

Swire Pacific Ltd.

Management Control Systems

by

Harold L. Irby

Southern Methodist University

for

Dr. Gerry H. Lawson

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TABLE OF CONTENTS

INTRODUCTION	1
CHANGE IN GOVERNMENT OF THE COLONY	1
CASH FLOW - MARKET VALUE EVALUATION	2
INTERPRETATION OF SWIRE PACIFIC'S CASH FLOWS	4
Market Value Performance - vs. - Conventional Accounting Performance	4
Multiperiod Behavior, Sales Receipts, Operating Payments	4
Markets, CPI and Share Data.....	4
Cash Flows and Economic Profits	4
Multi-period Relationship Between OCF and CAPEX	5
Multi-period Behavior of Total Market Value	5
Entity IRR vs. Lender IRR	5
Comparisons of IRR and ROI.....	5
Shareholder Economic Profit vs. Restated Reported Profit.....	5
Comparison of Entity, Shareholder IRR's with Market IRR's	5
EFFICIENCY OF DIVIDEND AND FINANCIAL POLICIES	6
Dividend Policy and Equity Financing	6
Dividend Policy and Debt Financing.....	6
Reverse Leverage.....	6
Miss-Priced Debt	6
Tax Leakages	6
EFFECTIVE CORPORATE TAX BURDEN	6
PATHS THROUGH TIME.....	7
Path Through Time - CASE I	7
Path Through Time - CASE I (+ 5%)	9
Path Through Time - CASE I (- 5%)	9
Path Through Time - CASE II.....	9
Path Through Time - CASE II (+ 5%).....	10
Path Through Time - CASE II (- 5%).....	10
Path Through Time - CASE III.....	10
Path Through Time - CASE III (+ 5%)	10
Path Through Time - CASE III (- 5%)	10
CONCLUSIONS.....	11
REFERENCES	12
APPENDIX ONE.....	13
APPENDIX TWO.....	15
NOMENCLATURE	15
CONSOLIDATED PROFIT AND LOSS ACCOUNT	15
CONSOLIDATED BALANCE SHEET	15
SUMMARY OF ACCOUNTING RATIOS	16
Hang Seng Index Constituent Stocks.....	17
NOMENCLATURE	18
Cash Flow – Market Value Nomenclature	18
Cash Flow – Market Value Relationships	19
Cash Flow – Periodic Nomenclature	19
Specifications of a Multi-Period Financial Model	20
ACKNOWLEDGEMENTS	24

INTRODUCTION ¹

Swire Pacific Limited ("Company") is one of the largest in Southeast Asia. The company traces its existence from John Swire & Sons established 1816 in Liverpool, England. Swire Pacific Ltd. is headquartered in Central, Hong Kong and has subsidiaries located in North America, Europe, Asia and Australia. The parent company and its various subsidiaries and associated companies engage in six major business functions; Aviation, Property Development, Shipping and Offshore Services, Industries, Trading, and Insurance.

The flagship of the Company is Cathay Pacific Airways Limited, originally founded in 1946 by an American, Roy Farrell, and an Australian, Sydney de Kantzow during August and September 1946. **Air Transport World** selected Cathay Pacific Airways as 'Airline Of The Year' for 1987. Its philosophy in recent years has been to sustain the airline based on business travel alone. The Property Division, Swire Properties Limited, a wholly owned subsidiary of the Company is engaged in real estate development primarily in Hong Kong and the United States. Shipping, Offshore Services have had to deal with the slumping oil industry during the 1980's and increased competition in its home port of Hong Kong. The Industries Division is comprised of manufacturing, processing and engineering businesses whose principle markets are in Hong Kong. Two export oriented manufacturing businesses, Swire Magnetics Holdings and Swire Technologies as well as the Company's Coca-Cola bottling operations are part of the Industries Division. The Trading Division continues to grow each year and is comprised of many different marketing companies. The Insurance Division has contributed net sales revenues to the Company since 1987 and comparatively is the smallest.

CHANGE IN GOVERNMENT OF THE COLONY

In 1997 the governmental administration of the British Crown Colony of Hong Kong will revert to The People's Republic of China (Mainland China). The present government of The People's Republic of China in Beijing has guaranteed that the capitalistic economic structure that now exists in Hong Kong will be allowed to continue in its present state for another fifty years. Hong Kong will be treated in essence as a special economic zone as are other such creations within the mainland. One can only speculate as to the consequences of such intentions. Therefore certain projections made herein as to the future economic performance of Swire Pacific Ltd. are made with these impounds in mind. Multi-period economic forecasting has for these purposes not been extended past 1997.

¹

The figures referenced in this document are part of four Microsoft Excel spreadsheets:
Swire91.xls (Web Site: Swire91w.xls)

CASH FLOW - MARKET VALUE EVALUATION²

An Overview

The stream of cash flows generated by a business enterprise (entity) can be divided between a stream attributable to their lenders, their stockholders, and their minority interest in a ratio that is indicative of the entity's dividend and debt-financing policies. Expressed as an algebraic relationship:³

$$\text{ENCF} = \text{LCF} + \text{SHCF} + \text{MICF}$$

In accounting (U.S.A. FASB) form:

$$(k-h) - (A+R-Y) - t - H = (F-N-M) + (D-B) + (D-B)$$

or as with the British ASC (ignoring minority interest):

$$(k-h-F-t) - (A+R-Y) - (D-B-N-M) = H$$

Expressed in literal terms:

$$\begin{aligned} &\text{Operating_Cash_Flow_Net_of_Interest_and_Taxes_Paid} - \\ &\text{Net_Capital_Expenditure} - \\ &\text{Dividends_Paid_Net_of_Equity_and_Debt_Financing} = \text{Liquidity Change} \end{aligned}$$

The entity cash flows that are generated by a firm's commercial activities can be partitioned between lenders, shareholders and minority interest. The ratio of this partitioning is a reflection of the entity's dividend and debt financing policies that are a separate financial policy decisions. Entity cash flows thus allow for the division of entity (total) market value into the market values of its debt, equity and minority interest. This partitioning of cash flow is the premise for the Cash Flow - Market Value (CF-MV) identity:

$$\text{TMV} = \text{MV}_d + \text{MV}_e + \text{MV}_{mi}$$

$$\text{TMV} = \sum_{j=0}^N \text{ENCF}_j / (1+r)^j$$

$$r = r_f + \beta * (r_m - r_f)$$

$$\text{TMV} = \sum_{j=0}^n \text{LCF}_j / (1+r_d)^j + \sum_{j=0}^n \text{SHCF}_j / (1+r_e)^j + \sum_{j=0}^n \text{MICF}_j / (1+r_{MI})^j$$

Literally the total market value of the business entity is the sum of the entity's market value of debt, its market value of equity and the market value of its minority interests.

² "Assessing Economic Performance and Corporate Financial Policies on a Cash Flow - Market Value Basis" by Dr. Gerry H. Lawson, presented at an international conference sponsored by The Universite de Nice and Banque Populaire de la Cote d'Azur at Nice, France, December, 1990.

