Kellogg School of Management
Northwestern University

A Primer on Securities Analysis

(with a Focus on Industry Analysis)

November 8, 2004
Linda Vincent

Kellogg
School of Management

1

Categories of Securities Analysis

1) **Technical Analysis**
   - **Individual stocks**
     – **Patterns in past prices or volume**
   - **Groups of stocks**
     – **Screens on firm characteristics**

2) **Market Timing**
3) **Relative Valuation (multiples)**
4) **Fundamental Analysis**

Kellogg
School of Management

2

Fundamental Analysis

Five steps:

1) **Overview of firm and its strategies**
2) **Evaluate structure of industry**
3) **Evaluate firm's economic position**
4) **Predict future course of firm**
5) **Valuation of firm**

Goal: Estimate intrinsic value of the firm.

Kellogg

1) Overview of Firm and its Strategies

A) **Key lines of business**
- Number of lines of business?
- Is the firm diversified?

B) **Major products/services**
- Characteristics of products/services
  - Commodity?
  - Specialized, quality?

C) **Primary markets**
- Number of major customers?
- Dependence on a few customers?
- Diversified markets?

Kellogg

1) Overview of Firm and its Strategies

D) **Age of firm**
- **Firm's life cycle [Start up, emerging growth, established growth, maturity, decline]**

E) **Current operating strategy**
- **Growth (organic or via acquisition)**
- **Restructuring**
- **Downsizing**
- **Diversifying**
- **Steady state**

F) **Management (quality, strengths, experience, reputation)**

G) **Corporate governance (quality, red flags)**

Kellogg
School of Management

5

2) Evaluate Structure of Industry

A) **Number of firms and concentration**
- **What percentage of industry sales captured by industry leaders?**

B) **Level of competitiveness**
- **Barriers to entry?**
- **Relative market shares of firms in industry?**
- **Competition - domestic, foreign, both?**
- **Characteristics of major competitors?**
  - **Strengths, weaknesses, strategies**

C) **Growth profile**
- **Historical, current and projected rates of growth**

Kellogg
School of Management

6

2) Evaluate Structure of Industry

D) Seasonal or cyclical patterns
- Sensitivity to business cycle?
  - Cyclical, counter-cyclical, or acyclical?

E) Regulatory environment
- Established agencies
  - FDA, EPA, FDIC, NRC, FAA, etc.
- Emerging "issues"
  - SEC, Sarbanes-Oxley, Eliott Spitzer, etc.

F) Sensitivity to macroeconomic conditions
- Interest rates, inflation, consumer confidence

**G) Technological change and innovation**
- Importance – history, resources

Kellogg
School of Management

7

---

2) Evaluate Structure of Industry

H) Production profile
- Labor or capital intensive?
- Unionized?
  - History of labor relations
- Constraints on availability of raw materials, labor, other production inputs?

I) Drivers of business
- What drives success in industry?
- What drives stock price/returns of firms in industry?

Kellogg
School of Management

8

4

Value Drivers

Share price
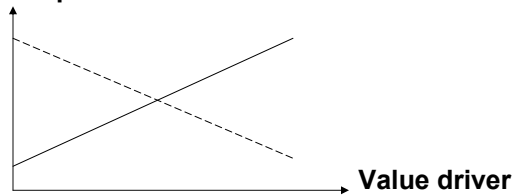
Value driver

__Examples__

Retail: Gross margin (sales less cost of goods sold) (+)

Same store sales per square foot (+)

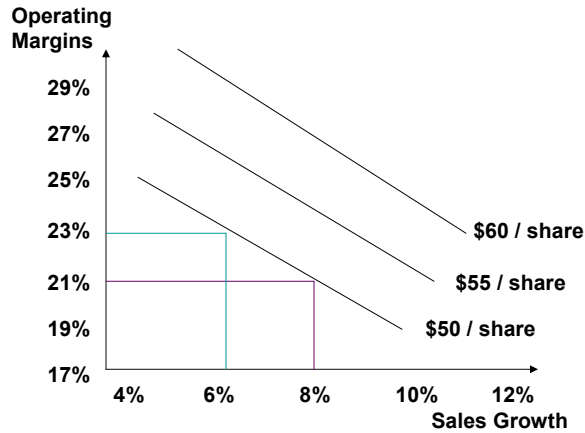**Food industry: Cost of capital (-)**

Sales growth (+)

Kellogg

9

Value Drivers

Industry comparisons – Specialty Retailing

2003	GPS	ANF	LTD	AEOS
Gross Margin	37.6%	42.0%	36.4%	36.5%
ΔSSS	+ 7 %	(5 %)	+ 7 %	(6.6 %)
Sales/SF	$ 415	$ 345	$ 292	$ 347
2002				
Gross Margin	34.0%	41.1%	36.6%	37.1%
ΔSSS	(3 %)	(9 %)	0 %	(4.3 %)
Sales/SF	$ 378	$ 379	$ 284	$ 372

Kellogg

10

Value drivers

DuPont Analysis

Return on equity (ROE)

