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Equity Instruments – Research on Measurement

Alternative approaches

Objective

- 1 The second request for technical advice from the European Commission asks EFRAG to consider alternative measurement bases for equity and equity-type instruments.
- 2 In this paper, the EFRAG Secretariat presents a number of possible alternative approaches. We note that each approach (except for fair value with changes in profit or loss) needs to be further developed.
- 3 The purpose of this session is to ask EFRAG TEG for their input on which of the alternatives explored in this paper should be included in a consultation document as part of EFRAG's due process. For the approaches that are selected, we also ask for input on:
 - (a) which aspects need to be further developed for the purpose of the consultation; and
 - (b) which aspects should not be further developed but should be identified for consideration by constituents.
- 4 Some of the approaches explored could be applied in two different ways:
 - (a) the approach could be directly used as a measurement basis for equity instruments in the statement of financial position. In that case, the use of Other Comprehensive Income ('OCI') would not generally be needed and therefore there would be no question about amount and time of recycling. However, fair value is often considered as the most relevant measure for the financial position; or
 - (b) fair value could be used as a measurement basis in the statement of financial position and the alternative approach as a basis for the measurement in profit or loss e.g. as already occurs with own credit or the policy choice to recognise the finance expense in OCI. In that case, the differences would be recognised in OCI and amount and timing of recycling would need to be addressed.
- 5 The EFRAG Secretariat understands that the concerns expressed by constituents around the current requirements in IFRS 9 *Financial Instruments* refer mostly to recognition in profit or loss. We also note that IFRS 7 *Financial Instruments: Disclosures* would require entities to disclose fair value of each class of financial assets where their carrying amount is measured on a different basis.

- 6 Based on the discussion at the EFRAG TEG in October, we are not suggesting restricting the use of any of the methods to long-term investments, however defined. We will assume that the approaches explored would replace the FVOCI election in IFRS 9, in the sense that entities would be able to elect using the alternative approach on an instrument-by-instrument basis, unless the instrument is held for trading or contingent consideration recognised in a business combination.
- 7 Similarly, in this paper we are not suggesting differentiating measurement based on whether the instruments are traded on an active market or that the fair value is readily (or reliably) determinable. As shown in paper 06-03, this distinction is used in some local GAAP to differentiate either the measurement basis or the way impairment losses are assessed. However, in the past EFRAG TEG has declined to introduce this distinction.

Description of alternative approaches

- 8 The basic choice for measuring equity instruments is between cost and fair value. Before IFRS 9 became effective, IAS 39 *Financial Instruments: Recognition and Measurement* was requiring fair value for equity instruments with the changes recognised either in profit or loss (for instruments classified as held-for-trading) or OCI (for instruments classified as available-for-sale). Only instruments without a quoted price on an active market and whose fair value could not be reliably measured were carried at cost.
- 9 IAS 39 became effective in 2001 and superseded the portions of IAS 25 *Accounting for Investments* that dealt with debt and equity instruments. Previously, IAS 25 required the measurement of marketable equity instruments classified as long-term assets at the lower of cost and market value determined on a portfolio basis.
- 10 IAS 27 *Separate Financial Statements* allows entities to measure investments in subsidiaries, joint ventures and associates either at cost, in accordance with IFRS 9 or using the equity method.
- 11 There has been an extensive debate about the pros and cons of fair value versus historical cost, in both practice and academic studies. Without aiming to provide a comprehensive analysis, we summarise the most common arguments below. More detail based on academic research is provided in Appendix 1.

Relevance of information

- 12 Fair value is considered to provide more relevant information and assist investors in predicting future cash flows, especially when based on quoted prices, since it reflects current market conditions. Historical cost loses relevance over time, which becomes especially relevant for assets held in a long-term investment business model.
- 13 On the other hand, it is noted that fair value changes at the reporting date may not be relevant for assets held in a long-term investment business model because the changes may reverse before the entity actually disposes of the investment.

Reliability of information

- 14 Fair value, especially for instruments that are not quoted on an active market, has been criticised as being highly dependent on assumptions. There are two types of measurement error. The first is unsystematic error arising from general uncertainty, and the second is error arising from management exercising discretion in determining the estimates.