³ See the Appendix labeled "NOMENCLATURE" for definitions of the symbols and relationships referred to hereafter.

In the CF-MV model analysis sales receipts, "k", is a function of a firm's price-output policies in end-product markets that are characterized by their own supply and demand conditions. Operating payments, "h", is a function of the supply and demand conditions in its respective factor input markets. Periodic income is expressed as follows:

$$\begin{aligned} \text{Periodic Income} = & \\ & \text{End_Period_Value_of_Business} - \text{Begin_Period_Value_of_Business} + \\ & \text{Distributions_To_Owners} - \\ & \text{Contributions_From_Owners} \end{aligned}$$

Or in accounting form as:

$$\begin{aligned} I &= (V_j - V_{j-1}) + (F + D + D_{mi}) - (N + M + B + B_{mi}) \\ I &= (V_j - V_{j-1}) + \text{ENCF} \end{aligned}$$

where the subscripts "j" refer to a given year or period. Note that this result cannot be derived by using the FASB-ASC cash flow classification.

Miller and Modigliani (1961) postulated that "... given a firm's investment policy, the dividend pay-out policy it chooses to follow will affect neither the current price of its shares nor the total return to its shareholders,...". Hence the distributable component of periodic income is a function of internal investment and liquidity decisions and is therefore a dependent variable.

When compared to other entity evaluation models, the ENCF component of any periodic income measure (the CF-MV income measure) is the most qualified index of income quality of a business. And the (Discounted Cash Flow) DCF valuation method represents the most theoretically defensible basis for the market capitalization process that generates market values. The ENCF measure of periodic income is a dichotomized income measure; it comprises:

1. an entity cash flow that is delivered directly by a company to its owners
2. a change in market value which can only be realized by a company's owners via capital market transactions

Periodic entity income is partitioned into that component which is distributable by a firm itself and a second component that can only be accessed by a company's owners via market transactions. These market transactions automatically provide for the maintenance of ownership capital when that periodic change is positive or zero. A periodic decrease in total market value measures the additional investment in marketable assets (of any kind) which owners themselves need to undertake in order to maintain their capital intact.

As stated by Lawson: *"The joint stock enterprise organizes the greater part of economic activity in a capitalistic economy and has become one of the most obvious manifestations of private property rights in such a system precisely because of the special advantages which, as a vehicle of economic organization, it confers on its owners."* ^(1 Ibid.) The investor in a joint stock enterprise acquires debt or equity participation and divests himself of his proprietary rights through transacting in the market place. The investor's rate of return is derived from his entry and exit values and the associated stream of cash flows that span the transaction time period. The investor has the additional concern of Purchasing Power Parity (PPP); i.e. will his cash purchase the same amount of goods and services upon exit as upon entry as an owner - shareholder.

The CF-MV model accommodates both relative price changes and inflation in correct economic terms. The CF-MV model also reveals the incidence and burden of corporate taxes measured in accordance with the classic principles of tax neutrality, i.e. the true burden of taxation and

whether or not state fiscal incentives embodied in a corporate tax system are actually having their intended effect.

Entity cash flows are a reflection of economic activity. Lender, shareholder and minority interest cash flows are, like their corresponding market values, a consequence of financial policies. Unless these cash flows are clearly separated from entity cash flows, an entity's economic performance will be unclear. Thus there should be a clear distinction between the basic economic business operating activities and financial policy variables.

INTERPRETATION OF SWIRE PACIFIC'S CASH FLOWS

Market Value Performance - vs. - Conventional Accounting Performance

Various market value performances have been derived via conventional accounting means and compared for Swire Pacific Limited from 1984 through 1990 inclusive. A CF-MV analysis has been completed over the same period of time. This analysis has included considerations for inflation using the Hang Seng CPI (Consumer Price Index), accommodation of total market fluctuations using the Hang Seng SPI (Share Price Index) and the market values of the "A" and "B" shares outstanding of Swire Pacific Ltd, and the market value of its debt.

Multiperiod Behavior, Sales Receipts, Operating Payments

Figure 1 shows the Sales Revenue of the various divisions of Swire Pacific Ltd. and depicts the annual growth rate, 18.77%, in nominal (or money) terms from 1984 through 1990 inclusive. The divisions are dominated by Aviation, specifically Cathay Pacific Airways and Hong Kong Aircraft Engineering Company Limited, followed by Industries, Trading, Property, and Shipping/Offshore. The Insurance division in terms of sales is relatively small. Net Sales Revenues for 1990 were approximately HK\$ 31.2 Bn. for the company. Figure 2 shows the components of the cost of doing business and is primarily in terms of COGS (Cost Of Goods Sold) followed by Minority Interest and Dividends. Dividends paid were HK\$ 1.27 Bn. and dividend yield averaged 30% for the years from 1984 through 1990.

Markets, CPI and Share Data

The Consumer Price Index (CPI) for both Hong Kong and the U.S.A. are shown in Figure 3. Figure 4 contains plots of the stock market indexes: Hang Seng Share Price Index and Dow Jones Industrial Average. As can be seen inflation as measured by CPI during the period from Jan-84 through Sept-91 was far greater in Hong Kong, 8.54%, compared with inflation in the U.S.A, 3.93%. Figure 5 shows the market price for Swire Pacific's "A" and "B" shares and 'turnover' volume is shown in Figure 6. Figure 7 and 8 are an analysis of the 'Beta' of both "A" and "B" shares. $Beta_A_Share = 1.107$ and $Beta_B_Share = 1.162$ for the period Jan-84 through Dec-90. Figure 9 plots relevant data for the two share issues on an "end of the year" basis. Also Figure 9 shows the relevant Hang_Seng_SPI (SPI=Share Price Index), the Hang_Seng_CPI (CPI=Consumer Price Index) and the HK\$/US\$ exchange rates. Figure 10 plots the authorized and outstanding "A" and "B" shares on an "end of the year" basis. One can refer to Figures 29 and 30 for a depiction of the interest rates of 12-Month time deposits and the Hang Seng Share Price Index Dividend Yield.

Cash Flows and Economic Profits

Figure 12 is a graphical plot of conventional accounting cash flows that involve NCF (Net Cash Flow) from Investing, Financing and Operating activities in nominal (or money) terms. Also show in Figure 11 is a 'Re-Classified' cash flow statement, which depict cash flows as Entity, Lender, Shareholder and Minority as per the CF-MV model. As can be seen the conventional accounting picture depicts a well-organized scheme of financial management, i.e. using

operating funds complimented with borrowings to finance investment activities. However, The CF-MV (Cash Flow - Market Value) approach to the cash flows of Entity, Lender, Shareholder and Minority show a somewhat more complex cash flow profile.

Figure 13 shows the Entity-Lender-Shareholder-Minorities cash flows in real terms (1990). Note that shareholder cash flows for the periods shown are all positive in real terms. Further Figure 14 displays the "Economic Profits" of Entity-Lender-Shareholder-Minorities in real terms (1990) as derived in the CF-MV analysis.