Decompose ROE ala DuPont Analysis:

$$\text{ROE} = \frac{\text{EBIT}}{\text{Sales}} \times \frac{\text{Sales}}{\text{Assets}} \times \frac{\text{Assets}}{\text{Equity}}$$
$$\qquad\quad (1) \qquad\qquad (2) \qquad\qquad (3)$$

(1) Return on sales (ROS) **(≤ 1)**
(2) Total asset turnover (TAT) **???**
(3) Leverage ratio **(≥ 1)**

DuPont Analysis Example – Industry

Median return on common equity, median profit margin, median total asset turnover, and median financial leverage for selected industries, 1966-1996

	ROE (%)	=	Profit Margin (%)	X	Asset Turnover (Times)	X	Financial Leverage (Times)
Pipelines	*17.1*	=	*27.8*	X	*0.40*	X	*2.08*
Restaurants	*15.6*	=	*5.0*	X	*2.83*	X	*1.32*
Bus. services	*14.6*	=	*5.2*	X	*2.95*	X	*1.00*
Food Stores	*13.8*	=	*1.7*	X	*7.39*	X	*1.35*
Utilities	*12.4*	=	*14.5*	X	*0.59*	X	*2.50*
Apparel	*11.6*	=	*4.0*	X	*2.55*	X	*1.40*
Primary metals	*9.9*	=	*5.0*	X	*1.80*	X	*1.43*
Railroads	*7.3*	=	*9.7*	X	*0.78*	X	*1.56*

13

---

3) Evaluate Firm's Current Economic Position

A) Financial position

- **Balance sheet analysis**
  - **Types of assets (tangible, intangible, current, long term)**
  - **Nature of liabilities (maturity structure, off-balance-sheet)**
  - **Capital structure (leverage)**
  - **Components of residual equity (contributed or retained)**

B) Profitability

- **Income statement analysis**
  - **Operating revenues and expenses**
  - **Profit margins**
  - **Nonrecurring or unusual items**

14

3) Evaluate Firm's Current Economic Position

C) Cash flow
- Statement of cash flows analysis
  - Cash from operations
  - Cash from investing activities
  - Cash from financing activities

D) Time series (firm through time)

E) Cross-section (firm relative to competitors)

F) Risk
- Economic – macroeconomic risks
- Business – risk of not earning cost of capital
- Financial – risk of not meeting financial obligations

Kellogg

15

4) Predict Future Course of Firm

Build financial model
- Project firm's future operations
  - Necessary to understand the business model
  - Necessary to understand firm's strategy
  - Necessary to understand and assess sustainability of competitive advantages (or lack thereof)
- Structure projections as pro forma financial statements
- Carefully articulate assumptions
- Sensitivity analysis on key assumptions

Kellogg

16

8

5) *Estimate the Intrinsic Value of Firm*

a) **Valuation model**
   (Discounted cash flow)

b) **Sensitivity analysis**

c) **Reasonable *range* for intrinsic value**

17

Valuation

This process is as much *ART* as *SCIENCE.*

The goal is not just the "number" (the *intrinsic value*) but an understanding of what drives the value and how that value could change.

Other valuation models (e.g., multiples or relative valuation) do not provide insight into the underlying economics of the firm's business.

18

Industry Analysis - Airlines

Industry Characteristics:

- **Protracted downturn (2001 – present)**
- **Top 10 carriers' losses:**
  - **2003: $ 4.5 billion on $ 81.6 billion revenues**
  - **2002: $ 11.1 billion on $ 80.9 billion revenues**
- **Heavily regulated**
- **Highly unionized**
  - **Poor labor relations common**
- **Major cost components**
  - **Labor (35 - 40% of total costs in 2003)**
  - **Fuel   (10 - 15% of total costs in 2003)**
- **Capital intensive**
- **Highly levered**

Kellogg
School of Management

19

Industry Analysis - Airlines

Industry Characteristics:

- **National carriers dichotomized as "legacy" and "low-cost"**
  - **Legacy airlines include United, American, Delta, Northwest, Continental, US Airways**
    - **UAL and US Airways currently in Chapter 11**
    - **UAL and Delta launched "low-cost" subsidiaries**
  - **Low cost include Southwest, JetBlue, AirTran**
    - **ATA entered bankruptcy October 26, 2004**
  - **Low cost airlines have increased share of available seat miles from 10.8% in 1998 to 17.5% in 2003**
- **Approximately 90 regional carriers in 2003**
  - **Some have been acquired by majors**
- **Start-ups – many have failed, few have thrived since 2000**

Kellogg
School of Management

20

Industry Analysis - Airlines

Key value drivers:

- **Revenue per revenue-paying passenger mile**
  (RPM or yield - measure of fare levels)
    - **Average domestic fares <u>decreased</u>**
        - **8.6 % in 2001**
        - **9.1 % in 2002**
        - **0.8 % in 2003**
- **Cost per available seat mile (CASM)**
    - **Labor**
    - **Fuel**
- **Passenger load factor (break-even analysis)**
  (Revenue passenger miles/available seat miles)

