Discussion of ‘Accounting for Intangible Assets: Suggested Solutions’ (Barker, Lennard, Penman, and Texeira)

IASB Research Forum,
November 2-3, 2020

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COMMENTS

‘Single-project’ vs. ‘balanced portfolio’ view

- Single project: how to find the ex ante amortisation schedule with low probability of impairment.
- The separability problem (identifying the asset component in transactions also involving current expenses: Some input from the components approach solution for subsequent costs in IAS 16.
- Portfolio of projects: counterbalancing errors
- Balanced portfolio with high level of uncertainty: income statement distortion as the portfolio is no longer balanced.

- **Intangible vs. tangible assets – suggested solutions?**
  - Monetary vs. non-monetary assets
  - Financial vs. non-financial assets

- **Additional comments**
  - Why not consider ‘expected value’? Compare with the IAS 37 exposure drafts.
  - Accounting under high levels of uncertainty – why is prudence and conservatism not referred to?
  - Activities (2) and (3) – compare with Edwards & Bell (1961) (the composition problem; operating vs. holding activities)

IMMEDIATE EXPENSING: SINGLE PROJECT VIEW

p. 13

‘The solution in current accounting practice is to **expense many investments in internally generated assets to the income statement**. That clearly is a mismatching to revenues. Stocks and the flows from those stocks are no distinguished, they are comingled. Accordingly, **valuation based on earnings** from earnings investment **is frustrated**. For stewardship assessment, the expensing mixes the earnings from past investments for which the manager is responsible with investment to gain more earnings in the future. **If the manager is judged on bottom-line earnings, that is a disincentive to invest**.’

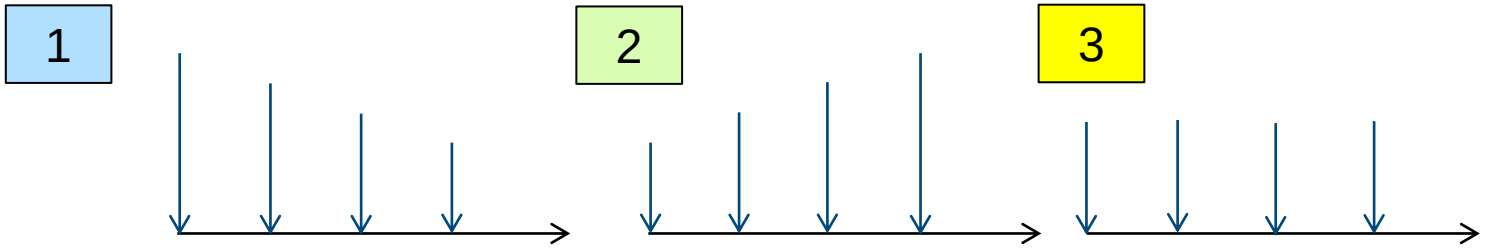
This is a single-project view. The effects will be different for a portfolio of projects. Besides, although earnings are lowered in the current year (the ‘disincentive’), earnings are simply shifted to later periods.

SINGLE PROJECT VIEW: CAPITALISATION AND DEPRECIATION/AMORTISATION

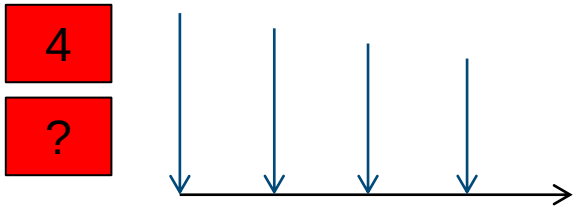
'The recognition of an asset must be accompanied by an assessment of the implications for earnings which conveys value from **using assets jointly**. The effect is via **(mis)matching amortizations and impairments**, with the extent of matching or mismatching determined by the amount of uncertainty surrounding the investment.' (p. 14). There is a need to '[…] establish an **ex ante amortization schedule with low probability of impairment**' (p. 26)

-This is a single-project view. The effects on a balanced portfolio of projects may also be evaluated.
-Present value accounting may be used as a benchmark to evaluate the depreciation/amortisation schedule.
-The components approach in IAS 16 (subsequent costs) may be a good example of how to handle a situation where components of an assets are used jointly (not just an issue of the depreciation/amortisation schedule).

