041	25.0	Midsize
3) Chevrolet Chevette	375,396	.041	28.3	Subcompact
4) Chevrolet	307,395	.034	20.2	Large
5) Ford Fairmont	294,277	.032	23.2	Midsize
6) Chevrolet Malibu	276,767	.030	21.2	Midsize
7) Toyota Corolla	257,812	.028	30.4	Subcompact
8) Ford Mustang	246,008	.027	23.5	Subcompact
9) Buick Regal	192,507	.021	20.7	Midsize
10) Volkswagen Rabbit-American	191,166	.021	34.6	Subcompact
11) Nissan Sentra (210)	188,672	.021	33.6	Subcompact
12) Chevrolet Monte Carlo	177,124	.019	20.3	Midsize
13) Honda Accord	176,954	.019	27.5	Subcompact
14) Ford Thunderbird	164,795	.018	20.6	Midsize
15) Ford LTD Crown Victoria	161,537	.018	19.2	Large
16) Buick Skylark (X-Car)	161,310	.018	24.3	Compact
17) Ford Pinto	159,709	.018	27.0	Minicompact
18) Oldsmobile 88	156,355	.017	20.7	Large
19) Cadillac DeVille	147,744	.016	18.7	Large
20) Toyota Celica	145,485	.016	24.6	Subcompact
21) Chevrolet Monza	143,609	.016	24.6	Subcompact
22) Subaru	140,425	.015	30.5	Subcompact
23) Plymouth Horizon	134,806	.015	27.0	Subcompact
24) Honda Civic	133,111	.015	34.7	Minicompact
25) Chevrolet Camaro	131,066	.014	18.9	Subcompact
26) Buick Century	130,763	.014	20.2	Midsize
27) Pontiac Grand Prix	123,283	.014	21.3	Midsize
28) Pontiac	119,880	.013	20.1	Large
29) Pontiac Sunbird	119,563	.013	25.3	Subcompact
30) Dodge Omni	110,708	.012	27.0	Subcompact
31) Nissan 310	99,575	.011	34.2	Subcompact
32) Pontiac Phoenix (X-Car)	95,506	.011	25.4	Midsize
33) Pontiac Firebird	95,449	.010	18.5	Subcompact
34) Toyota Tercel	94,503	.010	35.6	Subcompact
35) Buick Le Sabre	94,206	.010	19.1	Large
36) Ford Granada	92,410	.010	19.2	Compact
37) Plymouth Volare	91,442	.010	19.5	Midsize
38) Nissan 200SX	86,345	.009	30.9	Subcompact
39) Mercury Zephyr	85,946	.009	23.2	Midsize
40) Pontiac Le Mans	84,975	.009	21.4	Midsize
41) Oldsmobile Omega (X-Car)	80,152	.009	24.7	Compact
42) Oldsmobile 98	74,497	.008	20.0	Large
43) Nissan 280ZX	71,594	.008	23.5	Two seater
44) AMC Concord	70,336	.008	21.8	Compact
45) Mercury Cougar XR-7	69,572	.008	20.7	Midsize
46) Dodge Aspen	68,898	.008	19.5	Midsize
47) Buick Electra	68,890	.008	18.1	Large
48) Ford Fiesta	68,841	.008	30.0	Subcompact
49) Mazda GLC	68,231	.008	33.1	Subcompact
50) Mercury Capri	67,538	.007	23.7	Subcompact
51) Nissan Stanza (510)	66,468	.007	32.5	Subcompact
52) Chrysler Le Baron	66,083	.007	18.6	Midsize
53) Mercury Grand Marquis	58,008	.006	19.2	Large
54) AMC Spirit	55,392	.006	22.0	Subcompact
55) Dodge Colt Hatchback	54,313	.006	36.4	Subcompact
56) Cadillac Eldorado	51,775	.006	18.3	Midsize
57) Chrysler Cordoba	50,580	.006	17.7	Midsize
58) Mazda 626	47,597	.005	26.9	Subcompact
59) Honda Prelude	47,041	.005	27.6	Minicompact
60) Lincoln Continental Mark VI	44,978	.005	18.5	Large
61) Buick Riviera	42,711	.005	19.0	Midsize
62) Mazda RX-7	41,500	.005	19.7	Two seater
63) Cadillac Seville	39,480	.004	19.0	Midsize
64) Volvo DL	39,087	.004	21.7	Compact
65) Plymouth Colt	38,941	.004	36.3	Subcompact
66) Oldsmobile Toronado	38,289	.004	20.5	Midsize

Table E.3 (Cont'd)

	Model year sales	Ratio of total sales	Sales weighted MPG	EPA size class
67) Chevrolet Corvette	37,471	.004	16.9	Two seater
68) Toyota Camry(Corona)	37,352	.004	23.8	Subcompact
69) Lincoln Continental	35,845	.004	18.5	Large
70) Chrysler	35,089	.004	15.7	Large
71) Mercury Monarch	32,628	.004	19.2	Compact
72) Dodge Diplomat	32,317	.004	19.4	Midsize
73) Mercury Bobcat	31,419	.003	26.5	Minicompact
74) Dodge Mirada	27,349	.003	17.8	Midsize
75) Audi 5000 (Gas)	26,610	.003	22.7	Compact
76) BMW 320 I	25,771	.003	28.8	Subcompact
77) Volkswagen Dasher	24,286	.003	32.3	Subcompact
78) Toyota Supra	23,878	.003	22.5	Subcompact
79) Renault Le Car	23,201	.003	33.0	Minicompact
80) Volkswagen Scirocco	21,297	.002	29.5	Subcompact
81) Plymouth Arrow	18,657	.002	28.7	Minicompact
82) Dodge St Regis	18,392	.002	15.6	Large
83) Fiat 138 Strada	15,720	.002	27.9	Compact
84) Volvo 760 GLE	15,430	.002	18.6	Compact
85) JRT MG	14,872	.002	20.0	Two seater
86) Audi 4000	14,664	.002	25.3	Subcompact
87) JRT Triumph	14,643	.002	24.7	Two seater
88) Plymouth Gran Fury	13,374	.001	15.6	Large
89) Mercedes Benz 300 SD	13,093	.001	27.0	Compact
90) Dodge Challenger	13,059	.001	24.7	Subcompact
91) Toyota Cressida	12,193	.001	23.0	Subcompact
92) Mercedes Benz 300 D/300 CD	11,425	.001	25.7	Compact
93) Saab 900	11,374	.001	22.4	Midsize
94) Peugeot 505 (Gas)	11,094	.001	20.3	Compact
95) Plymouth Conquest(Sapporo)	10,311	.001	24.7	Subcompact
96) Mercedes Benz 240 D	9,213	.001	28.4	Compact
97) Buick Skyhawk	8,746	.001	21.1	Subcompact
98) Oldsmobile Starfire	8,550	.001	22.4	Subcompact
99) Fiat X 1/9	8,487	.001	29.0	Two seater
100) Volkswagen Jetta	8,157	.001	28.9	Subcompact
101) Fiat Brava	7,882	.001	24.8	Subcompact
102) Fiat Spider	7,711	.001	26.8	Two seater
103) Nissan Maxima (810)	7,441	.001	23.3	Subcompact
104) BMW 528 I	7,186	.001	21.3	Subcompact
105) Volkswagen Beetle	6,995	.001	24.0	Minicompact
106) Volkswagen Rabbit-Convertible	6,787	.001	33.9	Minicompact
107) Lincoln Versailles	6,645	.001	17.0	Compact
108) Mercedes Benz 450 SL(107)	6,426	.001	18.0	Two seater
109) Porsche 924	6,127	.001	22.4	Two seater
110) Ford LTD II	5,356	.001	14.9	Midsize
111) Mercedes Benz 450 SEL	3,844		18.0	Midsize
112) AMC Pacer	3,733		20.1	Compact
113) Alfa Romeo	3,542		21.0	Two seater
114) Checker	3,318		16.5	Midsize
115) Porsche 911	3,226		19.0	Two seater
116) Jaguar XJ/XJS	3,033		14.0	Compact
117) Saab 99	2,634		25.0	Compact
118) BMW 733 I	2,066		19.0	Compact
119) Lancia Beta	1,991		22.4	Subcompact
120) Mercedes Benz 450 SLC	1,643		18.0	Subcompact
121) Porsche 928	1,426		18.0	Minicompact
122) Mercedes Benz 280 E	1,378		18.0	Compact
123) Volkswagen Rabbit	1,261		45.0	Subcompact
124) BMW 633 CSI	949		19.0	Subcompact
125) Mercedes Benz 280 S	692		17.0	Compact
126) Mercedes Benz 280 SE	539		17.0	Compact
127) Porsche 930	365		15.0	Two seater
128) JRT Rover	195		18.0	Compact
	9,094,506	1.000	23.2	

Table E.4
133 Cars for Model Year 1981 Ranked by Sales

	Model year sales	Ratio of total sales	Sales weighted MPG	EPA size class
1) Oldsmobile Supreme	488,657	.055	22.4	Midsize
2) Chevrolet Chevette	376,758	.042	30.6	Subcompact
3) Chevrolet Citation (X-Car)	321,023	.036	26.0	Midsize
4) Ford Escort	284,633	.032	32.4	Compact
5) Toyota Corolla	254,083	.029	31.1	Subcompact
6) Chevrolet Malibu	242,856	.027	22.2	Midsize
7) Ford Fairmont	223,591	.025	23.5	Midsize
8) Chevrolet	216,630	.024	21.4	Large
9) Buick Regal	213,533	.024	22.6	Midsize
10) Buick Skylark (X-Car)	202,933	.023	26.0	Compact
11) Honda Accord	188,044	.021	28.4	Subcompact
12) Plymouth Reliant	180,103	.020	27.4	Midsize
13) Chevrolet Monte Carlo	175,155	.020	21.7	Midsize
14) Ford Mustang	173,329	.020	24.7	Subcompact
15) Oldsmobile 88	161,766	.018	22.0	Large
16) Nissan Sentra (210)	161,573	.018	35.2	Subcompact
17) Volkswagen Rabbit-American	159,588	.018	39.1	Subcompact
18) Honda Civic	158,127	.018	36.1	Minicompact
19) Subaru	150,884	.017	32.1	Subcompact
20) Buick Century	150,267	.017	22.0	Midsize
21) Pontiac Grand Prix	138,221	.016	23.6	Midsize
22) Dodge Aries	137,066	.015	27.5	Midsize
23) Plymouth Horizon	136,909	.015	30.4	Compact
24) Cadillac DeVille	135,747	.015	18.6	Large
25) Ford LTD Crown Victoria	120,410	.014	19.3	Large
26) Toyota Tercel	115,841	.013	35.8	Subcompact
27) Dodge Omni	111,147	.013	30.7	Compact
28) Chevrolet Camaro	109,707	.012	20.1	Subcompact
29) Oldsmobile Omega (X-Car)	109,199	.012	26.2	Compact
30) Ford Granada	105,743	.012	21.3	Midsize
31) Toyota Celica	103,505	.012	28.6	Subcompact
32) Pontiac	98,955	.011	22.1	Large
33) Pontiac Phoenix (X-Car)	91,209	.010	26.3	Midsize
34) Mercury Lynx	90,961	.010	32.3	Compact
35) Nissan 310	84,123	.009	33.4	Subcompact
36) Oldsmobile 98	83,332	.009	22.1	Large
37) Buick Le Sabre	81,244	.009	21.6	Large
38) Ford Thunderbird	80,942	.009	20.8	Midsize
39) Nissan 200SX	79,636	.009	30.3	Subcompact
40) Pontiac Le Mans	77,642	.009	23.7	Midsize
41) Mercury Zephyr	68,283	.008	23.4	Midsize
42) Mazda GLC	67,434	.008	37.5	Subcompact
43) Nissan 280ZX	65,479	.007	23.7	Two seater
44) AMC Concord	63,740	.007	23.1	Compact
45) Pontiac Firebird	61,460	.007	19.3	Subcompact
46) Mazda 626	61,047	.007	30.9	Subcompact
47) Buick Electra	59,722	.007	21.1	Large
48) Cadillac Eldorado	55,268	.006	19.0	Midsize
49) Mercury Capri	53,491	.006	24.7	Subcompact
50) Pontiac Sunbird	53,131	.006	22.7	Subcompact
51) Chrysler Le Baron	53,075	.006	19.7	Midsize
52) Mercury Grand Marquis	52,563	.006	19.2	Large
53) Mazda RX-7	50,505	.006	23.6	Two seater
54) Honda Prelude	49,025	.006	28.7	Minicompact
55) Buick Riviera	48,487	.005	19.5	Midsize
56) Ford Fiesta	47,707	.005	30.0	Subcompact
57) Nissan Stanza (510)	47,242	.005	32.3	Subcompact
58) Mercury Cougar	45,040	.005	21.0	Midsize
59) Chevrolet Cavalier	43,855	.005	31.6	Subcompact
60) Pontiac T1000	43,098	.005	30.6	Subcompact
61) AMC Eagle	42,904	.005	20.4	Compact
62) Chevrolet Monza	42,014	.005	22.7	Subcompact
63) Ford EXP	41,601	.005	33.1	Two seater
64) Dodge Colt Hatchback	41,288	.005	36.5	Subcompact
65) Plymouth Colt	40,050	.005	36.4	Subcompact
66) Volvo DL	39,752	.004	22.5	Compact
67) Oldsmobile Toronado	39,551	.004	20.6	Midsize

Table E.4 (Cont'd)

	Model year sales	Ratio of total sales	Sales weighted MPG	EPA size class
68) AMC Spirit	38,334	.004	23.1	Subcompact
69) Pontiac J2000	37,502	.004	31.5	Subcompact
70) Mercury Cougar XR-7	34,324	.004	20.2	Midsize
71) Lincoln Continental Mark VI	34,210	.004	19.0	Large
72) Toyota Starlet	33,870	.004	44.0	Minicompact
72) Toyota Starlet	33,870	.004	44.0	Minicompact
73) Chevrolet Corvette	33,414	.004	17.0	Two seater
74) Dodge Diplomat	31,066	.003	19.6	Midsize
75) Lincoln Continental	31,038	.003	19.0	Large
76) Chrysler Cordoba	30,644	.003	20.0	Midsize
77) Nissan Maxima (810)	29,221	.003	26.0	Subcompact
78) BMW 320 I	28,927	.003	28.8	Subcompact
79) Audi 5000 (Gas)	28,649	.003	23.9	Compact
80) Ford Pinto	27,795	.003	27.0	Minicompact
81) Cadillac Seville	26,622	.003	19.2	Midsize
82) Toyota Camry(Corona)	25,549	.003	29.0	Subcompact
83) Volkswagen Jetta	24,773	.003	29.7	Subcompact
84) Toyota Cressida	24,174	.003	25.0	Subcompact
85) Volkswagen Dasher	23,206	.003	31.8	Subcompact
86) Volkswagen Scirocco	19,210	.002	29.9	Subcompact
87) Audi 4000	18,585	.002	26.7	Subcompact
88) Renault Le Car	18,217	.002	33.0	Minicompact
89) Dodge Mirada	18,096	.002	20.0	Midsize
90) Chrysler New Yorker 5th Ave	15,453	.002	19.0	Large
91) Peugeot 505 (Gas)	15,156	.002	21.5	Compact
92) Plymouth Volare	15,113	.002	19.5	Midsize
93) Mercury LN7	13,954	.002	32.9	Two seater
94) Toyota Supra	13,849	.002	24.5	Subcompact
95) Mercedes Benz 300 SD	13,468	.002	28.0	Compact
96) Isuzu I-Mark	13,119	.001	34.7	Subcompact
97) Dodge Aspen	12,938	.001	19.5	Midsize
98) Plymouth Conquest(Sapporo)	12,709	.001	23.0	Subcompact
99) Dodge Challenger	12,391	.001	23.0	Subcompact
100) Volkswagen Rabbit-Convertible	12,162	.001	34.9	Subcompact
101) JRT Triumph	11,510	.001	22.5	Two seater
102) Fiat 138 Strada	11,255	.001	30.6	Compact
103) Saab 900	10,955	.001	23.0	Compact
104) Mercedes Benz 240 D	10,731	.001	29.4	Compact
105) Renault 18I	10,431	.001	27.8	Subcompact
106) Mercedes Benz 300 D/300 CD	10,403	.001	26.0	Compact
107) Plymouth Gran Fury	9,001	.001	19.0	Large
108) Fiat Spider	8,937	.001	28.1	Two seater
109) BMW 528 I	8,062	.001	21.4	Subcompact
110) Dodge St Regis	7,556	.001	19.0	Large
111) Fiat X 1/9	6,994	.001	30.0	Two seater
112) Fiat Brava	6,822	.001	26.8	Subcompact
113) Chrysler Imperial	6,368	.001	20.0	Midsize
114) Mercury Bobcat	5,719	.001	26.4	Minicompact
115) Porsche 924	4,875	.001	24.2	Two seater
116) Jaguar XJ/XJS	4,081		17.0	Compact
117) Dodge Charger D24	4,007		30.9	Subcompact
118) Porsche 911	3,714		20.0	Two seater
119) Plymouth Turismo (TC3)	3,200		32.6	Subcompact
120) Checker	2,923		16.5	Midsize
121) Alfa Romeo	1,951		23.0	Two seater
122) BMW 733 I	1,948		19.0	Compact
123) Porsche 928	1,745		18.5	Minicompact
124) Lancia Beta	1,354		22.0	Subcompact
125) Plymouth Arrow	1,250		28.7	Minicompact
126) BMW 633 CSI	1,099		19.0	Subcompact
127) Mercedes Benz 280 E	931		18.0	Compact
128) Ferrari	899		13.0	Minicompact
129) JRT Rover	877		18.0	Compact
130) Lincoln Versailles	334		17.0	Compact
131) AMC Pacer	228		20.1	Compact
132) Volkswagen Beetle	55		24.0	Minicompact
133) Porsche 930	28		15.0	Two seater
	8,879,865	1.000	25.3	