Kellogg
School of Management

21

Value Drivers - Airlines

Cost per available seat mile (ASM)
Revenue per revenue paying passenger mile (yield)

2<u>nd</u> Qtr 2004

(in cents)	Cost/ASM	Yield
US Airways	15.95	13.95
United	11.88	10.83
Northwest	13.49	15.71
American	11.18	11.46
Airtran	8.45	12.21
Southwest	8.08	11.24
JetBlue	5.93	7.89

Kellogg
School of Management

22

Industry Analysis - Airlines

Additional considerations:

- **Market share (share of available seat miles)**
- **Barriers to entry**
    - **Gates**
    - **Take-off and landing slots**
    - **Routes**
- **Aircraft fleet**
    - **Average age**
    - **Standardization**
    - **Fuel efficiency**
    - **Aircraft orders and options**

Kellogg

23

Industry Analysis - Homebuilding

- **Homebuilding industry characteristics**
    - **Cyclical**
    - **Regional**
    - **Fragmented**
        - **100 largest builders sold 33% of total new SF homes in 2002**
        - **Largest homebuilders each account for < 3% total sales**
    - **But consolidating**
    - **Highly regulated**
    - **Estimated residential home equity in U.S. (2003) = $7.7 Trillion or approx. 2/3 value of all publicly traded stocks**
    - **Housing starts a leading economic indicator**

Kellogg

24

Industry Analysis - Homebuilding

- **Industry drivers**
  - **Interest rates – levels and changes**
  - **General economic conditions**
  - **Mortgage rates and availability**
  - **Levels of (and trends in) employment**
  - **Consumer confidence**
  - **Disposable income**
  - **Affordability of housing**
  - **Demand for housing**
    - **Demographics**
    - **Immigration**
 - **Supply (inventory of homes)**

25

Industry Analysis - Homebuilding

- **Firm-Specific Value drivers**
  - **Backlog (orders in process due to time from contract to closing)**
  - **New Orders - Number of homes subject to sales contracts**
    - **Indicate demand**
    - **Available monthly**
  - **Inventory turnover**
  - **Gross margins**
  - **Diversification and product mix**
  - **Financial strength (access to capital, financial flexibility)**
  - **Market (demographics)**
  - **Product demand**

26

KB HOME
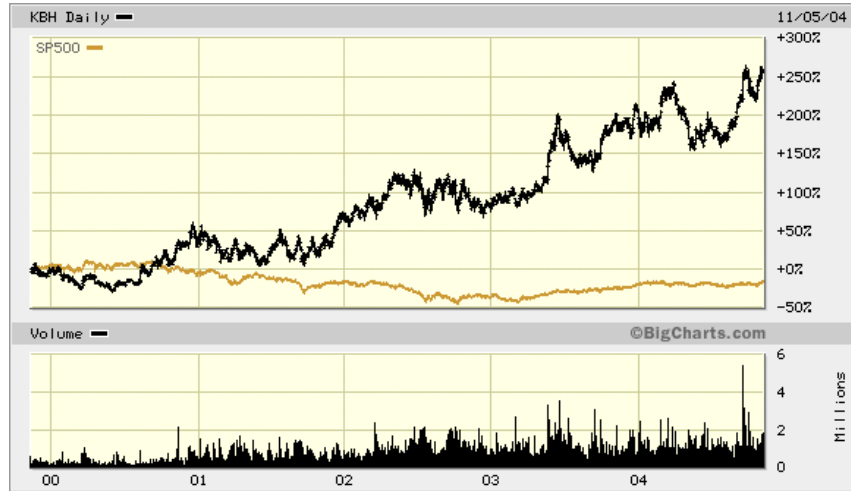
Lennar

Pulte Homes

Industry Analysis – Tire Industry

Industry characteristics:

- **$80 billion worldwide market**
- **Global market and global competition**
- **Highly concentrated:**
    - **Three firms have 55% of worldwide sales**
        - **Michelin**   **19% (French)**
        - **Bridgestone**   **19% (Japanese)**
        - **Goodyear**   **17% (U.S.)**
    - **Only other major U.S. competitor: Cooper Tire (2.5%)**
- **Two major sources of demand**
    - **Automobile manufacturers for use as original equipment on new cars (30%)**
    - **Vehicle owners in replacement market (70%)**
- **Market has been growing at 2-3% per annum**

Industry Analysis – Tire Industry

- **OEM market is commodity business**
  - **Fierce price competition ➔ low margins**
  - **Important for replacement market**
    - ▪ **But retention rates declining to about 33%**
- **Exception is luxury car market**
- **Capital intensive ➔ high fixed costs**
  - **Overhead costs approx. 30% of product cost**
  - **High volume necessary to cover fixed costs**
  - **Bridgestone introducing new production system in 2005**
    - ▪ **Lower break-even point**
- **Raw materials approximately 40% of product cost**
  - **Major raw materials are natural and synthetic rubber and petroleum**
  - **Raw material costs increased > 40% in 2003**

Kellogg

31

Industry Analysis – Tire Industry

Kellogg

32

Industry Analysis – Tire Industry