

Teaching Equity Valuation with the Value Line Investment Survey: a Template

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ABSTRACT

INTRODUCTION

In a course covering Equity Valuation it is desirable that students have the opportunity to apply valuation models to real companies with the purpose of making investment recommendations. The exercise of valuing an actual company provides a realistic context that takes students beyond the textbook and into the messy uncertainty of the investment profession. It allows them to see with their own eyes the drivers of corporate value. It can stimulate curiosity and excitement among students that might be difficult to create otherwise, and it can give them confidence that they have actually learned to do something useful and valuable. The finance professor who attempts this with students, however, must contend with formidable obstacles that stem from the nature of the task and the constraints encountered in an academic setting.

Equity valuation is difficult. Securities analysts work very hard to acquire and comprehend publicly disclosed information on companies they follow. They meet with company managements, employees, competitors, customers, regulators, and etc. They must understand industry dynamics and economic and financial market conditions, and they must be capable of grasping complexities of financial reporting. Their task is confounded by information that is often incomplete, vague and conflicting. To be considered expert normally requires years of experience researching and valuing companies and the industries in which they operate. For these reasons securities analysts tend to focus their research on relatively few firms and industries. Analysts' research provides the foundation for sound judgments regarding the future prospects of companies and their stock prices. Utilizing one or more valuation models, these judgments are crystallized into estimates of the fundamental, or intrinsic, values of common stocks, which provide the basis for analysts' investment recommendations.

Valuation modeling requires both short-term and long-term forecasts of a number of financial variables: e.g., revenue growth, profitability, capital expenditures, asset utilization, earnings retention, and more. The task is difficult even for professional analysts who possess the

depth of knowledge gained only from years of experience researching and valuing companies. In an academic setting there usually is little time to do extensive company research. A one-semester course in Security Analysis or Investments, for example, may devote only a portion of coverage to equity valuation. Given the complexity of the task, limited experience, and little time, students, and in many cases their finance professors, may find it nearly impossible to produce forecasts that adequately capture firms' actual prospects. Hence, the forecast assumptions which must be made for a valuation frequently lack solid grounding in the firm's fundamental business prospects. Students as a result will have little confidence in their forecasts. They will see their valuations and investment recommendations as being of limited use, and the attempt to value actual companies will fail to provide the realism that is the motivation for the exercise.

This article describes an Excel template (available from the author) that takes user-supplied inputs from the Value Line Investment Survey (VLIS) and outputs valuations for the common stock of an individual company. The template computes valuations from free cash flow, residual income and dividend valuation models. Having struggled in his own teaching with the problems described above, the author designed the template to provide students a quick way to value actual companies with confidence in the results. Students can understand and use the template provided they have knowledge of financial statements and equity valuation models. The template is designed to take financial forecasts from the VLIS, which are entered manually by the user. All user-supplied data can be input to the template in a few minutes. The VLIS, described further below, is easy for students to read and understand, and it provides financial forecasts that are current and based on sound research. The author's students indicate that they enjoy using the template to search for mispriced stocks, and they are frequently eager to report their findings in class. This has led to fruitful discussions and debates on a wide range of issues related to equity valuation, corporate strategy and market efficiency.

Value Line, Inc., publisher of the VLIS, is an independent research firm providing coverage of approximately 1,700 companies. With a staff of over 70 securities analysts and researchers Value Line produces reports that are updated quarterly for each firm in its coverage universe. Value Line cycles through its universe once per quarter at the rate of approximately 130 companies per week. Each company report includes a synopsis of recent developments, a brief discussion of the primary drivers of future financial and stock price performance, and forecasts of a number of financial variables for the current fiscal year and the year following. In addition, each report presents 3-5 year-ahead forecasts of sales, earnings, cash flow and other financial variables, which are especially useful for valuation modeling. Value Line forecasts are based on the research of professional securities analysts, and because company reports are updated quarterly, they are current and, hence, actionable. Historical and forecast data are presented in a standardized format that is easy to read and comprehend by students possessing an understanding of financial statements and valuation. Except for the current risk-free rate and equity risk premium, all user-supplied inputs to the template can be extracted from the company report and input to the template in only a few minutes.

In the remainder of the article, Section II provides an overview of equity valuation models. Section III describes the template in detail, and Section IV concludes.

EQUITY VALUATION MODELS

Dividend Valuation

The model that business students typically encounter first is the dividend valuation model. The motive for valuing dividends is that, ignoring share repurchases and issues, dividends represent the only stream of cash flow paid by a firm to stockholders. Treating a firm as a going concern, the value of a share of common stock equals the present discounted value of an infinite stream of dividends:

$$= \sum_{t=1}^{\infty} \frac{D_t}{(1+r)^t} \quad (1)$$

Where D_t denotes future dividend per share and r the required return for the firm's common stock—i.e., the cost of equity. “Net” dividends can be defined to include share repurchases and issues.

Gordon's model is obtained by assuming a constant, long-run growth rate in dividends

:

$$= \frac{D_1}{r-g} \quad (2)$$

In a two-stage model, dividends are projected to some future horizon (T), beyond which dividend growth settles to a long-run constant. The value of a share of stock equals the present value of dividends to the horizon ($\sum_{t=1}^T \frac{D_t}{(1+r)^t}$) plus the present value of the horizon value (or, terminal value) of the stock ($\frac{V_T}{(1+r)^T}$). The horizon value reflects an assumed constant growth rate after year T : $D_{T+1} = D_T(1+g)$. The current value of the stock is:

$$= \left[\frac{D_1}{1+r} + \frac{D_2}{(1+r)^2} + \dots + \frac{D_T}{(1+r)^T} \right] + \frac{V_T}{(1+r)^T} \quad (3)$$

Analysts frequently estimate horizon value by use of fundamental, or “justified” multiples of earnings and book value. For example, the value of a stock can be computed as the product of the Forward Price/Earnings ratio (P/E) and projected earnings per share (E_1):

$$= P/E \times E_1 \quad (4)$$

In the Forward P/E the denominator equals projected one-year-ahead earnings per share (E_1). From the Gordon model, an expression can be derived for the justified P/E in terms of the earnings retention rate (b), return on equity (ROE) and required return (r).

$$P/E = \frac{ROE}{r-g} \quad (5)$$

The numerator of equation (5) equals the long-run dividend payout rate, and the denominator expresses the firm's sustainable growth rate (g) as the product of long-run ROE and the earnings

retention rate (r). Alternatively, the value of a stock can be expressed in terms of the Price-to-Book multiple (P/B):

$$P/B = \frac{P}{B} \times \frac{B}{P} \quad (6)$$

B denotes the current book value of shareholder (common) equity. From the Gordon model, the justified P/B multiple can be expressed in terms of earnings retention, return on equity and required return:

$$P/B = \frac{r}{r - ROE} \quad (7)$$

In two-stage models, horizon values are often expressed in the form of equations (4) through (7).