Table E.5
136 Cars for Model Year 1982 Ranked by Sales

	Model year sales	Ratio of total sales	Sales weighted MPG	EPA size class
1) Ford Escort	321,952	.042	33.8	Compact
2) Oldsmobile Supreme	293,979	.038	23.9	Midsize
3) Chevrolet Chevette	233,858	.031	32.6	Subcompact
4) Chevrolet Citation (X-Car)	209,545	.027	28.5	Midsize
5) Chevrolet	209,514	.027	21.3	Large
6) Honda Accord	180,407	.024	32.0	Subcompact
7) Nissan Sentra (210)	176,896	.023	36.3	Subcompact
8) Toyota Corolla	174,710	.023	31.0	Subcompact
9) Oldsmobile 88	168,550	.022	21.0	Large
10) Buick Skylark (X-Car)	157,103	.021	28.0	Compact
11) Buick Century	152,658	.020	26.4	Midsize
12) Plymouth Reliant	151,279	.020	27.7	Midsize
13) Buick Regal	148,893	.019	22.5	Midsize
14) Chevrolet Camaro	148,619	.019	22.2	Subcompact
15) Cadillac DeVille	145,075	.019	18.5	Large
16) Subaru	144,902	.019	33.6	Subcompact
17) Honda Civic	134,054	.018	39.6	Minicompact
18) Ford Fairmont	128,930	.017	23.2	Midsize
19) Toyota Tercel	127,329	.017	35.4	Subcompact
20) Chevrolet Malibu	121,206	.016	23.4	Midsize
21) Chevrolet Cavalier	120,587	.016	31.8	Compact
22) Ford LTD Crown Victoria	118,527	.015	20.5	Large
23) Ford Mustang	116,804	.015	23.4	Subcompact
24) Toyota Celica	113,599	.015	28.7	Subcompact
25) Dodge Aries	112,761	.015	27.8	Midsize
26) Ford Granada	111,468	.015	21.5	Midsize
27) Volkswagen Rabbit-American	107,396	.014	38.5	Subcompact
28) Chevrolet Monte Carlo	105,721	.014	23.0	Midsize
29) Buick Le Sabre	102,424	.013	20.8	Large
30) Mercury Lynx	98,062	.013	33.8	Compact
31) Pontiac Grand Prix	88,821	.012	23.2	Midsize
32) Oldsmobile 98	86,338	.011	21.9	Large
33) Pontiac Firebird	83,810	.011	22.0	Subcompact
34) Chrysler Le Baron	81,598	.011	27.5	Midsize
35) Oldsmobile Omega (X-Car)	78,707	.010	28.6	Compact
36) Oldsmobile Ciera	78,542	.010	27.4	Midsize
37) Pontiac Bonneville	74,055	.010	23.3	Midsize
38) Volvo DL	70,827	.009	25.7	Compact
39) Mercury Grand Marquis	69,784	.009	20.5	Large
40) Chevrolet Celebrity	67,475	.009	27.6	Midsize
41) Mazda 626	60,499	.008	29.8	Subcompact
42) Nissan 280ZX	59,853	.008	24.2	Two seater
43) Pontiac J2000	59,018	.008	31.7	Compact
44) Buick Electra	57,706	.008	20.7	Large
45) Lincoln Continental	56,267	.007	20.0	Midsize
46) Nissan Stanza (510)	55,897	.007	37.0	Compact
47) Mazda GLC	55,760	.007	37.3	Subcompact
48) Pontiac Phoenix (X-Car)	54,762	.007	29.0	Midsize
49) Cadillac Eldorado	54,724	.007	20.4	Midsize
50) Nissan 200SX	54,622	.007	29.1	Subcompact
51) Pontiac T1000	52,558	.007	32.0	Subcompact
52) Chrysler New Yorker 5th Ave	51,757	.007	20.0	Midsize
53) Plymouth Horizon	50,699	.007	32.1	Compact
54) Nissan 310	50,582	.007	38.0	Subcompact
55) Mercury Cougar	49,438	.006	21.5	Midsize
56) Ford Thunderbird	47,903	.006	21.1	Midsize
57) Nissan Maxima (810)	47,630	.006	25.4	Subcompact
58) Ford EXP	43,049	.006	33.1	Two seater
59) Buick Riviera	43,008	.006	19.8	Midsize
60) Mazda RX-7	41,688	.005	23.6	Two seater
61) Dodge Colt Hatchback	41,577	.005	37.2	Subcompact
62) Dodge Charger 024	41,547	.005	33.0	Subcompact
63) Plymouth Colt	40,431	.005	37.3	Subcompact
64) Mercury Zephyr	40,146	.005	23.2	Midsize
65) Dodge Omni	39,993	.005	32.2	Compact
66) Plymouth Turismo (TC3)	38,776	.005	32.6	Subcompact
67) AMC Eagle	37,153	.005	21.3	Compact
68) Honda Prelude	37,137	.005	31.6	Minicompact

Table E.5 (Cont'd)

	Model year sales	Ratio of total sales	Sales weighted MPG	EPA size class
69) Pontiac A6000	36,564	.005	28.4	Midsize
70) AMC Concord	36,505	.005	23.6	Compact
71) BMW 320 I	35,190	.005	28.8	Subcompact
72) Toyota Cressida	34,616	.005	25.0	Subcompact
73) Oldsmobile Toronado	33,322	.004	20.2	Midsize
74) Buick Skyhawk	32,952	.004	30.9	Compact
75) Toyota Supra	31,270	.004	25.7	Subcompact
76) Mercury Capri	29,956	.004	23.2	Subcompact
77) Audi 5000 (Gas)	26,298	.003	22.4	Compact
78) Lincoln Continental Mark VI	25,386	.003	20.0	Large
79) Dodge 400	24,090	.003	27.6	Midsize
80) Dodge Diplomat	23,928	.003	20.0	Midsize
81) Cadillac Seville	22,334	.003	20.5	Midsize
82) Chevrolet Corvette	22,086	.003	19.0	Two seater
83) Volkswagen Jetta	21,561	.003	37.5	Subcompact
84) Toyota Starlet	20,459	.003	43.0	Minicompact
85) Renault Le Car	19,978	.003	35.0	Minicompact
86) Oldsmobile Firenza	19,562	.003	31.2	Subcompact
87) AMC Spirit	18,152	.002	25.3	Subcompact
88) Plymouth Gran Fury	17,793	.002	20.0	Midsize
89) Mercury Cougar XR-7	17,732	.002	21.2	Midsize
90) Saab 900	17,365	.002	23.6	Compact
91) Audi 4000	16,364	.002	30.2	Subcompact
92) Chrysler Cordoba	16,273	.002	19.7	Midsize
93) Mercedes Benz 300 SD	16,138	.002	29.0	Compact
94) Isuzu I-Mark	15,168	.002	37.3	Subcompact
95) Mercedes Benz 300 D/300 CD	15,115	.002	28.0	Compact
96) Cadillac Cimarron	14,899	.002	31.0	Compact
97) Mercury LN7	14,589	.002	32.6	Two seater
98) Dodge Challenger	14,340	.002	27.0	Subcompact
99) Mercedes Benz 240 D	12,970	.002	28.5	Compact
100) Plymouth Conquest(Sapporo)	12,607	.002	27.0	Subcompact
101) Volkswagen Scirocco	12,436	.002	32.5	Subcompact
102) Pontiac	12,257	.002	22.1	Large
103) Peugeot 505 (Diesel/Turbo)	10,118	.001	29.0	Compact
104) Renault 18I	9,693	.001	27.0	Subcompact
105) Volkswagen Quantum	8,570	.001	28.9	Compact
106) Volkswagen Rabbit-Convertible	8,531	.001	31.3	Subcompact
107) Jaguar XJ/XJS	8,296	.001	19.0	Subcompact
108) Dodge Mirada	8,073	.001	20.0	Midsize
109) Mercedes Benz 380 SL	7,889	.001	19.0	Two seater
110) BMW 528 I	7,045	.001	24.1	Compact
111) Renault Fuego	6,865	.001	26.0	Subcompact
112) Toyota Camry(Corona)	6,656	.001	28.0	Subcompact
113) Fiat Spider	6,656	.001	28.5	Two Seater
114) Porsche 911	4,310	.001	20.0	Minicompact
115) Fiat 138 Strada	3,732		31.8	Compact
116) Audi Coupe	3,697		26.8	Subcompact
117) Peugeot 505 (Gas)	3,622		24.1	Compact
118) Porsche 924	3,620		24.4	Minicompact
119) Fiat Brava	3,487		27.6	Subcompact
120) Fiat X 1/9	3,189		30.0	Two seater
121) Chrysler Imperial	2,807		19.0	Midsize
122) Checker	2,731		16.5	Midsize
123) BMW 733 I	2,709		20.4	Compact
124) Mercedes Benz 380 SEL/500 SEL	2,538		19.0	Midsize
125) Alfa Romeo	2,211		24.9	Two seater
126) Porsche 928	2,136		19.0	Minicompact
127) Volkswagen Dasher	1,826		41.0	Subcompact
128) Mercedes Benz 380 SLC	1,349		19.0	Compact
129) BMW 633 CSI	1,027		21.0	Subcompact
130) Lancia Beta	877		22.0	Subcompact
131) Peugeot 604	815		26.4	Compact
132) Ferrari	757		13.0	Two seater
133) JRT Triumph	710		22.5	Two seater
134) JRT MG	252		20.0	Two seater
135) JRT Rover	182		18.0	Compact
136) Volkswagen Beetle	5		24.0	Minicompact
	7,658,171	1.000	26.3	

Table E.6
156 Cars for Model Year 1983 Ranked by Sales

	Model year sales	Ratio of total sales	Sales weighted MPG	EPA size class
1) Ford Escort	323,900	.037	33.0	Compact
2) Oldsmobile Supreme	314,473	.036	23.3	Midsize
3) Chevrolet	226,750	.026	21.3	Large
4) Oldsmobile 88	218,604	.025	20.4	Large
5) Chevrolet Cavalier	216,324	.025	30.4	Compact
6) Nissan Sentra (210)	212,438	.024	37.6	Subcompact
7) Buick Regal	201,872	.023	23.0	Midsize
8) Chevrolet Chevette	183,970	.021	33.2	Subcompact
9) Honda Accord	177,169	.020	35.5	Subcompact
10) Chevrolet Camaro	175,004	.020	21.5	Subcompact
11) Cadillac DeVille	173,086	.020	15.1	Large
12) Oldsmobile Ciera	169,939	.019	26.8	Midsize
13) Buick Century	165,947	.019	25.5	Midsize
14) Plymouth Reliant	161,757	.018	28.6	Midsize
15) Chevrolet Celebrity	155,765	.018	27.8	Midsize
16) Subaru	152,427	.017	34.3	Subcompact
17) Toyota Tercel	150,968	.017	38.7	Subcompact
18) Toyota Corolla	142,832	.016	35.7	Subcompact
19) Ford LTD 83	142,817	.016	23.5	Midsize
20) Buick Le Sabre	140,272	.016	20.6	Large
21) Honda Civic	139,169	.016	41.1	Minicompact
22) Ford LTD Crown Victoria	126,821	.014	20.0	Large
23) AMC Renault Alliance	124,687	.014	36.7	Compact
24) Dodge Aries	124,650	.014	28.7	Midsize
25) Toyota Celica	119,140	.014	29.7	Subcompact
26) Chevrolet Citation (X-Car)	116,460	.013	29.7	Midsize
27) Ford Mustang	116,120	.013	22.2	Subcompact
28) Oldsmobile 98	113,794	.013	20.4	Large
29) Chevrolet Malibu	107,949	.012	22.5	Midsize
30) Buick Skylark (X-Car)	107,363	.012	28.0	Compact
31) Ford Thunderbird	99,176	.011	23.1	Compact
32) Chevrolet Monte Carlo	98,865	.011	22.1	Midsize
33) Mercury Grand Marquis	97,341	.011	20.0	Large
34) Pontiac Firebird	93,360	.011	21.9	Subcompact
35) Pontiac Grand Prix	87,026	.010	22.8	Midsize
36) Pontiac A6000	84,816	.010	28.3	Midsize
37) Volkswagen Rabbit-American	83,222	.009	35.6	Subcompact
38) Pontiac Bonneville	81,964	.009	22.7	Midsize
39) Chrysler Le Baron	80,566	.009	27.3	Midsize
40) Mercury Lynx	79,962	.009	32.8	Compact
41) Pontiac J2000	79,509	.009	33.5	Compact
42) Chrysler New Yorker 5th Ave	77,700	.009	20.0	Midsize
43) Ford Fairmont	77,669	.009	21.4	Midsize
44) Buick Electra	75,691	.009	19.4	Large
45) Nissan Maxima (810)	71,711	.008	28.1	Subcompact
46) Ford Tempo	70,986	.008	31.3	Compact
47) Chrysler New Yorker-E Class	70,104	.008	26.6	Midsize
48) Buick Skyhawk	69,946	.008	31.8	Compact
49) Nissan 280ZX	68,575	.008	23.0	Two seater
50) Cadillac Eldorado	67,760	.008	20.1	Midsize
51) Nissan Stanza (510)	66,330	.008	33.1	Compact
52) Mercury Cougar XR-7	63,350	.007	23.1	Compact
53) Mazda 626	63,073	.007	31.9	Compact
54) Lincoln Town Car	59,335	.007	20.0	Large
55) Mercury Marquis	57,688	.007	23.5	Midsize
56) Mazda GLC	57,251	.007	38.5	Subcompact
57) Oldsmobile Omega (X-Car)	56,610	.006	28.2	Compact
58) Mazda RX-7	54,453	.006	22.8	Two seater
59) Plymouth Horizon	50,861	.006	33.9	Compact
60) Buick Riviera	48,803	.006	20.1	Midsize
61) Dodge Omni	45,843	.005	34.3	Compact
62) Dodge Charger 024	45,238	.005	33.5	Subcompact
63) Volvo DL	44,700	.005	27.2	Compact
64) Nissan Pulsar NX	43,680	.005	38.0	Subcompact
65) Oldsmobile Firenza	43,042	.005	31.5	Compact
66) Toyota Cressida	39,503	.005	25.0	Subcompact
67) Oldsmobile Toronado	38,718	.004	20.4	Midsize
68) Pontiac T1000	38,286	.004	33.1	Subcompact
69) Nissan 200SX	37,189	.004	29.8	Subcompact
70) Plymouth Turismo (TC3)	37,079	.004	33.7	Subcompact
71) Honda Prelude	35,538	.004	31.6	Minicompact
72) Toyota Camry (Corona)	35,054	.004	35.0	Compact
73) Dodge Colt Hatchback	34,702	.004	37.9	Subcompact
74) BMW 320 I	33,602	.004	29.8	Subcompact
75) Dodge 400	31,947	.004	27.5	Midsize
76) Pontiac Phoenix (X-Car)	31,742	.004	28.2	Midsize
77) AMC Eagle	31,604	.004	23.5	Compact
78) Plymouth Colt	31,490	.004	38.1	Subcompact

