by Allen Michel and Israel Shaked

RJR Nabisco: A Case Study of a Complex Leveraged Buyout

Several features of RJR Nabisco made it a particularly attractive LBO candidate. Its operations exhibited moderate and consistent growth, required little capital investment and carried low debt levels. Its problems—a declining return on assets and falling inventory turnover—appeared fixable. And it offered significant break-up value.

Valuing RJR's equity at the time of the LBO requires detailed knowledge of the company's operations and extensive number crunching. The analysis is obviously quite dependent on the assumptions made about cash flow in the post-LBO period, as well as the long-term, steady-state growth rate. Nevertheless, the figures suggest that, even assuming a high, 5 per cent level of steady-state growth, RJR's cash flows would have to grow at a rate of at least 18 per cent per year to justify KKR's bid of $109 per share.

RJR's board played a prominent role in the bidding process. By setting the bidding rules, the board successfully minimized the possibility of collusion and thus increased potential gains to stakeholders. The decision to accept KKR's offer over RJR management's higher bid appears to reflect the board's concern for employees and existing shareholders.

BOTH THE POPULAR press and the academic press have devoted extensive coverage to leveraged buyouts, but neither has devoted much attention to analyzing the features of a specific LBO.[1] The RJR Nabisco transaction warrants particular attention. Not only is it the largest LBO on record, but it also features a particularly wide range of sophisticated players, a complex set of innovative financial instruments, and a challenging valuation process.

This article describes the RJR transaction. It gives a brief history of the company, examines the reasons why RJR was an attractive LBO target, provides a valuation of the company, analyzes the bidding dynamics, and describes the role of the board in determining the winning bid.

Historical Perspective

In many respects, RJR was a pioneer. It anticipated the increasing popularity of tobacco consumption, and in 1913 made a risky marketing move, introducing four brands simultaneously. The strategy worked well. Among the new brands was Camel, a name brand that changed the company's history. In 1914, RJR sold 425 million Camel cigarettes; seven years later it sold 18 billion. The combination of creativity on the production side and a well developed advertising campaign yielded a solid 50 per cent market share.

During the depression years, RJR was hurt by cheaper brands. But it was not ready to give up. It introduced the single-piece folding carton and made further improvements in packaging and wrapping. In 1935, the cigarette war ended with Camel regaining the number-one position it had lost in 1929.

Though Camel retained its leadership for 15 years, the post-World War II era was very turbulent, primarily because of three factors. First, the advent of television introduced a new advertising medium. Second, filter-tip cigarettes created the first significant tobacco-market segmentation. Third, health concerns raised controversy over tobacco consumption.

Responding to increased competitive pres-

1. Footnotes appear at end of article.

Table I Selected Financial Data

	1985	*1986*	*1987*	*1988*
I. INCOME STATEMENT ($MILLION)				
Tobacco	5,422	5,866	6,346	7,068
Food Sales	6,200	9,236	9,420	9,888
Total Sales	11,622	15,102	15,766	16,956
Tobacco Oper. Income	1,843	1,659	1,821	1,924
Food Oper. Income	549	820	915	1,215
Total Oper. Income	2,392	2,479	2,736	3,139
Depreciation	354	605	652	730
EBIT	1,949	2,340	2,304	2,848
Interest Expense	337	565	489	579
Net Income	1,001	1,064	1,289	1,393
II. BALANCE SHEET ($MILLION)				
Total Assets	16,414	16,701	16,861	16,895
Long-term Debt	5,628	5,514	5,681	5,262
Working Capital	1,617	1,329	1,717	1,795
III. OTHER FINANCIAL DATA				
Capital Expenditures ($million)	946	1,022	936	1,142
Return on Equity (%)	26.04	19.03	20.78	17.11
Return on Assets (%)	15.46	14.13	13.73	11.50
Asset Turnover	0.92	0.91	0.94	1.00
Inventory Turnover	10.01	9.74	5.08	3.92
Dividend Payout (%)	31.20	39.30	37.30	36.47
Common Stock Price Range:				
High	35	55⅛	71⅛	94½
Low	24¾	31	34½	54¾
No. Common Shares (mill.)	258.57	250.40	247.36	223.52

Source: December 6, 1988 prospectus.

sures, RJR responded with four strategies. It differentiated its products. Simultaneously, it diversified into non-cigarette products. It also increased its focus on overseas markets, where cigarette growth was increasing at double-digit rates. At the same time, it addressed increasing health concerns at home.

RJR as a Potential LBO

RJR Nabisco was a particularly attractive LBO candidate. First, it exhibited *steady growth unaffected by business cycles*. High growth and inconsistent growth often present unacceptable risks when it comes to leveraged buyouts. High growth requires a significant investment of working capital, whereas inconsistent growth may threaten cash flow. Successful LBOs are generally characterized by both low business risk and moderate growth.

RJR's unlevered beta, representing its business risk, was 0.69. In other words, the firm was relatively insensitive to market-wide fluctuations. Both its tobacco and food operations were non-cyclical and projected to have reasonably slow growth rates. Although the growth rate of the tobacco unit was a robust 9.8 per cent and the growth rate of food operations was 3.5 per cent in the period between RJR's purchase of Nabisco Brands in 1985 and the buyout announcement, most analysts had forecast a significantly slower long-term tobacco growth rate and a somewhat slower growth rate in food operations.

RJR had *low capital expenditures*. Neither of its businesses required much capital investment. Indeed, as Table I shows, in each of the three years following the Nabisco Brands purchase, less than 7 per cent of the firm's revenues were committed to capital investment. Furthermore, the firm was able to avoid the high-technology investments necessary in many industries, which require a significant R & D commitment to remain competitive.

The firm had a *low debt level*. In an LBO situation, new management often takes advantage of the debt capacity of the firm's assets, hence looks for low debt in the target firm. In the case of RJR, the pre-LBO ratio of long-term debt to assets was approximately 30 per cent. This offered significant opportunity for debt expansion following the LBO, especially when combined with RJR's low systematic risk.