- 15 On the other hand, it should be noted that when cost or a similar basis is used, entities still need to assess the asset for impairment, which involves some type of current value assessment and the use of assumptions.

Effects on behaviours

- 16 Fair value increases volatility in profit or loss and/or the financial position of entities. Some claim that entities will reduce investments in equity if the reporting becomes increasingly volatile. This could also lead to entities disinvesting at fire sale prices¹ when markets are experiencing losses, thus increasing the financial market downturn.
- 17 It is also suggested that the use of fair value can have pro-cyclical effects because of the link between accounting and capital regulations. If a bank has to write down its assets to reflect a decrease in market prices, the bank's regulatory capital is depleted, which can negatively affect the availability of financing for the real economy.
- 18 On the other side, it has been noted that the use of cost provides opportunity for selective profit-taking. In this way, the entity is able to decide the period in which a holding gain is recognised, although the gain has been accruing in other periods.
- 19 Others would instead consider that recognition of profit should be driven by cash realisation, as the sale changes the risk exposure of the holder of the assets.

Question for EFRAG TEG

- 20 Are there additional aspects to the comparison between cost and fair value in paragraphs 12 and 19?

What are the alternatives?

- 21 In this paper we explore the following alternative approaches:
- (a) *modified cost* approach;
 - (b) value in use;
 - (c) *modified fair value* approach;
 - (d) *long-term expected value*; and
 - (e) *linked approach*.

Modified cost approach

- 22 Historical cost could be adjusted to reflect events that have occurred since the purchase of the equity instrument. The EFRAG Secretariat suggests that the following adjustments could be considered:
- (a) adjusting the purchase price for the share of profit or loss of the investor. This would reflect the performance of the investee in the comprehensive income of the investor, in a way similar to the equity method but without the need to apply all the requirements. This would require the entity to obtain access to the financial statements of the investee. We would expect this to be generally possible, but there may be issues with the timing of the availability of the financial statements and the fact that the investees may not be reporting under IFRS Standards or a comparable GAAP; and

¹ Both US GAAP and IFRS allows for the exclusion of prices from fire sales for purposes of determining fair value.

- (b) adjusting the purchase price for observable market transactions. This would reflect changes in value and align the historical cost to the current value although on a non-recurring basis. A similar approach is used in US GAAP for unquoted instruments where the fair value is not readily determinable. This adjustment is only suitable for equity instruments that have no quoted price. It would require the investor to monitor if observable transactions are occurring on their investment. We would expect that it would be feasible for an entity with a limited number of equity investments, but burdensome for an entity with a very high number of small investments.
- 23 Compared to FVPL, a modified cost approach could be more or less volatile, in relation to the first adjustment, and less volatile in relation to the second adjustment to the extent that observable market transactions on unquoted entities do not occur frequently.

Value in use

- 24 Some argue that a value in use (VIU) type of calculation could be an alternative measurement basis whilst others disagree, pointing out that equity instruments do not have a use like plant or property. However, VIU is calculated for intangibles by considering related cash flows and so, similarly, dividends and/or sales proceeds could be used to determine a VIU for an equity instrument. For instance, interests in subsidiaries, associates or joint ventures not in the scope of IFRS 9 fall under the scope of IAS 36 *Impairment of Assets* and VIU is therefore one of the accepted methods to calculate possible impairment losses.
- 25 In practice, VIU requires two essential inputs: the amount of future cash flows and the appropriate rate of discount. In conditions of uncertainty, these are subject to a high degree of subjectivity that reduces the reliability of VIU.
- 26 Furthermore, given the significant judgement and estimates required in setting such a VIU, a reporting entity would have to consider providing sufficient disclosures to users in order for them to evaluate the VIU amount. This may be similar to a level 3 fair value estimation. Disclosure may include the estimates used as well as sensitivities to changes in important inputs. An example of this in practice is HSBC's 2017 annual report, in various sections of the report but primarily page 221 onwards (please refer to Appendix 2 for an excerpt of the information provided).