Table E.6 (Cont'd)

	Model year sales	Ratio of total sales	Sales weighed MPG	EPA size class
79) Cadillac Seville	30,334	.003	20.1	Midsize
80) Dodge 600	30,042	.003	26.7	Midsize
81) Honda Accord-American	29,898	.003	35.5	Subcompact
82) Lincoln Continental Mark VI	29,786	.003	20.0	Large
83) Toyota Supra	28,272	.003	24.3	Subcompact
84) Ford EXP	26,471	.003	32.4	Two seater
85) Chevrolet Corvette	25,891	.003	20.0	Two seater
86) Mercury Capri	25,500	.003	22.6	Subcompact
87) Dodge Diplomat	25,071	.003	20.4	Midsize
88) Saab 900	24,071	.003	25.4	Compact
89) Nissan Pulsar (310)	22,247	.003	37.0	Subcompact
90) Mercury Topaz	21,745	.002	30.5	Compact
91) Mercury Zephyr	21,626	.002	21.3	Midsize
92) Mercedes Benz 300 D/300 CD	20,580	.002	29.6	Compact
93) Volkswagen Jetta	19,154	.002	38.4	Subcompact
94) Cadillac Cimarron	18,958	.002	28.0	Compact
95) Audi 5000 (Gas)	18,437	.002	22.3	Compact
96) Mercedes Benz 300 SD	17,223	.002	29.0	Compact
97) AMC Concord	16,576	.002	24.0	Compact
98) Renault Le Car	16,484	.002	37.0	Minicompact
99) Lincoln Continental	16,205	.002	20.0	Midsize
100) Volkswagen Quantum	16,094	.002	30.3	Compact
101) Plymouth Gran Fury	15,867	.002	20.3	Midsize
102) Ford Granada	15,401	.002	21.5	Midsize
103) Dodge Challenger	14,760	.002	27.0	Subcompact
104) Isuzu I-Mark	14,727	.002	37.6	Subcompact
105) Jaguar XJ/XJS	14,675	.002	17.9	Subcompact
106) Pontiac	14,459	.002	22.1	Large
107) BMW 528 I	14,298	.002	22.4	Compact
108) Mercedes Benz 240 D	14,271	.002	29.8	Compact
109) Volkswagen Scirocco	14,184	.002	33.6	Subcompact
110) Chrysler Cordoba	13,569	.002	20.0	Midsize
111) Plymouth Conquest (Sapporo)	13,018	.001	27.0	Subcompact
112) Renault Fuego	13,003	.001	30.0	Subcompact
113) Volvo GL	12,956	.001	26.8	Compact
114) Porsche 944	12,144	.001	25.8	Minicompact
115) Volvo GLT	11,823	.001	22.4	Compact
116) Audi 4000	11,806	.001	29.3	Subcompact
117) Mitsubishi Tredia	11,083	.001	34.3	Subcompact
118) Mitsubishi Cordia	10,422	.001	34.3	Subcompact
119) Toyota Starlet	9,779	.001	49.0	Minicompact
120) Volkswagen Rabbit-Convertible	9,768	.001	33.1	Minicompact
121) Mercedes Benz 380 SL	9,216	.001	20.0	Two seater
122) Audi 5000 (Diesel/Turbo)	8,889	.001	24.1	Compact
123) Volvo Diesel Sedan	8,423	.001	30.1	Compact
124) Peugeot 505 (Gas)	8,122	.001	23.9	Compact
125) Mercury LN7	6,932	.001	32.3	Two seater
126) AMC Spirit	6,487	.001	24.5	Subcompact
127) Peugeot 505 (Diesel/Turbo)	5,721	.001	28.6	Compact
128) Isuzu Impulse	5,720	.001	27.7	Subcompact
129) Mitsubishi Starion	5,644	.001	25.0	Subcompact
130) Renault 18I	5,470	.001	29.2	Subcompact
131) Dodge Mirada	5,463	.001	20.2	Midsize
132) Porsche 911	5,313	.001	20.0	Minicompact
133) BMW 733 I	5,299	.001	20.4	Compact
134) Mercury Cougar	5,218	.001	23.1	Compact
135) Fiat Spider	4,190		28.1	Two seater
136) Mercedes Benz 380 SEL/500 SEL	3,801		20.0	Midsize
137) Audi Coupe	3,764		25.3	Subcompact
138) AMC Renault Encore	3,651		36.1	Compact
139) Alfa Romeo	3,104		27.0	Two seater
140) Volvo 760 GLE	3,077		28.3	Midsize
141) BMW 633 CSI	2,364		21.0	Subcompact
142) Porsche 928	2,325		19.0	Minicompact
143) Mercedes Benz 380 SLC	2,251		20.0	Compact
144) Fiat X 1/9	2,053		30.0	Two seater
145) Pontiac Fiero	2,015		31.0	Two seater
146) Chrysler Imperial	1,725		19.0	Midsize
147) Audi 4000 (Diesel)	1,711		44.0	Subcompact
148) Lancia Beta	949		22.0	Subcompact
149) Chrysler Laser	925		26.9	Subcompact
150) Dodge Daytona	802		27.2	Subcompact
151) Peugeot 604	544		29.3	Compact
152) Ferrari	542		13.0	Two seater
153) Mercedes Benz 190 D 2.2	498		33.7	Subcompact
154) Audi Quatro	359		21.0	Subcompact
155) Porsche 924	27		24.4	Minicompact
156) Volkswagen Dasher	24		41.0	Subcompact
	8,770,413	1.000	26.1	

Table E.7
167 Cars for Model Year 1984 Ranked by Sales

	Model year sales	Ratio of total sales	Sales weighted MPG	EPA size class
1) Chevrolet Cavalier	371,836	.036	32.2	Compact
2) Ford Escort	338,849	.033	34.2	Compact
3) Oldsmobile Supreme	334,060	.033	23.7	Midsize
4) Chevrolet Celebrity	307,777	.030	26.0	Midsize
5) Chevrolet	264,625	.026	20.2	Large
6) Oldsmobile 88	259,937	.025	20.7	Large
7) Ford Tempo	255,727	.025	31.3	Compact
8) Oldsmobile Ciera	252,569	.025	26.7	Midsize
9) Buick Century	208,745	.020	25.8	Midsize
10) Chevrolet Camaro	207,285	.020	22.6	Subcompact
11) Buick Regal	204,381	.020	22.4	Midsize
12) Cadillac DeVille	198,246	.019	20.1	Large
13) Ford LTD 83	198,109	.019	24.0	Midsize
14) Nissan Sentra (210)	192,185	.019	37.6	Subcompact
15) Chevrolet Chevette	180,341	.018	34.7	Subcompact
16) Buick Le Sabre	161,763	.016	20.7	Large
17) Toyota Corolla	159,323	.016	37.6	Compact
18) Ford LTD Crown Victoria	157,068	.015	18.4	Large
19) Ford Thunderbird	156,583	.015	23.3	Compact
20) Subaru	150,494	.015	33.4	Subcompact
21) Plymouth Reliant	141,377	.014	27.6	Midsize
22) Honda Accord	139,152	.014	35.3	Subcompact
23) Ford Mustang	131,762	.013	23.8	Subcompact
24) Mercury Grand Marquis	131,515	.013	20.0	Large
25) Chevrolet Monte Carlo	127,875	.013	21.7	Midsize
26) Pontiac A6000	124,407	.012	26.2	Midsize
27) Pontiac J2000	123,937	.012	31.9	Compact
28) Honda Civic	123,185	.012	38.5	Subcompact
29) Honda Accord-American	117,180	.011	35.2	Subcompact
30) Buick Skyhawk	116,276	.011	31.7	Compact
31) Mercury Cougar XR-7	115,546	.011	23.3	Compact
32) Dodge Aries	110,939	.011	27.6	Midsize
33) Toyota Tercel	108,889	.011	38.7	Subcompact
34) Oldsmobile 98	107,335	.011	21.1	Large
35) Pontiac Firebird	105,628	.010	22.6	Subcompact
36) AMC Renault Alliance	105,340	.010	35.6	Compact
37) Buick Skylark (X-Car)	104,561	.010	26.4	Compact
38) Pontiac Fiero	99,705	.010	31.5	Two seater
39) Mercury Marquis	99,069	.010	24.0	Midsize
40) Chrysler Le Baron	96,256	.009	26.7	Midsize
41) Chevrolet Citation (X-Car)	93,386	.009	27.4	Midsize
42) Toyota Celica	90,784	.009	29.7	Subcompact
43) Buick Electra	88,397	.009	20.0	Large
44) Chrysler New Yorker-E Class	87,064	.009	26.1	Midsize
45) Toyota Camry(Corona)	85,477	.008	34.7	Compact
46) Volkswagen Rabbit-American	83,084	.008	35.2	Subcompact
47) Pontiac Grand Prix	78,673	.008	22.6	Midsize
48) Lincoln Town Car	77,475	.008	20.0	Large
49) Plymouth Horizon	75,542	.007	31.5	Compact
50) Mercury Topaz	74,811	.007	30.5	Compact
51) Pontiac Bonneville	73,797	.007	22.8	Midsize
52) Chrysler New Yorker 5th Ave	73,399	.007	19.0	Midsize
53) Cadillac Eldorado	72,694	.007	21.0	Midsize
54) AMC Renault Encore	72,076	.007	36.1	Compact
55) Nissan 300ZX	71,617	.007	23.5	Two seater
56) Mazda 626	68,617	.007	34.7	Compact
57) Mercury Lynx	66,572	.007	34.3	Compact
58) Honda Prelude	65,694	.006	31.3	Subcompact
59) Dodge Omni	65,675	.006	31.6	Compact
60) Nissan Maxima (810)	65,195	.006	27.0	Subcompact
61) Oldsmobile Firenza	59,490	.006	31.7	Compact
62) Pontiac	55,736	.005	21.5	Large
63) Buick Riviera	55,356	.005	20.0	Midsize
64) Mazda RX-7	53,598	.005	21.5	Two seater
65) Chrysler Laser	52,073	.005	26.9	Subcompact
66) Dodge Charger D24	51,799	.005	30.7	Subcompact
67) Nissan 200SX	51,056	.005	33.0	Subcompact
68) Volvo DL	47,781	.005	26.6	Compact
69) Nissan Stanza (510)	47,265	.005	32.3	Compact
70) Mazda GLC	46,271	.005	37.8	Subcompact
71) Plymouth Turismo (TC3)	46,013	.005	30.8	Subcompact
72) Audi 5000S	43,721	.004	22.5	Midsize
73) Oldsmobile Toronado	43,364	.004	20.1	Midsize
74) Dodge Daytona	42,596	.004	27.2	Subcompact
75) Nissan Pulsar NX	42,319	.004	37.5	Subcompact
76) Oldsmobile Omega (X-Car)	41,801	.004	27.5	Compact
77) Honda Civic CRX	37,938	.004	43.0	Two seater
78) Cadillac Seville	37,384	.004	21.0	Midsize
79) Dodge 600	36,864	.004	27.0	Midsize
80) Volkswagen Jetta	36,636	.004	32.1	Subcompact
81) Toyota Cressida	35,214	.003	24.9	Subcompact
82) Dodge Colt Hatchback	35,113	.003	37.8	Subcompact
83) Lincoln Mercury Mark VII	31,502	.003	20.0	Midsize

Table E.7 (Cont'd)

	Model year sales	Ratio of total sales	Sales weighted MPG	EPA size class
84) Plymouth Colt	31,106	.003	37.9	Subcompact
85) Saab 900	30,981	.003	25.8	Compact
86) BMW 320 I	30,868	.003	30.5	Subcompact
87) Toyota Supra	29,862	.003	24.4	Subcompact
88) Pontiac T1000	28,900	.003	34.7	Subcompact
89) Volvo GL	28,062	.003	26.2	Compact
90) Chevrolet Corvette	27,986	.003	20.0	Two seater
91) Lincoln Continental	27,776	.003	20.0	Midsize
92) Ford EXP	24,040	.002	31.8	Two seater
93) Dodge 400	23,443	.002	27.5	Midsize
94) AMC Eagle	23,137	.002	22.5	Compact
95) Dodge Diplomat	21,932	.002	17.6	Midsize
96) Mercedes Benz 300 D/300 CD	20,053	.002	29.0	Compact
97) Mercury Capri	19,499	.002	24.2	Subcompact
98) Cadillac Cimarron	19,273	.002	28.3	Compact
99) Volkswagen Scirocco	17,348	.002	29.9	Subcompact
100) Jaguar XJ/XJS	17,242	.002	18.4	Subcompact
101) Volkswagen Quantum	16,955	.002	26.3	Compact
102) Pontiac Phoenix (X-Car)	16,224	.002	27.1	Midsize
103) BMW 528 I	15,758	.002	24.3	Compact
104) Audi 4000	15,542	.002	31.3	Subcompact
105) Mitsubishi Tredia	15,079	.001	31.5	Subcompact
106) Mitsubishi Cordia	14,938	.001	31.3	Subcompact
107) Mercedes Benz 300 SD	14,608	.001	26.1	Compact
108) Peugeot 505 (Gas)	14,223	.001	23.6	Compact
109) Plymouth Gran Fury	14,221	.001	17.6	Midsize
110) Mercedes Benz 190 E 2.3	13,108	.001	30.6	Subcompact
111) Porsche 944	13,047	.001	25.8	Minicompact
112) Isuzu Impulse	13,014	.001	27.7	Subcompact
113) Renault Fuego	12,528	.001	29.5	Subcompact
114) Volvo 760 GLE	11,270	.001	24.7	Midsize
115) Volkswagen Rabbit-Convertible	10,830	.001	29.7	Minicompact
116) Volvo GLT	9,903	.001	22.4	Compact
117) BMW 325	9,252	.001	30.0	Subcompact
118) Mercedes Benz 380 SL	8,393	.001	20.0	Two seater
119) BMW 733 I	7,702	.001	23.0	Compact
120) Chevrolet Sprint	7,312	.001	50.0	Minicompact
121) Mitsubishi Starion	6,604	.001	25.0	Subcompact
122) Mercedes Benz 190 D 2.2	6,440	.001	33.7	Subcompact
123) Mercedes 380 SE	5,592	.001	25.2	Compact
124) Porsche 911	4,795		24.0	Minicompact
125) Chevrolet Malibu	4,781		22.5	Midsize
126) Isuzu I-Mark	4,717		35.4	Subcompact
127) Plymouth Conquest(Sapporo)	4,239		25.0	Subcompact
128) Peugeot 505 (Diesel/Turbo)	4,171		29.6	Compact
129) Mercedes Benz 380 SEL/500 SEL	4,135		17.0	Midsize
130) Audi Coupe	3,606		25.1	Subcompact
131) Audi 4000S Quattro	3,558		24.0	Subcompact
132) Renault 18i	3,549		28.0	Subcompact
133) Dodge Conquest	3,341		25.0	Subcompact
134) Alfa Romeo	3,291		27.0	Two seater
135) BMW 633 CSI	3,103		23.0	Subcompact
136) Porsche 928	2,440		20.0	Minicompact
137) Mercedes 500 SEC	1,674		17.0	Compact
138) Volvo Diesel Sedan	1,445		30.1	Compact
139) Dodge Challenger	1,424		27.0	Subcompact
140) Volkswagen Cabriolet	1,300		25.6	Minicompact
141) Toyota Scarlet	1,227		48.0	Minicompact
142) Plymouth Caravelle	1,007		21.9	Midsize
143) Mitsubishi Mirage	946		28.7	Subcompact
144) Dodge Mirada	706		20.2	Midsize
145) Mitsubishi Galant	679		23.0	Compact
146) Maserati	633		10.0	Midsize
147) Ferrari	585		13.0	Two seater
148) Chrysler Cordoba	567		20.0	Midsize
149) Mercury LN7	543		32.3	Two seater
150) Fiat Spider	460		28.1	Two seater
151) Fiat X 1/9	441		30.0	Two seater
152) Renault Le Car	417		37.0	Minicompact
153) Nissan Pulsar (310)	389		37.0	Subcompact
154) AMC Concord	386		24.0	Compact
155) AMC Spirit	336		24.5	Subcompact
156) Audi Quatro	287		21.0	Subcompact
157) I.A.I. Pininfarina	227		22.8	Two seater
158) I.A.I. Bertone	144		25.0	Two seater
159) Peugeot 604	136		29.4	Compact
160) Lancia Beta	105		22.0	Subcompact
161) Chrysler Imperial	84		19.0	Midsize
162) Buick Somerset	66		24.2	Compact
163) Mercedes Benz 240 D	61		29.8	Compact
164) Audi 4000 (Diesel)	52		44.0	Subcompact
165) Audi 5000 (Diesel/Turbo)	43		24.1	Compact
166) Oldsmobile Calais	29		24.2	Compact
167) Pontiac Grand AM	26		24.2	Compact
	10,211,058	1.000	26.3	