It is interesting to note that some studies have determined that LBO target firms often exhibit higher debt levels than their non-target counterparts.[2] These high pre-LBO debt levels may

Table II RJR Break-Up Value

Food Operations	
U.S.:	
Nabisco cookies and crackers	$5 bill.
Canned vegetables	500 mill.
Canned fruits	300 mill.
Ready-to-eat and hot cereals	750–$1 bill.
Planter's peanuts	800–900 mill.
Lifesavers	400–500 mill.
Candy bars	300 mill.
Bubble gum	200 mill.
Margarine	200–300 mill.
Fresh Fruit	700 mill.
Ortega Mexican food	150 mill.
A-1 Steak Sauce	100–150 mill.
Milkbone dog biscuits	200 mill.
International	
Miscellaneous foods	$2.5–3 bill.
Total Food	12.1–13.1 bill.
Tobacco	12.5–13 bill.
Total Estimated Break-up Value	24.6–26.1 bill.
Value per Share:	
Break-Up Value	24.6–26.1 bill.
−Long-Term Debt	4.6 bill.
Equity Value	20.–21.5 bill.
÷Number of Shares	234 mill.
Break-Up Value Per Share	$85–92/share

Source: R. Alsop, A. M. Freedman and B. Morris, "RJR Takeover Could Hurt Marketers and Consumers," *Wall Street Journal*, December 2, 1988.

have appealed to buyers to the extent they suggested more stable operating cash flows.

RJR's problems appeared *fixable*. The firm's return on assets had declined steadily from 15.5 per cent in 1985 to 11.5 per cent in 1988. Over the same period, its inventory turnover had fallen from 10.0 to 3.9. To the extent new management viewed these problems as "fixable," there was potential for value creation.

RJR offered significant *break-up value*. In virtually all LBOs, the value of the deal is calculated based upon both a cash-flow value of the firm and a break-up option, which assumes that the firm is to be broken into units and sold off piecemeal. Table II gives RJR's break-up value, as estimated by Smith Barney and reported in the *Wall Street Journal*.[3] The break-up value of $85 to $92 per share was significantly higher than RJR's market price of $56 prior to the initial offer of RJR's CEO, Ross Johnson.

Discounted-Cash-Flow Valuation

The discounted-cash-flow methodology determines value by taking a projected stream of cash flows and discounting them at an appropriate discount rate. Though it sounds simple and straightforward, the process, if done correctly, requires an in-depth understanding of the principles and tedious number crunching.[4] The valuation of RJR consists of three steps:

1. develop a set of base-case cash-flow scenarios,
2. derive the appropriate discount rate,
3. discount the cash flows from Step 1 at the cost of capital derived in Step 2; account for the value of existing debt to obtain the value of RJR's equity.

Below we discuss RJR's cash flows and determination of the appropriate discount rate. We then value RJR's equity.

Cash Flows

Table III presents the projected *sales, operating profits and cash flows* assumed by Kohlberg Kravis Roberts (KKR) in the supplement to their December 6, 1988 tender offer.

For the *operating margins* of the tobacco business, KKR assumed an increase from the 1988 pre-LBO level of 27 per cent to 35 per cent in 1998. Though one might argue that this is an unrealistically optimistic projection, the tobacco industry had attained such operating margins in the past. In 1987, for example, Philip Morris reported a 35 per cent margin, the RJR tobacco unit a 27 per cent margin, American Brands an 11 per cent margin and Universal a 7 per cent margin.

In addition to its somewhat optimistic margin assumption, KKR assumed that tobacco *sales and operating income* would grow by 8.3 per cent and by more than 10 per cent per year, respectively. Though the U.S. tobacco market is declining annually by approximately 3 per cent, U.S. exports of cigarettes rose by 56 per cent in 1987 and by 25 per cent in 1988. In addition, like any other acquiring group, KKR expected to improve performance. As it indicated in the supplement to its tender offer, "Tobacco operating income for 1990 and years thereafter grows at rates greater than net sales due to expected production and other operating efficiencies and reduction in product development costs."

KKR's projections for the food business were not out of line with industry expectations. The projected sales growth of 6 per cent, for example, although higher than RJR's historical sales growth, was comparable to that of General Mills.

RJR's total cash flows represent the "free cash flows" available to meet both debt and equity

Table III Projected Cash Flows (millions of dollars)

	1989	*1990*	*1991*	*1992*	*1993*	*1994*	*1995*	*1996*	*1997*	*1998*
I. Sales:										
Tobacco	7,560	8,294	8,983	9,731	10,540	11,418	12,368	13,397	14,514	15,723
Food	10,438	11,383	12,092	12,847	13,651	14,507	15,420	16,393	17,428	18,533
Total	18,088	19,677	21,075	22,578	24,191	25,925	27,788	29,790	31,942	34,256
II. Cash Flows:										
Tobacco Operating EBIT*	2,022	2,360	2,786	3,071	3,386	3,733	4,115	4,534	4,998	5,508
+ Food Operating EBIT	1,163	1,255	1,348	1,459	1,581	1,713	1,815	2,011	2,178	2,361
= Total EBIT	3,185	3,615	4,134	4,530	4,967	5,446	5,970	6,545	7,176	7,869
− Corporate Expenses	287	279	296	314	333	353	374	396	420	445
= EBIT	2,898	3,336	3,838	4,216	4,634	5,093	5,596	6,149	6,756	7,424
− Taxes	1,029	1,184	1,362	1,497	1,645	1,808	1,987	2,183	2,398	2,636
= EBIAT†	1,869	2,152	2,476	2,719	2,989	3,285	3,609	3,966	4,358	4,788
+ Depreciation	783	767	794	823	840	841	841	841	841	835
− Increased Work Capit.	150	158	165	174	182	191	201	211	222	233
− Capital Expenditures	1,708	1,462	1,345	930	738	735	735	735	735	735
= Total Free Cash Flows	794	1,299	1,760	2,438	2,909	3,200	3,514	3,861	4,242	4,655

Source: December 6, 1988 prospectus. Incremental working capital estimates based on a Prudential Bache report dated October 28, 1988.
* Earnings before interest, taxes and corporate expenses.
† Earnings before interest but after taxes.

obligations. These cash flows will be discounted in the valuation process, so, to avoid double-counting of the interest cost, interest expense is not deducted from operating income.