Free Cash Flow Valuation

In Free Cash Flow valuation, the analyst assumes a control perspective which sets corporate policy to full payout of all available cash flow. Free Cash Flow to the Firm ($FCFF$) equals the total operating cash flow that can be paid to both debt and equity investors after investment in working capital and fixed assets:

$$FCFF = (EBIT - \text{Interest}) + \text{Depreciation} - [\Delta \text{NWC} + \text{CapEx}] \quad (8)$$

$EBIT$ denotes after-tax operating income. Depreciation denotes non-cash charges such as depreciation and amortization expense. CapEx denotes capital expenditures for long-lived assets such as property, plant and equipment. ΔNWC denotes the change in net working capital, where net working capital equals Current Assets (excluding excess cash and near-cash assets) less Accounts Payable and Accrued Liabilities.

In a two-stage valuation the discounted present value of $FCFF$, discounted at the

$$= \frac{NI}{1+r} - [\Delta D + \dots] + \Delta D \quad (11)$$

denotes Net Income Available to Common Stockholders. ΔD denotes the change in long-term debt. Because creditors are paid before stockholders, debt repayment ($\Delta D < 0$) reduces the cash available for stockholders. Conversely, increases in debt ($\Delta D > 0$) increase cash available to stockholders, possibly by reducing the amount of equity needed to fund new investment. r , ΔD and NI are as defined previously.

Discounting at the cost of equity (r) provides an estimate of current Enterprise Value after debt-related flows are taken into account.

$$= \left[\frac{NI}{1+r} + \frac{NI}{(1+r)^2} + \dots + \frac{NI}{(1+r)^T} \right] + \frac{EV}{(1+r)^T} \quad (12)$$

Again, in a two-stage valuation EV is projected to a horizon year, after which growth settles to a long-run constant. Horizon value equals the present value of EV after year T , $EV = \frac{EV_T}{r - g}$, discounted to the present in equation (12). Adding excess cash and other non-operating assets and subtracting the value of other liabilities yields the value of Equity capital:

$$= EV + \dots - \dots \quad (13)$$

The per-share value of the firm's common stock is obtained by dividing the value of equity (EV) by the number of shares of common stock outstanding.

Residual Income Valuation

Residual Income (RI) equals net income in excess the opportunity cost of beginning-of-period equity capital:

$$= NI - r \cdot BV \quad (14)$$

denotes beginning book value of equity. In residual income valuation, the value of common stock equals current book value of equity plus the present value of future residual income, discounted at the cost of equity. Assuming two-stage valuation,

$$= BV + \left[\frac{RI}{1+r} + \frac{RI}{(1+r)^2} + \dots + \frac{RI}{(1+r)^T} \right] + \left[\frac{RI}{r - g} \right] \frac{1}{(1+r)^T} \quad (15)$$

Because current book value of equity is the starting point, it is not necessary to adjust equation (15) for excess cash and other non-operating assets and liabilities. The result of equation (15) equals the value of the firm's equity:

$$= \dots \quad (16)$$

The per-share value of the firm's common stock is obtained by dividing the equity value (EV) by the number of shares of common stock outstanding.

Cost of Equity Capital

The required return for a firm's equity capital can be estimated using the Capital Asset Pricing Model:

$$r_E = r_f + (\beta - 1) \beta \quad (17)$$

Equation (17) is known as the Security Market Line, from which the cost of equity equals the risk-free return (r_f) plus a risk premium equal to the product of the equity risk premium ($\beta - 1$) and the equity beta β . The equity beta captures the stock's sensitivity to overall market movements and, hence, the stock's contribution to the risk of a diversified portfolio. Average beta over all risky assets equals one, as does the beta of the market portfolio. The risk-free return is generally taken to be the yield to maturity of a Treasury security with maturity equal to the investment holding period, and the equity risk premium is typically thought to be in the neighborhood of 5-8% per year. The template accepts any user inputs for these values.

A firm's equity beta is a function of its business risk (the uncertainty of operating cash flow) magnified by financial risk from the use of debt. Consequently, changes in capital structure require adjustments to the equity beta:

$$\beta = \frac{\beta}{1 + (D/E)} \quad (18)$$

β denotes the equity beta; r_f denotes the income tax rate; and D/E denotes the market value Debt-to-Equity ratio. The "unlevered beta" β reflects only business risk; it is what the equity beta would be equal to if the firm had no debt.

Weighted Average Cost of Capital (WACC)

The firm's weighted average cost of capital is a weighted average of the component costs of debt and equity:

$$WACC = (D/V) r_D + (E/V) r_E \quad (19)$$

and D/V and E/V denote the market value proportions of debt and equity in the capital structure; r_D denotes the after-tax cost of debt; and r_E the cost of equity.

If the firm were unlevered, i.e., if it had no debt, its cost of capital would depend only on business risk, and it would be calculated from the Security Market Line with the firm's unlevered beta: $r_E = r_f + (\beta - 1) \beta$. Because the unlevered cost of capital depends only on business risk, not financial risk, it is independent of capital structure. Consequently, the unlevered cost of capital for a levered firm can be estimated as the required return of a portfolio of all of its outstanding debt and equity:

$$r_E = (D/V) r_D + (E/V) r_E \quad (20)$$

Equation (20) can be rearranged to obtain an expression for the cost of debt in terms of the unlevered cost of capital, the cost of equity and the capital structure:

$$= \frac{-(/)}{(/)} \quad (21)$$

One would ideally estimate the cost of debt from secondary market yields on either the firm's own outstanding debt or on comparably-rated debt issued by other firms. However, because these approaches might not be feasible due to data limitations, the template relies on equation (21) to estimate costs of debt.

THE TEMPLATE

The template is illustrated for Kraft Foods, Inc. (symbol: KFT) from its Value Line Investment Survey report dated January 28, 2011. A copy of this report may be found at the end of the article. Kraft's fiscal year ends in December. Because Kraft had not released its 2010 fourth quarter and full-year results prior to the report date, 2009 is the most recent historical year and 2010 the current forecast year. Current capital market conditions and Kraft's stock price are from March 1, 2011. On that date, Kraft's stock price was \$31.51; the yield to maturity of the 10-year Treasury Note was 3.43%, and the equity risk premium is assumed equal to 5.5%.

Structure of the Template

The template contains 12 tabs, brief descriptions of which are contained in Exhibit 1.

User-Supplied Inputs (the *Ins* tab)

All user inputs are provided to the Inputs () tab, and all cells requiring user input are shown in ***bold italics***. The tab is shown in Exhibit 2.

Required user inputs for cells B5:C19 include: Company Name (Symbol), VL Report Date, Most Recent Quarter, Valuation Date, Current Stock Price, Common Shares Outstanding (in millions), VL Target Prices, and VL Beta. Capital market inputs include the 10-year Treasury Note yield (risk-free rate) and Equity Risk Premium. Terminal Growth Rate and Margin of Safety Discount are required as well.

The tab contains historical data for 2009 and forecasts for 2010-2015 in cells F6:L26. The user inputs data for 2009, 2010, 2011 and 2015. Forecasts for 2012-2014 are computed by linear interpolation between 2011 and 2015. The Value Line report provides forecasts for the 3-5 year-ahead period, which in this case spans 2013-2015. The interpretation of these forecasts is that they are expected to be realized at an unspecified point between 2013 and 2015 inclusive. The template is constructed on the assumption that these forecasts are realized in the final year of the 3-year period (i.e., 2015). Cells C23:C38 contain Current Working Capital and Capital Structure inputs from the Current Position and Capital Structure sections of the Value Line report for the quarter ended September 30, 2010. The Current Position shows current assets and liabilities, from which current net working capital is computed. For valuation purposes, net working capital equals Current Assets excluding Cash less Accounts Payable and Other Current Liabilities. The Capital Structure section in cells C35:C38 shows long-term debt, total debt, long-term interest and other liabilities. For Kraft, Other Liabilities consist of net pension obligations, i.e., Pension Assets less Pension Obligations.