Table E.8
155 Cars for Model Year 1985 Ranked By Sales

	Model year sales	Ratio of total sales	Sales weighted MPG	EPA size class
1) Chevrolet Cavalier	422,927	.039	28.3	Compact
2) Ford Escort	410,978	.037	34.5	Compact
3) Chevrolet Celebrity	360,167	.033	26.9	Midsize
4) Oldsmobile Ciera	315,569	.029	26.7	Midsize
5) Ford Tempo	297,656	.027	31.3	Compact
6) Chevrolet	251,666	.023	23.2	Large
7) Buick Century	239,570	.022	25.3	Midsize
8) Oldsmobile Supreme	234,242	.021	24.5	Midsize
9) Oldsmobile 88	213,833	.019	22.6	Large
10) Chevrolet Camaro	206,082	.019	22.2	Subcompact
11) Ford LTD 83	205,889	.019	24.0	Midsize
12) Nissan Sentra (210)	184,706	.017	36.6	Subcompact
13) Ford LTD Crown Victoria	173,509	.016	19.5	Large
14) Ford Thunderbird	169,770	.015	23.1	Compact
15) Toyota Corolla	166,568	.015	37.0	Compact
16) Subaru	161,587	.015	31.7	Subcompact
17) Ford Mustang	159,741	.015	24.0	Subcompact
18) Pontiac A6000	153,994	.014	26.9	Midsize
19) Honda Accord-American	149,674	.014	32.6	Subcompact
20) Mercury Grand Marquis	145,242	.013	21.0	Large
21) Honda Civic	145,074	.013	37.0	Subcompact
22) Buick Le Sabre	144,684	.013	22.8	Large
23) Cadillac DeVille	140,718	.013	23.0	Large
24) Plymouth Reliant	137,074	.012	28.7	Midsize
25) Chevrolet Chevette	135,261	.012	35.0	Subcompact
26) Mercury Cougar XR-7	129,997	.012	23.4	Compact
27) Buick Regal	127,386	.012	24.0	Midsize
28) Pontiac J2000	120,207	.011	29.7	Compact
29) Oldsmobile 98	118,668	.011	24.5	Large
30) Dodge Aries	117,742	.011	28.7	Midsize
31) Toyota Camry(Corona)	116,555	.011	34.6	Compact
32) Lincoln Town Car	116,015	.011	21.0	Large
33) Oldsmobile Calais	113,280	.010	29.4	Compact
34) Chrysler New Yorker 5th Ave	112,137	.010	21.0	Midsize
35) Honda Accord	106,581	.010	32.5	Subcompact
36) Chevrolet Monte Carlo	105,568	.010	22.5	Midsize
37) Pontiac Firebird	101,797	.009	22.4	Subcompact
38) Pontiac Grand AM	98,567	.009	29.4	Compact
39) Mercury Marquis	98,166	.009	24.1	Midsize
40) Toyota Tercel	97,798	.009	38.2	Subcompact
41) Nissan Maxima (810)	95,775	.009	22.5	Compact
42) Buick Electra	90,922	.008	24.5	Large
43) Chrysler Le Baron	90,830	.008	26.2	Midsize
44) Buick Skyhawk	90,700	.008	30.0	Compact
45) Pontiac Fiero	90,691	.008	33.0	Two seater
46) Plymouth Horizon	88,513	.008	32.3	Compact
47) Buick Somerset	88,103	.008	29.4	Compact
48) Mercury Lynx	84,370	.008	34.9	Compact
49) Mercury Topaz	79,899	.007	30.6	Compact
50) Buick Skylark (X-Car)	78,359	.007	27.8	Compact
51) Mazda 626	77,387	.007	32.0	Compact
52) AMC Renault Alliance	75,295	.007	33.4	Compact
53) Dodge Omni	75,107	.007	31.1	Compact
54) Pontiac	73,109	.007	23.1	Large
55) Honda Prelude	72,011	.007	31.4	Subcompact
56) Toyota Celica	71,508	.007	30.3	Subcompact
57) Volkswagen Golf - American	71,496	.007	35.4	Compact
58) Volkswagen Jetta	69,567	.006	35.1	Compact
59) Nissan 300ZX	67,555	.006	23.1	Two seater
60) Cadillac Eldorado	66,863	.006	21.0	Midsize
61) Nissan 200SX	66,755	.006	33.0	Subcompact
62) Pontiac Grand Prix	61,924	.006	23.6	Midsize
63) Chrysler New Yorker-E Class	59,623	.005	25.0	Midsize
64) Chevrolet Citation (X-Car)	59,605	.005	28.8	Midsize
65) Dodge Charger 024	58,969	.005	30.5	Subcompact
66) Dodge 600	58,043	.005	25.9	Midsize
67) Mazda RX-7	57,158	.005	22.0	Two seater
68) Nissan Stanza (510)	56,570	.005	31.2	Compact
69) Pontiac Bonneville	55,795	.005	23.4	Midsize
70) Chrysler LeBaron GTS	55,740	.005	27.3	Midsize
71) Buick Riviera	55,546	.005	22.0	Midsize
72) Chrysler Laser	54,758	.005	27.3	Subcompact
73) Honda Civic CRX	54,755	.005	42.2	Two seater
74) Plymouth Turismo (TC3)	54,251	.005	33.1	Subcompact
75) Oldsmobile Firenza	52,760	.005	29.4	Compact
76) Dodge Daytona	51,299	.005	27.3	Subcompact
77) Mazda GLC	49,503	.005	37.8	Subcompact
78) Audi 5000S	48,304	.004	23.2	Midsize

Table E.8 (Cont'd)

	Model year sales	Ratio of total sales	Sales weighted MPG	EPA size class
79) AMC Renault Encore	46,524	.004	34.1	Compact
80) Volvo DL	45,975	.004	24.4	Compact
81) Nissan Pulsar NX	44,825	.004	36.5	Subcompact
82) Toyota Cressida	43,840	.004	25.0	Compact
83) Dodge Lancer	39,984	.004	27.3	Midsize
84) Chevrolet Spectrum	39,424	.004	43.2	Subcompact
85) Cadillac Fleetwood Brougham	39,261	.004	23.2	Large
86) Chevrolet Corvette	37,878	.003	21.8	Two seater
87) Oldsmobile Toronado	37,581	.003	22.1	Midsize
88) Dodge Diplomat	37,350	.003	18.2	Midsize
89) Saab 900	36,948	.003	25.2	Compact
90) BMW 320 I	36,500	.003	28.6	Subcompact
91) Dodge Colt Hatchback	36,120	.003	33.6	Subcompact
92) Plymouth Caravelle	34,528	.003	25.9	Midsize
93) Plymouth Colt	33,302	.003	39.1	Subcompact
94) Cadillac Seville	32,986	.003	21.0	Midsize
95) Volvo 740 GLE	29,455	.003	25.4	Midsize
96) Lincoln Continental	28,799	.003	21.3	Midsize
97) Toyota Supra	27,419	.002	25.0	Subcompact
98) Ford EXP	26,450	.002	32.6	Two seater
99) Volvo GL	25,673	.002	24.1	Compact
100) Pontiac T1000	24,180	.002	34.7	Subcompact
101) Toyota MR-2	23,300	.002	33.0	Two seater
102) Mercedes Benz 300 D/300 CD	23,114	.002	26.5	Compact
103) Cadillac Cimarron	22,492	.002	28.5	Compact
104) Nissan Sentra-American	21,077	.002	36.6	Subcompact
105) Lincoln Mercury Mark VII	20,198	.002	21.4	Midsize
106) Plymouth Gran Fury	18,734	.002	18.2	Midsize
107) Chevrolet Sprint	18,726	.002	53.1	Minicompact
108) Jaguar XJ/XJS	18,640	.002	18.4	Subcompact
109) Mercedes Benz 190 E 2.3	17,495	.002	24.4	Subcompact
110) Mercury Capri	16,829	.002	25.1	Subcompact
111) Chevrolet Nova	16,323	.001	36.0	Compact
112) Audi 4000	16,263	.001	30.6	Subcompact
113) AMC Eagle	15,675	.001	20.1	Compact
114) Volkswagen Quantum	15,597	.001	26.2	Compact
115) BMW 528 I	15,348	.001	25.5	Compact
116) Peugeot 505 (Gas)	15,010	.001	24.2	Compact
117) Isuzu Impulse	14,955	.001	27.6	Subcompact
118) Mercedes Benz 300 SD	14,884	.001	26.5	Compact
119) Porsche 944	14,567	.001	25.8	Minicompact
120) Volkswagen Scirocco	14,481	.001	30.8	Subcompact
121) Volkswagen Cabriolet	12,009	.001	30.4	Minicompact
122) Mitsubishi Galant	11,964	.001	27.0	Compact
123) Mitsubishi Mirage	11,937	.001	33.6	Subcompact
124) BMW 325	11,846	.001	28.6	Subcompact
125) Volvo 760 GLE	10,980	.001	25.4	Midsize
126) BMW 524 TD	10,829	.001	26.7	Compact
127) Mitsubishi Tredia	10,546	.001	30.0	Subcompact
128) Mercedes Benz 380 SL	10,319	.001	20.0	Two seater
129) Isuzu I-Mark	9,958	.001	30.1	Subcompact
130) Mitsubishi Cordia	8,662	.001	30.3	Subcompact
131) Cadillac Fleetwood	8,622	.001	26.0	Large
132) Volvo GLT	8,138	.001	24.5	Compact
133) Mercedes 380 SE	7,598	.001	20.0	Compact
134) BMW 633 CSI	7,385	.001	23.0	Subcompact
135) Mercedes Benz 190 D 2.2	6,483	.001	37.9	Subcompact
136) Mercury Merkur	6,384	.001	24.0	Compact
137) BMW 733 I	6,177	.001	23.0	Compact
138) Renault Fuego	5,810	.001	28.4	Subcompact
139) Mitsubishi Starion	5,474		24.0	Subcompact
140) Mercedes Benz 380 SEL/500 SEL	5,092		17.0	Midsize
141) Porsche 911	4,661		24.0	Minicompact
142) Alfa Romeo	4,486		28.0	Two seater
143) Audi 4000S Quattro	4,134		23.0	Subcompact
144) Audi Coupe	3,388		24.6	Subcompact
145) Peugeot 505 (Diesel/Turbo)	3,077		30.7	Compact
146) Dodge Conquest	2,714		24.0	Subcompact
147) Plymouth Conquest(Sapporo)	2,634		24.0	Subcompact
148) Renault 181	2,429		28.0	Subcompact
149) Pontiac Phoenix (X-Car)	2,353		26.9	Midsize
150) Porsche 928	2,332		20.0	Minicompact
151) Mercedes 500 SEC	1,921		17.0	Compact
152) Oldsmobile Omega (X-Car)	1,708		27.2	Compact
153) Ferrari	605		13.0	Two seater
154) Audi Quatro	74		21.0	Subcompact
155) Peugeot 604	13		[illegible].2	Compact
	10,968,515	1.000	27.0	

Appendix F

Model Year Light Truck Nameplates Sorted by Sales, Model Years 1978-85

Table F.1
28 Trucks for Model Year 1978 Ranked by Sales

	Model year sales	Ratio of total sales	Sales weighted MPG	EPA size class
1) Ford F100/F150	597,411	.203	18.2	Standard Pickup Truck
2) Chevrolet C-10	554,342	.188	15.6	Standard Pickup Truck
3) Ford Econoline	229,899	.078	16.7	Standard Van
4) Chevrolet Van	191,834	.065	16.3	Standard Van
5) Dodge Ram Van	187,432	.064	16.4	Standard Van
6) Chevrolet C-20	179,343	.061	15.6	Standard Pickup Truck
7) Ford F250	166,665	.057	17.2	Standard Pickup Truck
8) GMC C-15	121,534	.041	15.5	Standard Pickup Truck
9) Dodge D150	110,985	.038	16.6	Standard Pickup Truck
10) Nissan Pickup	86,759	.029	26.6	Small Pickup Truck
11) Toyota Pickup	84,404	.029	25.8	Small Pickup Truck
12) Ford Courier	71,161	.024	28.6	Small Pickup Truck
13) Chevrolet LUV	61,705	.021	26.8	Small Pickup Truck
14) Chevrolet El Camino	50,155	.017	18.2	Standard Pickup Truck
15) GMC C-25	50,002	.017	15.1	Standard Pickup Truck
16) GMC Vandura/Rally	47,150	.016	15.7	Standard Van
17) Dodge D250	26,742	.009	16.2	Standard Pickup Truck
18) Ford Ranger	22,994	.008	16.4	Standard Pickup Truck
19) Volkswagen Vanagon	19,476	.007	19.5	Mini Van
20) GMC Jimmy	17,179	.006	15.9	Standard Special Purpose
21) Dodge Ram Charger	16,216	.006	15.9	Standard Special Purpose
22) Plymouth Voyager	14,138	.005	15.0	Standard Van
23) GMC Suburban	10,696	.004	13.8	Standard Special Purpose
24) GMC Caballero	6,609	.002	18.2	Standard Pickup Truck
25) Plymouth Trail Duster	6,485	.002	15.6	Small Special Purpose Vehicle
26) Mazda Pickup	4,761	.002	33.0	Small Pickup Truck
27) Jeep CJ	4,246	.001	16.4	Small Special Purpose Vehicle
28) Toyota Land Cruiser	857		13.5	Small Special Purpose Vehicle
	2,941,180	1.000	17.2	