DEPRECIATION PATTERNS FOR A SINGLE PROJECT

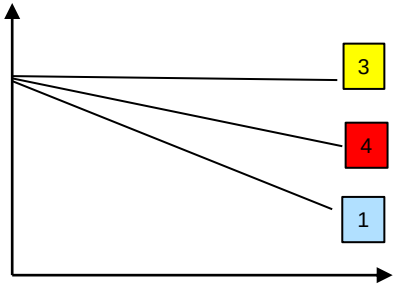


Cash flow pattern	Decreasing	Increasing	Constant
Depreciation pattern (‘present value accounting’)	Degressive	Progressive	Progressive

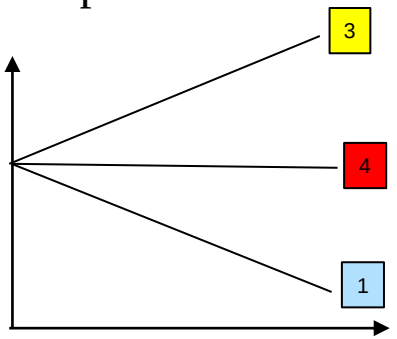


Cash flow pattern	Slightly decreasing
Depreciation pattern (‘present value accounting’)	Straight-line

Cash flow patterns



Depreciation patterns



ACCOUNTING FOR SUBSEQUENT COSTS – IAS 16

-Maintain/enhance approach (capitalise only when the asset is 'enhanced')

-Components approach (capitalise when asset components are replaced)

•IAS 16 was issued for the first time in 1982 and updated in 1993. In 2003, the IASB issued a revised version of IAS 16. One of the areas where the standard was revised concerned the accounting for subsequent costs.

•IASB (excerpts from basis for conclusions):

BC5 '[…] the Board noted difficulties in practice in making the distinction it required between expenditures that maintain, and those that enhance, an item of property, plant and equipment. Some expenditures seem to do both.'

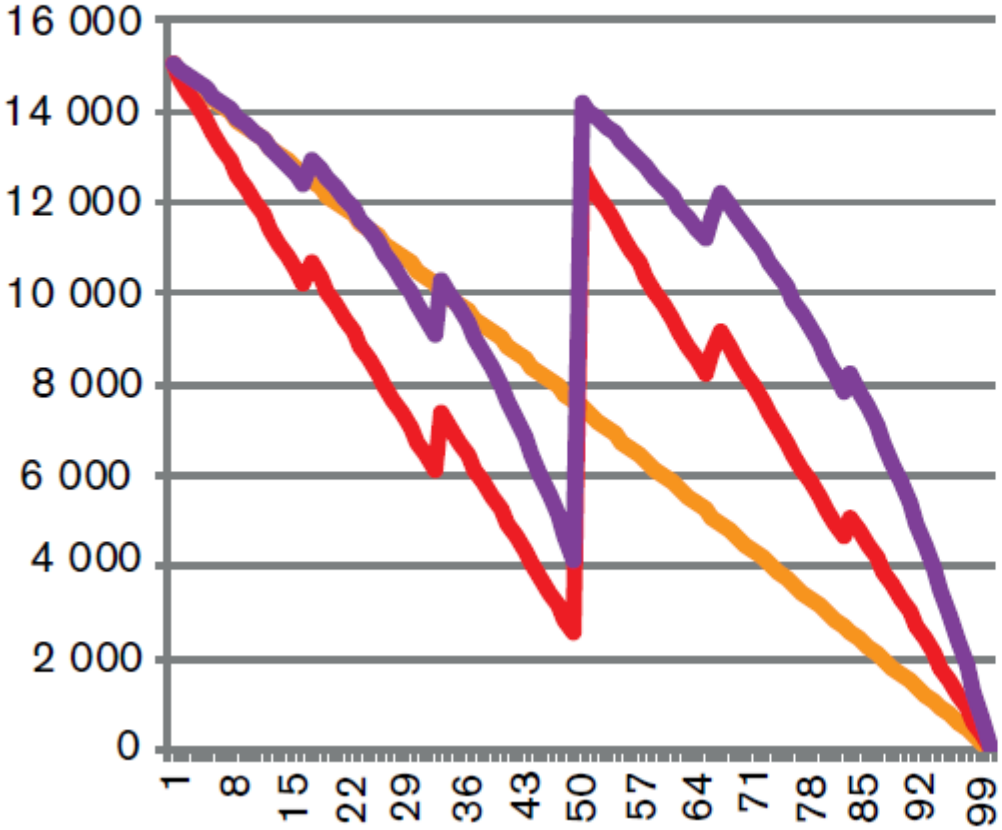
BC6 'The Board ultimately decided that the separate recognition principle for subsequent expenditure [maintain versus enhance] was not needed.'

