Lecture 1: Security selection and securities analysis

In this lecture we will focus on the main methods used to select individual securities for a portfolio. These may be summarized on the one hand as the “top down” or macro approach and on the other as the “bottom up” approach looking at individual firms using financial statement analysis.

Macroeconomic and industry analysis 1 (top down approach to firm valuation)

The need for a *better* forecast to earn abnormal returns

Global macroeconomic factors affecting security returns

- Global and regional growth (firms succeed when markets for products buoyant)
- Political developments (affecting economy, such as wars, revolutions, trade agreements)
- Nominal and real exchange rate (affect value of foreign securities, and of trading companies)
- Financial stability (affects securities prices, firms' solvency, political aspects, possibly exchange controls)

Asian economies; selected economic and monetary indicators

Indonesia	1992	1993	1994	1995	1996	1997
GDP growth	7.2	7.3	7.5	8.2	8.0	5.0
Current account balance/GDP	-2.2	-1.5	-1.7	-3.3	-3.3	-2.9
Domestic credit growth	14.1	21.0	22.9	21.7	22.7	
Growth in credit to private sector	11.4	25.5	23.0	22.6	21.4	
Banks' net foreign position	-2.0	-4.9	-5.2	-3.7	-2.5	
S. Korea						
GDP growth	5.1	5.8	8.6	8.9	7.1	6.0
Current account balance/GDP	-1.5	0.1	-1.2	-2.0	-4.9	-2.8
Domestic credit growth	11.7	12.7	18.4	14.7	19.4	
Growth in credit to private sector	11.5	13.3	19.5	15.6	19.8	
Banks' net foreign position	-0.9	-1.4	0	-1.2	-2.7	
Malaysia						
GDP growth	7.8	8.3	9.2	9.5	8.6	7.0
Current account balance/GDP	-3.8	-4.8	-7.8	-10.0	-4.9	-5.8
Domestic credit growth	16.6	12.3	14.8	29.5		
Growth in credit to private sector	11.2	11.6	15.3	30.5		
Banks' net foreign position	-9.4	-13.0	-3.4	-2.3		
Thailand						
GDP growth	8.2	8.5	8.9	8.7	6.4	0.6
Current account balance/GDP	-5.6	-5.0	-5.6	-8.0	-7.9	-3.9
Domestic credit growth	18.0	22.7	28.9	23.1	14.0	
Growth in credit to private sector	20.5	24.0	30.3	23.8	14.6	
Banks' net foreign position	-3.7	-6.5	-18.9	-19.4	-19.9	

Asset price changes in Asian markets, 1 July 1997 to 18 February 1998 (percent)

	Equity market	US$ exchange rate
Indonesia	-81.2	-73.5
S Korea	-32.3	-48.1
Thailand	-47.9	-43.2
Malaysia	-59.0	-33.2
Singapore	-45.0	-13.2
Hong Kong	-36.6	0

"Reverse" effects of stock prices on economic developments (Barrell and Davis 2003)

- Wealth effects on consumption
- Tobin's q/risk premium effect on investment
- International spillovers via portfolio holdings and equity market integration
- Absorption of shocks via long rates, exchange rates and policy reactions

Macroeconomic and industry analysis 2: national macroeconomic issues

National economic factors

- Underlying link of share price to earnings
- Key macro data items in forecasting aggregate earnings
- Classification into supply and demand shocks
- Fiscal and monetary policy effects
- Supply side/structural policies
- Business cycle and leading indicators
- Financial stability and macro prudential indicators

Corporate Deficit/GDP

(%)

	1988	1989	1990	1991	1992	1993
UK	-1.6	-4.2	-4.1	-1.4	-1.3	0.4
US	-0.9	-0.8	-0.3	0.6	0.3	0.2
Japan	-4.6	-6.8	-9.1	-6.9	-6.0	-3.2
Canada	-1.7	-3.2	-2.7	-1.8	-1.0	-0.8
France	-1.2	-2.0	-1.9	-1.4	0.4	1.9
Germany	-.9	-1.6	-1.6	-2.8	-4.8	-2.8
Italy	na	na	-8.2	-5.4	-5.2	na
Sweden	-6.2	-9.5	-10.1	-5.4	-2.3	na
Norway	-6.6	-4.3	2.1	1.9	na	na
Finland	-4.3	-6.3	-7.6	-5.3	-3.4	0.9
Australia	na	na	-11.4	2.2	-3.5	-1.8

Danger signal to economy – accentuates recession as companies cut investment due to adverse balance sheets as well as fall in GDP