Table F.2
38 Trucks for Model Year 1979 Ranked by Sales

	Model year sales	Ratio of total sales	Sales weighted MPG	EPA size class
1) Ford F100/F150	524,575	.187	15.2	Standard Pickup Truck
2) Chevrolet C-10	477,625	.171	16.1	Standard Pickup Truck
3) Chevrolet Van	188,255	.067	14.3	Standard Van
4) Ford Econoline	184,722	.066	14.7	Standard Van
5) Ford F250	156,629	.056	15.5	Standard Pickup Truck
6) Dodge Ram Van	151,070	.054	16.2	Standard Van
7) Chevrolet C-20	133,046	.047	15.8	Standard Pickup Truck
8) Toyota Pickup	124,960	.045	20.4	Small Pickup Truck
9) GMC C-15	113,509	.041	16.1	Standard Pickup Truck
10) Nissan Pickup	104,565	.037	23.9	Small Pickup Truck
11) Chevrolet LUV	97,485	.035	25.7	Small Pickup Truck
12) Dodge D150	93,201	.033	16.6	Standard Pickup Truck
13) Ford Courier	76,883	.027	25.8	Small Pickup Truck
14) Chevrolet El Camino	55,224	.020	19.9	Standard Pickup Truck
15) Jeep CJ	49,794	.018	17.7	Small Special Purpose Vehicle
16) GMC Vandura/Rally	46,183	.016	14.2	Standard Van
17) GMC C-25	39,080	.014	15.5	Standard Pickup Truck
18) Dodge Ram 50	27,517	.010	24.3	Small Pickup Truck
19) Volkswagen Vanagon	18,153	.006	17.9	Mini Van
20) Ford Ranger	16,186	.006	15.7	Standard Pickup Truck
21) Dodge Ram Charger	15,754	.006	15.9	Standard Special Purpose
22) Dodge D250	14,335	.005	16.1	Standard Pickup Truck
23) GMC Jimmy	14,193	.005	15.9	Standard Special Purpose
24) Plymouth Arrow Pickup	13,004	.005	24.3	Small Pickup Truck
25) Plymouth Voyager	10,653	.004	16.0	Standard Van
26) GMC Suburban	8,588	.003	13.8	Standard Special Purpose
27) Mazda Pickup	7,134	.003	30.0	Small Pickup Truck
28) GMC Caballero	6,952	.002	18.9	Standard Pickup Truck
29) Plymouth Trail Duster	6,114	.002	15.9	Small Special Purpose Vehicle
30) Toyota Land Cruiser	5,888	.002	13.5	Small Special Purpose Vehicle
31) Ford Bronco	5,507	.002	15.0	Standard Special Purpose
32) Chevrolet Suburban	4,004	.001	14.0	Standard Special Purpose
33) Jeep Grand Wagoneer	3,546	.001	14.1	Standard Special Purpose
34) Dodge W150	2,777	.001	14.5	Standard Pickup Truck
35) Chevrolet Blazer	1,446	.001	15.9	Standard Special Purpose
36) Dodge W250	1,230		13.8	Standard Pickup Truck
37) Jeep J10	1,153		14.4	Standard Pickup Truck
38) Jeep J20	223		13.0	Standard Pickup Truck
	2,801,163	1.000	16.5	

Table F.3
39 Trucks for Model Year 1980 Ranked by Sales

	Model year sales	Ratio of total sales	Sales weighted MPG	EPA size class
1) Ford F100/F150	384,658	.174	16.8	Standard Pickup Truck
2) Chevrolet C-10	314,679	.142	18.4	Standard Pickup Truck
3) Toyota Pickup	144,055	.065	23.4	Small Pickup Truck
4) Ford Econoline	114,645	.052	16.2	Standard Van
5) Nissan Pickup	113,248	.051	26.5	Small Pickup Truck
6) Chevrolet Van	100,705	.045	16.4	Standard Van
7) Chevrolet LUV	90,815	.041	26.6	Small Pickup Truck
8) Ford F250	88,932	.040	15.4	Standard Pickup Truck
9) Chevrolet C-20	87,862	.040	14.9	Standard Pickup Truck
10) Dodge Ram Van	80,180	.036	16.3	Standard Van
11) Ford Courier	78,401	.035	26.5	Small Pickup Truck
12) GMC C-15	65,443	.030	18.6	Standard Pickup Truck
13) Dodge D150	59,426	.027	17.3	Standard Pickup Truck
14) Jeep CJ	51,684	.023	17.7	Small Special Purpose Vehicle
15) Ford Bronco	48,837	.022	15.0	Standard Special Purpose
16) Chevrolet El Camino	43,896	.020	19.8	Standard Pickup Truck
17) Dodge Ram 50	42,540	.019	25.1	Small Pickup Truck
18) Chevrolet Suburban	34,741	.016	13.7	Standard Special Purpose
19) Jeep Grand Wagoneer	34,600	.016	14.1	Standard Special Purpose
20) GMC Vandura/Rally	25,271	.011	16.2	Standard Van
21) Chevrolet Blazer	23,876	.011	15.9	Standard Special Purpose
22) GMC C-25	22,968	.010	14.9	Standard Pickup Truck
23) International Harvester Scout	20,025	.009	15.7	Small Special Purpose Vehicle
24) Volkswagen Pickup — Diesel	20,006	.009	29.7	Small Pickup Truck
25) Plymouth Arrow Pickup	18,458	.008	25.0	Small Pickup Truck
26) Dodge W150	14,374	.006	14.5	Standard Pickup Truck
27) Volkswagen Vanagon	13,649	.006	19.6	Mini Van
28) Dodge D250	10,708	.005	14.9	Standard Pickup Truck
29) Dodge Ram Charger	9,411	.004	14.4	Standard Special Purpose
30) Jeep J10	9,379	.004	14.4	Standard Pickup Truck
31) Mazda Pickup	8,889	.004	30.0	Small Pickup Truck
32) Plymouth Voyager	7,264	.003	15.1	Standard Van
33) GMC Jimmy	7,113	.003	16.1	Standard Special Purpose
34) Dodge W250	6,367	.003	13.8	Standard Pickup Truck
35) GMC Suburban	4,809	.002	13.8	Standard Special Purpose
36) GMC Caballero	4,742	.002	19.8	Standard Pickup Truck
37) Plymouth Trail Duster	4,166	.002	14.4	Small Special Purpose Vehicle
38) Toyota Land Cruiser	3,901	.002	13.5	Small Special Purpose Vehicle
39) Jeep J20	1,814	.001	13.0	Standard Pickup Truck
	2,216,537	1.000	18.1	

Table F.4
42 Trucks for Model Year 1981 Ranked by Sales

	Model year sales	Ratio of total sales	Sales weighted MPG	EPA size class
1) Ford F100/F150	340,087	.176	18.1	Standard Pickup Truck
2) Chevrolet C-10	280,089	.145	19.7	Standard Pickup Truck
3) Toyota Pickup	128,180	.066	28.1	Small Pickup Truck
4) Nissan Pickup	114,014	.059	28.6	Small Pickup Truck
5) Ford Econoline	108,599	.056	17.1	Standard Van
6) Chevrolet Van	86,757	.045	18.5	Standard Van
7) Ford F250	77,632	.040	16.2	Standard Pickup Truck
8) Chevrolet C-20	77,346	.040	18.4	Standard Pickup Truck
9) Chevrolet LUV	72,052	.037	27.2	Small Pickup Truck
10) Ford Courier	66,155	.034	26.6	Small Pickup Truck
11) GMC C-15	56,970	.029	19.5	Standard Pickup Truck
12) Dodge Ram Van	48,702	.025	18.2	Standard Van
13) Dodge D150	43,456	.022	18.7	Standard Pickup Truck
14) Jeep CJ	38,772	.020	20.2	Small Special Purpose Vehicle
15) Ford Bronco	37,396	.019	15.6	Standard Special Purpose
16) Chevrolet El Camino	36,711	.019	20.5	Standard Pickup Truck
17) Volkswagen Pickup — Diesel	31,160	.016	38.1	Small Pickup Truck
18) Dodge Ram 50	29,573	.015	24.5	Small Pickup Truck
19) Ford Club Wagon	25,051	.013	14.9	Standard Van
20) Chevrolet Suburban	22,036	.011	15.4	Standard Special Purpose
21) GMC Vandura/Rally	21,375	.011	17.5	Standard Van
22) Jeep Grand Wagoneer	20,207	.010	16.3	Standard Special Purpose
23) Chevrolet Blazer	19,932	.010	17.9	Standard Special Purpose
24) GMC C-25	19,794	.010	18.0	Standard Pickup Truck
25) Dodge Ram Wagon	18,548	.010	17.0	Standard Van
26) Mazda Pickup	14,931	.008	31.0	Small Pickup Truck
27) Chevrolet Sport Van	13,849	.007	16.2	Standard Van
28) Volkswagen Vanagon	11,007	.006	18.8	Mini Van
29) Dodge W150	10,333	.005	15.9	Standard Pickup Truck
30) Plymouth Arrow Pickup	10,270	.005	24.6	Small Pickup Truck
31) Dodge D250	7,703	.004	16.4	Standard Pickup Truck
32) Isuzu Pickup	6,276	.003	31.4	Small Pickup Truck
33) Jeep J10	5,826	.003	17.0	Standard Pickup Truck
34) Dodge W250	5,559	.003	15.2	Standard Pickup Truck
35) Dodge Ram Charger	5,351	.003	16.0	Standard Special Purpose
36) Plymouth Voyager	4,849	.003	16.8	Standard Van
37) GMC Jimmy	4,802	.002	17.9	Standard Special Purpose
38) GMC Caballero	4,380	.002	20.5	Standard Pickup Truck
39) GMC Suburban	4,289	.002	15.4	Standard Special Purpose
40) Toyota Land Cruiser	2,051	.001	14.0	Small Special Purpose Vehicle
41) Plymouth Trail Duster	1,990	.001	16.1	Small Special Purpose Vehicle
42) Jeep J20	1,356	.001	14.5	Standard Pickup Truck
	1,935,416	1.000	19.8	

Table F.5
46 Trucks for Model Year 1982 Ranked by Sales

	Model year sales	Ratio of total sales	Sales weighted MPG	EPA size class
1) Ford F100/F150	336,547	.158	17.3	Standard Pickup Truck
2) Chevrolet C-10	309,303	.145	20.1	Standard Pickup Truck
3) Toyota Pickup	136,478	.064	27.1	Small Pickup Truck
4) Chevrolet S-10	135,710	.064	27.3	Small Pickup Truck
5) Ford Econoline	122,399	.057	16.5	Standard Van
6) Nissan Pickup	97,547	.046	28.1	Small Pickup Truck
7) Chevrolet Van	94,113	.044	18.6	Standard Van
8) GMC C-15	77,557	.036	20.3	Standard Pickup Truck
9) Chevrolet C-20	73,972	.035	20.7	Standard Pickup Truck
10) Ford F250	63,631	.030	15.3	Standard Pickup Truck
11) Dodge D150	59,438	.028	19.4	Standard Pickup Truck
12) Dodge Ram Van	58,976	.028	17.4	Standard Van
13) Ford Bronco	38,900	.018	14.8	Standard Special Purpose
14) Ford Courier	38,148	.018	27.3	Small Pickup Truck
15) Mazda Pickup	33,670	.016	31.6	Small Pickup Truck
16) GMC S-15	31,058	.015	27.2	Small Pickup Truck
17) Dodge Ram 50	30,912	.014	27.4	Small Pickup Truck
18) Ford Club Wagon	30,425	.014	15.2	Standard Van
19) Jeep CJ	27,950	.013	21.0	Small Special Purpose Vehicle
20) Dodge Ram Wagon	27,546	.013	17.2	Standard Van
21) Chevrolet LUV	26,359	.012	30.8	Small Pickup Truck
22) GMC Vandura/Rally	25,985	.012	16.2	Standard Van
23) GMC C-25	25,442	.012	19.7	Standard Pickup Truck
24) Chevrolet Blazer	24,746	.012	20.1	Standard Special Purpose
25) Chevrolet El Camino	24,098	.011	20.7	Standard Pickup Truck
26) Chevrolet Suburban	23,913	.011	18.0	Standard Special Purpose
27) Jeep Grand Wagoneer	19,780	.009	17.2	Standard Special Purpose
28) Isuzu Pickup	16,705	.008	32.6	Small Pickup Truck
29) Chevrolet Sport Van	14,728	.007	16.8	Standard Van
30) Volkswagen Pickup — Diesel	13,349	.006	43.7	Small Pickup Truck
31) Volkswagen Vanagon	11,964	.006	22.5	Mini Van
32) Dodge D250	10,035	.005	15.6	Standard Pickup Truck
33) Dodge Ram Charger	9,032	.004	15.7	Standard Special Purpose
34) Jeep Scrambler	8,188	.004	21.6	Small Pickup Truck
35) GMC Suburban	7,921	.004	17.6	Standard Special Purpose
36) Dodge W150	7,776	.004	16.0	Standard Pickup Truck
37) GMC Jimmy	6,213	.003	19.6	Standard Special Purpose
38) Plymouth Arrow Pickup	6,187	.003	27.6	Small Pickup Truck
39) Volkswagen Pickup — Gasoline	4,952	.002	30.0	Small Pickup Truck
40) Plymouth Voyager	4,938	.002	15.8	Standard Van
41) Jeep J10	4,682	.002	18.3	Standard Pickup Truck
42) Dodge W250	4,422	.002	15.1	Standard Pickup Truck
43) Toyota Land Cruiser	2,850	.001	14.0	Small Special Purpose Vehicle
44) GMC Caballero	2,654	.001	20.7	Standard Pickup Truck
45) Jeep J20	1,215	.001	14.4	Standard Pickup Truck
46) Plymouth Trail Duster	426		16.1	Small Special Purpose Vehicle
	2,132,840	1.000	20.0	

Table F.6
59 Trucks for Model Year 1983 Ranked by Sales

	Model year sales	Ratio of total sales	Sales weighted MPG	EPA size class
1) Ford F100/F150	306,721	.114	17.2	Standard Pickup Truck
2) Chevrolet C-10	272,715	.101	19.9	Standard Pickup Truck
3) Chevrolet S-10	181,162	.067	26.6	Small Pickup Truck
4) Toyota Pickup	169,104	.063	28.4	Small Pickup Truck
5) Ford Ranger	167,874	.062	24.4	Small Pickup Truck
6) Ford Econoline	153,477	.057	16.3	Standard Van
7) Nissan Pickup	141,811	.053	26.5	Small Pickup Truck
8) Chevrolet Van	131,127	.049	19.5	Standard Van
9) Ford F250	92,371	.034	15.8	Standard Pickup Truck
10) Chevrolet C-20	83,388	.031	19.7	Standard Pickup Truck
11) Chevrolet Blazer "S"	79,996	.030	24.2	Small Special Purpose Vehicle
12) GMC C-15	73,533	.027	20.0	Standard Pickup Truck
13) Dodge Ram Van	69,528	.026	17.0	Standard Van
14) Mazda Pickup	63,515	.024	31.2	Small Pickup Truck
15) Dodge D150	58,235	.022	18.5	Standard Pickup Truck
16) GMC Vandura/Rally	43,138	.016	17.0	Standard Van
17) GMC S-15	41,345	.015	27.6	Small Pickup Truck
18) Ford Bronco	40,719	.015	15.3	Standard Special Purpose
19) Ford Bronco II	39,780	.015	21.6	Small Special Purpose Vehicle
20) Jeep CJ	34,183	.013	21.4	Small Special Purpose Vehicle
21) Dodge Ram Wagon	33,787	.013	15.8	Standard Van
22) Dodge Ram 50	31,815	.012	26.5	Small Pickup Truck
23) Ford Club Wagon	30,735	.011	15.5	Standard Van
24) Chevrolet Blazer	30,228	.011	18.9	Standard Special Purpose
25) Chevrolet Suburban	30,164	.011	17.9	Standard Special Purpose
26) Jeep Grand Wagoneer	24,216	.009	17.0	Standard Special Purpose
27) GMC C-25	23,468	.009	20.3	Standard Pickup Truck
28) Chevrolet El Camino	23,177	.009	20.6	Standard Pickup Truck
29) Isuzu Pickup	22,432	.008	34.2	Small Pickup Truck
30) Dodge Ram Charger	19,005	.007	15.1	Standard Special Purpose
31) Chevrolet LUV	18,688	.007	29.3	Small Pickup Truck
32) Chevrolet Sport Van	17,929	.007	17.2	Standard Van
33) GMC Jimmy "S"	15,052	.006	24.2	Small Special Purpose Vehicle
34) Ford Courier	14,541	.005	31.8	Small Pickup Truck
35) Volkswagen Vanagon	13,619	.005	20.9	Mini Van
36) Dodge Rampage	11,943	.004	32.1	Small Pickup Truck
37) GMC Suburban	10,466	.004	17.1	Standard Special Purpose
38) Dodge W150	10,048	.004	15.3	Standard Pickup Truck
39) Mitsubishi Pickup	7,245	.003	27.3	Small Pickup Truck
40) Subaru Brat	6,855	.003	29.5	Small Pickup Truck
41) GMC Jimmy	6,614	.002	20.5	Standard Special Purpose
42) Dodge D250	5,463	.002	15.0	Standard Pickup Truck
43) Jeep Scrambler	4,671	.002	22.9	Small Pickup Truck
44) Plymouth Voyager	4,628	.002	15.2	Standard Van
45) Volkswagen Pickup — Diesel	4,576	.002	43.5	Small Pickup Truck
46) Toyota Land Cruiser	4,463	.002	14.0	Small Special Purpose Vehicle
47) Jeep J10	3,243	.001	18.2	Standard Pickup Truck
48) Plymouth Scamp	2,852	.001	32.2	Small Pickup Truck
49) Volkswagen Pickup — Gasoline	2,459	.001	30.0	Small Pickup Truck
50) Dodge W250	2,419	.001	14.5	Standard Pickup Truck
51) GMC Caballero	2,126	.001	20.9	Standard Pickup Truck
52) Plymouth Arrow Pickup	1,544	.001	26.6	Small Pickup Truck
53) Jeep J20	1,501	.001	14.4	Standard Pickup Truck
54) Jeep Cherokee XJ	741		24.0	Small Special Purpose Vehicle
55) Mitsubishi Montero	391		21.5	Small Special Purpose Vehicle
56) Jeep Wagoneer XJ	376		22.7	Small Special Purpose Vehicle
57) Dodge Vista	45		31.0	Mini Van
58) Toyota Van	26		27.0	Mini Van
59) Plymouth Vista	26		31.0	Mini Van
	2,687,299	1.000	20.5	