The example is from Hellman, N. Nordlund, B., Pramhäll, C. (2011) Förbättrad redovisning med komponentansats: Nyttan överstiger kostnaderna, *Balans*, issue 11. In Swedish.

ACCOUNTING FOR SUBSEQUENT COSTS – IAS 16

COMPARING METHODS

Example: 100-year real estate project



Book value of the asset according to the 'maintain/enhance approach' (all subsequent costs expensed as incurred)

Book value of the asset according to the 'components approach' (all replacements capitalised and depreciated over useful life)

Book value of the asset according to 'present value accounting'

From the paper: '[…] establish an ex ante amortization schedule with low probability of impairment' (p. 26).

-Present value accounting helps us identify appropriate depreciation/amortisation patterns.

-Finding the appropriate depreciation/amortisation pattern and a way to solve the separability problem.

CONSIDERATION OF PORTFOLIOS OF PROJECTS

The cancelling error property of accounting

'Expensing an investment such as research and development (R&D) immediately to the income statement […] results in an 'error' in the balance sheet […] earnings so calculated are the same as earnings under a policy of booking the investment to the balance sheet and then amortizing it to the income statement as long as the business is in a steady state, that is, *if* there is no growth in investment.' (p. 29)

'[…] This informational signal is distorted, however, outside an (unrealistic) 'steady state', in which there is no growth in investment in intangible assets.' (p. 24)

Theorem 1 If the absolute error in measuring equity is the same at the beginning and at the end of the year, the net income will be the same in alternatives W and C, i.e.

if $$E_b(C) - E_b(W) = E_e(C) - E_e(W)$$

then

Further $$I(W) = I(C) \qquad [7.1a]$$

and $$R_E(W) = R_E(C) \times E_b(C)/E_b(W) \qquad [7.1b]$$

$$E'(W) = E'(C) \times E_b(C)/E_b(W) \qquad [7.1c]$$

Johansson, S-E. and Östman, L. (1995) *Accounting Theory: Integrating Behaviour and Measurement*, Pitman Publishing.

CONSIDERATION OF PORTFOLIOS OF PROJECTS

Theorem 2 If the error in measuring equity grows at a rate equal to the rate of return n equity, the rate of return on equity will be the same in alternatives W nd C, i.e.

$$\frac{E_e(C) - E_e(W)}{E_b(C) - E_b(W)} - 1 = R_E(W)$$

hen

$$R_E(W) = R_E(C) \qquad [7.2a]$$

urther

$$I(W) = I(C) \times E_b(W)/E_b(C) \qquad [7.2b]$$

nd

$$E'(W) = E'(C) + (D/E_b(C) - D/E_b(W)) \qquad [7.2c]$$

Theorem 3 If the error in measuring equity grows at the same rate as equity, then the rate of growth of equity will be the same in alternatives W and C, i.e. if

$$\frac{E_e(C) - E_e(W)}{E_b(C) - E_b(W)} - 1 = E'(W)$$

$$E'(W) = E'(C) \qquad [7.3a]$$

$$I(W) = I(C) \times \frac{E_b(W)}{E_b(C)} + D \times \frac{E_b(C) - E_b(W)}{E_b(C)} \qquad [7.3b]$$

$$R_E(W) = R_E(C) + (D/E_b(W) - D/E_b(C)) \qquad [7.3c]$$

If the correct capitalization and valuation of R&D result in the same book value at the end of the year as at the beginning of the year, the income will be the same as reported without capitalization (Theorem 1).