Summary Outputs (the *Outs* tab)

The *Outs* tab is shown in Exhibit 3. In Panel A cells D7:D11 hold the results of free cash flow, residual income and dividend valuations. The estimated value of Kraft's common stock ranges from a low of \$31.84 from the dividend model to a high of \$98.02 from the FCFF model. These calculations are described below in discussion of the *Outs*, *FCFF*, and *Dividend* tabs. Cells E7:E11 contain expected return estimates assuming the stock is acquired at its current price and held for 5 years, at which time the stock is assumed to be sold at its estimated value. These calculations assume dividend reinvestment and are described below in discussion of the *Outs* tab. Cells F7:F11 contain the investment recommendations (Buy? Yes or No) based on estimated values, margin of safety discount and current stock price. For example, Cell D9 shows that the estimated value of Kraft's stock from RI valuation equals \$46.80. After taking the 30% margin of safety discount, the result exceeds the current stock price of \$31.51, which makes the stock a Buy.

Panel B of the *Outs* tab provides information on Kraft's current capital structure and costs of capital. Kraft's long-term debt outstanding as of September 30, 2010 was \$30,035 million, and the market value of its outstanding common stock as of March 1, 2011 was \$55,042 million. Hence, the total value of Kraft's long-term capital was \$85,077 million, comprised of approximately 35% debt and 65% equity. The estimated before-tax cost of debt is 4.22%, and the estimated cost of equity equals 7.01%. Kraft's after-tax weighted average cost of capital is estimated to be 5.57%. These capital costs are described further in discussion of the *Outs* tab.

Panel C of the *Outs* tab reports expected returns implied by the valuation models assuming the stock equals its estimated intrinsic value in 2015. For example, cell F20 indicates that expected return equals 10% based on dividend valuation and a terminal value calculated from the 2015 justified P/E ratio. Expected returns in Panel C are obtained using Excel Solver, which is described further in discussion of the *Outs* tab.

Capital Structure and Costs of Capital (the *CoC* tab)

Kraft's capital structure and costs of capital are computed in the *CoC* tab, which is shown in Exhibit 4. Panel A of Exhibit 4 shows that Long-Term Debt is \$30,035 million at September 30, 2010; the market value of debt is assumed equal to book value. The market value of equity at March 1, 2011 is \$55,042 million, and Kraft's total market value of capital is \$85,077 million, comprised of 35% debt and 65% equity. Panel B of Exhibit 4 shows that given the risk-free return of 3.43%, equity risk premium of 5.5% and Kraft's beta of 0.65, Kraft's current cost of equity is estimated to be 7.01% (cell C16):

$$= 0.35 + 0.65(.0701) = 0.0701 \%$$

Kraft's unlevered beta is calculated in cell C14 from its 31% tax rate and 55% Debt/Equity ratio:

$$\beta = \frac{\beta}{\left[1 + \left(\frac{D}{E} \right) (1 - \tau) \right]} = \frac{0.65}{\left[1 + (0.55) (1 - 0.31) \right]} = 0.43$$

Kraft's unlevered cost of equity is computed in cell C15:

$$= 0.0343 + 0.43(0.055) = 0.0557 \%$$

The unlevered cost of equity can be viewed as the required return of any portfolio comprised of all the debt and equity securities issued by a firm. Because it reflects business risk only, not financial risk, it is independent of the mix of debt and equity and remains constant with changes in capital structure. Consequently, Kraft's implied cost of debt is computed in cell C17 with equation (12):

$$= \frac{-(\text{ / })}{(\text{ / })}$$

$$= \frac{. - . (\text{ . })}{.} = . \%$$

Annual Costs of Capital

Panel C of Exhibit 4 (row 23) shows that Kraft is expected to pay down its Long-Term Debt from \$30,035 million to \$25,000 million in 2015. Consequently, Kraft's equity beta will decline, and it is necessary to adjust future capital costs. These calculations are shown in cells D23:I35. Kraft's projected market capitalization (row 24) bases on the assumption that the current P/B ratio remains constant. Currently, Kraft's P/B equals approximately 1.6, so that 2015 Market Capitalization, for example, (cell I24) equals the product of 1.6 and 2015 Shareholder Equity: 1.6 x 42,000 = \$65,193 million. With projected 2015 long-term debt of \$25,000 million, Kraft's projected D/E ratio equals 38% (cell I26). Kraft's levered beta in 2015 is calculated in cell I30 as:

$$\beta = \beta \left[+ (-) \left(\text{ / } \right) \right] = . \left[+ (- .) (.) \right] = .$$

The 2015 cost of equity in cell I31 equals = . + . (.) = . % , and the weighted average cost of capital in cell I34 equals = . (.) (- .) + . (.) = . % . Equity and WACC Discount Factors are shown in rows 32 and 35. For example, the Equity Discount Factor (EDF) for 2012 equals

$$= \frac{1}{(.) (.) (.)} = .$$

The remaining equity and WACC discount factors are calculated similarly.

Free Cash Flow Valuation (the FCF tab)

Exhibit 5 shows the valuation of Free Cash Flow to the Firm in Panel A and Free Cash Flow to Equity in Panel B. In Panel A, Kraft's FCFF for 2010-2015 in row 10 is calculated according to equation 8. EBIT in row 5 equals the product of Sales and Operating Margin from the tab. The change in Net Working Capital (Δ) is based on the assumption that 2009 Net Working Capital (row 18) increases at the same rate as Sales. Forecast FCFF ranges from \$4,856 million in 2010 to \$6,181 million in 2015. Enterprise Value at 2014 is calculated in cell H14 based on a WACC of 5.65% (cell H12) and terminal growth rate of 3%:

$$= \frac{1}{. - .} = ,$$

The present value of the terminal value is computed in cell C14 by multiplying the terminal value by the WACC discount factor for 2014 in cell H13: $177,307 = .761 \times 233,111$. The present value of 2010-2014 FCFE is computed in cell C15 as sum of cells D15:H15. Kraft's Enterprise Value is computed in cell C16 as the sum of cells C14:C15:

$$= [(, \times.) + (, \times.) + \dots + (, \times.)] + (, \times.)$$

$$= , + ,$$

$$= ,$$

In Exhibit 6, Enterprise Value is adjusted for Cash, Debt and Other Liabilities. Adding Cash of \$2,288 million to Enterprise Value puts the total value of the firm at \$202,960 million in cell C18. After subtracting long-term debt and other liabilities, the value of Kraft's equity equals \$171,222 million in cell C21. There are 1,747 million shares outstanding, which puts Kraft's value on per-share basis at \$98.02 in cell C23.