Multi-period Relationship Between OCF and CAPEX

Figure 15 shows graphically the OCF (Operating Cash Flows) along with ENCF (Entity Cash Flows) and Capital Expenditure in Nominal terms and Figure 16 depicts them in Real 1990 terms. The magnitude of OCF parallels the magnitude of Capital Expenditure.

Multi-period Behavior of Total Market Value

Figure 17 displays the market value of Swire Pacific Ltd in HK\$ in both Nominal terms and Figure 18 depicts them in Real 1990 terms. As of Dec 31st 1990 the total market value exceeded HK\$ 44 Bn. reflecting a very strong company.

Entity IRR vs. Lender IRR

Figures 19 show the Entity IRR (Internal Rate of Return) and Lender's IRR from the end of year 1984 to the end of each successive year up to 1990. As can be seen the Entity IRR is positive and significantly greater than the Lender's IRR for the time period. One could conclude that the shareholder's company is being managed well and is not suffering from reverse leverage, a situation in which Lender IRR > Entity IRR.

Comparisons of IRR and ROI

Comparisons in Figure 20 are of the conventional rate of return on Invested Capital for Swire Pacific Ltd. and the IRR's of both the Hang_Seng_SPI and for U.S.A. common stocks. The return on Invested Capital is commensurate with both indexes and excels in 1985 and 1986 which reflects the ability of a share market to change more rapidly than long term business investments.

Shareholder Economic Profit vs. Restated Reported Profit

As can be seen on Figure 21 the "Shareholder's Economic Profit" and the "Re-stated Net Income" from the annual reports (in Real 1990 Terms) are significantly different in all but year 1988. A "Bull" Hong Kong stock market during 1985 and 1986 contributed to the increase in shareholder's profit or increase in value in real economic terms. In 1987 the year end stock market crash was to yield a negative "Shareholder's Economic Profit" but Re-stated Net Income continues to grow. Thus Net Income would have to be considered only a superficial measure of shareholder's real wealth.

Comparison of Entity, Shareholder IRR's with Market IRR's

Entity, Shareholder and the Hang_Seng_SPI internal rates of return are show in Figure 22. It is apparent that both the Entity and the Shareholders are receiving a much greater return than those of the Hang_Seng_SPI overall. Figure 25 shows that the Entity and Shareholder are receiving rates of return significantly greater than Swire Pacific's cost of capital as derived via the CAPM (Capital Asset Pricing Model). In the CAPM model Beta has been calculated from a weighted average of Beta_A_Shares and Beta_B_Shares. Also interesting to note is the superior returns of the minorities. Figure 26 shows the internal rates of return of an investor in "A" shares, "B" shares and the Hang_Seng_SPI, which are compared with the 12-Month return on deposits at the Hong Kong and Shanghai Bank.

Conventional Accounting Yardsticks, Financial Summary

In the attached spreadsheets there are those labeled 'Financial Statement Analysis' and 'Financial Summary'. Figures 27 and 28 graphically depicts conventional accounting ratios labeled 'Test of Financial Condition' and certain rates of return labeled 'Overall Performance Measures' (see Appendix Two). These values are in nominal (or money) terms and are only a year-by-year representation and are not exactly representative of the company's financial health. The numbers given in the 'Financial Summary' spreadsheet, specifically Table C.2, while impressive lend little to an economic evaluation of the company. This is not to say that conventional accounting is totally useless as it does provide the principles and framework for which a CF-MV analysis can be carried out as well as establish procedures for company record keeping.

EFFICIENCY OF DIVIDEND AND FINANCIAL POLICIES

Dividend Policy and Equity Financing

Since cash flows were adequate to cover dividends they had little affect on the company's debt ratio as shown in Table B.3. During 1985, 1986 and 1987 new shares were not issued; only stock splits were instituted.

Dividend Policy and Debt Financing

During the 1988 and 1989 years of substantial cash flow it may have been a wise decision to repurchase both "A" and "B" shares for the purpose of increasing shareholder value. Dividend policy appears to remain in an increasing mode whereas a freeze on dividends should enhance the value of the shares.

Reverse Leverage

It is readily apparent as mentioned before in reference to Figure 19 that the shareholders of Swire Pacific Ltd. do not suffer from 'reverse leverage'. This situation occurs when the returns on total capital employed are generally lower than the preferential returns to lenders.

Miss-Priced Debt

Note the comparison of Lenders Rate Of Return and the IRR on Hong Kong Bank 12-Mo. Time Deposits in Real 1990 Terms as shown in Figure 23. It would appear that the lenders and not the shareholders are subsidizing the company.

Tax Leakages

In the case of the low tax rates in British Crown Colony of Hong Kong one would conclude that taxes are of minor concern with respect to business and investment. Hence the intent of tax neutrality is realized.

EFFECTIVE CORPORATE TAX BURDEN

The yearly effective tax burden, T, has been computed as follows:

$$T = t / [(k_j - h_j) - (A_j + R_j - Y_j) - H_j]$$

Where:

t	= Actual Tax Paid
$k_j - h_j$	= Operating Cash Flow (Nominal)
$A_j + R_j - Y_j$	= Net Capital Expenditure
H_j	= Liquidity Change

Figure 24 also shows the Stated Income Tax Rate and the Calculated Income Tax Rate from the various Annual Reports. It is readily apparent that the British Crown Colony of Hong Kong does

not excessively tax its business enterprises and that Swire Pacific's Effective Corporate Tax Burden is relatively low.

PATHS THROUGH TIME

The CF-MV evaluation model along with the specifications of a multi-period financial model (described in Appendix Two) allows for the forecasting of periodic balance sheet, income statements and associated cash flow statements. Combined with projections of the Consumer Price Index, CPI, and Share Price Index, SPI, these derivations allow for the forecasting of economic profits and market prices per share. In addition the "What If" scenario can easily be accommodated.

A path through time is a function of a firm's output and pricing decisions. Optimistic, expected and pessimistic cases are considered as sensitivities to a chosen path through time or are deviations of the supply-demand curve at the given point in time. A sensitivity analysis to a single parameter (i.e. dependent variable) or a group of parameters are a much more meaningful application of this type of analysis.

The various chosen paths through time may also be considered as scenarios for which the wealth maximization axiom can be examined. For a wealth maximizing firm the objective is to maximize the present value of the entity cash flow, ENCF. Thus the wealth maximizing firm's objective function may be written as:

$$\text{Max! ENCF}_j = \sum_{j=0}^n ((k_j - h_j) - (A_j + R_j - Y_j) - t_j - H_j) / (1 + r)^j$$

(where n approaches infinity)

and is equivalent to the firm's total market value.