Once operating income is derived, two further adjustments are made. The first is a *working capital adjustment*. If inventory is projected to increase over time, for example, RJR will have fewer funds available to meet debt and distribute to equity holders. In other words, increases in working capital items decrease free cash flow; similarly, decreases in working capital items increase cash flow.

The second adjustment deals with *capital expenditures*. As capital expenditures increase, fewer funds are available for distribution to equity and debt holders.

For the short period following the buyout, KKR's projections were reasonably compatible with those of RJR's management in previous years. For example, in RJR's 1987 annual report, management projected capital expenditures of $5 billion for the following three years, or approximately $1.7 billion per year. As indicated in Table III, KKR's projection for the first post-buyout year is approximately $1.7 billion; it subsequently declines over four years to $700 million.

The Appropriate Discount Rate

Deriving an appropriate discount rate requires three steps. First, the amount of each debt instrument must be determined and the weighted average after-tax cost of debt calculated. Second, the rate of return required by shareholders must be adjusted to reflect the increase in the firm's leverage following the LBO. Third, given the proportions of debt and equity and their costs, a weighted average cost of capital must be derived.

Cost of Debt: In a typical corporate finance textbook, the derivation of the cost of debt is a simple exercise. In virtually all mergers and LBOs, however, the features, cost of funds and even amounts are structured in a relatively complex manner. The amounts are frequently provided as ranges, rather than exact values. The features include both cash and PIK (paid-in-kind) securities. Interest rates are floating, based upon various base rates. Moreover, an interest rate base is sometimes selected by the borrower and sometimes by the lender. Also, many of the initial sources are assumed to be refinanced at some unspecified time at a rate unknown at the time of the transaction.

These complexities are illustrated in Table IV, which provides the sources of financing used in the RJR buyout. Note that the funds borrowed under the Tender Offer Facility are to be used to purchase the shares tendered to RJR. This amount is to be refinanced upon the completion of the transaction by the Asset Sales Bridge Facility, Refinancing Bridge Facility and Revolving Credit and Term Loan Facility.

Because of their complexity, many of the rates are not structured in a manner easily analyzed in the context of an LBO. Consider, for example,

Table IV Sources of Financing

Type	*Amount*	*Rate*	*Characteristics*
Tender Offer Facility (T.O.F.)	$13.6 billion	Base Rate +2%[a] or Eurodollar Rate +3%	Bank financing used to purchase shares tendered to KKR.
Asset Sale Bridge Facility	$6 billion	Base Rate +1½%[a] or Eurodollar Rate +2½%	Bank financing used to refinance the T.O.F. At least $5.5 billion must be obtained from the sale of assets.
Refinancing Bridge Facility	$1.5 billion	Base Rate +2¼%[b] or Eurodollar Rate +3¼%[d]	Bank financing used to refinance T.O.F.
Revolving Credit and Term Loan Facility	$5.25 billion	Base Rate +1½%[c] or Eurodollar Rate +2½%	Bank financing used to refinance the T.O.F. After 2 yrs., both facilities are to be converted to 4-yr. term loans upon satisfying key debt covenants relating to working capital, asset sales, solvency, etc.
Bridge Financing	$5.0 billion	Base Rate + 6% for 1st 6 mos. 8% for following 3 mos. 10% thereafter	Drexel Burnham Lambert and Merrill Lynch commit $1.5 bill. each of Senior Subordinated Bridge financing and Drexel agreed to provide $2 bill. of sub. bridge financing.[d]
Increasing-Rate Notes	$5.0 billion	Greater of a) Floating 90-day LIBOR plus adjustment b) Fixed rate plus adjustment[e]	Used to redeem non-bank bridge financing. Two classes: (1) 8-yr. First Subordinated Notes, (2) 8-yr. Second Subordinated Notes. Can use additional notes as interest payment for second subordinated notes during period between month 18 and month 78.
Partnership Debt Securities	$0.5 billion	T-bill +4%	6-mo. debt security, which can be extended up to 7 years with adjustment in rate schedule.
Senior Convertible Debentures	$1.8 billion	Interest = 550 basis points over the greater of 1) 3-mo. T-bill 2) 10-yr. T-notes 3) 30-yr. T-bonds Minimum rate = 12⅝% Maximum rate = 16⅝	20-year maturity. For the first 10 years, interest is paid in securities or cash at the option of KKR. Following the 10-year period, cash payments are mandatory. At option of debenture holder can be converted to common stock after year 4. Debentures are convertible into 25% of RJR equity in 1993. Security has reset provision to trade at par.
Cumulative Exchangeable Preferred Stock	$4.059 billion	Dividend = 550 basis points over the greater of 1) 3-mo. T-bill 2) 10-yr. T-notes 3) 30-yr. T-bonds Minimum rate = 12⅝% Maximum rate = 16⅝%	First 6 years, dividends are paid in cash or additional shares, at KKR's option. Following year 6, dividends are paid in cash. Shares have no voting rights. Then shares have a prior claim to that of the senior convertible debentures.
Equity	$1.5 billion	No Fixed Dividend	Provided by KKR investing group set up as a limited partnership.

Source: January 31, 1989 prospectus.
a. RJR has the option of making interest rate selection. Base rate is defined as the 30-day commercial paper rate for firms whose bond ratings are "AA."
b. Increasing to 2½% for the 6-month period following the first anniversary of the tender offer expiration date and 2¾% thereafter.
c. Increasing to 3½% for the 6-month period following the first anniversary of the tender offer expiration date, and 2¾% thereafter.
d. Subordinated rates have similar structure, but are increased by ¾%.
e. Adjustment is based on seniority and length of time since issuance.

the Increasing-Rate Notes described briefly in Table IV. These eight-year notes comprise two classes. Approximately $1.25 billion are eight-year First Subordinated Increasing-Rate Notes bearing cash interest payment. The other class—$3.75 billion of Second Subordinated Increasing-Rate Notes—pay interest in cash for the first 18 months, in cash or additional Second Subordinated Increasing-Rate Notes (at the option of KKR) for the following 60 months, and again in cash for the remaining 18 months.