Identical measures of income, however, would mean non-identical measures of return on capital. To obtain identical rates of return on equity, the book value of capitalized R&D must grow at a rate identical with the rate of return (Theorem 2). A prerequisite for the identical growth rate of equity is that the book value of capitalized R&D grows at the same rate as equity (Theorem 3). The book value of capitalized R&D will grow at the same rate as the R&D expenditures, if the same method of depreciation and assessment of useful life is applied to all investments.(*See* Section 7.4 for explanation of theorems.)

If the conditions for counterbalancing errors with regard to rate of return or growth of equity are not fulfilled and non-capitalized investments are substantial, a measure of rate of return may have an unsatisfactory representational ability and supplementary control mechanisms may be necessary in order to avoid the risk that R&D and similar expenditures will be reduced to improve profitability in the short term at the expense of long-term profitability.

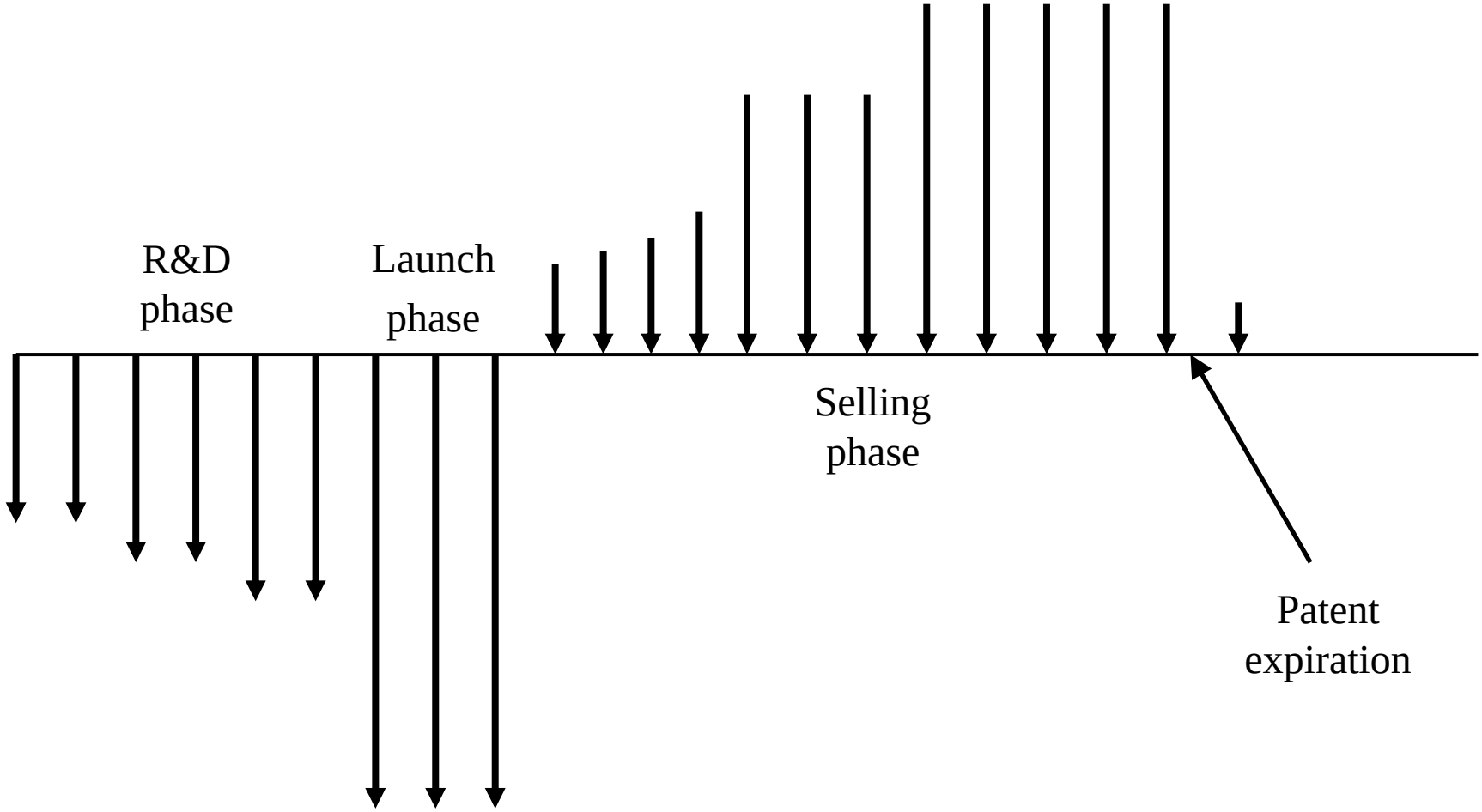
Johansson, S-E. and Östman, L. (1995) *Accounting Theory: Integrating Behaviour and Measurement*, Pitman Publishing.

