

Chrysler's Warrants: September 1983

We quietly asked the government to surrender the warrants to us at little or no cost. What a mistake! There was a huge uproar over our request. . . . I was furious. . . .
—Lee Iacocca

There is no justification for forgoing one penny. Any profit the government could earn would be a reasonable reward for taking on the risk of saving Chrysler.¹
—Rep. William S. Green

At the bottom of its financial distress in 1980, Chrysler Corporation arranged with the U.S. government for guarantees of Chrysler's debt up to \$1.5 billion in return for cash fees and common stock warrants.² The fees, to be paid annually, would be equal to 1 percent of the loans guaranteed. The warrants were for 14.4 million shares exercisable at \$13 per share until 1990. The government also had a first lien on Chrysler's assets, which were estimated to have a liquidation value of \$2.5 billion. Participating banks were also given warrants on the same terms for 13.286 million shares. During the period when the loan guarantee was negotiated, the price of Chrysler's shares was about \$7.50. (See **Exhibit 1** for a history of Chrysler's share price during the period of the guarantee negotiations.)

¹"The Kicker," *New Yorker* (January 7, 1985): 56.

²Numerous arguments were advanced in favor of providing assistance: (1) the impact on the federal budget of a Chrysler failure would be greater than the cost of assistance. Budget impacts were expected in unemployment benefits, trade adjustment assistance payments, other social programs, and reduced tax revenues. (2) A Chrysler failure would disproportionately affect a city and region that already had substantial economic problems. (3) Failure would lead to either greater monopoly power by surviving U.S. firms or worsening balance of payments as foreign producers captured increased U.S. market share. (4) Chrysler's output of its popular small cars was 300,000 units in 1979 and 1980; this would expand to 1 million units in the near future.

Eventually only \$1.2 billion of the guarantee was used. In June 1980, \$500 million in notes were issued at 10.35 percent. Another \$300 million were issued in July at 11.40 percent. And in February 1981, \$400 million were issued at 14.90 percent.

By the summer of 1983, Chrysler was plainly recovering. **Exhibit 2** presents the share-price history during the period of recovery. In the spring, an offering of 26 million new shares at \$16.625 was sold out within an hour, and in the following weeks, the price per share rose to \$35.00. Then on July 13 Lee Iacocca, the chief executive officer, presented a check repaying the guaranteed loans in their entirety.³

Chrysler's Request

In the context of this recovery, Chrysler asked the government to return its warrants at no cost to Chrysler. On May 6, Gerald Greenwald, Chrysler's vice chairman, argued that, in view of the rapid recovery, the terms of the guarantee had been too onerous. The government had not "paid a nickel" for the loans, he said, adding, "At some point, you have to define what the term 'usury' means." Lee Iacocca stated,

These warrants were a sword hanging over our head. At any point over the next seven years, the government—or anyone else who owned the warrants—could demand that we issue an extra 14.4 million shares of Chrysler stock at bargain-basement prices. . . . When you consider that the government's money was never at risk in the first place—they had a lien on everything we owned, which was worth far more than \$1.2 billion—that kind of profit was almost indecent.⁴

Chrysler had initially borrowed only \$1.2 billion on its \$1.5 billion line of credit for a term of up to ten years, and repaid the debt after three years. The cash costs associated with this debt included \$404 million in interest, \$33 million in administrative fees to the federal government, and \$67 million in fees to investment bankers and lawyers. Iacocca viewed the potential dilution from the exercise of the warrants as an additional cost to shareholders. Chrysler had a total of 68.5 million shares outstanding.

During the 1930s' depression, the federal government had bought preferred stock of large commercial banks in order to improve their financial stability, but in the long history of government loan guarantees, there were no examples of equity kickers. At the time Chrysler requested the loan guarantees, government loan guarantees of \$409 billion were currently outstanding. In general, the government's loan losses had been quite small; the most notable loss was related to the bankruptcy of

³At the end of 1983, Chrysler's debt outstanding was \$1.07 billion.

⁴Lee Iacocca and William Novak, *Iacocca: An Autobiography* (New York: Bantam Doubleday Dell, 1984), 283.

the Penn Central railroad, which eventually required \$3 billion in cash assistance in order to maintain operations.