The terms for these notes indicate that the interest rate will be adjusted monthly and will equal the greater of

(1) a floating-rate 90-day LIBOR, plus a 400-basis-point spread for the first quarter in the case of the first class of increasing-rate notes and a 500-point spread in the case of the second class. For each class, the spread will increase by 50 basis points per quarter for the first two years and by 25 basis points per quarter thereafter;

(2) a fixed rate equal to the floating rate for the initial quarter determined in (1) above, less ⅛ of 1 per cent in each case, increasing by 50 basis points per quarter during the first two years and by 25 basis points per quarter each quarter thereafter. If the interest rate is above 18 per cent, interest expense in excess of 18 per cent will be made in additional increasing-rate notes, not in cash.

Several long-term securities are also relatively unusual in their structure. For example, the senior convertible debentures due in 2009 were set to be repriced to trade at par in May 1991. Several months prior to the required reset, the bonds traded at 80. At this price, the issue's coupon would have been reset at more than 20 per cent. To avoid the reset, RJR decided to buy back for cash the entire amount of the bond issue, costing about $1.7 billion.

Because the bonds were convertible into 25 per cent of RJR's equity in 1993, the buyback boosted KKR's holding in RJR from 58 per cent on a fully diluted basis to 83 per cent. Interestingly, while this security (described in Table IV as Senior Convertible Debentures) had a floor and cap rate, Drexel set the May 1991 reset without any cap or floor. The lack of a cap no doubt attracted buyers for the bonds, but KKR's exposure increased substantially.

A second junk bond issue also faced a mandatory reset in May 1991. This issue resulted when RJR, on July 17, 1989, exchanged its $4 billion Cumulative Exchangeable Preferred Stock for subordinated exchange debentures having an identical rate and a maturity date of 2007. The exchange resulted from KKR's concern about the potential tax liability of preferred stock relative to tax-deductible debt.

Similar reset bonds were a major contributing factor in the Chapter XI filing of another KKR acquisition—Hillsborough Holdings. January 1, 1990 was the reset date for $624.3 million of Hillsborough bonds. The anticipated reset rate was far in excess of 20 per cent. As a result, three days prior to the reset, on December 28, 1989, Hillsborough filed for protection under the bankruptcy code.

Table V Cost of Debt

Type of Debt	*Amount* (millions)*	*Weight*	*Interest Rate (per cent)*
Short-Term Debt	$13,600	0.5198	11.27%
Existing Long-Term Debt	5,262	0.2011	9.75
Sub. Increasing-Rate Notes (Class I)	1,250	0.0477	13.00
Sub. Increasing-Rate Notes (Class II)	3,750	0.1434	14.00
Senior Convertible Debentures	1,800	0.0688	14.50
Partnership Debt Securities	500	0.0191	11.20
Total	$26,162	1.0000	11.66%
After-Tax Cost of Debt = 11.66 (1 − 0.355) = 7.52%			

* From January 31, 1989 prospectus.

Because of the complexity of the RJR LBO financing structure, the cost of debt can only be estimated. Table V provides an approximation of the interest rates charged on each of the debt instruments. It also indicates their respective weights as a percentage of the company's total debt. The before-tax weighted average cost of debt is determined to be approximately 11.66 per cent, and the after-tax cost of debt is calculated as 7.52 per cent.

Cost of Equity: Table VI indicates that RJR's pre-LBO beta was about 1.05, while its debt-to-equity ratio was 0.82. Given the relationship between total beta, unlevered (operating) beta, tax rate and debt-equity ratio, RJR's unlevered beta was 0.69. RJR was expected to have a debt-to-equity ratio of 20.15 following the buy-

Table VI Cost of Equity

I. Data

Pre-LBO Beta	1.05*
Pre-LBO Debt/Equity	0.82
Post-LBO Debt/Equity	20.15
Tax Rate	0.355

II. Unlevering the Beta

$1.05 = \text{Beta}_{\text{unlevered}} \times [1 + (1 - 0.355) \cdot 0.82]$

$\text{Beta}_{\text{unlevered}} = 0.69$

III. Post-LBO Beta

$\text{Beta}_{\text{post-LBO}} = 0.69\ [1 + (1 - 0.355) \cdot 20.15] = 9.65$

IV. Post-LBO Cost of Equity

$R_E = 7.2 + 9.65 \cdot 8 = 84.4\%$

* RJR's pre-LBO beta was obtained from the September 1988 issue of *Value Line*, the most recent issue prior to the transaction.

Table VII Alternative Beta Estimate

I. Universal Corporation	
Primary Business	Tobacco
Beta	0.86
Debt/Equity	88.1/356.9
Effective Tax Rate	24%
Universal's Unlevered Beta =	$\frac{0.86}{1 + (1 - 0.24) \cdot 88.1/356.9} = 0.72$
II. Flowers Industries	
Primary Business	Food
Beta	0.95
Debt/Equity	103.0/198.0
Effective Tax Rate	33%
Flowers' Unlevered Beta =	$\frac{0.95}{1 + (1 - 0.33) \cdot 103/198} = 0.70$
III. Proportion of RJR's assets in	
Tobacco Segment	33.9%
Food Segment	66.1%
RJR's Unlevered Beta =	$0.339 \cdot 0.72 + 0.661 \cdot 0.70 = 0.71$

out; its post-LBO beta was thus estimated as 9.65.

Panel IV of Table VI gives the post-buyout cost of equity. With a risk-free rate of 7.2 per cent and a historical market risk premium of 8 per cent, that cost is 84.4 per cent. This seems high, but it is well within the target range of buyout specialists in such highly leveraged transactions.