Panel B of Exhibit 5 shows Kraft's FCFE calculation according to equation (11). Forecast FCFE (cells D29:I29) ranges from \$3,351 million in 2010 to \$3,812 million in 2015. The horizon value of FCFE at 2014 is calculated in cell H33 based on a cost of equity of 6.75% (cell H31) and terminal growth rate of 3%:

$$= \frac{72,970}{.0675 - .03} = 101,643$$

The present value of the horizon value is computed in cell C33 by multiplying the horizon value by the equity discount factor for 2014 in cell H32: $72,970 = .718 \times 101,643$. The present value of 2010-2014 FCFE is computed in cell C34 as sum of cells D34:H34. The total present value of FCFE is computed in cell C35 as the sum of cells C33:C34:

$$= , + ,$$

$$= ,$$

Exhibit 6 shows the adjustments for Cash and Other Liabilities following equation (13). Adding Cash and subtracting Other Liabilities puts the value of Kraft's equity at \$85,703 million in cell C9. On a per-share basis, Kraft's equity is valued at \$49.06 in cell C11.

Dividend Valuation (the *Div* tab)

Exhibit 7 shows Kraft's projected dividends per share in cells D5:I5. Forecast dividends range from \$1.16 per share in 2010 to \$1.40 in 2015. The horizon value of dividends at 2014 is calculated in cell H9 based on a cost of equity of 6.75% and terminal growth rate of 3%:

$$= \frac{26.80}{.0675 - .03} = 37.33$$

The present value of the horizon value is computed in cell C9 by multiplying the horizon value by the equity discount factor for 2014 in cell H8: $26.80 = .718 \times 37.33$. The present value of 2010-2014 dividends is computed in cell C10 as sum of cells D10:H10. The total value of dividends is computed in cell C11 as the sum of cells C9:C10:

$$= . + .$$

$$= .$$

Residual Income Valuation (the *RI* tab)

Exhibit 8 shows the valuation of Residual Income in millions of dollars in Panel A and per-share in Panel B. Exhibit 8 Panel A shows Kraft’s projected residual income in millions in cells D7:I7. Residual income is calculated by equation (14). For example, Kraft’s projected Net Profit in 2015 is \$5,250 million. The 2015 cost of equity equals 6.71%, and 2014 Book Value of Equity equals \$40,823 million. Kraft’s 2015 Residual Income is computed in cell I7 as:

$$= -$$

$$= , - (.) (,)$$

$$= ,$$

The horizon value of residual income in 2014 is calculated in cell H11 with a cost of equity of 6.75% and terminal growth of 3%:

$$= \frac{,}{. - .} = ,$$

The present value of the horizon value is computed in cell C11 by multiplying the horizon value by the equity discount factor for 2014 in cell H10: 48,038 = .718 x 66,915. The present value of 2010-2014 residual income is computed in cell C12 as the sum of cells D12:H12. The total value of Kraft’s equity based on residual income is computed in cell C14 by equation (15) as the sum of the present value of future residual income plus current book value of equity:

$$= , + , + ,$$

$$= ,$$

Because current book value of equity provides the starting point in RI valuation, adjustments for cash, debt, and other liabilities are not necessary. Hence, from equation (16) the value of Kraft’s equity equals:

$$= = ,$$

On a per-share basis, the value of Kraft’s common stock is \$46.80 (see Exhibit 6, cell F16).

Exhibit 8 Panel B shows Kraft’s projected residual income per share in cells D21:I21. For example, Kraft’s projected 2015 EPS is \$3.00. The 2015 cost of equity equals 6.71%, and the 2014 Book Value of Equity per share equals \$23.34. Therefore, Kraft’s 2015 Residual Income per share equals

$$= . - (.) (.)$$

$$= .$$

The horizon value of residual income in 2014 is calculated in cell H25 with a cost of equity of 6.75% and terminal growth of 3%:

$$= \frac{.}{.} = .$$

The present value of the horizon value is computed in cell C25 as the product of the horizon value and the 2014 equity discount factor: 27.44 = .718 x 38.22. The present value of 2010-2014 residual income is computed in cell C26 as sum of cells D26:H26. The value of Kraft's equity per share based on residual income is computed in cell C28 by equation (15) as the sum of the present value of future residual income plus current book value of equity:

$$=$$

$$= . + . + .$$

$$= .$$

See also Exhibit 6 cell F23.

Estimating Expected Return

The template provides several methods for estimating the expected return of an investment in the stock. Each method assumes the stock is acquired at its current price and held for 5 years, at which time the stock is sold at its intrinsic value. During the holding period, dividend reinvestment is assumed.

In Exhibit 9, Panel A Excel's IRR function is used to find the return that equates the present value of future dividends and intrinsic value to the current stock price. For example, by FCFE valuation Kraft's intrinsic value equals \$49.06. Exhibit 9 cell C6 shows that Kraft's stock price on March 1, 2011 is \$31.51. Annual dividends per share for 2011-2014 are in cells D6:G6, and cell H6 equals the sum of the 2015 dividend and intrinsic value. The IRR function in cell B6 finds in the following equation:

$$. = \frac{.}{+} + \frac{.}{(+)} + \frac{.}{(+)} + \frac{.}{(+)} + \frac{.}{(+)}$$

Hence, by FCFE valuation Kraft's expected 5-year holding period return equals 12.7%.

The template also provides an opportunity for students to use Solver. In Panel B of Exhibit 9 Solver is used to find the discount rate at which the present value of future dividends and terminal stock price equals the current stock price. The terminal stock price is calculated by equations (4) and (5), which express stock price in terms of forward EPS and the P/E ratio. Cell M6 contains a formula that computes the present value of future dividends and terminal price. Cell M7 contains the current stock price, and cell M8 computes the difference between current stock price and value. Cells N6:R6 contain projected dividends. Cell R8 contains 2015 EPS. Cell R9 contains a formula for the forward P/E. Cell R10 contains the terminal (i.e., 2015) Dividend Payout rate. Cell R11 contains the terminal (i.e., 2015) sustainable growth rate. Solver

finds the value in Cell R12 that equates cells M6 and M7 (i.e., that makes cell M8 equal to zero). Expressed algebraically, Solver finds k_E in the following equation:

$$0 = \left[\frac{D_1}{1+k} + \frac{D_2}{(1+k)^2} + \frac{D_3}{(1+k)^3} + \frac{D_4}{(1+k)^4} + \frac{D_5}{(1+k)^5} \right] + \left[\frac{P_5}{(1+k)^5} \times \frac{1}{1+k} \right]$$

The solution is shown in cell S3 as 9.96%.

Panel C of Exhibit 9 computes the implied cost of equity from equations (6) and (7), which express terminal stock price as the product of 2015 book equity and the 2015 P/B ratio. Solver finds k_E in the following equation:

$$0 = \left[\frac{D_1}{1+k} + \frac{D_2}{(1+k)^2} + \frac{D_3}{(1+k)^3} + \frac{D_4}{(1+k)^4} + \frac{D_5}{(1+k)^5} \right] + \left[\frac{P_5}{(1+k)^5} \times \frac{B_5 \times P/B}{1+k} \right]$$

The solution is shown in cell S17 as 10.00%.