Frederick Zuckerman, the treasurer of Chrysler, said,

In May of 1980, Chrysler had a poker hand full of deuces and the government had one full of face cards. We *had* to give the warrants. In 1983, there was a philosophical issue as to whether or not it was right for the government to be profiting so enormously. Remember, it hadn't put up any money—only guaranteed loans made by others.⁵

Reaction to the Request

G. William Miller, secretary of the Treasury at the time the loan guarantee was approved, wrote to the Chrysler Loan Guarantee Board urging them not to return the warrants as “a matter of grave public concern and an ill-advised precedent.”

In reacting to the news of Chrysler's request, Representative William Green said,

The equity kicker that Congress insisted on is entirely consistent with the high risk. There is no reason for surrendering a penny of it. It wasn't a windfall. I didn't notice Mr. Iacocca offering to give back his options on Chrysler stock.⁶

Iacocca owned 1,000 common shares and held options for 320,000 shares exercisable at prices ranging from \$9.88 to \$11.02.

John Albertine, president of the American Business Conference, said that the request bordered on “disgrace.” Kenneth McLean, staff director of the Senate Banking Committee, called the proposal “outrageous.” And David Healey, an auto-industry analyst with Drexel Burnham Lambert, said, “They're trying to change the score of the game after it's over.”

Only Representative Stewart McKinney saw merit in the request. He argued that Chrysler had paid \$33 million in fees to the government: “. . . a hefty price. And having the government make a windfall is a little bit absurd.”

The Loan Guarantee Board rejected Chrysler's initial request as well as a subsequent offer of \$218 million for the warrants Chrysler made in July 1983. Instead, the board proposed to sell the warrants to the highest bidder in a sealed-bid auction in September 1983.

⁵“The Kicker,” 56.

⁶Ibid.

Decision

With the prospect of an open auction for the warrants, Chrysler executives faced the likelihood of paying a competitive price. Iacocca assigned Robert S. Miller, Chrysler's executive vice president of finance, the task of making a winning bid. But, said Miller, "He told me that if the bid was a penny too low or more than a dollar too high not to come home." Miller was reminded that in July Shearson/American Express had offered \$20.10 per warrant. How should Chrysler's bid be determined? Moreover, was that price at all consistent with the risks the government had run? In fact, had the government been overpaid?

Historical information was available that might assist in valuing the warrants. **Exhibit 3** presents certain definitions about the information, and **Exhibit 4** calculates the standard deviation of the log-normalized return on Chrysler's common stock in July and August 1983. **Exhibits 5** through **8** calculate the standard deviation over various time periods when the loan guarantee was being negotiated. **Exhibit 9** presents the long-term volatilities of selected companies. During this entire period, Chrysler paid no dividends on its common stock. This historical look affords a check on the estimates at the time of the case.

Chrysler had other warrants outstanding that could provide another benchmark in the valuation. These other warrants (for 5 million shares) had been issued in connection with preferred stock. They could be exercised at \$13 per share any time until June 15, 1985. Chrysler retained the option to shorten the life of the warrants, however, which it exercised in the summer of 1983. The new expiration date would be December 1, 1983. **Exhibit 10** presents historical information relevant to the value of these warrants.

Exhibit 11 calculates the standard deviation of log-normalized returns on two issues of Chrysler's debt that were trading on the New York Exchange at the time the loan guarantees were negotiated. These issues were (1) the \$100-million sinking-fund debentures (8.875s) of 1995 and (2) the \$200-million sinking-fund debentures (8.5s) of 1998. The return is an average of the daily trading returns of the bonds weighted by par value. This information might provide a foundation for evaluating the loan guarantee itself.

Exhibit 12 presents interest rates on selected debt instruments over the 1979–83 period. And **Exhibit 13** presents the yields to maturity on selected corporate bonds as of May 12, 1980, the date the loan guarantee was signed.