Table VII gives an alternative estimate of RJR's operating beta, derived by using two surrogate firms, one for each of RJR's main business segments. The direct method of unlevering RJR's beta and the surrogate-firm approach yield nearly identical results (unlevered betas of 0.69 and 0.71, respectively).

Weighted Average Cost of Capital: Once the costs and extent of financing have been worked out, the calculation of the weighted average cost of capital is straightforward. RJR's debt constituted 82.47 per cent of its total capital, its preferred stock represented 12.8 per cent, and its equity only 4.73 per cent. After accounting for the cost of each of these components, we estimated RJR's cost of capital to be 12.06 per cent.

Valuing RJR

All the inputs needed to value RJR are now available. We performed the following sequence of calculations.

First, using 12.06 per cent as the cost of capital, we discounted each of the projected cash flows for the 10 years 1989–98 (from Table III) back to 1988. This calculation yielded a value of $15,633.77 million.

Second, we had to make some assumptions about the period following 1998. A review of the different assessments made by the acquiring group could lead us, for example, to select 3 per cent as the steady-state compound growth rate for the period following 1998. As Table VIII shows, the present value of post-1998 cash flows, given a 3 per cent growth rate, is $16,952 million.

Finally, in order to derive the value of RJR's equity, we added the present value of the cash flows for the 1989–98 period ($15,633.77 million) to the present value of the cash flows following 1998 ($16,952.00 million). This gave a total firm value of $32,585.77. From this value we subtracted RJR's existing long-term debt ($5,390.20 million), which yielded an equity value of $27,195.37 million. Given RJR's 223.52 million shares of common stock, this resulted in a value of $121.66 per share.

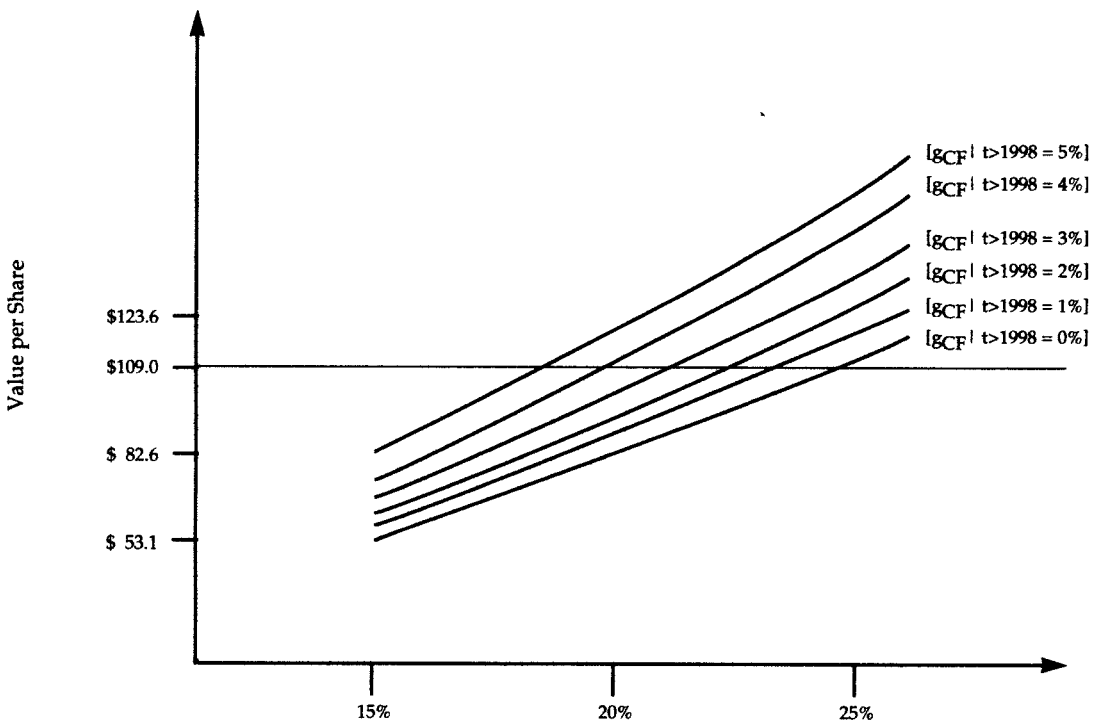
Obviously, the valuation is dependent on the projected growth rate. As Table VIII shows, a conservative assumption of no growth following 1998 yields a value per share of $101.10. At the other extreme, a post-1998 growth rate of 5 per cent gives a share value of $145.04. Most

Table VIII Per-Share Valuation Based on KKR's Projections

A *Present Value of CF for 1989–1998 ($ millions)*	*B* *Assumed Growth Rate for CF of t > 1998 (%)*	*C* *PV of CF of t > 1998 ($ millions)*	*D (= A + C)* *Total PV of CF ($ millions)*	*E* *Existing Long-Term Debt ($ millions)*	*F (= D − E)* *Value of Equity ($ millions)*	*G* *Number of Shares (millions)*	*F/G* *Value Per Share ($)*
$15,633.77	0%	$12,354.01	$27,987.78	$5,390.2	$22,597.58	223.52	$101.10
	1	13,616.74	29,250.51		23,860.31		106.74
	2	15,118.51	30,752.28		25,362.08		113.46
	3	16,952.00	32,585.57		27,195.37		121.66
	4	19,240.00	34,873.77		29,483.57		131.90
	5	22,176.42	37,810.19		32,419.99		145.04

Source: December 6, 1988 prospectus.

Figure A Sensitivity Analysis of Value per Share



analysts pointed to the 2 to 3 per cent range as the most likely steady-state scenario, implying a value in the range of $113 to $121.

The per-share valuation analysis in Table VIII is based on KKR's 21.7 per cent projected annual cash flow growth rate for the first 10 years (1989–98) and alternative assumptions for the cash flow growth rate in the following periods. Figure A presents valuations under a more conservative set of assumptions. The per-share valuation analysis here is based on annual growth rates for the first 10 years ranging from 15 to 25 per cent and steady-state growth rates for the period following 1998 ranging from 0 to 5 per cent.