CONCLUSION

Learning equity valuation from a textbook is like learning to play golf by reading the USGA rulebook. In each case the student merely gains an understanding of process. In valuation, the process is to forecast cash flows and discount them at an appropriate cost of capital; in golf, it is to hit a ball with sticks into a hole taking as few whacks as possible. Without guided practice, however, the student cannot fully appreciate the true complexity of these tasks or hope to achieve any proficiency with them. Practice in equity valuation ideally confronts students with the task of valuing the common stock of actual companies, but the complexity of the task and the constraints inherent in an academic setting pose significant obstacles.

This article describes an Excel template designed by the author to enable students to value real companies with some degree of confidence that the results lead to meaningful investment recommendations. The template takes financial forecasts from the Value Line Investment Survey and outputs valuations based on dividend, free cash flow and residual income models. It also returns several measures of the expected return from an investment in the firm's common stock. The template can be used as a supplement in courses that cover equity valuation. It is relatively easy to use by students with an understanding of financial statements and valuation concepts. Students enjoy using it to search for mispriced stocks, which can lead to their active participation in discussions and debates on topics related to equity valuation, corporate strategy and market efficiency. In addition, the template is well-suited for use by student-managed investment funds (SMIF) that follow a bottom-up, stock-picking approach. In a recent comprehensive survey of SMIF, Lawrence (2008) reports that the most widely used investment strategy is the bottom-up approach, and individual security selection is rated very important by 58% of survey respondents. Lawrence also reports that 58% of professors involved with SMIF as part of a formal class believe that these classes take substantially more faculty time than a regular class. This template will save time.

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Exhibit 1
Teaching Equity Valuation with the Value Line Investment Survey
Structure of the Template

This template takes user-supplied forecast inputs from the Value Line Investment Survey (VLIS) and outputs valuations for the common stock of an individual company. The template computes valuations from free cash flow, residual income and dividend valuation models. All user-supplied data are input in the *Ins* tab. All outputs are reported in the *Outs* tab. The template can be used to supplement discussion of valuation-related topics such as the cost of capital, required returns, expected returns, and financial statement analysis and forecasting.

Inputs (*Ins*)

Contains all required user-supplied inputs

Outputs (*Outs*)

Reports five estimates of stock value based on Free Cash Flow, Residual Income and Dividend valuation models. Also contains expected return forecasts for an assumed 5-year holding period with reinvested dividends. Also contains cost of capital estimates based on current capital structure.

Cost of Capital (*CoC*)

Current and projected costs of equity and weighted average cost of capital (WACC) reflecting projected changes in debt

Free Cash Flow (*FCF*)

FCFF and FCFE valuations

Valuation (*Val*)

Reports detail from the valuation estimates

Dividends (*Div*)

Dividend valuation

Residual Income (*RI*)

Residual Income valuation

Expected Returns (*IRR*)

Reports detail from expected return calculations. Also contains Solver applications for estimating implied cost of equity

Exhibit 2
User-Supplied Inputs

	B	C	D	E	F	G	H	I	J	K	L
4						Forecast					
5	Kraft Foods, Inc. (KFT)			VL data (per share)	2009	2010	2011	2012	2013	2014	2015
6	VL Report Date	1/28/2011		Sales	27.33	28.15	29.75	30.53	31.30	32.08	32.85
7	Most Recent Qtr	9/30/2010		Cash Flow	2.67	2.70	3.05	3.23	3.40	3.58	3.75
8	Valuation Date	3/1/2011		Earnings	2.03	2.03	2.35	2.50	2.66	2.82	3.00
9	Current Stock Price	31.51		Dividends	1.16	1.16	1.16	1.22	1.28	1.34	1.40
10	Comm Shares Out (mill)	1,746.8		Capital Spending	0.90	0.95	1.00	1.05	1.10	1.15	1.20
11	Market Cap (\$ mill)	55,042		Book Value	17.57	20.30	21.35	22.01	22.68	23.34	24.00
12	VL Target Price: High	55.00		Comm Shs Outstand (mill)	1,747	1,747	1,747	1,748	1,749	1,749	1,750
13	VL Target Price: Low	45.00		VL data (\$ mill)							
14	VL Target Price: Midpoint	50.00		Sales	40,386	49,150	52,000	53,350	54,728	56,107	57,500
15	VL Beta	0.65		Operating Margin	16.0%	15.5%	16.5%	16.8%	17.0%	17.3%	17.5%
16	Yield 10-yr T-Note	3.43%		Depreciation	931	1,150	1,200	1,225	1,250	1,275	1,300
17	Equity Risk Premium	5.50%		Net Profit	3,021	3,545	4,105	4,375	4,652	4,937	5,250
18	Terminal Growth Rate	3.0%		Income Tax Rate	29.4%	28.5%	30.5%	30.5%	30.5%	30.5%	30.5%
19	Margin of Safety Discount	30.0%		Net Profit Margin	7.5%	7.2%	7.9%	8.2%	8.5%	8.8%	9.1%
20				Working Capital	963	2,000	2,000	2,125	2,250	2,375	2,500
21				Long-Term Debt	29,103	29,500	27,500	26,875	26,250	25,625	25,000
22	Current Position (\$ mill)			Shareholder Equity	25,972	35,500	37,300	38,472	39,647	40,823	42,000
23	Cash	2,288		Return on Total Capital	8.3%	6.5%	7.5%	11.5%	11.8%	12.2%	9.0%
24	Accounts Receivable	6,013		Return on Shr Equity	11.6%	10.0%	11.0%	11.4%	11.7%	12.1%	12.5%
25	Inventories	5,735		Retained to Comm Eq	5.0%	4.5%	5.5%	5.8%	6.1%	6.4%	6.5%
26	Other Current Assets	1,788		All Div's to Net Profit	57.0%	57.0%	49.0%	48.7%	48.1%	47.5%	47.0%
27	Current Assets	15,824									
28	Accounts Payable	5,130									
29	Debt Due	464									
30	Other Current Liabs	8,032									
31	Total Current Liabs	13,626									
32	Net Work Cap (ex. Cash)	374									
33											
34	Capital Structure (\$mill)										
35	LT Debt	29,571									
36	Total Debt	30,035									
37	Other Liabs	1,703									
38	LT Interest	1,500									

Net Working Capital equals
Current Assets (ex. Cash) less
Accounts Payable and Other
Current Liabilities

KFT net pension obligation

2012-2014 forecasts are computed by linear
interpolation between 2011 and 2015
Cell J6 = I6+(L6-H6)/4

Exhibit 3
Model Outputs: Stock Valuations and Expected Returns

	B	C	D	E	F	G	H	I	J	K	L	M
4												
5	A. Equity Valuations and 5-year Expected Returns					estimated Value after a 5-year holding period. Includes dividend income. See IRR tab.						
6		Current Price	Value	IRR	Buy?							
7	FCF to Equity (FCFE)	31.51	49.06	12.7%	Yes							
8	FCF to the Firm (FCFF)	31.51	98.02	28.2%	Yes	The Buy decision is an IF statement comparing the Current Stock Price to estimated Value less the Margin of Safety Discount Cell F9 = IF((1-Ins!SC519)*D9>C9,"Yes","No")						
9	Residual Income (\$ mill)	31.51	46.80	11.7%	Yes							
10	Residual Income (per shr)	31.51	49.26	12.8%	Yes							
11	Dividends	31.51	31.84	4.2%	No							
12												
13	B. Current Capital Structure and Costs of Capital											
14			\$ mill	% wt	% Cost	Cost of Debt Before Tax Levered Cost of Equity WACC See CoC tab						
15	Long-term Debt (\$ mill)		30,035	35.3%	4.22%							
16	Market Cap (\$ mill)		55,042	64.7%	7.01%							
17	Total Capital (\$ mill)		85,077	100.0%	5.57%							
18												
19	C. Model Implied Expected Returns											
20	Implied Cost of Equity from DDM and Terminal P/E				10.0%	Implied Expected Return uses Solver to equate Value to Current Price: See IRR tab						
21	Implied Cost of Equity from DDM and Terminal P/B				10.0%							
22	Implied Cost of Equity from FCFE				12.0%							
23	Implied Cost of Equity from RIM				14.0%							
24												
25												