Macroeconomic and industry analysis

3: industry analysis

Firm performance strongly related to fortunes of its industry

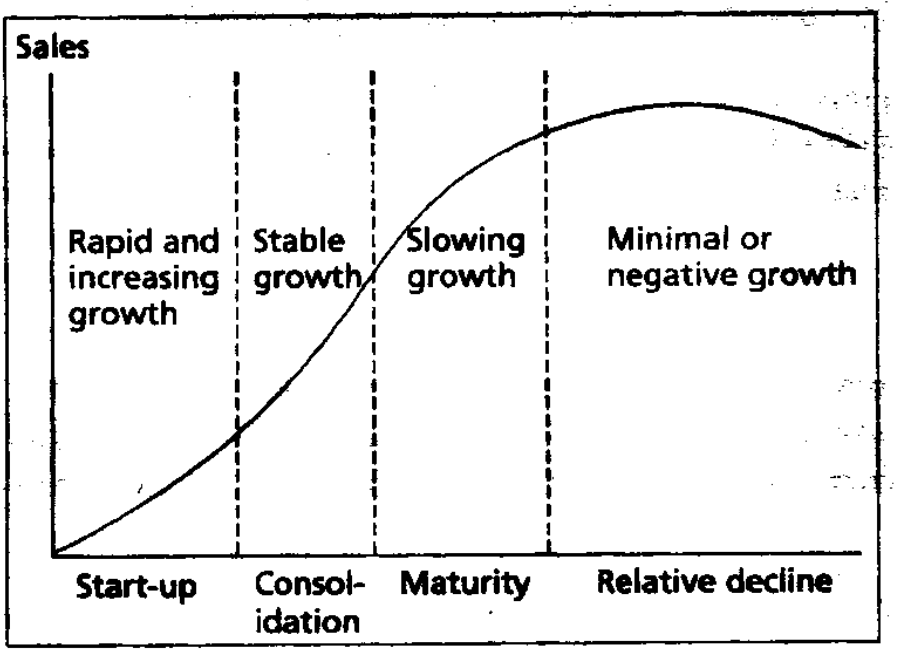
Industry definitions

Sensitivity to the business cycle

- Product demand
- operating leverage
- financial leverage

Life cycle of industries

- Four stages of growth



Industry structure and performance

As industry matures, competitive conditions change

5 determinants of competition (Michael Porter)

- entry barriers
- rivalry
- substitute products
- bargaining power of buyers
- bargaining power of suppliers

Example of macro analysis

Salomon Brothers© 2001 macro forecast…of a short term slowdown (soft landing) with low inflation
….underpinning the EPS forecast which is favourable for 2001 given expectations of short downturn, monetary easing, lower bond yields…
….underweighting cyclicals given economic outlook….
….and overweighting financials given positive yield curve

In fact outturns were a harder landing but still low inflation

Figure 9. Industrial Countries — Economic Forecast Overview, 2000F-2002F

	GDP Growth			CPI Inflation			Current Balance (% of GDP)			Fiscal Balance (% of GDP)		
	2000F	2001F	2002F	2000F	2001F	2002F	2000F	2001F	2002F	2000F	2001F	2002F
Global	**4.6%**	**3.5%**	**4.1%**	**3.9%**	**3.3%**	**3.0%**	**-0.1%**	**-0.6%**	**-0.8%**	**-0.7%**	**-0.6%**	**-0.5%**
Industrial Countries	**3.9%**	**2.8%**	**3.3%**	**2.2%**	**1.9%**	**1.7%**	**-1.2%**	**-1.5%**	**-1.6%**	**0.0%**	**0.0%**	**0.0%**
United States	5.2%	3.1%	4.4%	3.4%	2.8%	2.3%	-4.3%	-4.5%	-4.5%	2.4%	2.8%	3.4%
Japan	2.4	1.8	2.0	-0.6	-0.3	0.0	2.4	2.0	2.3	-6.6	-6.5	-6.0
Euro Area	3.4	3.0	2.7	2.3	1.9	1.8	0.1	0.0	0.1	-0.2	-0.5	-1.1
Canada	4.7%	3.6%	4.1%	2.7%	2.6%	2.2%	1.3%	1.5%	2.6%	1.2%	1.3%	0.6%
Australia	4.6	3.4	4.0	4.6	4.0	1.9	-4.4	-3.5	-3.1	2.0	0.6	0.7
New Zealand	3.0	2.0	3.0	2.6	2.9	1.7	-5.2	-5.9	-5.5	0.7	0.9	1.8
Germany	3.3%	2.8%	2.4%	1.9%	1.7%	1.4%	-1.2%	0.1%	0.1%	1.4%	-1.4%	-1.0%
France	3.1	2.8	2.7	1.7	1.9	1.4	1.8	1.4	1.2	-1.2	0.3	-0.8
Italy	2.6	2.5	2.3	2.6	2.2	1.9	-0.4	-0.8	-1.2	-0.2	-1.3	-1.2
Spain	4.0	3.4	3.2	3.4	2.6	2.2	-3.0	-3.5	-3.8	-0.3	0.0	0.3
Netherlands	4.0	3.4	3.1	2.5	3.3	2.5	5.0	4.2	3.8	1.5	0.5	0.6
Belgium	3.9	3.2	2.8	2.7	2.7	2.2	4.3	4.3	4.6	-0.1	0.9	0.4
Finland	5.1	4.2	3.9	3.3	2.5	2.3	6.0	7.2	7.5	4.5	4.8	5.0
Portugal	3.2	2.9	2.8	2.7	2.9	2.6	-10.5	-11.0	-11.5	-1.5	-1.4	-1.4
Denmark	2.5%	2.3%	2.1%	3.0%	2.5%	2.1%	1.5%	1.2%	1.0%	2.4%	2.5%	2.1%
Greece	3.8	4.0	3.5	3.1	3.0	2.8	-3.3	-3.2	-3.0	-1.2	0.3	0.3
Norway	2.2	1.3	1.5	3.2	2.6	2.4	15.0	18.0	15.0	13.0	14.0	16.0
Sweden	3.9	3.5	3.0	1.3	2.1	2.3	2.1	1.6	1.2	3.0	3.5	3.6
Switzerland	3.5	2.5	2.4	1.7	1.9	1.5	11.6	11.3	11.3	0.4	0.7	0.5
United Kingdom	3.0	2.8	2.7	2.1	2.2	2.4	-1.7	-3.2	-3.3	2.8	1.0	0.1