Figure A shows that, if RJR's cash flows grow by 15 per cent per year in the 1989–98 period and by a steady 5 per cent in the succeeding years, the value per share will be $82.60. With the same initial growth rate, but a steady-state growth rate of 0 rather than 5 per cent, value per share falls to $53.10. And if RJR's cash flows grow by 25 per cent in the first 10 years, followed by 1 per cent steady-growth rate, the value is $123.6.

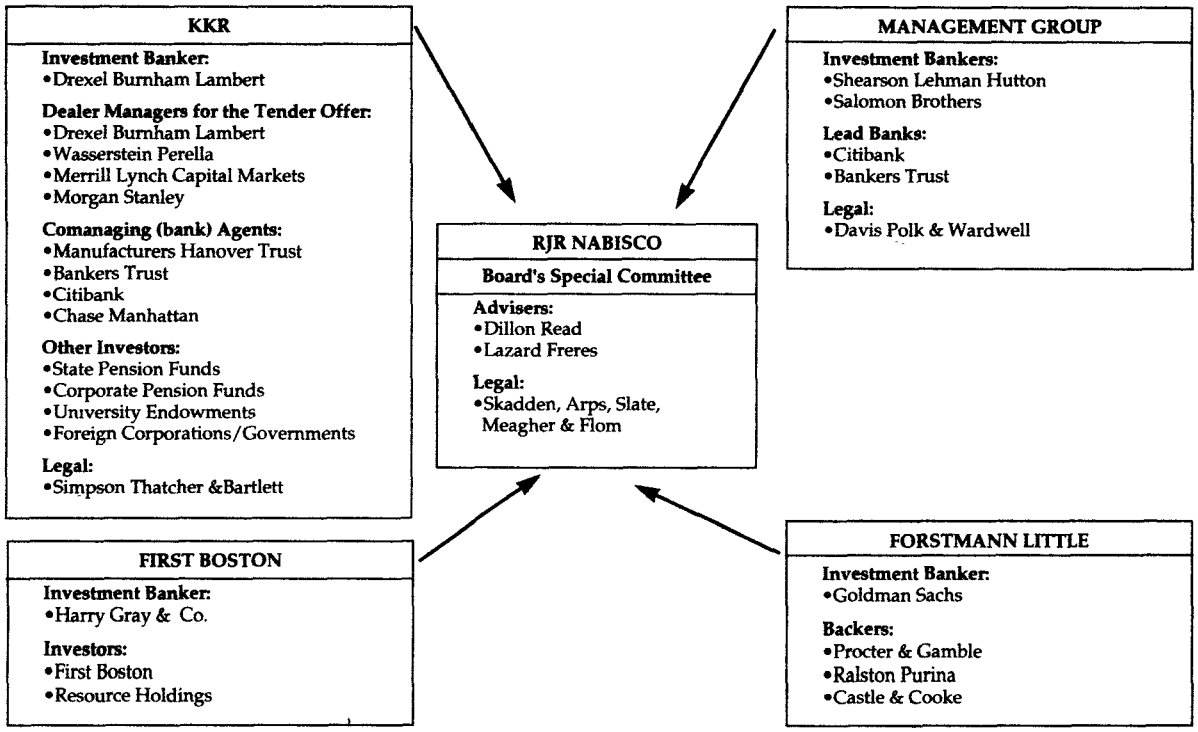
Even with the most optimistic steady-state growth rate of 5 per cent, the cash flow in the first 10 years must grow by at least 18 per cent per year to justify KKR's bid of $109 per share.

The Bidding Groups

In a deal as large and complex as the RJR buyout, the quality of the bidding team is a key factor to success. As Figure B shows, each investing group tried to retain the best available investment bankers, legal advisers and financial backers. Below we summarize the main issues related to the participants in the RJR transaction, their roles and their compensation.

KKR's strategy was clear: Recruit every significant player so that the other bidding groups wouldn't be able to retain them. Implementing this strategy, KKR retained Drexel Burnham Lambert, Merrill Lynch, Morgan Stanley and Wasserstein Perella as dealer managers for the tender offer. This left the management-Shearson bidding group with only two available players with significant access to capital markets—Salomon Brothers and First Boston. However,

Figure B The Bidding Groups



because First Boston was preparing its own bid, only Salomon remained.

Even with Salomon on its team, experts felt that the management group would face difficulties finding an outlet for billions of dollars in bonds that would have to be sold to finance any buyout of RJR. Indeed, KKR's "Get Them All" strategy worked. For example, Paine Webber, a mid-tier investment bank, had privately decided it would not join the management-Shearson group, citing the problems it expected the group would encounter in financing the bid.

Forstmann Little's bidding group was a unique coalition of an investment banking firm and interested corporations. Forstmann's investment banker, Goldman Sachs, approached several of its corporate clients, trying to entice them to join the bidding group. Even though it was not spelled out publicly, the idea was to "presell" RJR's different business segments to corporate buyers with maximum potential synergism. It seemed initially as if this strategy would succeed. The buyout firm of Forstmann Little was joined by three strategic buyers—Procter & Gamble, Ralston Purina and Castle & Cooke.

The group had a very unusual relationship with RJR's board. Because the board did not want sensitive information going to RJR's competitors, Forstmann had to screen some of the data from its prospective partners, which competed with RJR in several markets. RJR's board also objected to any advance selling of RJR's businesses. This implied that Forstmann's corporate backers had to present themselves as mere investors in the bid, not acquirers of businesses.

The most complex bid was that of the *First Boston* bidding group. It proposed to buy the RJR food business for installment notes, which it said could immediately be turned into cash by a banking syndicate. The group planned to then sell RJR's food businesses, distributing some of the proceeds to shareholders, before acquiring the company's tobacco business for itself. The most significant impact of First Boston's bid was that its complex use of installment notes led RJR's board to extend one of the bidding contest's deadlines.