**Exhibit 4
Capital Structure and Costs of Capital**

	B	C	D	E	F	G	H	I	J	K	L	M
2	A. Current Capital Structure											
3		\$ mil	%									
4	Long-Term Debt	30,035	35.3%									
5	Market Capitalization	55,042	64.7%									
6	Total Capital	85,077	100.0%									
7												
8	B. Current Cost of Capital											
9	Risk-free rate	3.43%										
10	Equity Risk Prem	5.50%										
11	Beta Levered	0.65										
12	Tax Rate	31%										
13	Debt/Equity	0.55	= C4 / C5									
14	Beta Unlevered	0.47	= C11 / [1 + (1-C12)*C13]									
15	Cost of Equity Unlever	6.02%	= C9 + C10*C14									
16	Cost of Equity Levered	7.01%	= C9 + C10*C11									
17	Cost of Debt Implied	4.22%	= IF(C4>0, (C15-D5*C16) / D4, 0)									
18	WACC	5.57%	= D4*C17*(1-C12) + D5*C16									
19												
20	C. Annual Costs of Capital											
21			Forecast									
22		2009	2010	2011	2012	2013	2014	2015				
23	Long-term Debt	30,035	29,500	27,500	26,875	26,250	25,625	25,000				
24	Market Capitalization	55,042	55,104	57,898	59,717	61,541	63,366	65,193				
25	Total Capital	85,077	84,604	85,398	86,592	87,791	88,991	90,193				
26	Debt/Equity	55%	54%	47%	45%	43%	40%	38%				
27	Debt/Capital	35%	35%	32%	31%	30%	29%	28%				
28	Equity/Capital	65%	65%	68%	69%	70%	71%	72%				
29	Tax Rate	29%	29%	31%	31%	31%	31%	31%				
30	Beta Levered	0.65	0.65	0.63	0.62	0.61	0.60	0.60				
31	Cost of Equity Levered	7.01%	7.01%	6.88%	6.83%	6.79%	6.75%	6.71%				
32	Equity Discount Factors		0.934	0.874	0.818	0.766	0.718	0.673				
33	Cost of Debt Implied	4.22%	4.17%	4.22%	4.22%	4.22%	4.22%	4.22%				
34	WACC	5.58%	5.61%	5.61%	5.62%	5.64%	5.65%	5.67%				
35	WACC Discount Factors		0.947	0.897	0.849	0.804	0.761	0.720				

Market Cap = Current P/B ratio times projected book value of Shareholder Equity

Equity Beta decreases as LT Debt is reduced

The present value of \$1

Exhibit 5
Free Cash Flow Valuation

	A	B	C	D	E	F	G	H	I	J	K	L	M
1													
2		A. Free Cash Flow to the Firm (FCFF)											
3				Forecast									
4		2009	2010	2011	2012	2013	2014	2015					
5		EBIT	7,618	8,580	8,936	9,304	9,678	10,063					EBIT equals Sales x Oper Margin
6		EBIT(1-T)	5,447	5,963	6,211	6,466	6,727	6,993					
7		+ Depreciation	1,150	1,200	1,225	1,250	1,275	1,300					
8		- Δ Net Wkg Cap	(81)	(26)	(13)	(13)	(13)	(13)					
9		- Cap Spending	(1,660)	(1,747)	(1,835)	(1,923)	(2,012)	(2,100)					
10		FCFF	4,856	5,390	5,588	5,780	5,977	6,181					FCFF equals the sum of rows 6-9
11		Growth		11.0%	3.7%	3.4%	3.4%	3.4%					
12		WACC	5.61%	5.61%	5.62%	5.64%	5.65%	5.67%					
13		WACC Discount Factors	0.947	0.897	0.849	0.804	0.761	0.720					
14		Horizon Value(FCFF 2014)	177,307				233,111						Horizon Value of FCFF
15		PV(FCFF 2010-2014)	23,366	4,598	4,833	4,744	4,645	4,546					PV of FCFF
16		EV_{FCFF}	200,672										
17													
18		Net Wkg Cap	374	455	482	494	507	520	532				Net Working Capital assumed to grow with Sales
19		Δ Net Wkg Cap		81	26	13	13	13	13				
20													
21		B. Free Cash Flow to Equity (FCFE)											
22				Forecast									
23		2009	2010	2011	2012	2013	2014	2015					
24		Net Profit	3,545	4,105	4,375	4,652	4,937	5,250					Capital Spending Per Share multiplied by Common Shares Outstanding
25		+ Depreciation	1,150	1,200	1,225	1,250	1,275	1,300					
26		- Δ Net Wkg Cap	(81)	(26)	(13)	(13)	(13)	(13)					
27		- Cap Spending	(1,660)	(1,747)	(1,835)	(1,923)	(2,012)	(2,100)					
28		+ Δ Debt	397	(2,000)	(625)	(625)	(625)	(625)					The change in Long-term Debt
29		FCFE	3,351	1,532	3,127	3,341	3,563	3,812					FCFE equals the sum of rows 24-28
30		Growth		-54.3%	104.2%	6.8%	6.7%	7.0%					
31		Cost of Equity Levered	7.01%	6.88%	6.83%	6.79%	6.75%	6.71%					
32		Equity Discount Factors	0.934	0.874	0.818	0.766	0.718	0.673					
33		Horizon Value(FCFE 2014)	72,970				101,643						Horizon Value of FCFE
34		PV(FCFE 2010-2014)	12,148	3,132	1,339	2,559	2,560	2,558					PV of FCFE
35		EV_{FCFE}	85,118										

**Exhibit 6
Valuations**

	B	C	D	E	F
2	Valuations				
3	FCFE Valuation			Dividend Valuation	
4	Horizon Value 2014	101,643		Horizon Value 2014	37.33
5	PV(Horizon Value)	72,970		PV(Horizon Value)	26.80
6	PV(FCFE 2010-2014)	12,148		PV(DPS 2010-2014)	5.04
7	+ Cash	2,288		V_{DIV}	31.84
8	- Other Liabilities	(1,703)			
9	Equity Value	85,703		RI Valuation (\$ mill)	
10	Common Shs Outstan	1,747		Horizon Value 2014	66,915
11	V_{FCFE}	49.06		PV(Horizon Value)	48,038
12				PV(RI 2010-2014)	7,745
13	FCFF Valuation			BV Equity	25,972
14	Horizon Value 2014	233,111		Equity Value	81,756
15	PV(Horizon Value)	177,307		Common Shs Outstand	1,747
16	PV(FCFF 2010-2014)	23,366		V_{RI}	46.80
17	+ Cash	2,288			
18	Firm Value	202,960		RI Valuation (per shr)	
19	-Long-term Debt	(30,035)		Horizon Value 2014	38.22
20	- Other Liabilities	(1,703)		PV(Horizon Value)	27.44
21	Equity Value	171,222		PV(RI 2010-2014)	4.25
22	Common Shs Outstan	1,747		BV Equity	17.57
23	V_{FCFF}	98.02		V_{RI}	49.26