Exhibit 1

CHRYSLER-S WARRANTS: SEPTEMBER 1983

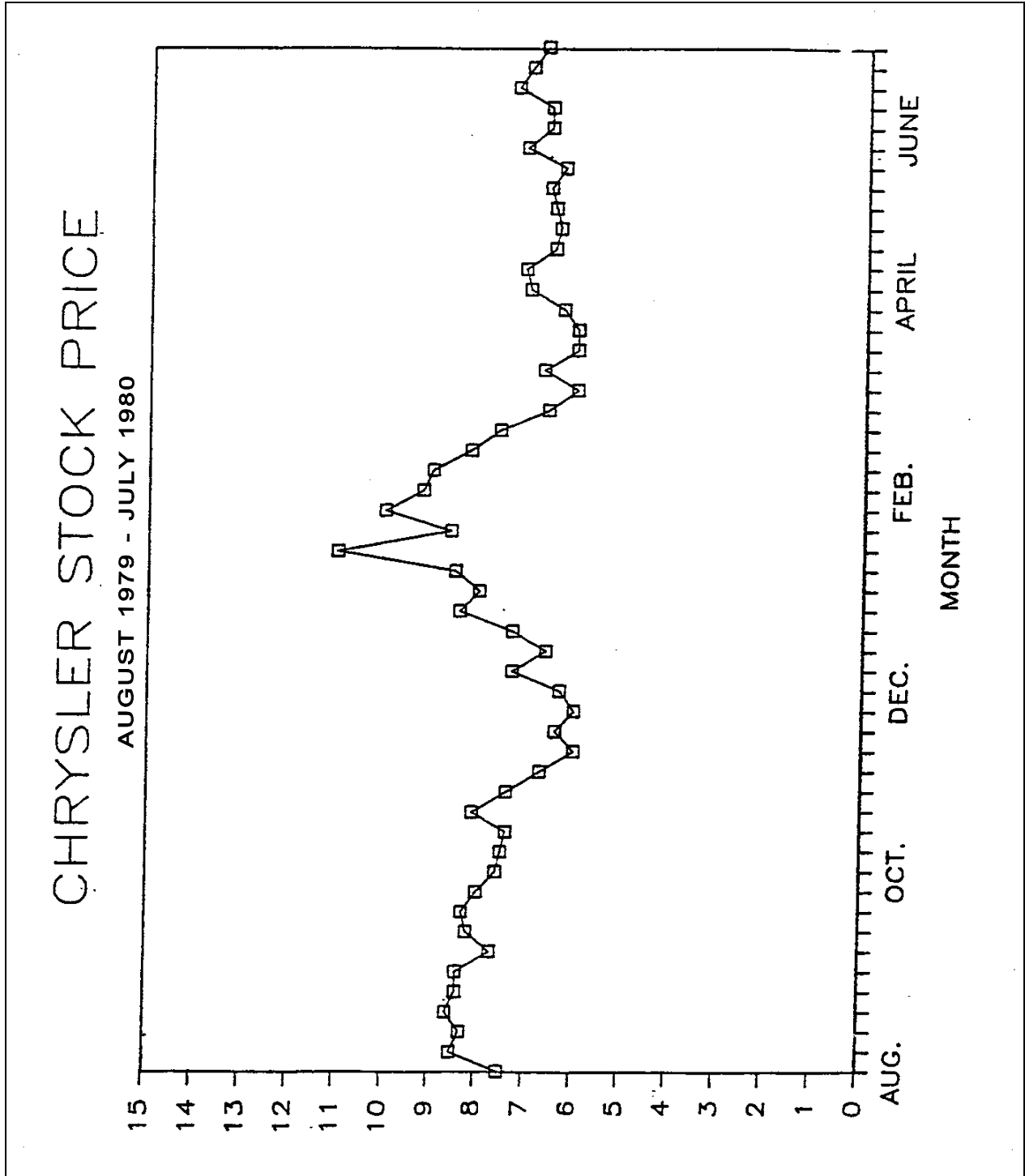


Exhibit 2

CHRYSLER-S WARRANTS: SEPTEMBER 1983

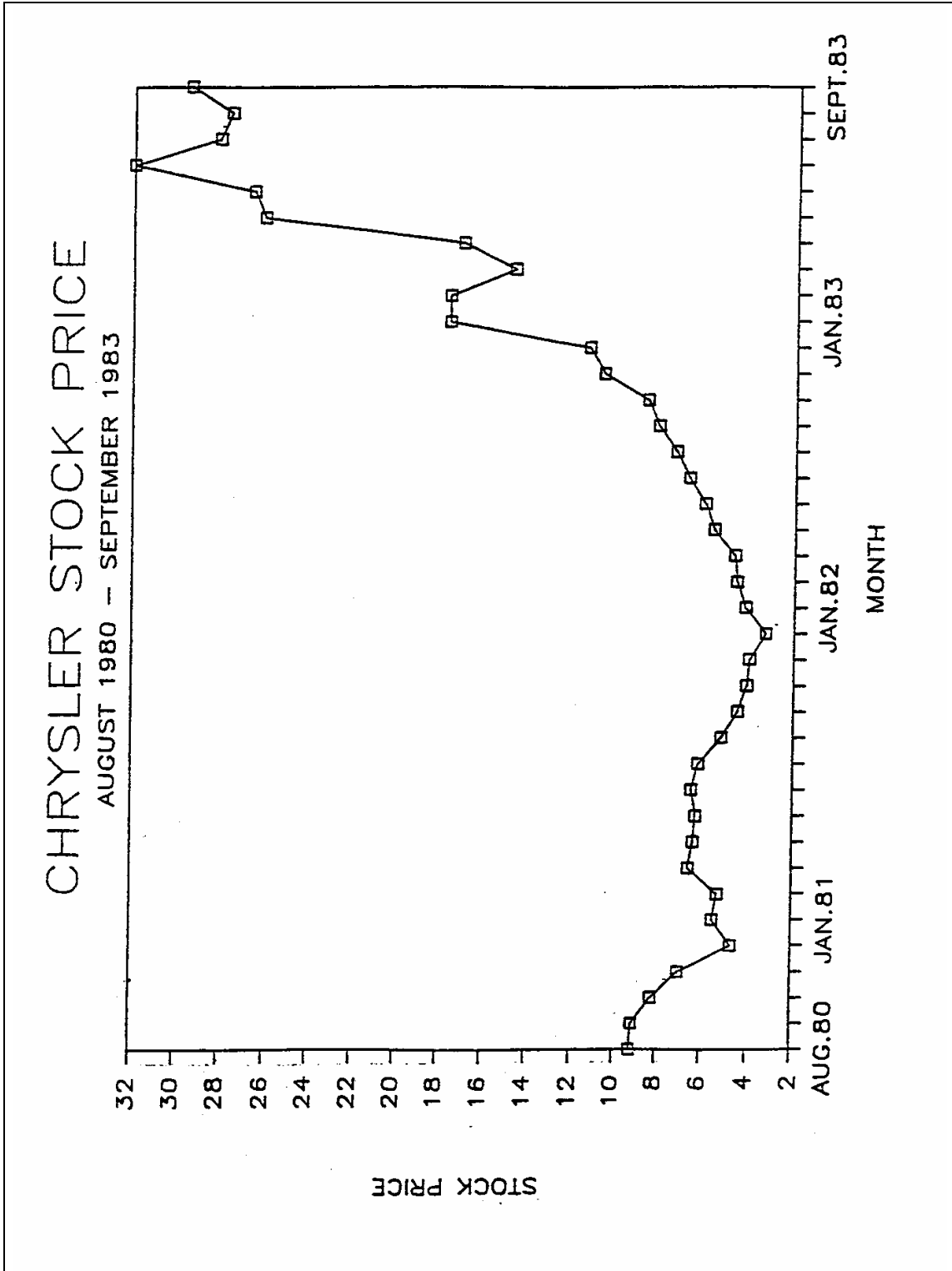


Exhibit 3

CHRYSLER-S WARRANTS: SEPTEMBER 1983

Definition of Components of Exhibits 4-8

- S_j = Stock price.
- R_j = Price relatives, calculated as today's closing stock price divided by yesterday's closing stock price.
- LN R_j = Natural Logarithm of daily price relatives.
This corrects for the possibility that the distribution of price relatives does not have a normal distribution.
- U = Mean of LN R_j.
- LN R_j-U = Deviation of price relatives from mean.
- Sigma = Standard deviation of log-normalized daily price relatives annualized, the typical measure of volatility of a stock.