Table F.7
69 Trucks for Model Year 1984 Ranked by Sales

	Model year sales	Ratio of total sales	Sales weighted MPG	EPA size class
1) Ford F100/F150	360,620	.100	17.0	Standard Pickup Truck
2) Toyota Pickup	224,252	.062	27.2	Standard Pickup Truck
3) Ford Ranger	215,432	.060	24.5	Small Pickup Truck
4) Chevrolet S-10	185,726	.051	24.2	Small Pickup Truck
5) Ford Econoline	173,630	.048	15.5	Standard Van
6) Chevrolet Van	159,245	.044	18.8	Standard Van
7) Chevrolet K-10	154,639	.043	18.2	Standard Pickup Truck
8) Chevrolet C-10	154,638	.043	19.2	Standard Pickup Truck
19) Chevrolet Blazer "S"	139,453	.039	23.4	Small Special Purpose Vehicle
10) Ford F250	137,436	.038	15.5	Standard Pickup Truck
11) Mazda Pickup	114,987	.032	29.6	Small Pickup Truck
12) Nissan Pickup	102,914	.028	31.9	Small Pickup Truck
13) Ford Bronco II	98,462	.027	21.6	Small Special Purpose Vehicle
14) Nissan Pickup-American	73,943	.020	31.9	Small Pickup Truck
15) Dodge D150	72,744	.020	16.7	Standard Pickup Truck
16) Dodge Ram Van	71,956	.020	15.2	Standard Van
17) Dodge Caravan	67,517	.019	24.9	Mini Van
18) Plymouth Voyager(FWD)	64,874	.018	24.8	Mini Van
19) Jeep Cherokee XJ	55,583	.015	24.0	Small Special Purpose Vehicle
20) Chevrolet K-20	50,961	.014	15.7	Standard Pickup Truck
21) Chevrolet C-20	50,961	.014	18.4	Standard Pickup Truck
22) Chevrolet Suburban	49,203	.014	16.8	Standard Special Purpose
23) Dodge Ram 50	46,937	.013	27.7	Small Pickup Truck
24) Ford Bronco	46,544	.013	14.6	Standard Special Purpose
25) GMC Vandura/Rally	45,541	.013	17.0	Standard Van
26) Chevrolet Blazer	45,165	.013	18.3	Standard Special Purpose
27) GMC S-15	43,594	.012	24.3	Small Pickup Truck
28) Dodge Ram Wagon	40,420	.011	14.1	Standard Van
29) Jeep CJ	38,573	.011	24.0	Small Special Purpose Vehicle
30) GMC K-15	37,729	.010	18.2	Standard Pickup Truck
31) GMC C-15	37,725	.010	19.3	Standard Pickup Truck
32) Isuzu Pickup	35,869	.010	35.4	Small Pickup Truck
33) Toyota Van	33,787	.009	27.0	Mini Van
34) GMC Jimmy "S"	33,289	.009	23.4	Small Special Purpose Vehicle
35) Ford Club Wagon	32,056	.009	15.5	Standard Van
36) Dodge Ram Charger	27,013	.007	13.6	Standard Special Purpose
37) Chevrolet El Camino	24,926	.007	20.8	Standard Pickup Truck
38) Chevrolet Sport Van	22,463	.006	16.7	Standard Van
39) Jeep Grand Wagoneer	19,052	.005	13.3	Standard Special Purpose
40) Jeep Wagoneer XJ	19,016	.005	22.7	Small Special Purpose Vehicle
41) Volkswagen Vanagon	18,823	.005	20.7	Mini Van
42) Dodge W150	16,758	.005	13.7	Standard Pickup Truck
43) GMC Suburban	15,526	.004	17.4	Standard Special Purpose
44) Dodge Mini Ram Van	14,486	.004	25.8	Mini Van
45) GMC k-25	13,997	.004	16.1	Standard Pickup Truck
46) GMC C-25	13,996	.004	18.7	Standard Pickup Truck
47) Mitsubishi Pickup	11,805	.003	28.6	Small Pickup Truck
48) Dodge D250	11,711	.003	14.3	Standard Pickup Truck
49) Dodge Rampage	10,321	.003	28.9	Small Pickup Truck
50) GMC Jimmy	8,675	.002	15.7	Standard Special Purpose
51) Toyota Cargo Van	8,504	.002	23.0	Mini Van
52) Dodge Vista	7,672	.002	31.0	Mini Van
53) Plymouth Vista	7,135	.002	31.0	Mini Van
54) Dodge W250	6,412	.002	13.2	Standard Pickup Truck
55) Subaru Brat	6,271	.002	29.3	Small Pickup Truck
56) Isuzu Trooper	4,188	.001	20.0	Small Special Purpose Vehicle
57) Toyota Land Cruiser	4,093	.001	14.0	Small Special Purpose Vehicle
58) Toyota 4Runner SR-5	4,074	.001	23.0	Small Special Purpose Vehicle
59) Jeep Scrambler	3,480	.001	27.0	Small Pickup Truck
60) Mitsubishi Montero	2,880	.001	21.5	Small Special Purpose Vehicle
61) GMC Caballero	2,751	.001	20.9	Standard Pickup Truck
62) Chevrolet LUV	2,533	.001	29.7	Small Pickup Truck
63) Toyota 4Runner Truck	2,482	.001	31.3	Small Pickup Truck
64) Jeep J20	1,847	.001	13.0	Standard Pickup Truck
65) Jeep J10	1,845	.001	15.7	Standard Pickup Truck
66) Volkswagen Pickup — Gasoline	590		30.0	Small Pickup Truck
67) Plymouth Scamp	572		32.2	Small Pickup Truck
68) Volkswagen Pickup — Diesel	348		43.5	Small Pickup Truck
69) Plymouth Voyager	284		15.2	Standard Van
	3,612,934	1.000	20.1	

Table F.8
70 Trucks for Model Year 1985 Ranked by Sales

	Model year sales	Ratio of total sales	Sales weighted MPG	EPA size class
1) Ford F100/F150	385,537	.091	17.1	Standard Pickup Truck
2) Toyota Pickup	277,491	.066	26.7	Standard Pickup Truck
3) Ford Ranger	232,298	.055	26.2	Small Pickup Truck
4) Chevrolet S-10	203,234	.048	24.0	Small Pickup Truck
5) Ford Econoline	186,333	.044	15.6	Standard Van
6) Chevrolet C-10	167,300	.040	21.4	Standard Pickup Truck
7) Chevrolet K-10	167,300	.040	19.4	Standard Pickup Truck
8) Chevrolet Blazer "S"	166,370	.039	22.4	Small Special Purpose Vehicle
9) Ford F250	152,016	.036	14.1	Standard Pickup Truck
10) Nissan Pickup	151,380	.036	23.0	Standard Pickup Truck
11) Chevrolet Van	150,190	.035	18.8	Standard Van
12) Mazda Pickup	113,398	.027	30.1	Small Pickup Truck
13) Nissan Pickup-American	110,248	.026	29.7	Small Pickup Truck
14) Dodge Caravan	108,417	.026	23.6	Mini Van
15) Plymouth Voyager(FWD)	102,109	.024	23.2	Mini Van
16) Dodge D150	98,316	.023	17.1	Standard Pickup Truck
17) Ford Bronco II	96,906	.023	21.9	Small Special Purpose Vehicle
18) Jeep Cherokee XJ	88,148	.021	22.0	Small Special Purpose Vehicle
19) Chevrolet Astro Van	79,179	.019	25.0	Mini Van
20) Dodge Ram 50	66,745	.016	26.9	Small Pickup Truck
21) Dodge Ram Van	64,145	.015	15.6	Standard Van
22) Chevrolet Suburban	56,479	.013	17.2	Standard Special Purpose
23) Chevrolet C-20	54,619	.013	18.6	Standard Pickup Truck
24) Chevrolet K-20	54,619	.013	17.9	Standard Pickup Truck
25) Ford Bronco	51,528	.012	17.1	Standard Special Purpose
26) Isuzu Pickup	49,271	.012	31.5	Small Pickup Truck
27) GMC S-15	45,578	.011	24.1	Small Pickup Truck
28) Chevrolet Blazer	44,480	.011	17.5	Standard Special Purpose
29) GMC Vandura/Rally	41,653	.010	17.1	Standard Van
30) Dodge Ram Wagon	40,051	.009	15.1	Standard Van
31) GMC C-15	39,639	.009	19.1	Standard Pickup Truck
32) GMC K-15	39,639	.009	17.7	Standard Pickup Truck
33) GMC Jimmy "S"	38,883	.009	22.4	Small Special Purpose Vehicle
34) Jeep CJ	36,950	.009	21.3	Small Special Purpose Vehicle
35) Toyota Van	34,322	.008	26.6	Mini Van
36) Dodge Ram Charger	33,644	.008	14.7	Standard Special Purpose
37) Ford Club Wagon	33,349	.008	15.1	Standard Van
38) Dodge Mini Ram Van	25,756	.006	23.6	Minidard Van
39) Toyota Cargo Van	24,303	.006	26.4	Mini Van
40) Dodge W150	23,574	.006	14.6	Standard Pickup Truck
41) Isuzu Trooper	22,828	.005	23.0	Small Special Purpose Vehicle
42) Mitsubishi Pickup	21,902	.005	28.5	Small Pickup Truck
43) Chevrolet Sport Van	20,521	.005	16.4	Standard Van
44) Chevrolet El Camino	20,233	.005	20.8	Standard Pickup Truck
45) GMC Safari	18,563	.004	25.0	Mini Van
46) Jeep Grand Wagoneer	17,438	.004	14.2	Standard Special Purpose
47) GMC Suburban	17,324	.004	17.7	Standard Special Purpose
48) Dodge D250	17,292	.004	14.5	Standard Pickup Truck
49) Volkswagen Vanagon	17,089	.004	21.5	Mini Van
50) Jeep Wagoneer XJ	14,709	.003	21.2	Small Special Purpose Vehicle
51) GMC C-25	14,030	.003	18.8	Standard Pickup Truck
52) GMC K-25	14,029	.003	16.1	Standard Pickup Truck
53) Toyota 4Runner Truck	11,696	.003	31.3	Small Pickup Truck
54) Dodge Vista	10,376	.002	30.6	Mini Van
55) Plymouth Vista	10,079	.002	30.6	Mini Van
56) GMC Jimmy	8,349	.002	17.7	Standard Special Purpose
57) Dodge W250	8,075	.002	14.2	Standard Pickup Truck
58) Ford Aerostar Van	7,467	.002	25.3	Mini Van
59) Toyota 4Runner SR-5	6,373	.002	27.0	Small Special Purpose Vehicle
60) Subaru Brat	5,284	.001	29.4	Small Pickup Truck
61) Toyota Land Cruiser	3,732	.001	14.0	Small Special Purpose Vehicle
62) Mitsubishi Montero	2,807	.001	21.2	Small Special Purpose Vehicle
63) GMC Caballero	2,504	.001	20.9	Standard Pickup Truck
64) Dodge Rampage	2,039		27.4	Small Pickup Truck
65) Jeep Scrambler	1,884		21.8	Small Pickup Truck
66) Jeep Comanche	1,123		25.9	Standard Pickup Truck
67) Jeep J10	1,108		16.0	Standard Pickup Truck
68) Jeep J20	1,107		14.0	Standard Pickup Truck
69) Volkswagen Pickup – Gasoline	5		30.0	Small Pickup Truck
70) Volkswagen Pickup – Diesel	2		43.5	Small Pickup Truck
	4,235,365	1.000	20.4	

Appendix G

Methodology for Estimating Sales-Weighted Fuel Economy

The ORNL MPG and Market Share Data System, developed under the sponsorship of the Office of Transportation Systems, DOE, monitors changes in the composition of new car sales, in sales-weighted fuel efficiencies, and in sales-weighted vehicle characteristics. Monthly sales statistics, fuel economies, engine/transmission configurations and other vehicle characteristics for each of the nameplates in a given model year are maintained in the data base system. For some imports (Volvo, Mercedes Benz, BMW, Fiat) and standard size light trucks (GM C-10, GM C-20, Ford F100/F150, Chevrolet C-10, Chevrolet C-20), only manufacturers' monthly sales totals are available. In order to allocate the sales data to specific makes and models for these vehicles, the previous year's production percentages are used to estimate the detailed monthly sales data by make and model.

Monthly sales data are reported by make and model while EPA estimated fuel economies (mpg) are broken down by engine size and transmission type within a given make and model. Prior to 1983, an unweighted harmonic mean of fuel economies was calculated and reported in all the previous publications. A numerical example is given to illustrate how the unweighted fuel economy for a given nameplate was calculated:

(1) Information from the Gas Mileage Guide for each nameplate is entered by engine/transmission configurations as follows:

Chevrolet Chevette

Combined MPG	Engine description		Type	Transmission
	CID	CYL		
36	98	4	FFS	M5
32	98	4	FFS	A3
35	98	4	FFS	M4
48	111	4	CAL•DIESEL	M5
49	111	4	DIESEL	M5
40	111	4	DIESEL	A3

(2) Because sales data are only available for a given nameplate and not by specific engine/transmission configuration, the unweighted harmonic mean of fuel economy for Chevrolet Chevette was calculated as:

$$\left[\frac{1/36 + 1/32 + 1/35 + 1/48 + 1/49 + 1/40}{6}\right]^{-1} = 39 \text{ mpg} .$$

This estimated fuel economy could reflect mpg changes due to sales shifts across models or changes in EPA size classes quite accurately. However, it could not capture the effect of how shifting to a more efficient engine/ transmission type within a given nameplate will change the fuel economy.

Prior to model year '83, this unweighted harmonic averaging was used to compute all fuel economy numbers reported in the Motor Vehicle MPG and Market Shares Report. Estimates made in 1982 showed that the error introduced by this approximation was small (Motor Vehicle MPG and Market Shares, 81/4, March 1982, pp. 38–40).

By 1983, however, it had become apparent that the unweighted approach was producing unreliable estimates of make and model fuel economy. The primary reason for this was the high number of diesel

options available combined with the relatively low sales for these vehicles. ORNL solved this problem by estimating the sales percentages for the individual engine and transmission combinations. The fuel economy of a nameplate is therefore estimated by weighting the individual fuel economies of each engine/ transmission combination by the corresponding sales percentages.