**Exhibit 7
Dividend Valuation**

	A	B	C	D	E	F	G	H	I	J
1										
2		Dividends								
3				Forecast						
4			2009	2010	2011	2012	2013	2014	2015	
5		Div per share		1.16	1.16	1.22	1.28	1.34	1.40	
6		<i>Growth</i>			0%	5%	5%	5%	4%	
7		Cost of Equity Levered		7.01%	6.88%	6.83%	6.79%	6.75%	6.71%	
8		Equity Discount Factors		0.934	0.874	0.818	0.766	0.718	0.673	
9		Horizon Value 2014	26.80					37.33		
10		PV(DPS 2010-2014)	5.04	1.08	1.01	1.00	0.98	0.96		
11		V_{DRV}	31.84							
12										

**Exhibit 8
Residual Income Valuation**

	A	B	C	D	E	F	G	H	I	J	K	L	M	
1														
2		A. Residual Income (\$ mill)												
3				Forecast										
4		2009		2010	2011	2012	2013	2014	2015					
5		Net Profit		3,545	4,105	4,375	4,652	4,937	5,250					
6		BV Equity	25,972	35,500	37,300	38,472	39,647	40,823	42,000					
7		RI		1,723	1,663	1,826	2,039	2,261	2,510				Cell I7 = I5 - I9*H6	
8		<i>Growth</i>			-3.5%	9.8%	11.7%	10.9%	11.0%					
9		Cost of Equity Levered		7.01%	6.88%	6.83%	6.79%	6.75%	6.71%					
10		Equity Discount Factors		0.934	0.874	0.818	0.766	0.718	0.673					
11		Horizon Value 2014	48,038					66,915						
12		PV(RI 2010-2014)	7,745	1,610	1,454	1,494	1,563	1,623						
13		V_{RI}	81,756											
14														
15														
16		B. Residual Income (per share)												
17				Forecast										
18		2009		2010	2011	2012	2013	2014	2015					
19		EPS		2.03	2.35	2.50	2.66	2.82	3.00					
20		BV Equity	17.57	20.30	21.35	22.01	22.68	23.34	24.00					
21		RI		0.80	0.95	1.04	1.17	1.29	1.43				RI = EPS - Cost of Equity X Beginning BV Equity	
22		<i>Growth</i>			19.6%	9.5%	11.6%	10.8%	11.0%					
23		Cost of Equity Levered		7.01%	6.88%	6.83%	6.79%	6.75%	6.71%					
24		Equity Discount Factors		0.934	0.874	0.818	0.766	0.718	0.673					
25			38.22										Horizon Value 2014	
26	0.75	0.83	0.85	0.89	0.93								PV(RI 2010-2014)	
27													BV Equity	
28													V _{RI}	
29													49.26	

Exhibit 9
Expected Returns for 5-year Holding Period with Dividend Reinvestment

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
2																			
3		A. IRR assuming 5-year holding period with dividend reinvestment								B. Implied Cost of Equity from DDM and Terminal P/E: 9.96%									
4		Current Price	Dividends and estimated Value						PV dividends and Term Price	Dividends Per Share						=R11+R12			
5		IRR	3/1/2011	2011	2012	2013	2014	2015	Model	2011	2012	2013	2014	2015					
6		12.7%	(31.51)	1.16	1.22	1.28	1.34	50.46	FCFE	Value	31.51	1.16	1.22	1.28	1.34	1.40			
7		28.2%	(31.51)	1.16	1.22	1.28	1.34	99.42	ECFF	Price	31.51								Price 2015
8		=R8*R9	3700	134550015				81	101.7%	(31.51)	1.16	1.22	1.28	1.34	1.40	1000	(00,000)		
9		=R10/R12	14.49%	130550015				87	152.8%	(31.51)	1.16	1.22	1.28	1.34	1.40	1000	(00,000)		
10			47.30%	1011350015				100	41.5%	(31.51)	1.16	1.22	1.28	1.34	1.40	1000	(00,000)		
11			6.7%	511530015				101											
12			3.549%	15215				102											
13								103											
14								104											
15								105											
16								106											
17								107											
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57								147											
58								148											
59								149											
60								150											

IRR function takes as inputs the Current Stock Price, annual dividends from 2011-2014, and 2015 dividend plus intrinsic value

C. Implied Cost of Equity from DDM and Terminal P/B: 10.00%

KRAFT FOODS INC. NYSE-KFT

RECENT PRICE	31.05	PE RATIO	15.3 (Trailing: 15.5; Median: N/A)	RELATIVE PE RATIO	0.90	DIVID YLD	3.7%	VALUE LINE								
TIMELINESS	4	Lowest 12/3/10	High: 35.6 Low: 29.5	43.9 32.5	39.4 26.3	36.1 29.5	35.7 27.9	36.7 27.4	37.2 30.0	35.0 24.8	29.8 20.8	32.7 27.1	Target Price	2013: 40 2014: 40 2015: 40	Range	120 100 80 64 40 20 16 12 8
SAFETY	1	Rated 10/3/03	LEGENDS --- 33.5 "Cash Flow" per sh Relative Price Strength Ongoing Yes Ongoing Price Indebt increases													
TECHNICAL	3	Lowest 9/3/10	2013-15 PROJECTIONS Price Gain Return High 66 (+76%) 18% Low 46 (+46%) 13%													
BETA	.65	(1.00 = Market)	Institutional Decisions 12/31/10 3/31/11 9/30/11 to Buy 540 495 470 to Sell 546 590 400 Held/Not 19413512899712711541													