Path Through Time - CASE I

As a "base" case for Swire Pacific's Price/Output/Investment/Cost "path through time" a historical perspective combined using historical company and other historical economic trends in Hong Kong. Appendix One, "Economic Trends in Hong Kong", are indicative of the "ex post" and "ex ante" economic conditions in the colony. These trends forecast increasing economic activity at least in nominal terms. From the perspective of a non-resident or resident investor, the real terms embodied in the CF-MV evaluation model then are the most befitting. The table, labeled CASE I (+ 0.0%), displays the basic assumptions for "path through time I", i.e. the base or expected case based upon Swire Pacific's historical data..

Future revenues for each of the nine major divisions of Swire Pacific Ltd. have been forecasted using historical data and/or expectations of the various output markets. Figure 31 shows the expected sales revenue for the Airline and Air Services in nominal terms. An exponential trend projected for 1991 through 1997 for which the growth rate is given in table CASE I of 20.71%. Figure 32 portrays the average expected sales revenues for Property Trading and Property Investment in nominal terms. The increasing Property Investment is perceived to be largely outside of Hong Kong. Figure 33 predicts the multi-period sales revenue forecast for Property Sales and the Insurance divisions. Declining revenues from property sales and increasing sales in Insurance may be a reflection of the impending change in government as 1997 approaches. The lack of growth in Shipping and Offshore Services are depicted in Figure 34 and in Table CASE I with a -1.96 %/Yr. decline in sales revenue in nominal terms. Also, Figure 34 shows the exponential historical revenues and future expected revenues for Aircraft Engineering which in

essence parallels Airline and Air Services. Figure 35 is the base case expectations of the Industries and Trading divisions' sales revenues in nominal terms. Expected Consolidation Adjustments are shown in Figure 36 and the corresponding rate of change in Table CASE I. Finally, the sum of sales revenues for each of these nine divisions are algebraically added and shown as Net Sales Revenue and Expected Future Revenues in nominal terms in Figure 37. Also the projections of COGS are shown in Figure 37. The fit to historical data is indicative that the projections are at least within the realm of current reality. As listed in Table CASE I, the growth rate for net sales revenue is historical and projected to be 18.77 %/Yr.

Swire Pacific's dividend policy has been modeled using the relationship:

$$DIV_j = \text{Alpha} * \text{Gamma} * HCP_j + (1 - \text{Alpha}) * DIV_{j-1}$$

(see Appendix Two). Figure 38 shows the modeled dividend payment where Alpha = 1.000 and Gamma = 0.0851 and is listed in Table CASE I. However, for 1989 and 1990 Swire Pacific's total dividend payment has remained constant. In keeping with the modeled response, we have assumed for the base case that dividend policy is as per the above relationship with the constants as stated above as in Figure 38.

COGS have been projected from historical data to increase at a rate of 17.08% per year. Profit from Associated Companies and Minority Interest (P & L) has been projected from historical data at 32.72% and 23.43% per year respectively. A provision has been made for extraordinary items based on historical data and has a nominal growth rate of at 10.75% per year. This provision is listed in HK\$ x 1000000 in Table CASE I.

For the base case sales prices are assumed to increase at the rate of inflation as determined by the Hang Seng CPI and market share has been determined from the relationship

$$(1 + v') = (1 + sp)(1 + ms)$$

where v' is the nominal growth rate in total sales.

The Property Valuation of Swire Pacific's balance sheet has been allowed for and increases at 39.43% per year based upon historical data. This provision and accounting for has been allowed for even though it is inconsistent with FASB rules.

For indexation factors and discount rate factors the Hang Seng CPI is projected to increase at 8.54% per year. A falling term structure in interest rates (HK\$) has also been derived and is shown in Table CASE I. The discount rate for Swire Pacific's cost of capital in both real and nominal terms is shown also in Table CASE I.

As shown in Figure 39 the modeled retained earnings, dependant upon the multi-period model of Interest Expense; Income Tax; Minority Interest (P & L); Extraordinary Items (Provision For); and Dividends, is at best correct on the average.

The exogenously determined (independent) variables are Net LT Investments, Capital Expenditures (Fixed Asset Additions), and Financing decisions (Proceeds, Payments Long-Term Debt). Short-term debt financing is treated as a dependant variable (see Appendix Two). The assumptions for these independent variables are shown in Table CASE I.

Figure 40 displays historical and projected cash flows via conventional accounting means in nominal terms. Figure 41 shows the associated Operating Cash Flows, Entity Cash Flows and Capital Expenditures, also in nominal terms. Figure 42 indexes these cash flows in real terms 1990. The Indexation Factors for 1991 through 1997 are given in Table B.1 CASE I.

Figure 43 shows the Re-Classified Cash Flows as per the CF-MV evaluation in terms of Entity, Lender, Shareholder and Minorities, and future expected values in nominal terms. Figure 44 is the cash flows of Figure 43 in real terms 1990. Table C.1 CASE I. utilizes the discounted cash flow technique to determine the net present value as of December 1990 since $r < g$, the historic terminal value is displayed only in the accompanying spreadsheet and is not indicative of reality. The total market of 44202.8 Bn. HK\$ as of Dec. 1990 is stated on the Table CASE I for reference. Economic Profits in real terms 1990 for the historic (1984-1990) and forecasted (1991-1997) time periods for "Entity", "Lender", "Shareholder" and "Minorities" are shown in Figure 45.

And finally, Figure 46 indicates the corresponding price of "A" shares and "B" shares in nominal terms as well as the forecasted CPI and SPI. If the assumed conditions prevail then investment in the shares of Swire Pacific Limited will yield superior returns to the company's owners, i.e. its shareholders.

Path Through Time - CASE I (+ 5%)

For all of the parameters listed in table CASE I (+ 0.0%) a sensitivity of +5.0% has been applied, i.e. a percentage change of the forecasted growth rate. Except that the rate of change in the Hang_Seng CPI and the Hang_Seng SPI have been left at historical growth rates. In the case of a declining (or negative) parameter the rate has become literally more negative; for a increasing (or positive) parameter the rate has become more positive. Spreadsheets of all the accounting numbers have not been printed for the sensitivity case but the variables affected and the resulting change in present value of the ENCF are shown in the corresponding table CASE I (+ 5.0%). Only the corresponding spreadsheets of accounting and CF-MV data are presented for CASE I (+ 0.0%). For this type of 'global' sensitivity the percentage change in present values of the ENCF for 1991 through 1997 is +26.88%. A percentage change factor has been judiciously implemented in the spreadsheet (CASE I (+ 0.0%)) so that any given percentage change in the parameters shown can be accommodated.

Path Through Time - CASE I (- 5%)

As in the previous case scenario a sensitivity of -5.0% has been applied, i.e. a declining (or negatively affecting) parameter has become more negative and an increasing (or positively affecting) parameter has become more positive. As can be seen in Table CASE I (+ -5.0%) the percentage change in the present value of the ENCF for 1991 through 1997 is -23.08%. For CASE I the +/- 5.0% change results is representative of the deviation and/or accuracy which are in out forecasts.