As Figure C shows, First Boston's $118 a share bid was outstanding simultaneously with KKR's

Figure C The Bidding Dynamics

Bidder	Bidding Date (1988) Oct. 19	Nov. 4	Nov.25	Nov.29	Dec.1	Amount/Form of Payment
RJR Management					$112/sh.	$84 Cash $24 Preferred Stock $ 4 Convertible Stock
				$101/sh.		$88 Cash $ 9 Preferred Stock $ 4 Other Security
			$100/sh.			$90 Cash $ 6 Preferred Stock $ 4 New Common Stock
		$92/sh.				$84 Cash $ 8 Debt Securities
	$75/sh.					Bidder did not specify form of payment
KKR Acquisition Group					$109/sh.	$81 Cash $18 Preferred Stock $10 Debentures
				$106/sh.		$80 Cash $18 Preferred Stock $ 8 Debentures
			$94/sh.			$75 Cash $11 Preferred Stock $ 8 Convertible Bond
		$90/sh.				$78 Cash $12 Securities
First Boston			$118/sh.			$110 Notes $ 3 Other Securities $ 5 Warrants

$94 a share and management's $100 a share. However, First Boston's offer, in addition to being complex, was conditional upon further review of nonpublic information. RJR's board therefore announced a new round of bidding, allowing First Boston to come back with a firmer bid. In retrospect, it is clear that, in placing its complex and uncertain bid, First Boston enabled KKR to reshape its winning strategy.

The costs associated with obtaining investment banking advice, distributing securities and raising capital amounted to more than $700 million, plus an equity position. Table IX shows the distribution of the fees to the investment bankers involved.

The Role of RJR's Board

Upon receipt of an unexpected bid, a board of directors typically makes an announcement that the offer "does not serve shareholders' best interests." That announcement is soon followed by solicitations for other offers, once it becomes apparent that the firm will be acquired.[5] RJR's board proved an exception to this process: It played an active role in structuring the bidding rules, monitoring and adjusting the bidding process, and choosing the winning bid. We summarize below the board's active participation in the process.

The board defined its task not as just getting the best immediate price for RJR, but as ensuring that shareholders did not get locked out of possible future gains. It did so by stating that one of its considerations was the proportion of stub equity left in public hands.

The board defined its fiduciary duty broadly, considering not only shareholders' interests, but also the welfare of its primary stakeholders—the company's employees and its communities.[6] By making its preferences known, the board implied that it would evaluate factors other than merely the bid price, such as the

Table IX Investment Advice and Capital-Raising Costs

Drexel's Fees[a]	
Fees as adviser and dealer manager	$25.0 million
Commitment Fee: 1.5% on a $3.5 billion bridge loan	$52.5
Funding Fee: 0.5% on a $3.5 billion bridge loan	17.5
Financing Fee: 3.875% on a $2 billion junk bond offering	77.5
Financing Fee: 1.8125% on a $3 billion junk bond offering[b]	$54.4
Total Drexel's Fees	$226.9 million
Merrill Lynch's Fees[a]	
Fees as adviser and dealer manager	$25.0 million
Commitment Fee: 1.5% on a $1.5 billion bridge loan	22.5
Funding Fee: 0.5% on a $1.5 billion bridge loan	7.5
Financing Fee: 1.8125% on a $3 billion junk bond offering[b]	54.4
Total Merrill Lynch's Fees	$109.4 million
Morgan Stanley's Fees as dealer manager	$25.0 million
Wasserstein Perella's Fees as dealer manager	25.0 million
Total Investment Banking Fees	$386.3 million[c]

a. In addition to these fees, Drexel got to buy 2% and Merrill Lynch 1% of the stock in the new RJR, along with warrants to double those stakes.

b. Drexel and Merrill Lynch would collect the financing fees on the junk bond offering even if the bridge loans are refinanced in some other way.

c. For its share of the financing, a large syndicate of commercial banks received $325 million in fees. The bank syndicate consisted of about 200 institutions led by Manufacturers Hanover, Bankers Trust, Citibank and Chase Manhattan.

extent of asset sell-offs, the number of employees fired and the stock equity component remaining in the public hands.

The board, in an unusual move, immediately criticized as unacceptable management's first offer to invest only $20 million for an 8.5 per cent stake in the company (with an option to raise the stake to 20 per cent).

The board asked interested bidders to submit two bids—one for the whole company and one for the tobacco business only. This gave it more flexibility and also enabled it to fetch a better valuation for RJR. In addition, the board was concerned that, because of the size of the transaction, some of the bidders would cooperate rather than compete with each other. It therefore asked for a sealed bid, thus discouraging alliances between groups. Typically, in a leveraged buyout plan, the acquiring group attempts to secure buyers for assets it plans to sell. To avoid this, RJR's board emphasized that it would not allow potential bidders to "pre-sell" businesses—that is, obtain commitments in advance to divest themselves of the company's businesses.

Prior to the first round of bidding, the board announced that the bidding deadline would not be extended. This put time pressure on the bidders' advisers, by then already overwhelmed by the extent of information they had to analyze.

Following the first round of bidding (with firm offers including KKR's $94 a share and management's $100), the advisers to the board's special committee gathered the bidders in an informal discussion, suggesting $100 a share as the floor for the next round of bidding. On the surface, it seemed like a risky strategy, which could scare off all the bidding groups. But the board had an alternative plan—break up RJR on its own.

As events unfolded, the more aggressive strategy prevailed. The board advisers informed the bidders (prior to the second round), that the board members were prepared to unveil their own restructuring plan unless bids for RJR surpassed the restructuring estimated value, believed to be at least $100 a share.

Factors Leading to Selection of the Lowest Bid

By traditional standards, RJR management should have won the bidding war. Its offer, $112 a share, was higher than KKR's by nearly $700 million, its cash portion of the offer ($84) was higher than KKR's ($81), its members were all industry experts with an intimate knowledge of the company, and management was on good terms with the board members. Nevertheless, when the bidding ended, traditional factors did not determine the winner. The management group lost. The following factors led to the ultimate victory of KKR's lower bid.