F Salomon Smith Barney forecast. Note: The current balance in the euro area is the trade balance. In the United Kingdom, inflation is measured by the retail price index excluding mortgage interest payments. Norway, mainland GDP.

Source: Salomon Smith Barney.

Figure 24. Global Equities — Regional Market Forecasts, End-2001

	SSB Index Weights	Key Local Index	Current Level	End-2001 Forecast	Price Change	EPS Growth End-1999 YY	EPS Growth End-2000 YY	EPS Growth End-2001 YY	Best Sectors	W Sect
United States	53.7%	S&P 500	1336.1	1500	12.3%	15.1%	12.7%	6.5%	Financials	Ene
Japan	12.3	TOPIX	1349.1	1750	29.7	11.3	61.4	13.0	Health care	Ba
Europe	28.4	Europe STOXX	371.7	470	26.5	13.4	11.0	11.0	Banks	Consumer Cycli
Euro Area	15.6	Euro STOXX 50	4893.6	6,500	32.8	14.5	12.0	13.0	Banks	Consumer Cycli
United Kingdom	8.4	FTSE-100	6249.8	7,600	21.6	11.1	7.0	6.0	Financials	Consumer Cycli

EPS Earnings Per Share. DJ Europe STOXX Index for 601 European equities (local currency) and DJ Euro STOXX 50 for the euro area (in euros). FTSE-100 = 100 largest companies on London St Exchange. Current index levels as of November 28, 2000. National market weights are from Salomon Smith Barney World Equity Index at November 24, 2000. European EPS are top down. Japan data are for fiscal year-end (March 31). Japan earnings and valuation measures are based on TSE-1 companies (consolidated where available), ex-financials.
Source: Datastream.

Figure 25. Global Equities — Valuation Parameters, End-2001

	Key Local Index	EPS Level	DPS Level	P/E Ratio	Earnings Yld	10-Year Bond	Yield Ratio	Cash	Div. Yield	Cash-Div.
United States	S&P 500 Comp.	61.25	16.8	21.8	4.58%	5.40%	1.18	6.00%	1.25%	4
Japan	TOPIX	15.7	10.5	80.3	1.25	1.90	1.53	0.25	0.60	-0
Europe	Europe STOXX	19.7	7.9	18.9	5.30	5.50	1.04	5.75	2.10	3
Euro Area	Euro STOXX 50	239.4	87.7	20.4	4.89	5.40	1.10	5.50	1.84	3
United Kingdom	FTSE-100	312.5	150.2	20.0	5.00	5.55	1.11	6.25	2.49	3

EPS Earnings Per Share, DPS Dividends Per Share. DJ Europe STOXX Index for 601 European equities (in local currency) and DJ Euro STOXX 50 for euro area (in euros). FTSE-100 = 100 largest companies on London Stock Exchange. Europe P/Es are top down. Japan earnings and valuation measures are based on TSE-1 companies (consolidated where available), ex-financials. Valuation measures are based on current index levels and forecast EPS level. Current index levels as of November 28, 2000. Cash rates are official short-term interest rates.
Source: Datastream.