CONSIDERATION OF PORTFOLIOS OF PROJECTS

‘Portfolio effects mitigate: under standard finance theory, portfolios of investments diversify and reduce risk. So, outcomes to R&D investment into one drug in a bio-tech start-up might be highly uncertain, while that in a mature pharmaceutical firm with a portfolio of other drugs being developed is less do. Further, amortization errors net in a portfolio. Accordingly, the unit of account becomes the portfolio and the uncertainty associated with it.’ (pp. 15-16)

Companies with internally generated intangibles with highly uncertain outcomes can be expected to build balanced portfolios of projects. Therefore, the income statement distortion effects for balanced portfolios may be of particular relevance.

Illustration of the cash flow pattern for a successful pharmaceutical project



AstraZeneca

Income Statement Structure % of Sales

	2002	2003	2004	2005	2006	AVE
Sales	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%
Cost of Goods Sold	-26,1%	-23,7%	-24,2%	-22,4%	-21,0%	-23,5%
Gross Margin	73,9%	76,3%	75,8%	77,6%	79,0%	76,5%
Sales expenses	-35,6%	-36,4%	-38,6%	-36,3%	-34,4%	-36,2%
Administration	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
R&D	-17,2%	-18,3%	-16,2%	-14,1%	-14,7%	-16,1%
Other Items Net (incl. FI)	3,8%	0,8%	2,7%	2,7%	4,5%	2,9%
Non-Recurring Items	-2,0%	0,0%	1,0%	0,0%	0,0%	-0,2%
EBIT-Margin (incl. FI)	22,9%	22,4%	24,7%	29,9%	34,4%	26,9%

FI = Financial income

The balanced portfolio gradually becomes unbalanced…

…as an effect of R&D failures (e.g. Exanta). Fewer projects move into the more costly R&D phases and fewer projects reach the launch phase.

INTANGIBLE VS. TANGIBLE ASSETS
SUGGESTED SOLUTION?

If tangibility is not a '[…] determining economic feature for recognising assets […], what are the alternatives?

Monetary vs. non-monetary assets

IAS 21 , p. 16: '[…] the essential feature of a non-monetary item is the absence of a right to receive (or the obligation to deliver) a fixed or determinable number of units of currency. Examples include: amounts prepaid for goods and services; goodwill; intangible assets; inventories; property, plant and equipment; right-of-use assets; and provisions that are to be settled by the delivery of a non-monetary asset.

This is a classification closely linked to general and specific price changes and the income statement effects caused by **realized and unrealized holding gains**, and changes in purchasing power over time.

2019 Group results

Consolidated data in millions of dollars, except for earnings per share, dividends, number of shares and percentages.