	2000	2001A	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	% VALUE LINE PUB. LLC	13-15
Sales per sh	18.24	19.52	17.17	18.01	18.86	20.43	21.00	24.28	25.11	27.33	28.16	28.76	22.85	32.85
"Cash Flow" per sh	2.09	2.03	2.44	2.48	2.39	2.43	2.51	2.48	2.61	2.67	2.70	3.06	3.75	3.75
Earnings per sh	1.38	1.17	2.02	2.00	1.87	1.88	1.94	1.82	1.88	2.03	2.00	2.38	3.00	3.00
Div's Decl'd per sh	---	26	54	63	75	85	94	1.02	1.10	1.15	1.15	1.16	1.40	1.40
Cap'l Spending per sh	62	63	68	63	59	70	71	81	83	80	86	1.00	1.20	1.20
Book Value per sh	9.66	13.53	14.93	16.57	17.54	17.72	17.45	17.80	15.11	17.57	20.20	21.25	24.00	24.00
Common Shs Outstg	1455.0	1735.0	1730.5	1721.9	1705.4	1669.9	1636.0	1533.8	1469.3	1477.9	1747.0	1747.0	1750.0	1750.0
Avg Ann'l PE Ratio	---	27.8	19.1	15.4	17.3	16.7	16.5	18.4	16.1	12.8	14.8	14.8	17.0	17.0
Relative P/E Ratio	---	1.42	1.04	88	91	89	90	98	97	86	80	80	1.15	1.15
Avg Ann'l Div'd Yield	---	8%	14%	2.0%	2.3%	2.7%	2.9%	3.1%	3.6%	4.5%	3.9%	3.9%	2.7%	2.7%
Sales (\$mil)	26532	33875	29703	31010	32168	34113	34356	37241	42777	40386	49190	52000	57500	57500
Operating Margin	21.0%	22.1%	23.5%	21.9%	21.9%	19.5%	17.8%	15.6%	14.7%	16.0%	15.0%	16.8%	17.8%	17.8%
Depreciation (\$mil)	1034.0	1642.0	716.0	813.0	879.0	879.0	898.0	899.0	966.0	931.0	1100	1200	1300	1300
Net Profit (\$mil)	2081.0	1882.0	3585.0	3452.0	3285.0	3193.0	3203.0	2906.0	2844.0	3021.0	3646	4106	5250	5250
Income Tax Rate	41.4%	45.4%	35.5%	34.9%	32.3%	30.3%	31.7%	31.2%	30.2%	29.4%	28.8%	30.8%	30.8%	30.8%
Net Profit Margin	7.5%	5.6%	11.8%	11.1%	10.2%	9.3%	9.3%	7.8%	6.6%	7.5%	7.2%	7.8%	8.7%	8.7%
Working Cap'l (\$mil)	6438.0	61869	287.0	263.0	644.0	6571.0	62219	65349	322.0	963.0	2000	2000	2500	2500
Long-Term Debt (\$mil)	2695.0	8134.0	10416	11591	9723.0	8475.0	7081.0	12902	18589	18024	29600	27000	25000	25000
Shr. Equity (\$mil)	14048	23478	25832	28530	29911	29593	28555	27295	22200	25972	35000	37200	42000	42000
Return on Total Cap'l	13.4%	8.7%	10.4%	9.2%	8.7%	9.0%	8.5%	8.1%	8.5%	8.3%	8.8%	7.8%	8.0%	8.0%
Return on Shr. Equity	14.2%	8.0%	13.6%	12.1%	10.7%	10.8%	11.2%	10.6%	12.8%	11.6%	10.0%	11.0%	12.8%	12.8%
Retained to Com Eq	14.2%	7.1%	9.9%	8.3%	6.4%	5.9%	5.7%	4.8%	5.3%	5.0%	4.0%	5.8%	6.8%	6.8%
All Div's to Net Prof	---	12%	27%	32%	40%	45%	49%	56%	58%	57%	67%	49%	47%	47%

MARKET CAP: \$64.2 billion (Large Cap)

CURRENT POSITION 2008 2009 9/30/10 (\$mil)

Cash Assets	1344	2101	2368
Receivables	4704	5157	6013
Inventory (LIFO)	3729	3775	5735
Other	1683	1381	1788
Current Assets	11366	12454	15824
Accs Payable	3373	3766	5130
Debt Due	1662	966	464
Other	6055	6759	8032
Current Liab.	11044	11497	13825

ANNUAL RATES OF CHANGE (per cent)

10 Yrs.	5.7%	19.7%	20.7%
5 Yrs.	2.2%	2.2%	20.7%
1 Yr.	1.5%	0.2%	0.2%
Dividends	16.6%	0.2%	0.2%
Stock Value	7.5%	0.2%	0.2%

QUARTERLY \$/SH (\$ MIL)

Year	Q1	Q2	Q3	Q4
2007	4.58	5.05	5.04	11.80
2008	11.72	11.76	11.62	11.75
2009	8.06	11.62	8.53	11.75
2010	15.18	12.53	11.63	12.12
2011	12.00	12.50	12.50	15.00

EARNINGS PER SHARE

Year	Q1	Q2	Q3	Q4
2007	\$.44	\$.50	\$.44	\$.44
2008	\$.44	\$.56	\$.44	\$.43
2009	\$.44	\$.56	\$.56	\$.45
2010	\$.49	\$.60	\$.47	\$.47
2011	\$.50	\$.50	\$.50	\$.70

QUARTERLY DIVIDENDS PND-9

Year	Q1	Q2	Q3	Q4
2007	\$.25	\$.25	\$.25	\$.27
2008	\$.27	\$.27	\$.27	\$.29
2009	\$.29	\$.29	\$.29	\$.29
2010	\$.29	\$.29	\$.29	\$.29
2011	\$.29	\$.29	\$.29	\$.29

Business: Kraft Foods Inc. is the largest branded food and beverage company headquartered in the U.S. and second largest worldwide. The company markets many of the world's leading food brands, including Kraft cheese, Cadbury candy, Maxwell House and Jacobs coffee, Nabisco cookies and crackers, Philadelphia cream cheese, and Oscar Mayer meats. Its products are currently sold in more than 160 countries around the globe. North America sales accounted for 59% of '09 total; International, 41%. Acq. Nabisco, 12/00; Cadbury, 2/10. Has about 97,000 employees. Officers & Directors own less than 1% of stock (3/10 Proxy). Chairman & CEO: Irene B. Rosenfeld. Address: Three Lakes Drive, Northfield, IL 60093. Telephone: 847-646-2000. Internet: www.kraft.com.

Kraft is poised to have a breakout year in 2011. Organic revenue growth will likely fall short of the company's long-term goal of "at least 5%" because of price pressure, especially in the U.S. But sales growth should be reasonably good for 2011 as the company's food stock market value rises. The company should be able to grow its top line at a faster pace than the overall industry, thanks to synergies from the Cadbury acquisition, which was completed in February of last year. These will come, we think, from opportunities to introduce new products in thriving merchandise categories (e.g., confection, snacks, and gum) and to gain ground in China, India, and other emerging countries. Recall that one of Cadbury's biggest strengths, aside from its iconic brands, is its vast distribution capabilities in underdeveloped international markets. There is still plenty of room to cut costs. The company continues to drive efficiency improvements in key areas, like manufacturing, procurement, and inventory management. Additionally, we envision sizable Cadbury-related savings in the coming quarters, given the overlapping back-office functions/facilities that still exist.

Starbucks is looking to end its distribution agreement with Kraft, which has led to a lot of corporate bickering in the media. We view this as a fairly minor development, however, since the Starbucks coffee business only generates around \$500 million in annual sales, a net earnings of \$0.02-\$0.03 a share. Kraft Plus, Kraft would likely be compensated for the contract termination (see Eggs in excess of \$1 billion). These high-quality shares should generate good risk-adjusted returns in 2013-2015. Yes, the stock now carries a Below Average (-) Timeliness rank.

Justin Hallman January 28, 2012

(A) Results prior to 2001 are pro forma. (B) Diluted earnings. Excludes nonrecurring gains/losses. (C) 14, (D) (12), (E) (15), (F) (16), (G) (17). Next earnings report is due in mid-February. (H) Dividends are typically paid biweekly January, April, July, and October. (I) In millions. (J) 0.0001 sum due to rounding. Company's financial strength: A, Stock's Size: 10, Price Growth Potential: 2, Earnings Predictability: 10.

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