The Break-Up Factor: The board's five-person special committee wanted to keep the company as intact as possible and minimize turmoil and negative effects on employees. While KKR promised to keep the tobacco and most of the food business intact, the management group planned to keep only the tobacco business (see Table X). Indeed, KKR specified that it would sell only $5 to $6 billion of RJR assets in the near future. The management group intended to sell the entire food business for an estimated $13 billion. Keeping its options open, KKR did not disclose its longer-term plans.

The Equity Factor: The board's five-person special committee wanted to provide existing shareholders with an option to participate in the

Table X KKR's Bid vs. Management's Bid

KKR's Bid	*Management's Bid*
Financial	Financial
$81 a share in cash	$84 a share in cash
$18 a share in exchangeable preferred stock	$24 a share in preferred stock
$10 a share in debentures, convertible into a total of about 25% of the new company's equity	$4 a share in additional stock, convertible into a total of 15% of the new company's stock
Total: $109 a share	Total: $112 a share
Non-Financial	Non-Financial
Keep the tobacco and much of the food business intact	Keep only the tobacco business
Guarantee severance and other benefits to employees who lose their jobs because of change in control	Give equity to 15,000 employees

buyout and thus share in any future KKR profits from the transaction. The desire was to leave some stub portion of the company's stock in public hands. While KKR proposed to distribute 25 per cent of the equity in the future company to existing shareholders, the management group offer included only 15 per cent.

Financing Structure: As Table X shows, both groups offered a combined $28 a share in the form of either exchangeable preferred stock and debentures (KKR's offer) or preferred stock and additional convertible stock (management's offer). However, based on an analysis performed by the advisers to the board's special committee, KKR was offering $500 million more equity than the management group. This, again, accommodated the board's objective of maximizing current shareholders' participation in future profits.

Employment Commitment: In its effort to be responsible to all stakeholders, the board's special committee wanted to minimize adverse effects on employees. While KKR's offer guaranteed severance and other benefits to employees who lost their jobs because of layoffs, management's proposal focused on giving equity to 15,000 employees. Though these two proposals were not comparable in value, the board believed that KKR's plan was potentially more remunerative for the employees.

Post-LBO Leadership: The intensive bidding war affected all parties involved—management, employees, communities and the bidders themselves. During the bidding period, the uncertainty was high and business was affected. In the interest of restoring stability, the board's special committee assessed each offer in terms of its effects on RJR's identity and culture. KKR quickly read the board's mind and announced its plan to install J. Paul Sticht as the company's chairman and CEO. He had been in these positions in the 1970s and early 1980s and was known for emphasizing the company's responsibility to stakeholders—primarily employees and communities. Alternatively, the management group proposed to let F. Ross Johnson continue as RJR's CEO. For various reasons (including poor handling of his own PR) the board associated Mr. Johnson's group with greed, lavish spending, and insensitivity to employee and community needs.

On a purely monetary basis, the two offers were very close; the final decision was based on other factors. KKR was attuned to the board's goals and the impact on other stakeholders such as employees and communities. It also recognized that financial, but not immediately quantifiable, factors as well as the acquiring group's goodwill would play a decisive role.

Conclusions

Transforming a complex set of financing instruments into a simple estimate of the cost of capital requires many approximations and simplifications. Moreover, the assumptions underlying the valuation process must be carefully assessed and modeled.

The RJR buyout is a classic example of how the bidding process itself can affect the outcome. In particular, the board's role in setting the bidding rules minimized the possibility of collusion and thereby increased potential gains to both shareholders and the firm's other stakeholders. In addition, KKR's well structured sequential bidding strategy may well provide a role model for future buyouts.[7] ■

Footnotes

1. See, for example, M. Jensen, "The Eclipse of the Public Corporation," *Harvard Business Review*, September/October 1989; S. Kaplan, "Management Buyouts: Evidence on Taxes as a Source of Value," *Journal of Finance*, July 1989; A. Michel and I. Shaked, *The Complete Guide to a Successful Leveraged Buyout* (Homewood, IL: Dow Jones-Irwin, 1988); and K. Torabzadeh and W. Bertin, "Leveraged Buyouts and Shareholder Returns," *Journal of Financial Research* 4, pp. 313–320.

2. Michel and Shaked, *Complete Guide, op. cit.*
3. R. Alsop, A. M. Freedman and B. Morris, "RJR Takeover Could Hurt Marketers and Consumers," *Wall Street Journal*, December 2, 1988.
4. For a discussion of the valuation issues related to buyouts, see C. Crutchley and R. Hansen, "A Test of the Agency Theory of Managerial Ownership, Corporate Leverage, and Corporate Dividends," *Financial Management*, Winter 1989; H. DeAngelo, L. DeAngelo and E. M. Rice, "Going Private: Minority Freezeouts and Shareholder Wealth," *Journal of Law and Economics*, October 1984; and I. Inselbag and H. Kaufold, "How to Value Recapitalizations and Leveraged Buyouts," *Journal of Applied Corporate Finance*, Summer 1989.
5. For a discussion of the role of the board, see B. Cornell and A. Shapiro, "Corporate Stakeholders and Corporate Finance," *Financial Management*, Spring 1987, and "Corporate Governance: The Role of Boards of Directors In Takeover Bids and Defenses" (a roundtable discussion at the University of Michigan, April 7, 1989), in *Journal of Applied Corporate Finance*, Summer 1989.
6. Boards in general have tended to broaden their view of their fiduciary responsibility, in part because of the increased fraudulent-conveyance litigation resulting from failed transactions. See "Note," *Columbia Law Review*, November 1987; A. Michel and I. Shaked, "Assessing LBO Risk: The Case of Fraudulent Conveyance," *Financial Management*, Winter 1989; and A. Michel and I. Shaked, "The LBO Nightmare: Fraudulent Conveyance Risk," *Financial Analysts Journal*, March/April 1990.
7. We thank Adrian Gustavo Becher for his research assistance.

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