Since sales data are not available at the engine/transmission level, the sales percentages by engine/transmission combination are estimated based on the percentage breakdown by engine type and on the percentage breakdown by transmission type of factory installations. From Ward's Automotive Reports, the marginal totals for % factory-installed equipment data are available to form the marginal totals of a matrix of engine vs. transmission type, such as:

		Transmission Type			
		M4	M5	A3	% installed
Engine Type	Gasoline				E1
	Diesel				E2
	% installed	T1	T2	T3	

Where it is known that engine/transmission combinations do not exist, a zero is inserted in the appropriate cell (e.g. E2, T1). By employing the iterative proportional fitting procedure, the percentages of each engine/transmission combination installed can be estimated based on the known marginal percentages E1, E1, T1, T2 and T3. Upon completion of

this estimating procedure, the sales percentages for each engine/ transmission combinations can be obtained by multiplying the nameplate's total sales by the corresponding percentages of engine/ transmission combinations installed by the factory. The fuel economy of the nameplate can then be estimated by weighting the fuel economies by the corresponding sales percentages at each engine/transmission combination level.

For Chevrolet Chevette, the marginal totals of % factory-installed equipment are as follows:

		Transmission Type			
		M4	M5	A3	% installed
Engine Type	Gasoline				98.8
	Diesel				1.2
	% installed	33.8	4.2	62.0	

Applying iterative proportional fitting to this table yields the following estimated installation percentages:

		Transmssion Type			
		M4	M5	A3	% installed
Engine Type	Gasoline	33.8	3.54	61.46	98.8
	Diesel	0.0	0.66	0.54	1.2
	% installed	33.8	4.2	62.0	

Since no information is available on the split between California and non-California diesel sales, the 0.66 is split evenly between them.

Using these installation percentages as weights, the sales-weighted harmonic mean of fuel economy for Chevrolet Chevette is obtained by:

$$\left[\frac{0.0345 * (1/36) + 0.6146 * (1/32) + \ldots + 0.0054 * (1/40)}{(0.0345 + 0.6146 + 0.338 + 0.0033 + 0.0033 + 0.0054)}\right]^{-1} = 33 \text{ mpg}$$

Currently this technique is applied only to domestic and imported automobiles. Application to light trucks is complicated by the wide range of engine and transmission combinations and by the lack of sufficiently detailed information on installations.

Appendix H

Methodology for Estimating Sales-Weighted Vehicle Characteristics

The ORNL MPG and Market Shares Data System, developed under the sponsorship of the Office of Transportation Systems, DOE, monitors changes in the composition of new car sales, in sales-weighted fuel economies, and in sales-weighted vehicle characteristics. Monthly sales statistics, fuel economies, engine/transmission configurations and other vehicle characteristics for each of the nameplates in a given model year are maintained in the data base system.

In order to obtain a reliable estimate of fuel economy or vehicle characteristic for a fleet of vehicles, a sales-weighted methodology is used. Monthly sales data are reported by make and model; EPA estimated fuel economies, engine sizes and interior/trunk volume are broken down by engine size and transmission type within a given make and model. The detailed methodology of estimating the sales-weighted fuel economies and other vehicle characteristics for each make and model is included in Appendix G. However, some of the vehicle characteristics, i.e., width, length, curb weight, interior space, etc., are already available for each make and model, so that for these characteristics the estimation procedure is significantly simplified.

Let X_i be the vehicle characteristic (e.g. 1488 lb) for a given attribute (e.g. curb weight) for make and model i. Let S_i be the monthly sales for i. The sales-weighted vehicle characteristic X for all k makes and models can be calculated as:

$$\left(\frac{\sum_{i=1}^{k} \frac{F_i}{X_i}}{\sum_{i=1}^{k} F_i} \right)^{-1}$$

where $F_i = S_i / \sum_{i=1}^{k} S_i$. This estimate is called the sales-weighted harmonic mean of X.

A numerical example is given to illustrate this approach. For model year 1985 minicompact, the curb weights and sales data by make and model for the first half of the model year are given as follows:

Nameplate	Curb weight (lb)	Sales	F_i
Chverolet Sprint	1,488	7,670	.354
Volkswagen Cabriolet	2,214	4,617	.213
Porsche 944	2,778	6,721	.310
Porsche 911	2,756	1,701	.078
Porsche 928	3,366	985	.045
Total		21,694	1.000

The sales-weighted harmonic mean of curb weight for 1985 minicompacts is:

$$\left[\frac{0.354*(1/1488) + 0.213*(1/2214) + \ldots + 0.045*(1/3366)}{0.354 + 0.213 + \ldots + 0.045} \right]^{-1}$$

$$= 2{,}051.8 \text{ lb.}$$

Appendix I

Analysis of Fuel Economy Changes

The total change in fuel economy from one model year to the next can be thought of as composed of shifts in sales from one type of vehicle to another, introductions or discontinuations of vehicle types, and improvements in the fuel economy of continued vehicle types. For example, an increase in sales of larger, less efficient cars, or of configurations with less efficient larger engines and automatic transmissions will tend to depress new car fuel economy. At the same time, however, manufacturers may introduce new, more efficient models and discontinue older, less efficient ones or may employ engineering and design changes such as lock-up automatic transmissions, or lighter materials, which tend to improve vehicle fuel economy. With enough data on vehicle sales and fuel economies it is possible to identify and measure each component.

The first step is to define vehicle types. This can be done in any number of ways but defining meaningful vehicle types is key to the usefulness of the results. Three, hierarchical levels of vehicle types will be used:

1. size class, as defined by EPA interior volume,
2. nameplate, e.g. Chevette, Escort, Reliant, etc.
3. configuration, an engine-transmission combination within a nameplate.

Thus, the smallest unit in the analysis is a configuration of a nameplate, e.g. a four cylinder diesel Rabbit with a four-speed manual

transmission. Since this is the level at which the EPA certifies vehicles' fuel economies it is a logical choice for the basic unit.

Since neither all nameplates nor all configurations will be the same from one year to the next, it will be useful to define three sets of vehicles for the analysis. Let,

V — be the set of all (nameplate) configurations existing in either year t or t-1. This is the universe of configurations;

C — be the subset of V containing all configurations of nameplates which continue from year t-1 to year t;

C′ — be the subset of C containing all configurations which continue from one year to the next.

Total fuel economy change must be calculated on the set V, including all vehicle configurations. It makes sense to compute nameplate and configuration sales shifts only over the sets C (continued nameplates) and C′ (continued configurations), respectively. Size class sales shifts could be computed over V or C. We choose to compute the effect of size class shifts over C only. As a result, size class shifts associated with the introduction or discontinuation of nameplates will be attributed to nameplate changes. The purpose is to make a clearer distinction between consumer choice effects, and those due to changes in the range of options offered to consumers.

The analysis of fuel economy changes will be carried out in terms of gallons per mile rather than miles per gallon to simplify the arithmetic. The mean of different gallons per mile is the arithmetic mean, while the mean of miles per gallon is the harmonic mean.

The following definitions are required.

E — vehicle efficiency in gallons per mile,

ΔE — change in efficiency from year t-1 to t,

S_{Kt} — is nameplate K's share of total sales in year t

f_{iKt} — is configuration i's share of nameplate K's sales in year t,

i — indexes configurations,

K — indexes nameplates

(Note that, $\sum_i f_{iKt} = 1$, and $\sum_K S_{Kt} = 1$),

ℓ — indexes size classes,

t — indexes years.

The decomposition of efficiency changes is represented in Figure I.1. The total efficiency change can be partitioned into two vehicle sets: 1) continued, and 2) discontinued or new nameplates. For continued nameplates it is possible to break out the change due to changes in the nameplate sales mix versus the combined effect of efficiency improvements and the configuration sales mix. The nameplate sales mix effect can be further decomposed into a size class sales shift effect. The efficiency and configuration effect can be partitioned into two sets: 1) continued, and 2) discontinued or new configurations. For continued configurations, the change in efficiency can be decomposed into a configuration sales shift effect and a configuration efficiency effect.

Sales shifts effects are always computed by holding fuel efficiency constant at last year's level (for each configuration) and contrasting this year's sales distribution with last year's. Thus all changes in efficiency within a continued configuration are attributed to efficiency improvement. The mathematical derivation, following the steps in Figure I.1, is provided below.

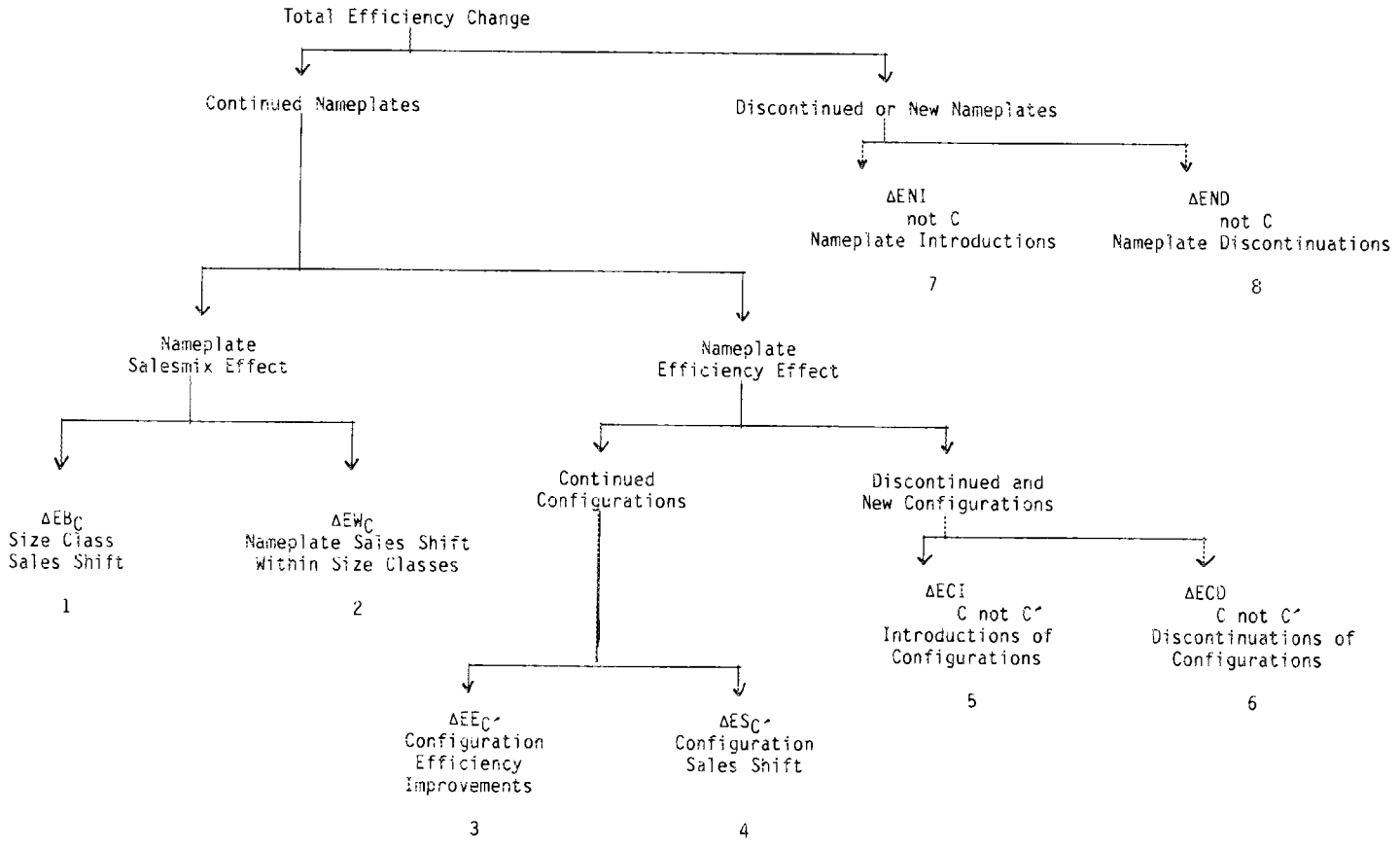

Fig. I.1. Decomposition of Efficiency Changes.

TOTAL CHANGE IN EFFICIENCY

$$\Delta E = \sum_{iK}\sum S_{Kt} f_{iKt} E_{iKt} - \sum_{iK}\sum S_{Kt-1} f_{iKt-1} E_{iKt-1} \tag{1}$$

$$= E_t - E_{t-1} \tag{1a}$$

(1a) states that the overall annual efficiency is a salesweighted average of configuration efficiencies.

CONTINUED NAMEPLATES' EFFICIENCY CHANGE

Considering only the set C, ΔE_C can be decomposed into two components:

$$\Delta E_C = \left(\sum_{iK}\sum S_{Kt} f_{iKt} E_{iKt} - \sum_{iK}\sum S_{Kt} f_{iKt-1} E_{iKt-1}\right) + \left(\sum_{iK}\sum S_{Kt} f_{iKt-1} E_{iKt-1} - \sum_{iK}\sum S_{Kt-1} f_{iKt-1} E_{iKt-1}\right) . \tag{2}$$

The first and last summation terms are identical to those in (1) except that only nameplates offered in both t and t-1 are included. A term including this year's nameplate sales shares but last year's nameplate effficiencies has been subtracted from the first component and added to the last component so that its net effect is zero. The first part of (2) represents the <u>nameplate efficiency improvement</u> effect, the second part of the nameplate sales mix effect.

SIZE CLASS SALES AND NAMEPLATE SHIFT EFFECTS

The second part of (2) can be further decomposed into size class sales shift and within size class nameplate sales shift effects. First, define

$$\bar{E}_{Kt-1} = \sum_i f_{iKt-1} E_{iKt-1}$$

as the average fuel consumption rate for nameplate K in year t-1. Summing over i, the second term of (2) becomes

$$\sum_K S_{Kt} \bar{E}_{Kt-1} - \sum_K S_{Kt-1} \bar{E}_{Kt-1} \ .$$

Now split the sum over K into a set of sums for each size class ℓ

$$\sum_\ell \sum_{K\varepsilon\ell} S_{Kt} \bar{E}_{Kt-1} - \sum_K S_{Kt-1} \bar{E}_{Kt-1} \ .$$

Note that $\sum_{K\varepsilon\ell} S_{Kt}$ is the size class share of total car sales in year t. Then $S_{Kt} / \sum_{K\varepsilon\ell} S_{Kt}$ is nameplate K's share of size class ℓ's sales. We can then write,

$$\sum_\ell \left(\frac{\sum_{K\varepsilon\ell} S_{Kt}}{\sum_{K\varepsilon\ell} S_{Kt}} \right) \sum_{K\varepsilon\ell} S_{Kt} \bar{E}_{Kt-1} - \sum_\ell \left(\frac{\sum_{K\varepsilon\ell} S_{Kt-1}}{\sum_{K\varepsilon\ell} S_{Kt-1}} \right) \sum_{K\varepsilon\ell} S_{Kt-1} \bar{E}_{Kt-1}$$

or, rearranging

$$\sum_\ell \left(\sum_{K\varepsilon\ell} S_{Kt} \right) \sum_{K\varepsilon\ell} \frac{S_{Kt}}{\sum_{K\varepsilon\ell} S_{Kt}} \bar{E}_{Kt-1} - \sum_\ell \left(\sum_{K\varepsilon\ell} S_{Kt-1} \right) \sum_{K\varepsilon\ell} \frac{S_{Kt-1}}{\sum_{K\varepsilon\ell} S_{Kt-1}} \bar{E}_{Kt-1} \ .$$

Adding and subtracting a term which contains this year's sales mix across size classes and last year's sales mix within size classes and fuel economy,

$$\sum_\ell \left(\sum_{K\varepsilon\ell} S_{Kt} \right) \sum_{K\varepsilon\ell} \frac{S_{Kt-1}}{\sum_{K\varepsilon\ell} S_{Kt-1}} \bar{E}_{Kt-1}$$

we get,

$$\Delta ES_C = \left(\sum_{\ell}\left(\sum_{K\varepsilon\ell} S_{Kt}\right)\sum_{K\varepsilon\ell}\frac{S_{Kt}}{\sum_{K\varepsilon\ell} S_{Kt}}\bar{E}_{Kt-1} - \sum_{\ell}\left(\sum_{K\varepsilon\ell} S_{Kt}\right)\sum_{K\varepsilon\ell}\frac{S_{Kt-1}}{\sum_{K\varepsilon\ell} S_{Kt-1}}\bar{E}_{Kt-1}\right)$$

$$+\left(\sum_{\ell}\left(\sum_{K\varepsilon\ell} S_{Kt}\right)\sum_{K\varepsilon\ell}\frac{S_{Kt-1}}{\sum_{K\varepsilon\ell} S_{Kt-1}}\bar{E}_{Kt-1} - \sum_{\ell}\left(\sum_{K\varepsilon\ell} S_{Kt-1}\right)\sum_{K\varepsilon\ell}\frac{S_{Kt-1}}{\sum_{K\varepsilon\ell} S_{Kt-1}}\bar{E}_{Kt-1}\right) . \quad (3)$$

The first part of equation (3) is the change in fuel efficiency due to nameplate sales shifts within size classes. The only term which differs is the nameplate share of size class sales.