Modified fair value

- 27 Paragraph 15 of IFRS 13 *Fair Value Measurement* indicates that a fair value measurement assumes that the asset or liability is exchanged in an orderly transaction between market participants to sell the asset or transfer the liability at the measurement date under current market conditions
- 28 Fair value could be modified to reduce the reliance on current market conditions at the measurement date. While the purpose of a modified cost would be to mitigate the concerns about the loss of relevance over time, the purpose of a modified fair value would be to mitigate concerns about the inherent volatility and/or point-in-time measurement.
- 29 There are examples of modified fair value in regulation. For instance, the Capital Requirements Regulation demands that entities determine a prudential valuation adjustments (PVA) to fair value. Article 105(14) of the EBA Final Regulatory Technical Standards (RTS) indicates that the aim of the PVA is to 'achieve an appropriate degree of certainty having regard to the dynamic nature of trading book positions, the demands of prudential soundness and ...'.
- 30 The RTS requires banks to calculate PVA to deduct from regulatory capital when calculating Core Equity Tier 1 capital and ratios. PVA is calculated on all fair value positions whether in the trading or the banking book.

- 31 The approach in the RTS is not necessarily relevant for accounting as it is aimed at ensuring that the capital position of banks could withstand significant losses and continue to be prudentially sound. The RTS also is not attempting to limit volatility in the profit or loss.

Adjustments to the input

- 32 A modified fair value could for instance maintain constant the original risk-free rate and update only the risk premium specific to the issuer. In this way, investment performance would not be affected by general market price changes (as noted above, this could be used only in relation to amounts recognised in profit or loss). This would be similar to using the interest rate at inception for amortised cost irrespective of subsequent changes in market rates.

Using averages

- 33 A component of the fluctuations observed in fair value possibly relates to it being a point in time value as well as the frequency of measurement. A way to reduce the perceived volatility could be to use the average of fair value estimates rather than at reporting date. An average could be based on quarterly estimates or even daily estimates for the month or week around the reporting date.
- 34 This may be more viable for highly liquid instruments, because daily fair values would not be available for unquoted instruments. To ensure comparability, the accounting standard could select a specific average period.
- 35 However, the selection of a specific average would be necessarily arbitrary, and some may argue that it should be adjusted to the expected holding period. This discussion would in substance replicate the debate about defining the 'significant' and 'prolonged' threshold in relation to the impairment model.

Long-term expected value

- 36 A recent report from the Long-term Investment Taskforce of the Paris marketplace includes eleven recommendations to promote long-term investment in Europe, one of which suggests changes to financial reporting. The recommendation asks for immediate reintroduction of recycling for equity instruments carried under the FVOCI election and the extension of the same accounting treatment to equity funds.
- 37 In the longer term, the recommendation suggests the introduction of a long-term expected value measurement basis, that incorporates all forecasted cash flows in accordance with the analysis supporting the investment decision. This would be accompanied by the disclosure of the market value. The report does not include a full description of the approach, but the EFRAG Secretariat understands that it would allocate the expected holding gain (being the difference between the expected selling price at disposal and the purchase price) over the expected holding period. We also understand that this approach could be applied on a portfolio level.
- 38 This is in substance an approach where the entity recognises income on its equity investments based on their expected return. A similar approach was used in IAS 19 *Employment Benefits* before the Standard was revised in 2011.
- 39 The approach relies heavily on assumptions about long-term expected return and expected holding period. The latter assumption in particular would be highly discretionary if applied to individual investments. The approach could also result in significant disposal gains or losses.
- 40 Compared to FVPL, the amounts would presumably be less volatile during the expected holding period because the entity would assess a long-term expected return.