Exhibit 5
CHRYSLER-S WARRANTS: SEPTEMBER 1983
 Calculation of Standard Deviation of Daily Percentage
 Changes in Stock Price: September 14, 1979
 (first date of loan-guarantee bill with equity kicker
 drawn up at Treasury)

<u>Date</u>	<u>Chrysler Stock Price, S_j</u>	<u>R_j-S_j/ S_j-1</u>	<u>Log R_j</u>	<u>Log R_j-U</u>	<u>Log R_j-U Squared</u>
8/02/79	7.875				
8/03	7.625	0.968	-0.03226	0.000	0.00000
8/06	7.500	0.984	-0.01653	-0.017	0.00027
8/07	7.750	1.033	0.03279	0.000	0.00000
8/08	7.750	1.000	0.00000	.000	.00000
8/09	8.750	1.129	0.12136	0.121	0.01473
8/10	8.625	0.986	-0.01439	-0.014	0.00021
8/13	8.500	0.986	-0.01460	-0.015	0.00021
8/14	8.375	0.985	-0.01482	-0.015	0.00022
8/15	8.500	1.015	0.01482	0.000	0.00000
8/16	8.500	1.000	0.00000	.000	.00000
8/17	8.375	0.985	-0.01482	-0.015	0.00022
8/20	8.375	1.000	0.00000	.000	.00000
8/21	8.500	1.015	0.01482	0.000	0.00000
8/22	8.625	1.015	0.01460	0.015	0.00021
8/23	8.750	1.014	0.01439	0.000	0.00000
8/24	8.750	1.000	0.00000	.000	.00000
8/27	8.625	0.986	-0.01439	-0.014	0.00021
8/28	8.625	1.000	0.00000	.000	.00000
8/29	8.500	0.986	-0.01460	0.000	0.00000
8/30	8.375	0.985	-0.01482	-0.015	0.00022
8/31	8.500	1.015	0.01482	0.000	0.00000
9/04	8.500	1.000	0.00000	.000	.00000
9/05	8.375	0.985	-0.01482	-0.015	0.00022
9/06	8.625	1.030	0.02941	0.029	0.00087
9/07	8.500	0.986	-0.01460	-0.015	0.00021
9/10	8.000	0.941	-0.06062	-0.061	0.00368
9/11	7.750	0.969	-0.03175	-0.000	0.00000
9/12	7.750	1.000	0.00000	.000	.00000
9/13	7.875	1.016	0.01600	0.016	0.00026
9/14/79	7.875	1.000	0.00000	.000	.00000
		Sum=	.00000	Sum=	0.02173
		U=	.00000		
Sigma- (Sum of Log R _j -U squared/30) × (30/29)-					0.000749
To convert to annual variance: × 365 or					0.273493
Annual volatility-square root or					0.522965

Exhibit 7

CHRYSLER'S WARRANTS: SEPTEMBER 1983

Calculation of Standard Deviation of Daily Percentage

Changes in Stock Price: April 8, 1980

(Chrysler and the Treasury negotiate, warrants proposed)

<u>Date</u>	<u>Chrysler Stock Price, Sj</u>	<u>Rj-Sj/ Sj-1</u>	<u>Log Rj</u>	<u>Log Rj-U</u>	<u>Log Rj-U Squared</u>
2/25/80	8.875				
2/26	8.625	0.972	-0.02857	-0.019	0.00035
2/27	8.625	1.000	0.00000	0.010	0.00009
2/28	8.625	1.000	0.00000	0.010	0.00009
2/29	9.000	1.043	0.04256	0.052	0.00274
3/03	8.875	0.986	-0.01399	-0.004	0.00002
3/04	8.625	0.972	-0.02857	-0.019	0.00035
3/05	8.625	1.000	0.00000	0.010	0.00009
3/06	8.250	0.957	-0.04445	-0.035	0.00120
3/07	8.250	1.000	0.00000	0.010	0.00009
3/10	8.000	0.970	-0.03077	-0.021	0.00044
3/11	8.250	1.031	0.03077	0.041	0.00164
3/12	8.000	0.970	-0.03077	-0.021	0.00044
3/13	8.000	1.000	0.00000	0.010	0.00009
3/14	7.750	0.969	-0.03175	-0.022	0.00048
3/17	7.500	0.968	-0.03279	-0.023	0.00053
3/18	7.125	0.950	-0.05129	-0.042	0.00173
3/19	7.125	1.000	0.00000	0.010	0.00009
3/20	6.750	0.947	-0.05407	-0.044	0.00196
3/21	6.750	1.000	0.00000	0.010	0.00009
3/24	6.375	0.944	-0.05716	-0.047	0.00225
3/25	6.250	0.980	-0.01980	-0.010	0.00010
3/26	6.375	1.020	0.01980	0.030	0.00087
3/27	6.000	0.941	-0.06062	-0.051	0.00259
3/28	6.000	1.000	0.00000	0.010	0.00009
3/31	6.125	1.021	0.02062	0.030	0.00092
4/01	6.250	1.020	0.02020	0.030	0.00000
4/02	6.375	1.020	0.01980	-0.030	0.00087
4/03	6.750	1.059	0.05716	0.067	0.00448
4/07	6.625	0.981	-0.01869	-0.009	0.00008
4/08	6.625	1.000	0.00000	0.010	0.00009
		Sum-	0.29239	Sum-	0.02492
		U-	0.00975		