Introduction to financial analysis
(bottom up approach)

Valuation of equity

Balance sheets versus future cash flows as basis of firm value

Concepts:

- Book value
- Market price
- Liquidation value
- Replacement cost
- Tobin's Q

Because balance sheet can give limited information, analysts value firms by reference to expected future cash flows

Equity valuation methods

Investor expects holding period returns (hpr) equal to dividend D plus price gains dP:

$E(hpr) = [E(D) + E(dP)]/P_0$

(1) Can comparing expected hpr and CAPM required return or "market capitalization rate":

$k = r_f + \beta[E(r_m) - r_f]$

(2) Can compare market price and intrinsic valuation (V):

$Vo = [E(D_1) + E(P_1)]/(1+k)$

The Dividend Discount Model can be used to estimate intrinsic value

$$V_0 = \frac{D_1 + P_1}{1 + k}$$

$$V_0 = \frac{D_1}{1+k} + \frac{D_2}{(1+k)^2} + \frac{D_3}{(1+k)^3} + \cdots$$

Gordon's growth model (constant growth assumption)

$$V_0 = \frac{D_0(1+g)}{k-g} = \frac{D_1}{k-g}$$

So D, k, g are key factors determining valuation

Shortcomings of the DDM
- Growth/ploughback relationship
Growth may depend on dividend policy – price = no growth value per share plus present value of growth opportunities PVGO
- Profitability of investment. Growth insufficient without profitability

Multistage growth models

How do analysts actually value equity?

- Multistage forecasting of the DDM (as idiosyncratic factors fade)
- Additional factors add considerable precision to DDM such as neglect and residual reversal)
- With or without quantified prediction
- Financial information used as a screen for further investigation
- Geographical and industry information crucial
- Relative pricing based on P/E ratios

The role of the P/E ratio

Use as indicator of growth opportunities

Relationship to growth and ROE

$$\frac{P_0}{E_1} = \frac{1}{k}\left(1 + \frac{\text{PVGO}}{E/k}\right)$$

$$\frac{P_0}{E_1} = \frac{1-b}{k - \text{ROE} \times b}$$

P/E ratios and risk

P/E ratios and the DDM

Some difficulties in use of P/E

- accounting problems
- inflation
- business cycle effects on income

Time series analysis and forecasting the market and stock returns

Usual procedure is to

- forecast earnings growth
- forecast government bond yield
- assume spread of yield over earnings yield
- derive future share price/EPS

Indicators of market under- and overvaluation

- P/E ratios
- Bond-equity yield ratios
- Options prices

Tests for bubbles

Accounting information and the role of the analyst

Importance of statements in investment analysis

Differing audiences for financial statements – possible conflict, e.g.:

- portfolio manager prefers more public disclosure re profits
- investment manager likes less, to benefit from discussion with firm
- credit analyst interested in default risk
- personal investor low skills

Lack of economically sound accounting definitions (profit, equity etc.)

The role of management in preparing financial statements, giving incentive to manipulate

- external fund access
- information to competitors
- information to regulators
- pay and job security

Table 2.1 Influences of various information sources

	US '84	UK '84	UK '93	FRG '93
Company's annual report			3	2
Chair's statement	13	6		
Directors' report	9	8		
Balance sheet	2	2		
Income statement	1	1		
Cash flow statement	3	5		
Current cost data	11=	10		
Unqualified audit report	14	15		
Qualified audit report	4	7		
Quarterly results	5	3		
Government statistics	15	13		
Statistical information	8	11		
Financial press	10	9	5	5
Industry/Trade journals	7	14		
Company personnel	6	4	1	3
Other financial analysts	11=	12	6	6
Analysts meetings in company			2	1
General meeting			7	7
Preliminary announcement			4	4

Source: Arnold *et al.* 1984, and Pike *et al.* 1993.

Financial ratios employed by analysts

Why use ratios? – response to quantity of information and need to compare different size firms with industry benchmark

- Du Pont system: return on equity (ROE) and its decomposition into tax burden, interest burden, margin, turnover and leverage:

$$\text{ROE} = \frac{\text{Net profits}}{\text{Pretax profits}} \times \frac{\text{Pretax profits}}{\text{EBIT}} \times \frac{\text{EBIT}}{\text{Sales}} \times \frac{\text{Sales}}{\text{Assets}} \times \frac{\text{Assets}}{\text{Equity}}$$

- Return on capital (EBIT/assets)
- Turnover ratios
    - inventory turnover (sales/inventories),
    - collection period (accounts/sales)
- Liquidity ratios
    - current ratio (current assets/current/liabilities)

- quick ratio (cash + receivables/current assets),
- interest cover (EBIT/interest expense)

- Capital structure (debt/equity as measure of risk)

- Market price ratios
  - market/book value ratio P/B – margin of safety if low?
  - price/earnings ratio P/E based on past earnings

ROE = earnings/book value
= (market price/book value) ÷ (market price/earnings)
= P/B ÷ P/E
Earnings yield E/P = ROE ÷ P/B

Accounting difficulties in use of ratios

Statistical issues