- 41 The EFRAG Secretariat notes that there are a number of aspects that would need to be addressed:
- (a) if the approach is applied on a portfolio basis, the characteristics of the portfolio. The portfolio could be closed (no modification to the portfolio would be allowed, except for partial disposals) or open (the entity would be allowed to include new equity instruments in the portfolio); and
 - (b) how the amounts would be trued-up or down. Assume an entity initially assessed an expected holding period of 5 years and an expected return of 5% on an annual basis. If the following year the entity re-assesses the expected annual return at 4%, would it adjust the recognition prospectively? Or would it determine the cumulative return to be recognised at the end of Year 2 with updated assumption, and recognise in profit or loss the difference with the amount recognised for the prior period?
- 42 Another issue would be how to recognise projected losses. The EFRAG Secretariat however notes that if the approach is applied on portfolio level, it would be unlikely that the entity would project a negative return.

A 'linked' approach

- 43 The final approach we explore in this paper is an approach where the amount of the change in value of the equity instruments recognised in profit or loss is determined in a manner that reflects the measurement of the expense included in profit or loss for a liability economically linked to the equity instruments. We will refer to this as a 'linked' approach.
- 44 As noted in paragraph 4 above, the linked approach could also be articulated in two different ways:
- (a) a linked measurement approach, in which the fair value of the equity instruments is directly adjusted on the statement of financial position; or
 - (b) a disaggregation approach, in which the fair value change recognised on the statement of financial position is allocated between profit or loss and OCI.
- 45 The EFRAG Secretariat notes that IFRS Standards already include disaggregation approaches. Under IAS 19, finance cost is measured on the net asset/liability position using the high-quality corporate bond rate. The difference between the finance income and the fair value change of plan assets is recognised in OCI.
- 46 IFRS 17 *Insurance Contracts* allows an entity to disaggregate insurance finance income or expenses, when the entity issues contracts with direct participation features and holds the underlying assets. If the entity elects to do so, it includes in profit or loss an expense or income that exactly matches the income or expense included in profit or loss for the underlying items, resulting in the net impact in profit or loss being nil.
- 47 The EFRAG Secretariat notes that IFRS Standards set specific criteria to qualify for these treatments. Under IAS 19, plan assets need to be available to be used only to pay or fund employee's benefits and not be available to the reporting entity's creditors even in bankruptcy.
- 48 Under IFRS 17, contracts need to meet the following conditions to classify as contracts with direct participation features:
- (a) the contractual terms specify that the policyholder participates in a pool of clearly identified underlying items;
 - (b) the entity expects to pay an amount equal to a substantial share of the fair value returns on the underlying items; and

- (c) the entity expects a substantial proportion of any change in the amounts to be paid to vary with the change in fair value of the underlying items.

What is the argument for a linked approach

- 49 Entities that hold equity instruments other than for trading purposes often claim that their investments are meant to provide the necessary funds to settle some of their liabilities. This could be the case for insurance companies that invest the premiums paid by their policyholders to generate returns to pay for claims and participation features; or energy companies that invest to generate returns to settle asset retirement obligations. It could be argued that a linked approach reflects this interdependency.
- 50 A linked approach, particularly when it relates to a long-term liability, reflects the initial assumption that the investment is going to be held for the long term by apportioning the return over the holding period.
- 51 The linked approach has the following merits:
 - (a) compared to FVPL, it avoids the entity's exposure to short-term price fluctuations;
 - (b) compared to FVOCI without recycling, it allows the entity to recognise the performance of its equity investments, which also allows to assess management stewardship; and
 - (c) compared to FVOCI with recycling, it reduces the incentive for selective profit-taking because recognition in profit or loss is not conditional on selling the instruments.
- 52 However, the link may only be based on the entity's management practices, with no legal or contractual relationship between the asset and the liability.
- 53 The economic characteristics of an equity instrument also differ from those of most liabilities. Proceeds from equity investments such as expected dividends and disposal proceeds are economically dissimilar in nature to the contractual cash payments required by the liability. While the cash receipts expected from the equity instrument are uncertain and discretionary, cash payments under most liabilities are generally certain, even if there is uncertainty about the exact amount, e.g. decommissioning liabilities.
- 54 Another issue with a linked approach is that the liabilities generally referred to as 'linked' are accounted for differently:
 - (a) debt instruments are generally carried at amortised cost;
 - (b) provisions are measured at the best estimate of the amount required to settle the obligation at the end of the reporting period;
 - (c) asset retirement obligations are carried at the estimated cost of removal and restoration; and
 - (d) insurance liabilities are measured at the fulfilment cash flows and the contractual service margin.
- 55 Given the different accounting treatments for liabilities, a linked approach may require to be adapted to each class of liability; this applies in particular to the offsetting expense mechanism explained in paragraph 64 below.
- 56 A linked approach would need first to define in which circumstances an economic linkage may be identified, and then how the measurement of the equity instruments would be amended to reflect the economic link.