The second part of (3) represents the effect of size class sales shifts. The only terms which differ are the size class shares of total sales. Note that the sales shares of all continued nameplates may be different in years t and t-1. This could result in confusion of size class sales shifts and the effect of different sales shares for new introductions versus discontinued models. A correction for this effect will be introduced when nameplate introductions and discontinuations are considered below.

CONFIGURATION SHIFT EFFICIENCY CHANGE

The first part of equation (2) includes configuration shifts, introductions and discontinuations of configurations, and efficiency improvements for a given configuration. Consider the subset of C which include only those configurations which continue from year t-1 to year t, namely C´. For this subset only, configuration sales shifts and efficiency improvement effects can be calculated.

Add and subtract the following from the first part of (2)

$$\sum_{iK}\sum S_{Kt} f_{iKt} E_{iKt-1} ,$$

to get

$$\Delta E_{C'} = \left(\sum_{iK}\sum S_{Kt} f_{iKt} E_{iKt} - \sum_{iK}\sum S_{Kt} f_{iKt} E_{iKt-1}\right) + \left(\sum_{iK}\sum S_{Kt} f_{iKt} E_{iKt-1} - \sum_{iK}\sum S_{Kt} f_{iKt-1} E_{iKt-1}\right) . \quad (4)$$

The first part of (4) differs only in the configuration efficiency terms and so represents the effect of configuration efficiency improvements from t-1 to t. The second term differs only in configuration sales shares and so represents only that effect. However the sum of sales share weights in the first and second parts of the second term are not necessarily equal.

INTRODUCTIONS AND DISCONTINUATIONS OF CONFIGURATIONS

In computing $\Delta E_{C'}$ in (4) newly introduced or discontinued configurations of continued nameplates were excluded. To calculate the effect of configuration introductions or deletions we compute the first part of (2) using configurations in the set C but not C′.

$$\Delta E_{C \text{ not } C'} = \sum_{\substack{iK \\ C \text{ not } C'}}\sum S_{Kt} f_{iKt} E_{iKt} - \sum_{\substack{iK \\ C \text{ not } C'}}\sum S_{Kt} f_{iKt-1} E_{iKt-1} . \quad (5)$$

This is equivalent to subtracting (4) from the first part of (2) since (2) is performed over all configurations of continued nameplates (C) while (4) is performed over continued configurations (C′) only.

In equation (5) the sales share weights in the first and second terms will in general not be equal. As a result changes in the total sales share of new versus discontinued configurations could confuse the interpretation of this term. To prevent this, the term is split into separate introduction and discontinuation effects by adding the term,

$$- \sum_{\substack{iK \\ C \text{ not } C'}}\sum S_{Kt} f_{iKt} \bar{E}_{Kt-1} + \sum_{\substack{iK \\ C \text{ not } C'}}\sum S_{Kt} f_{iKt-1} \bar{E}_{Kt-1} \tag{6}$$

and splitting equation (5) into two separate effects.

Introductions

$$\sum_{\substack{iK \\ C \text{ not } C'}}\sum S_{Kt} f_{iKt} E_{iKt} - \sum_{\substack{iK \\ C \text{ not } C'}}\sum S_{Kt} f_{iKt} \bar{E}_{Kt-1} \tag{7}$$

Discontinuations

$$\sum_{\substack{iK \\ C \text{ not } C'}}\sum S_{Kt} f_{iKt-1} \bar{E}_{Kt-1} - \sum_{\substack{iK \\ C \text{ not } C'}}\sum S_{Kt} f_{iKt-1} E_{iKt-1} \; . \tag{8}$$

Since equation (6) is not zero, it must be subtracted from some other term in the equation set to preserve the property that the sum of all terms equals the total change in efficiency. Subtracting it from the configuration sales shift effect [the second term of equation (4)] makes a correction to that equation for any change in the sales share of continued configuration.

Sales shifts

$$\Delta ES_{C'} = \sum_{\substack{iK \\ C'}}\sum S_{Kt} f_{iKt} E_{iKt-1} + \sum_{\substack{iK \\ C \text{ not } C'}}\sum S_{Kt} f_{iKt} \bar{E}_{Kt-1}$$

$$- \left(\sum_{\substack{iK \\ C \text{ not } C'}}\sum S_{Kt} f_{iKt-1} \bar{E}_{Kt-1} + \sum_{\substack{iK \\ C'}}\sum S_{Kt} f_{iKt-1} E_{iKt-1} \right) .$$

NAMEPLATE INTRODUCTIONS AND DISCONTINUATIONS

Finally, it remains to compute the effect of introductions and discontinuations of nameplates. Involved with the introduction or removal of these new products may be size class shifts, nameplate shifts, configuration shifts, and engineering and design improvements. We are comparing two bundles of commodities: 1) newly introduced vehicles, and 2) discontinued models. This term, together with the corresponding term for configurations, represent actions that vehicle producers have taken to respond to the market demand for or regulations requiring fuel economy improvement.

This effect is computed by subtracting the total efficiency change for continued nameplates from that for all nameplates.

$$\Delta EN = \Delta E - \Delta E_C \ . \tag{9}$$

This is what would be obtained by calculating the total efficiency change for all vehicles not in the set C.

$$\Delta EN = \sum_{\substack{iK \\ \text{not in } C}}\sum S_{Kt} f_{iKt} E_{iKt} - \sum_{\substack{iK \\ \text{not in } C}}\sum S_{Kt-1} f_{iKt-1} E_{iKt-1} \ . \tag{9a}$$

(Note that the first and second terms of (9a) contain no common nameplates.) Once again, however, the sum of sales shares will not be equal in the first and second terms. A correction for this is introduced below which also involves a correction for a related problem in the size class sales shift effect.

SEPARATION OF INTRODUCTIONS AND DELETIONS EFFECTS AND CORRECTION OF SIZE CLASS SHIFT EFFECT

Two of the efficiency change effects compare sales shares which may not be the same from one year to the next. The size class sales shift effect compares sales shares in year t for nameplates which continued from year t-1 to t, with the sales share of these vehicles in year t-1. The nameplate introductions and discontinuations effect similarly contrasts the market share of new introduction in year t with that of discontinued models in year t-1. This is problematic since if the sales shares of new introductions differ substantially from those of discontinued nameplates, that sales shift could mask efficiency differences. A solution to this problem can be obtained by splitting introduction and discontinuation effects into separate factors, while at the same time adding factors to the size class share effect which, in a sense, complete the shares.

It is convenient to first simplify notation.

Let,

$$S_{\ell t} = \sum_{K \varepsilon \ell} S_{Kt} \ ,$$

$$\overline{E}_{\ell t-1} = \sum_{K \varepsilon \ell} \frac{S_{Kt-1}}{\sum_{K \varepsilon \ell} S_{Kt-1}} \overline{E}_{Kt-1}$$

and

$$\bar{E}_{\substack{t-1 \\ \text{in } C}} = \sum_{\substack{K \\ \text{in } C}} \frac{S_{Kt-1}}{\sum_{\substack{K \\ \text{in } C}} S_{Kt-1}} \bar{E}_{Kt-1} \ .$$

$S_{\ell t}$ is the sales share of size class ℓ in year t (for continued nameplates only if we sum over the set C). $\bar{E}_{\ell t}$ is the average efficiency of size class ℓ (in gallons per mile) and $\bar{E}_{\substack{t-1 \\ \text{in } C}}$ is the average efficiency in year t-1 of all continued nameplates.

The efficiency improvement of introductions can be measured by comparing their sales share weighted efficiency to that of continued nameplates in year t-1.

Introductions effect

$$\sum_{\substack{K \\ \text{not } C}} S_{Kt}\bar{E}_{Kt} - \left(\sum_{\text{not } C} S_{Kt}\right)\bar{E}_{\substack{t-1 \\ \text{in } C}} \ .$$

Likewise, the share weighted efficiency of discontinued nameplates can be contrasted with that of continued nameplates in t-1.

Discontinuations effect

$$\left(\sum_{\substack{K \\ \text{not } C}} S_{Kt-1}\right)\bar{E}_{\substack{t-1 \\ \text{in } C}} - \left(\sum_{\text{not } C} S_{Kt-1}\bar{E}_{Kt-1}\right) \ .$$

In each, the share weighted efficiency of nameplates not in the set of continued nameplates in each year is compared with an equal share weight times the efficiency of continued nameplates in year t-1. By so doing we have added another quantity to the total efficiency change:

$$\left(\sum_{\substack{K \\ \text{not } C}} S_{Kt}\right) \bar{E}_{\substack{t-1 \\ \text{in } C}} - \left(\sum_{\substack{K \\ \text{not } C}} S_{Kt-1} \bar{E}_{\substack{t-1 \\ \text{in } C}}\right) .$$

In order that the sum of all terms equals exactly the total efficiency change, the additional term must be subtracted from some term. Subtracting it from the size class sales shift effect adjusts that effect for the difference in sales shares of continued nameplates between t-1 and t. The adjusted size class sales shift effect is,

$$\Delta EB' = \left(\sum_{\substack{\ell \\ \text{in } C}} S_{\ell t} \bar{E}_{\ell t-1} + \left(\sum_{\substack{K \\ \text{not } C}} S_{Kt}\right) \bar{E}_{\substack{t-1 \\ \text{in } C}}\right)$$

$$- \left(\sum_{\substack{\ell \\ \text{in } C}} S_{\ell t-1} \bar{E}_{\ell t-1} + \left(\sum_{\substack{K \\ \text{not } C}} S_{Kt-1}\right) \bar{E}_{\substack{t-1 \\ \text{in } C}}\right) .$$

By multiplying and dividing the second term of $\Delta EB'$ by

$$S_{Ct-1} = \sum_{\substack{\ell \\ \text{in } C}} S_{\ell t-1}$$

it is easy show that it equals $\bar{E}_{\substack{t-1 \\ \text{in } C}}$, since

$$\sum_{\substack{K \\ \text{not } C}} S_{Kt-1} = 1 - S_{Ct-1} .$$

Similarly by muliplying and dividing the first term of $\Delta EB'$ by S_{Ct} we get,

$$S_{Ct} \left(\sum_{\substack{\ell \\ \text{in } C}} \frac{S_{\ell t}}{S_{Ct}} \bar{E}_{\ell t-1}\right) + (1 - S_{Ct}) \bar{E}_{\substack{t-1 \\ \text{in } C}} .$$

Let,

$$\bar{E}'_{\substack{t-1 \\ \text{in } C}} = \sum_{\substack{\ell \\ \text{in } C}} \frac{S_{\ell t}}{S_{Ct}} \bar{E}_{\ell t-1}$$

$\bar{E}'_{\substack{t-1 \\ \text{in } C}}$ is equivalent to $\bar{E}_{\substack{t-1 \\ \text{in } C}}$, except that year t size class shares are used as weights.

Thus, we have

$$\Delta EB' = S_{Ct}\left(\bar{E}'_{\substack{t-1 \\ \text{in } C}} - \bar{E}_{\substack{t-1 \\ \text{in } C}}\right) .$$

The size class sales shift effect is thus the difference between the average efficiency of continued nameplates in year t-1 and what that efficiency would be using year t size class shares, weighted by the sales share of continued nameplates in year t.

SUMMARY

The eight components of efficiency change derived above are summarized below. Summing all components will return the total change in efficiency, ΔE, (1).

1. Size class sales shift

$$\Delta EB_C = \left(\sum_{\substack{\ell \\ \text{in } C}} S_{\ell t}\bar{E}_{\ell t-1} + \left(\sum_{\substack{K \\ \text{not } C}} S_{Kt}\right)\bar{E}_{\substack{t-1 \\ \text{in } C}}\right)$$

$$- \left(\sum_{\substack{\ell \\ \text{in } C}} S_{\ell t-1}\bar{E}_{\ell t-1} + \left(\sum_{\substack{K \\ \text{not } C}} S_{Kt-1}\right)\bar{E}_{\substack{t-1 \\ \text{in } C}}\right) .$$

2. Nameplate sales shift within size classes

$$\Delta EW_C = \sum_{\ell}\left(\sum_{K\varepsilon\ell} S_{Kt}\right)\sum_{K\varepsilon\ell}\frac{S_{Kt}}{\sum_{K\varepsilon\ell} S_{Kt}}\bar{E}_{Kt-1} - \sum_{\ell}\left(\sum_{K\varepsilon\ell} S_{Kt}\right)\sum_{K\varepsilon\ell}\frac{S_{Kt-1}}{\sum_{K\varepsilon\ell} S_{Kt-1}}\bar{E}_{Kt-1} \cdot$$

3. Configuration efficiency improvements

$$\Delta EE_{C'} = \sum_{iK}\sum S_{Kt} f_{iKt} E_{iKt} - \sum_{iK}\sum S_{Kt} f_{iKt} E_{iKt-1} \cdot$$

4. Configuration sales shift

$$\Delta ES_{C'} = \left(\sum_{iK}\sum S_{Kt} f_{iKt} E_{iKt-1} + \sum_{\substack{iK \\ C \text{ not } C'}}\sum S_{Kt} f_{iKt}\bar{E}_{Kt-1}\right)$$

$$- \left(\sum_{\substack{iK \\ C \text{ not } C'}}\sum S_{Kt} f_{iKt-1}\bar{E}_{Kt-1} + \sum_{iK}\sum S_{Kt} f_{iKt-1} E_{iKt-1}\right) \cdot$$

5. Introductions of configurations

$$\Delta ECI_{C \text{ not } C'} = \sum_{\substack{iK \\ C \text{ not } C'}}\sum S_{Kt} f_{iKt} E_{iKt} - \sum_{\substack{iK \\ C \text{ not } C'}}\sum S_{Kt} f_{iKt}\bar{E}_{Kt-1} \cdot$$

6. Discontinuations of configurations

$$\Delta ECD_{C \text{ not } C'} = \sum_{\substack{iK \\ C \text{ not } C'}}\sum S_{Kt} f_{iKt-1}\bar{E}_{Kt-1} - \sum_{\substack{iK \\ C \text{ not } C'}}\sum S_{Kt} f_{iKt-1} E_{iKt-1} \cdot$$

7. Nameplate introductions

$$\Delta ENI_{\text{not } C} = \sum_{\substack{K \\ \text{not } C}} S_{Kt}\bar{E}_{Kt} - \left(\sum_{\substack{K \\ \text{not } C}} S_{Kt}\right)\bar{E}_{t-1\,\text{in } C} \cdot$$

8. Nameplate discontinuations

$$\Delta END_{\text{not } C} = \left(\sum_{\substack{K \\ \text{not } C}} S_{Kt-1}\right) \overline{E}_{t-1\,\text{in } C} - \sum_{\text{not } C} S_{Kt-1}\overline{E}_{Kt-1} \; .$$

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