Sigma- (Sum of Log Rj-U squared/30) × (30/29)-

To convert to annual variance: × 365 or

Annual volatility-square root or

0.000859

0.313596

0.559996

Exhibit 9

CHRYSLER-S WARRANTS: SEPTEMBER 1983

Historical Volatility of Selected Companies

<u>Name</u>	<u>Industry</u>	<u>Historical Volatility</u> <u>(1/1/80 to 1/1/84)</u>
Caterpillar Tractor	Machinery (const. and mining)	.27
John Deere	Agricultural equipment	.29
Firestone Tire	Tire and rubber	.33
Ford Motor	Autos and trucks	.36
General Motors	Autos and trucks	.28
Goodyear Tire	Tire and rubber	.29
Winnebago	Recreational vehicles	.68

Source: John C. Cox and Mark Rubinstein, *Options Markets* (Englewood Cliffs, N.J.: Prentice-Hall, 1985), 346–58.
Adapted by permission of Prentice-Hall, Inc.

Exhibit 10

CHRYSLER-S WARRANTS: SEPTEMBER 1983

Chrysler-s Publicly Traded Warrants

	<u>Price of Warrant</u>	<u>Time in Warrant (years)</u>	<u>Stock Price</u>	<u>Exercise Price</u>
Sept. 14, 1979	2.875	5.75	7.875	13
Jan. 7, 1980	2.750	5.42	7.500	13
April 8, 1980	3.000	5.17	6.625	13
May 12, 1980	3.630	5.00	7.500	13
Sept. 1, 1983	16.380	0.25	28.375	13

Exhibit 12

CHRYSLER'S WARRANTS: SEPTEMBER 1983

Yields to Maturity on
Selected Debt Instruments

	<u>Debt of the U.S. Treasury</u>				AAA Bonds	BAA Bonds
	<u>90-Day T-Bill</u>	<u>1-Year T-Bond</u>	<u>5-Year T-Bond</u>	<u>10-Year T-Bond</u>	<u>Moody's Average</u>	<u>Moody's Average</u>
September 14, 1979	11.42%	10.79%	9.25%	9.27%	9.42%	10.48%
January 7, 1980	12.31	11.67	10.49	10.63	10.88	12.29
April 8, 1980	15.70	14.60	12.45	11.03	12.95	14.75
May 12, 1980	9.34	9.34	9.83	10.52	10.93	13.20
September 1, 1983	9.59%	10.48%	11.92% ¹	11.94%	12.54%	13.65%

¹On September 1, 1983, the yield on a 7-year Treasury Bond was .1193.

Exhibit 13

CHRYSLER-S WARRANTS: SEPTEMBER 1983

Yield to Maturity of Selected Corporate Bonds
on May 12, 1980

Selected CCC Issues

McCrorry Corp. deb. 10.5s -85	15.310%
McCrorry Corp. deb. 7.5s -94	15.850
LTV Corp. sub. s.f.deb. 5.0s -88	15.360
Fedders Corp. sub. s.f. deb. 8.875s -94	16.300
Allegheny Beverage, sub. deb. 10.0s -97	16.820%

Selected Chrysler Issues

S.f. deb. 8 7/8s -95	19.480%
S.f. deb. 8s -98	18.700
Chrysler financial notes 8 7/8s -84	20.800
Chrysler financial notes 9S -86	21.450
Chrysler financial sub. deb. 7 3/8s -86	23.360%