Eligibility for the linked approach

- 57 The eligibility could require a voluntary designation mechanism similar to designating a hedging instrument or placement of an equity instrument and liability in a trust or similar structure.
- 58 Some reporting entities may have only one liability, or a limited number of liabilities and the designation of an equity instrument would be simple. Formal designation and documentation are familiar to most reporting entities for hedge accounting treatment. The overall administrative effort should be less than hedge accounting since the linked treatment would not need to deal with effectiveness or ratios.
- 59 However, other reporting entities are likely to have numerous liabilities which may make it impracticable to designate an investment in an equity instrument to a specific liability on a 1:1 level. Often the investments and liabilities for these entities are managed on a portfolio basis. Further, it may be difficult to determine the duration of individual liabilities.
- 60 Grouping similar liabilities with similar expected durations into a pool of liabilities either in a trust or a specific portfolio may facilitate the designation process as well as the estimation of the duration of the liability or pool of liabilities. The issue as to whether the pool or portfolio could be subsequently modified over time would need to be addressed. For example, if an entity had initially created a portfolio of equity instruments and liabilities expected to be settled in 2025 could it add other liabilities (and equity instruments) at a later date where the added liability was also expected to settle in 2025.
- 61 By using a trust and requiring it to be irrevocable would create an implicit contractual linkage between the equity instrument and the liability. The trust could have a provision where the duration of the trust would be the same as the duration of the liability restricting the reporting entity of using any assets of the trust until the liability is settled.
- 62 If a voluntary designation is selected, the approach should address whether the entity would also be allowed to voluntarily terminate the designation and what would be the consequences if the underlying liability is settled or transferred or the designation is revoked.

Measurement in a linked approach

- 63 The main feature of a linked approach is a systematic method of profit and loss recognition for the equity instrument that is linked to a liability. A systematic method for a linked approach can be based on:
- (a) offsetting expense of the linked liability; or
 - (b) gain or losses allocated over the duration of the liability.

Offsetting expense mechanism

- 64 One allocation mechanism in a linked approach would be to recognise a gain on an equity instrument in an amount equal to the expense recognition of the linked liability. Any excess would be either deferred (in a linked measurement approach) or recognised in OCI (in a disaggregation approach).
- 65 The following aspects would need to be further developed:
- (a) the items of income and expense that would be included for the purpose to determine the offset:
 - (i) whether dividend income from the equity instrument should be considered prior to any gain recognition from the equity instrument; and

- (ii) whether the remeasurement of the liability (if required) should be considered together with the normal ongoing expense – interest or unwinding of the discount;
- (b) whether excess gains could be carried forward or carried back – in other words, would the offset mechanism be limited to individual periods or applied on a cumulative basis;
- (c) whether prior gains recognised (to offset expense) should be reversed if the fair value of the equity instrument subsequently declines; and
- (d) whether any residual amount in OCI should be transferred to profit or loss when the equity instruments is disposed of and/or liability is settled.

Matching duration mechanism

- 66 A second allocation mechanism would be to recognise cumulative holding gains and losses rateably over the duration of the linked liability.
- 67 As an example, if an equity instrument linked to a liability had a holding gain of 100 in the first reporting period and the liability was expected to be settled in five reporting periods, the reporting entity would recognise one-fifth of the holding gain or 20 in the first reporting period.
- 68 The recognition of holding gains or losses of equity investments over the duration of the liability would increase the volatility of an entity's profit or loss compared to IFRS 's 9 existing FVOCI election. However, the profit or loss would not introduce the same volatility as if FVPL were applied. Having said that, profit or loss volatility would increase as the liability nears settlement as there are fewer periods to spread current fair value changes of the equity instrument.
- 69 A matching duration mechanism would need to address the treatment of equity instruments if the reporting entity continued to hold the instruments after the liability was settled rather than dispose the equity instruments to use the sale proceeds.