Path Through Time - CASE II

For Case II the path chosen is one in which all of the historic and foreseeable economic trends and conditions are in place but that we embark upon a business strategy that is perceived as 'cost savings' oriented in an effort to increase shareholder value. This involves curtailing and controlling the Consolidation Adjustments as depicted in Figure 51 (compare to Figure 36), COGS as shown in Figure 52, Dividend policy as shown in Figure 53 and a reduction in new LTD per year by 50% with respect to CASE I. All other forecasts have been left the same as in CASE I. The results in Retained Earnings are shown in Figure 54 (compare to Figure 39). Figure 55 depicts the conventional accounting cash flows in nominal terms (compare to Figure 40) and the appearance in increased operating cash flows is formidable. Figures 56 and 57 show the Operating CF, Entity CF and Capital Expenditures in nominal and real terms 1990 respectively. Though apparent cost reducing mechanisms have been introduced the Entity Cash Flows have declined from the CASE I scenario as is readily apparent when comparing Figures

58, 59 (CASE II) with Figures 43,44 (CASE I) for both nominal and real values. Even more pronounced is the trend in economic profits as shown in Figure 60 (compare to Figure 45). It would certainly appear that apparent cost savings have done little in the way of maximizing ENCF. This is depicted in the rising then declining share price as can be seen in Figure 61 (compare to Figure 46).

Path Through Time - CASE II (+ 5%)

Similarly for 'Path Through Time CASE II' a globally oriented +5.0% change in the parameters listed in Table CASE II have been applied with the CPI and the SPI left unchanged. As can be seen in Table CASE II the percentage increase in present value of the ENCF is 11.88%.

Path Through Time - CASE II (- 5%)

For 'Path Through Time CASE II' a parameter change of -5.0% has been applied as above and show in Table CASE II (- 5.0%). Table CASE II shows the percentage decrease in present value of the ENCF to be -9.84%.

Path Through Time - CASE III

In CASE III we have accelerated the growth rate in both the CPI and the SPI. The growth rates have been increased by a significant margin. The CPI has increased from 8.54% to 12.81% and the SPI from 14.46% to 19.22%. This increase can be seen graphically on Figure 78. Also a rising term structure of interest rates has been postulated as an accompanying phenomenon. The other parameters have been left unchanged as in CASE I. Figure 71 shows the resulting Retained Earnings for CASE III, which does not deviate drastically from CASE I (see Figure 39). Accounting Net Cash Flows are show in Figure 72 when compared with Figure 40 in CASE I show similar values and in essence the same profile in time. Figures 73 and 74 display the operating cash flows, entity cash flows and capital expenditures for CASE III in nominal and real 1990 terms respectively. The significant reduction in cash flows in real terms is apparent from Figure 74. Figures 75 and 76 show the Entity, Lender, Shareholder and Minority cash flows reclassified in both nominal and real terms respectively. Again the reduction in real terms 1990 is apparent in Figure 76. The responses in Figures 77 and 78 however do not reflect what one would conventionally expect of economic profits and share values under these conditions.

Path Through Time - CASE III (+ 5%)

Table CASE III (+ 5%) shows the parameters that have been change by 5.0% consistent with the previous case scenarios. For this case the change in the present value of the entity cash flows from 1991 through 1997 is 18.63%.

Path Through Time - CASE III (- 5%)

Table CASE III (- 5%) shows the parameters which have been changed by -5.0% resulting in a change in the present value of the entity cash flows of -16.14%.

CONCLUSIONS

The attached spreadsheet and corresponding figures depict an enormous amount of financial, economic and accounting related information. They have been compiled with the best of the authors abilities and the various inputs provided by other individuals and sources. The principles of the CF-MV multi-period model and theory has been faithfully adhered to and applied with respect to both historical and forecasted data. However any predictions and/or forecast concerning future earnings and share prices are just scenarios based on assumptions which may be totally arbitrary or in a "What If" environment. The magnitude and scope of Swire Pacific Ltd. and the economy of Hong Kong has only been briefly addressed.

It is envisioned that Swire Pacific Ltd. will continue to be a profitable enterprise, maximizing shareholder value in the near future and into those years far exceeding 1997. The company's history and current business strategies interacting with the Peoples Republic of China indicate that it will continue to be a pillar in the economy of South East Asia.

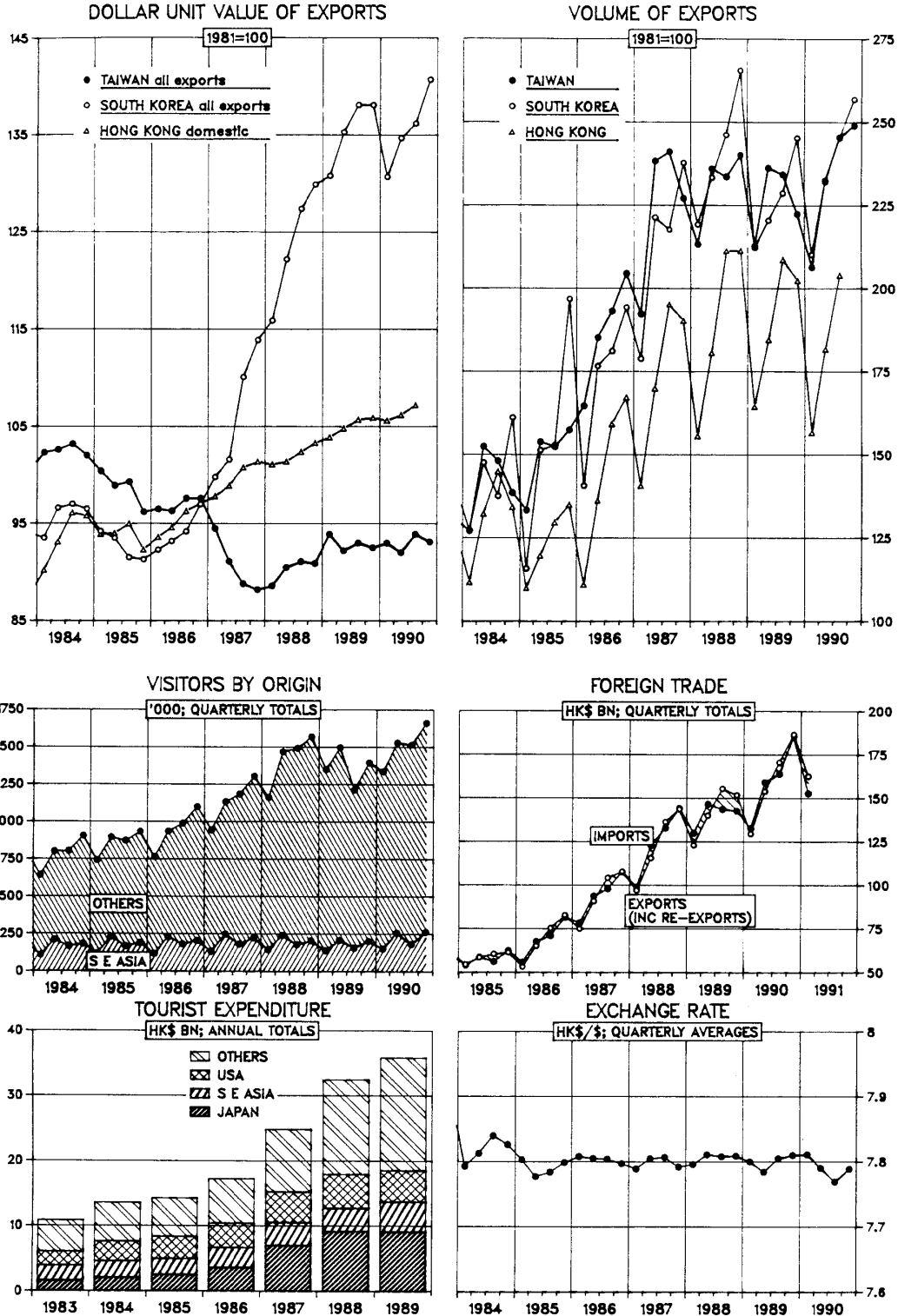
$$\begin{aligned} \text{Sustainable_Growth} = & \\ \text{Asset_Turnover} * \text{After_Tax_Return_Sales} * & (\text{Assets/Debt}) * (\text{Debt/Equity}) * \\ & (\text{Fraction_Of_Earnings_Retained}) \end{aligned}$$