(in $M)	2019	2018	2017
Adjusted net operating income from business segments[a]	14,554	15,997	11,936
Net income (Group share)	11,267	11,446	8,631
Adjusted net income (Group share)[a]	11,828	13,559	10,578
Fully diluted weighted-average shares (millions)	2,618	2,624	2,495
Adjusted fully diluted earnings per share (dollars)[a][b]	4.38	5.05	4.12
Dividend per share (euros)[c]	2.68	2.56	2.48
Gearing ratio[d] (as of December 31)	20.7%	15.5%	11.9%
excluding the impact of leases	*16.7%*	*14.3%*	*11.1%*
Return on average capital employed (ROACE)[e]	9.8%	11.8%	9.4%
Return on equity (ROE)	10.4%	12.2%	10.1%
Net investments[f]	17,449	15,568	11,636
Organic investments[g]	13,397	12,427	14,395
Net acquisitions[h]	4,052	3,141	(2,759)
Operating cash flow before working capital changes[i]	26,432	24,529	21,135
Operating cash flow before working capital changes w/o financial charges (DACF)[j]	28,501	26,067	22,183
Cash flow from operating activities	24,685	24,703	22,319

(a) Adjusted results are defined as income using replacement cost, adjusted for special items, excluding the impact of changes in fair value. (refer to Note 3 to the Consolidated Financial Statements, point 8.7 of chapter 8).
(b) Based on fully diluted weighted-average number of common shares outstanding during the fiscal year. In accordance with IFRS standards, adjusted fully diluted earnings per share is calculated from the adjusted net income less the perpetual subordinated bond.
(c) 2019 dividend subject to approval at the Annual Shareholders' Meeting on May 29, 2020.
(d) Net Debt/(Net debt + shareholders equity, Group share + Non-controlling interests). Including the impact of leases.
(e) Based on adjusted net operating income and average capital employed at replacement cost (refer to Note 3 to the Consolidated Financial Statements, point 8.7 of chapter 8).
(f) Net investments = organic investments + net acquisitions.
(g) Organic investments = net investments excluding acquisitions, asset sales and other operations with non-controlling interests.
(h) Net acquisitions = acquisitions – assets sales – other transactions with non-controlling interest.
(i) Operating cash flow before working capital changes is defined as cash flow from operating activities before changes in working capital at replacement cost. The inventory valuation effect is explained in Note 3 to the Consolidated Financial Statements (refer to point 8.7 of chapter 8).
(j) DACF = debt adjusted cash flow. The operating cash flow before working capital changes without financial charges of the segment is defined as a cash flow from operating activities before changes in working capital at replacement cost and effective second quarter 2019 including organic loan repayments from equity affiliates, without financial charges.

TOTAL S.A., annual report 2019

INTANGIBLE VS. TANGIBLE ASSETS
SUGGESTED SOLUTION?

If tangibility is not a '[…] determining economic feature for recognising assets […], what are the alternatives?

Financial vs. non-financial assets

The 2005 ED Amendments to IAS 37, suggested that the term 'non-financial liability' would be used instead of 'provision'. The 2005 and 2010 EDs regarding IAS 37 were part of an overall proposal to handle uncertainty through measurement rather than recognition, which may be relevant to discuss in the context of the current paper

EXPECTED VALUE?

‘If the probability of success in research for a cancer cure is only 1 percent, the complimentary probability of a later impairment is 99 percent. Should the accountant book the R&D with these probabilities? Rational expectation theory would say: no.’ (p. 14)

The EDs for amending IAS 37 (2005, 2010) have suggested that the concepts of provisions and contingent liabilities are omitted, and that recognition uncertainty is handled through measurement instead, using expected value.

It is perhaps relevant to discuss in the paper, whether the concept of expected value can be applied in the context of assets referred to, especially in regard to the use of balanced portfolios of projects.

PRUDENCE AND CONSERVATISM

‘Uncertainty’ is frequently referred to in the paper, but the terms prudence and conservatism are not. Perhaps the reason for avoiding these terms could be explained in a footnote, as it is common in practice to refer to prudence when investments in internally generated intangibles are immediately expensed.

EDWARDS & BELL (1961)

It is stressed in the paper that assets have a value from being used jointly; only assets that arise from expenditures should be recorded; and the surplus generated from the joint use will show in the income statement.

Activities (2) and (3) – compare with Edwards & Bell (1961). Management must decide at any moment in time in what form to hold its total resources (the composition problem, p. 34). This may be relevant to the discussion of the short-term and long-term links between (2) and (3). Even if asset recognition is restricted to being expenditure-based, the subsequent income statement effects that you refer to will include both ‘operating profit’ (in E&B terms) and realised holding gains (and there will also be unrealised holding gains).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