Advantages and disadvantages of alternative approaches

- 70 As discussed in paragraphs 12 to 19 above, the various arguments in favour or against specific measurement bases centre mostly around relevance; reliability; volatility of profit or loss (or equity) and procyclicality; as well as selective profit-taking.
- 71 The advantages and disadvantages of alternative approaches can be assessed against these criteria but the EFRAG Secretariat also accepts that such analysis depends on one's attitude to the relevant measurement basis. For instance, some would consider historical cost less impairment as a measurement basis to be more reliable than fair value whereas others would consider it equivalent to level 3 fair value amounts. Furthermore, some consider volatility as conflicting with a long-term business model or holding period whereas others consider it the economic reality.
- 72 The approaches in this paper were developed as alternatives to the options contained in IFRS 9. FVPL has been criticised as introducing profit or loss volatility for certain business models. FVOCI without recycling is considered by some to understate profit or loss over the long-term as gains or losses on equity investments are not recognised with only dividend income included in profit or loss. As a result, each approach in this paper is expected to reduce profit or loss volatility compared to the FVPL approach, but may have higher profit or loss than FVOCI as under IFRS 9.

- 73 The table below compares these alternatives to the existing FVPL treatment in IFRS 9:

Approach as described in paper		Expected impact on PL volatility ²	Further comments
Modified cost	Simplified equity accounting ³	Significant reduction	Administrative effort and timing of underlying earnings are likely to be out of period
	Cost adjusted for observable transactions ⁴	Significant reduction	Likely limited application to level 3 instruments
Value in use⁵		Reduction	Entity specific measurement and potential day 1 gain
Modified fair value	Locking-in of inputs ⁶	Reduction	Administrative effort
	Use of averages ⁷	Tempering of volatility	Potential to increase volatility in some periods
Long-term expected value⁸		Significant reduction	Entity specific measurement; volatility when expected values change or trued-up
Linked approach	Offsetting expense mechanism ⁹	Significant reduction	Unclear if offset is applied to liability estimate changes
	Matching duration mechanism ¹⁰	Tempering of volatility	Increased volatility towards end of holding period

- 74 The above table does not address the concern raised in past meetings related to the issue of selective profit taking if recycling were to be allowed. This could be relevant where there are disposals when balance sheet measurement is not at fair value (assuming all changes in value are taken to profit or loss) or where the profit or loss does not recognise full changes in fair value over the holding period. This will be further considered once the approaches are further developed.
- 75 There could also be a similar concern with any approach that use entity specific measurements as bias may impact profit and loss even when there is not a disposal.

² Excluding the potential impacts of selective profit taking or disposals

³ Para 22(a)

⁴ Para 22(b)

⁵ Para 24-26

⁶ Para 32

⁷ Para 33-35

⁸ Para 36-42

⁹ Para 64 to 65

¹⁰ Para 66 to 69

Questions for EFRAG TEG

- 76 Which of the alternatives explored in this paper should be included in a consultation document as part of EFRAG due process? Are there alternatives not in this paper that should be considered for purposes of the consultation?
- 77 For those alternatives that you support being included in the consultation document, what aspects should the EFRAG Secretariat further develop in view of the publication?

Appendix 1: Academic research

Introduction

- 1 This appendix provides further information about some of the academic research on the topic of fair value.