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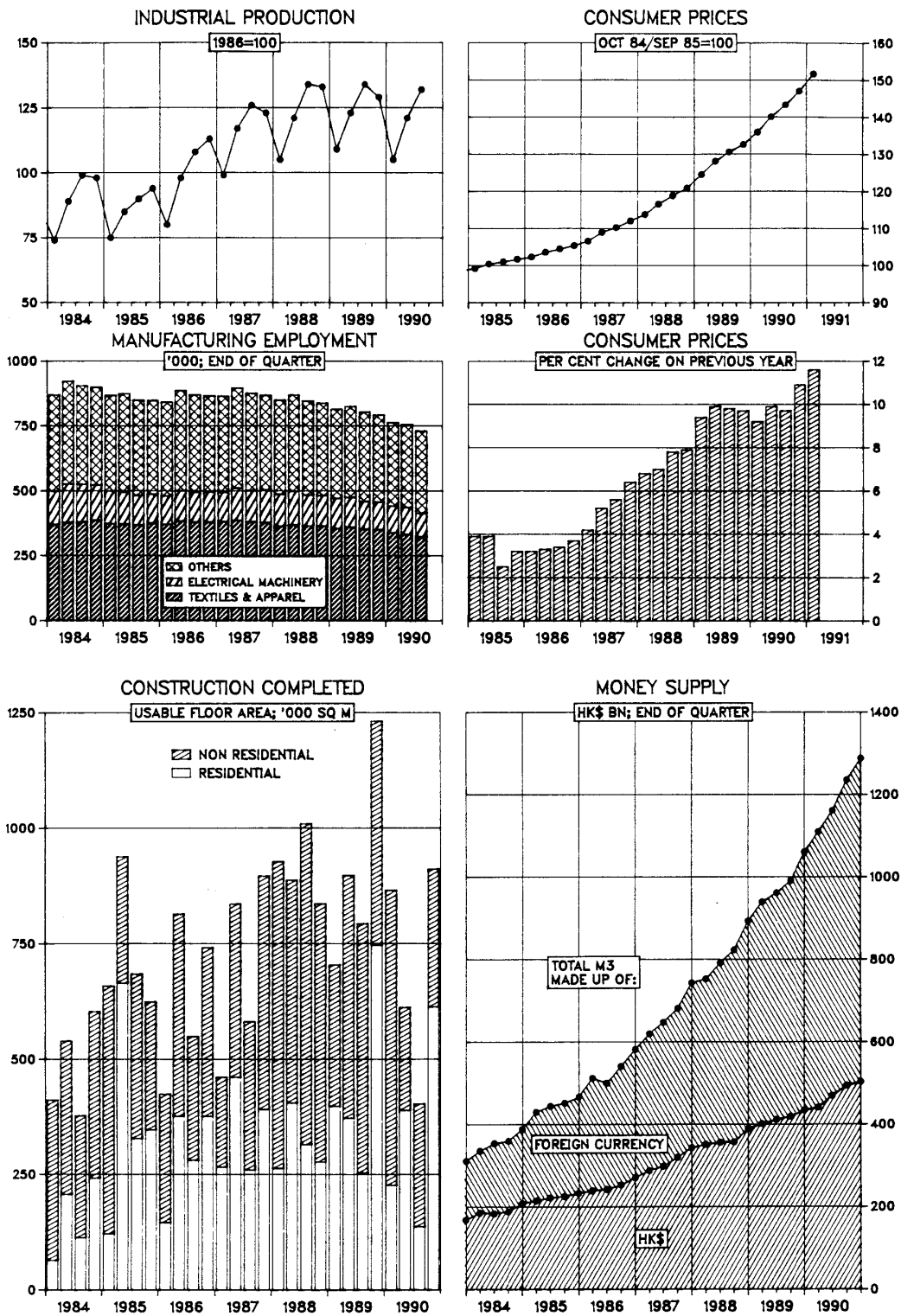
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APPENDIX ONE

The Economist Intelligence Unit



Economic Trends in Hong Kong



APPENDIX TWO

NOMENCLATURE

CONSOLIDATED PROFIT AND LOSS ACCOUNT

INCOME STATEMENT

<u>Hong Kong International</u>	<u>U.S.A. FASB</u>
Turnover	Net Sales
Operating Profit	Gross Margin
Net Finance Charges	Interest Expense
Net Operating Profit	Operating Income
Profits Less Losses Associated Companies	Retained Earnings Subsidiary
Profit Before Taxation	Income Before Tax
Minority Interest	Minority Interest
Profit Before Extraordinary Items	Extraordinary Item Gain (Loss)
Profit Attributable to Shareholders	Net Profit
Dividends	Dividends
Retained Profit For The Year	Retained Earnings

CONSOLIDATED BALANCE SHEET

BALANCE SHEET

<u>Hong Kong International</u>	<u>U.S.A. FASB</u>
Fixed Assets	Fixed Assets Net
Associated Companies	Associated Companies Net
Deferred Expenditure	Prepaid Expense
Deferred Receivables	Loans Receivable
Net Current Assets	Current Assets minus Current Liabilities
Other Deferred Items	Deferred Liabilities
Share Capital	Capital Stock
Reserves	Retained Earnings plus Paid In Capital
Shareholders' Fund	Shareholders' Equity
Minority Interests	Minority Equity
Long Term Loans and Bonds	Long Term Notes Payable
Obligations Under Finance Leases	Capital Leases Payable

SUMMARY OF ACCOUNTING RATIOS

Overall Performance Measures

Price/Earnings Ratio	Market Price Per Share / Net Income Per Share
Return On Assets	Net Income + Interest*(1 - t)/Total Assets
Return On Invested Capital	Net Income + Interest*(1 - t)/LT Liabilities + Shr_Hldrs' Equity
Return On Shareholder Equity	Net Income / Shr_Hldrs' Equity

Profitability Measures

Gross Margin Percentage	Gross Margin / Net Sales Revenues
Profit Margin	Net Income / Net Sales Revenues
Earnings Per Share	Net Income / Number Shares Outstanding

Test Of Investment Utilization

Asset Turnover	Sales Revenues / Total Assets
Invested Capital Turnover	Sales Revenues / LT Liabilities + Shr_Hldrs' Equity
Capital Intensity	Sales Revenues / Property, Plant & Equipment
Days' Cash	Cash / Cash Expenses / 365
Days' Receivables	Accounts Receivable / Sales / 365
Days' Inventory	Inventory / COGS / 365
Inventory Turnover	COGS / Inventory
Working Capital Turnover	Sales Revenues / Working Capital

Test Of Financial Condition

Current Ratio	Current Assets / Current Liabilities
Quick Ratio (Acid-Test)	Monetary current Assets / Current Liabilities
Debt/Equity Ratio	LT Liabilities / Shareholders' Equity
Debt/Capitalization	LT Liabilities / LT Liabilities + Shr_Hldrs' Equity
Times Interest Earned	Pretax Operating Profit + Interest / Interest
Cash Flow / Debt	Operating Cash Flow / Total Debt
Dividend Yield	Dividends Per Share / Market Price Per Share
Dividend Payout	Dividends / Net Income

Hang Seng Index Constituent Stocks

Finance

Bank East Asia Co Ltd.
Hang Seng Bank Ltd.
HSBC Holdings Plc.
Jardine Strategic Holdings Ltd.

Properties:

Cheung Kong (Holdings) Ltd.
Great Eagle Holdings Ltd.
Hang Lung Development co. Ltd.
Henderson Land Development Co. Ltd.
HK Land Holdings Ltd.
Hopewell Holdings Ltd.
Hysan Development Co. Ltd.
New World Development co. Ltd.
Sun Hung Kai Properties Ltd.

Utilities

China Light & Power Co. Ltd.
HK & China Gas Co. Ltd.
HK Electric Holdings Ltd.
HK Telecommunications Ltd.
Kowloon Motor Bus Co. (1933) Ltd.

Commercial & Industrial

Cathay Pacific Airways Ltd.
Cavendish International Holdings Ltd.
Dairy Farm International Holdings Ltd.
HK Aircraft Engineering Co. Ltd.
HK & Shanghai Hotel Ltd.
Hutchison Whampoa Ltd.
Lai Sun Garment (International) Ltd.
Mandarin Oriental International Ltd.
Miramar Hotel & Investment Co. Ltd.
Swire Pacific Ltd. "A" Shares
Television Broadcasts Ltd.
Wharf Holdings Ltd.
Winsor Industrial Corporation Ltd.
World International (Holdings) Ltd.

NOMENCLATURE**Cash Flow – Market Value Nomenclature**

k	Cash collected from customers
D	Dividends paid to shareholders
h	Operating payments (cash)
B	Equity capital raised (-ve) or repaid (+ve)
A	Replacement investment cost
ENCF	Entity Cash Flow
R	Growth of investment
LCF	Lender Cash Flow
Y	Proceeds from assets displaced
SHCF	Shareholder Cash Flow
t	Corporate income tax payments
MICF	Minority Interest Cash Flow
H	Liquidity change
HCP	Historic Cost Profit (change in cash and cash equivalents)
I	Periodic Income
F	Interest payments
LTD	Long Term Debt
N	Medium; LTD raised (-ve) or repaid (+ve)
STD	Short Term Debt
M	Short Term Debt raised (-ve) or repaid (+ve)
NW	Net Worth
re	Shareholder Cost of Capital
r	Entity Cost of Capital
rd	Lender Cost of Capital
r_mi	Minority Interest Cost of Capital
MI	Profit ascribable to minority
CF	Cash Flow
MV	Market Value
TMV	Total Market Value

Superscripts / Subscripts

m	Minority Interest
d	Debt
mi	Minority Interest
e	Equity
j	Year or Period

Cash Flow – Market Value Relationships

k – h	Operating Cash Flow
A+R-Y	Net capital expenditure
k-h-F-t	Operating CF net of interest and taxes paid
D-B-N-M	Dividends paid net of equity and debt financing
$[MV_j - MV_{j-1}]$	End_period - Begin_period market value
$[F_j + D_j + D_{j(mi)}]$	Distributions to owners
$[F_j + M_j + B_j + B_{j(mi)}]$	Contributions from owners
$HCP_j + F_j + MI_j$	Historic Cost Entity Profit

Cash Flow – Periodic Nomenclature

NW _j	Net Worth (or total capital employed measured via historic cost entity basis)
F _j	Post-tax profit before interest
MI _j	Group profit ascribable to minorities
D _j	Dividend in year j
HCP _j	Historic Post Tax Profit
ENCF _j	Periodic entity cash flow
I _j	Period Income
k _j	Periodic cash collected from customers
e _j	Periodic profit, historic cost, pre-depreciation
d _j	Periodic accrued sales
n _j	Net operating CF
b _j	Periodic purchases
ETR _j	Effective tax rate
h _j	Periodic payments to suppliers
p _j	Periodic working capital investment
a _j - a _{j-1}	Periodic inventory investment
b _j - h _j	Periodic credit taken
d _j - k _j	Periodic credit given

Specifications of a Multi-Period Financial Model ⁴

Sales Model (Income Statement)

$$d_{j-1} * (1 + v_j) * (1 + ms_j) * (1 + sp_j) = d_j$$

ms Market share growth (firm's market share) ^{5 6}

sp Sales price growth (firm's sales price increase)

v Sales volume growth; total market; (physical units)

d Accrued sales (sales revenues)

End year trade receivables (Balance Sheet)

$$TR_j = d_j * (TR_{j-1} / d_{j-1})$$

TR Trade Receivables ⁷

Cash collected from customers (Cash Flow Statement)

$$k_j = TR_{j-1} + d_j - TR_j$$

Materials component of COGS (Income Statement)

$$m_{j-1} * (1 + v_j) * (1 + ms_j) * (1 + c_j) = m_j$$

m Materials component of COGS

c Cost of raw materials rate of change

Materials purchased and material inventory

$$m_j = a_{j-1} + b_j - a_j$$

b Materials purchased (corresponding to m)

a Inventory (j-1 = opening; j = closing)

Materials purchased ⁸

$$b_j = m_j - a_{j-1} + a_j$$

Materials (MTR) inventory (Balance Sheet)

$$a_{j-1}^{MTR} * ((1 + v_j) * (1 + ms_j))^{*0.5} * (1 + c_j^{MTR}) = a_j^{MTR}$$

4 This section is condensed and paraphrased from an article entitled "Specifying A Multi-period, Computer Based Financial Model" by G. H. Lawson.

5 Growth as used here is synonymous with rate of change, i.e. growth can be positive or negative.

6 Subscript "j" refers to the accounting period e.g. the given year.

7 A weighted average of the last five years of the ratio of TR to d may be used with allowances for expected adjustments.

8 As the materials component, m_j, of the COGS is included in the income statement; b_j, a_{j-1} and a_j are not included therein. Materials purchased, b_j, are the basis of the end-year trade payables estimate, TP_j and the operating payment, h_j, in respect of materials.

Work in progress (WIP) inventories (Balance Sheet):

Work in progress (WIP) inventory change (Income Statement):

$$a_{j-1}^{WIP} * ((1 + v_j) * (1 + ms_j))^{**0.5} * (1 + c_j^{WIP}) = a_j^{WIP}$$

Finished goods (FG) inventories (Balance Sheet)

Finished goods (FG) inventory change (Income Statement):

$$a_{j-1}^{FG} * ((1 + v_j) * (1 + ms_j))^{**0.5} * (1 + c_j^{FG}) = a_j^{FG}$$

a Inventory, MTR, WIP or FG (j-1 = opening j = closing)

c Rate of change in unit book value of MTR, WIP or FG

Notes: ⁹ ¹⁰

End-year trade payables (Balance Sheet) ¹¹

$$TP_j = b_j * (TP_{j-1} / b_{j-1})$$

Payment in respect of materials (Cash Flow Statement)

$$h_j = TP_{j-1} + b_j - TP_j$$

Labor costs (Income Statement)

$$LAB_{j-1} * (1 + v_j) * (1 + ms_j) * (1 + c_j^{LAB}) = LAB_j$$

LAB Labor cost

c_j^{LAB} Growth in labor cost

Fixed expenses (Income Statement)

$$FEX_{j-1} * (1 + c_j^{FEX}) * (1 + fcstf) = FEX_j$$

FEX Fixed expenses

c_j^{FEX} Growth rate in fixed expenses (nominal terms)

fcstf Fixed costs step time function (if applicable)

⁹ The 1/2 positive exponent gives effect to the EOQ (Economic Order Quantity) relationship between MTR, WIP and FG volumes and sales volume

¹⁰ The income statement classification distinguishes between opening and closing raw materials inventories that are included in the materials component of the COGS and opening and closing work in progress and finished goods inventories that are treated separately. Alternatively all three inventories can be included in the materials component of the COGS in which case changes in WIP and changes in FG are not separately included in the income statement.

¹¹ For the first trade payables (TP_1) to be forecast, purchases b_0 must first be derived:
 $b_0 = m_0 - a_{-1} + a_0$

Variable expenses (Income Statement)

$$VEX_{j-1} * (1 + v_j) * (1 + ms_j) * (1 + c_j^{VEX}) = VEX_j$$

VEX Variable expenses

c_j^{VEX} Growth rate in variable expenses (nominal terms)

Accrued expenses (Balance Sheet)

$$AEX_j = (AEX_{j-1} / (FEX_{j-1} + VEX_{j-1})) * (FEX_j + VEX_j)$$

AEX Accrued expenses

Capital investment, fixed assets, depreciation and disposals

CE_j Exogenously-determined capital expenditure
(Cash Flow Statement)

GBV_{j-1} Gross book value of fixed assets and the
cumulative depreciation at end-year j-1
(Balance Sheet)

L_j Depreciation charged in year j (Income Statement)

$xGBV_{j-1}$ Gross book value of disposals in year j

yCD_{j-1} Cumulative depreciation related to GBV in year j

X_j Written down book value of disposals in year j

Y_j Sales proceeds of assets displays in year j
(Cash Flow Statement)

P&L Profit or Loss (Income Statement)

x Proportion of GBV attributed to assets displaced

y Proportion of CD attributed to assets displaced

z Proportion of P&L attributed to asset displaced

NBV_j Net book value in year j

$$L_j = (L_{j-1} / GBV_{j-2}) * GBV_{j-1}$$

$$X_j = xGBV_{j-1} - yCD_{j-1}$$

$$Y_j = X_j * (1 + z) = (xGBV_{j-1} - yCD_{j-1}) * (1 + z)$$

$$P\&L = Y_j - X_j = z * (xGBV_{j-1} - yCD_{j-1})$$

$$GBV_j = GBV_{j-1} - xGBV_{j-1} + CE_j$$

$$CD_j = CD_{j-1} - yCD_{j-1} + L_j$$

$$NBV_j = GBV_j - CD_j$$

Payments in advance (Balance Sheet)

$$PADV_j = (PADV_{j-1} / (FEX_{j-1} + VEX_{j-1})) * (FEX_j + VEX_j)$$

PADV Payments in advance

Cash paid in respect of fixed and variable expenses (Income Statement)

$$h_j^{OHD} = (AEX_{j-1} - PADV_{j-1}) + (FEX_j + VEX_j) - AEX_j - PADV_j$$

PADV Payments in advance

Corporate taxable earnings (Income Statement and Cash Flow Statements) ¹²

$$TE_j = d_j - (a_{j-1} + b_j - a_j) - F_j + Y_j - ACRS_j$$

d_j	Accrued sales
a_j	Closing inventory
a_{j-1}	Opening inventory
b_j	Purchases
F_j	Corporate interest payments
Y_j	Proceeds of assets displaced
$ACRS_j$	Tax depreciation allowances (including the written down value for tax purposes of assets displaced) (if applicable)

Periodic changes in cash balances (Cash Flow Statement)

$$H_j = CB_j - CB_{j-1}$$

CB Cash Balance

Short term debt financing (dependent variable)

$$STD_j = \sum_{t=-z}^j M_t = \sum_{t=-z}^{j-1} M_t * (1 + r_d) - CS_j * (1 + r_d/2)$$

$$CS_j = (k_j - h_j) - (CE_j - Y_j) - T_{j-1} - H_j - (D_j - B_j) - (F_j LTD - N_j)$$

CS_j Cash surplus or deficit for year j

$$F_j^{STD} = r_d * \left(\sum_{t=-z}^{j-1} M_t - 0.5 * CS_j \right)$$

Long term debt financing (exogenous variable)

$$LTD_j = \sum_{t=-x}^j N_j$$

Total interest (Cash Flow Statement)

$$F_j = r_d^{(L)} * LTD_j + r_d^{(S)} * STD_j$$

Dividend policy (dependent variable)

$$D_j = \alpha * \beta HCP_j + (1 - \alpha) D_{j-1}$$

D_j Dividends in year j

α Rate of Adjustment; dividends to current earnings
 $0 < \alpha < 1$

β Firms target pay-out ratio

HCP_j Historic cost profit

12

Deferred taxation accounting is ignored here on the assumption that it has insignificant economic consequences.

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