General comments about academic research

- 2 For bank equity, fair value estimates of debt securities appear reliable and relevant to investors, but fair value gains and losses on such securities do not. Barth¹¹ surmises (based on supplemental analysis) that this is due to any estimation error in disclosed fair values is small enough for the fair value to remain value relevant, but for gains and losses, combined estimation errors result in value irrelevance.
- 3 Laux and Leuz¹² argue that fair value accounting was not responsible for the crisis but that as a measurement system it has economic effects of its own. They consider fair value accounting a continuation of the debate of trade-off between relevance and reliability.
- 4 When considering debt instruments (an investment in bonds or bonds payable), Koonce et al¹³ found that:
 - (a) investors consider fair value as more relevant for assets than for liabilities;
 - (b) investors consider fair value more relevant for items to be sold soon rather than longer term or to be held to maturity; and
 - (c) unexpectedly, there was no difference in fair value relevance judgments between gains and losses.
- 5 Brousseau et al¹⁴ found that for held for trading investments of an investor in the equity of a nonfinancial company, there was no systematic difference in price volatility between fair value accounting or historical cost accounting even though earnings volatility is systematically higher.
- 6 Palea¹⁵ argues that historical cost in addition to fair value accounting is required to provide a fuller picture of stewardship and would provide more useful information to financial statement users.

¹¹ *Fair value accounting: Evidence from investment securities and the market valuation of banks* (Barth 1994).

¹² *The Crisis of Fair Value Accounting: Making Sense of the Recent Debate* (Laux, Leuz 2009)

¹³ *Judging the Relevance of Fair value for Financial Instruments* (Koonce, Nelson, Shakespeare 2011)

¹⁴ *Does fair value accounting contribute to market price volatility? An experimental approach* (Brousseau, Gendron, Bélanger, Coupland 2014)

¹⁵ *Fair value accounting and its usefulness to financial statement users* (Palea 2014)

Advantages and disadvantages of fair value as measurement basis per academic research

Advantages

- 7 Penman¹⁶ considers fair values a 'plus' when value to the shareholders is one-to-one with market prices, for instance for an investment of 'excess cash' in a marketable bond or where an investor gets the return on a trading portfolio one-for-one from changes in market prices. According to Penman, the one-to-one condition for fair value applies to items such as:
- (a) investments in a trading portfolio along with the related derivatives;
 - (b) pension assets as shareholder value is directly affected by changes in the market value of the assets;
 - (c) investments by an insurance company as in the business model these securities are 'value in reserve' and that depends on fair value;
 - (d) real estate held for speculation (i.e. no plan to develop or use the property); and
 - (e) written options as the entity is a passive counterparty.
- 8 Laux and Leuz noted that fair value increases transparency and encourages prompt corrective actions as it reflects the current market conditions which is timely information. Also, investors are less concerned about the reliability of fair value accounting and require it as they consider fair values with robust disclosures to be more reliable, timely and comparable than the alternatives. (Laux & Leuz 2009).

Disadvantages

- 9 According to Penman, fair values are not appropriate where the business model adds value to market prices i.e. where the value to the customer is an exit price with value added over an input price. He argues that raw material used in manufacturing process does not add value for shareholders from a change in exit market prices, but rather through the production process.
- 10 Laux and Leuz identify concerns that fair value is potentially misleading for assets held for a long period (including to maturity for debt). Furthermore, prices can be distorted by market inefficiencies, investor irrationality or liquidity problems. They also highlight legitimate concerns about using market values in times of financial crisis however, IFRS allows deviation from market prices (such as the requirement to disregard fire sales and use of models when markets become inactive).
- 11 They also highlight that the fair value hierarchy information and a fear of litigation or enforcement actions may mean preparers hesitate to disregard certain values even if allowed by IFRS, e.g. prices in an inactive market or fire sales. They acknowledge that previous models showed that a *pure* form of fair value (i.e. marking to prices under any circumstances) can create contagion effects. However, given the requirements in IFRS, they argue that problems around procyclicality should not and cannot be solved by the choice of fair value or historical cost but rather by regulatory forces.

¹⁶ *Financial reporting quality: is fair value a plus or a minus?* (Penman 2007)

Advantages and disadvantages of historical cost as measurement basis per academic research

Advantages

- 12 Penman notes that historical cost is appropriate to value evaluate stewardship in certain cases such as where the increase in shareholder value is due for instance to a manufacturing process rather than changes in market prices.
- 13 According to Penman, the one-to-one condition (see paragraph 7) for fair value does not apply to items such as:
 - (a) investment in a subsidiary where the firm has influence;
 - (b) assets and liabilities where the value changes due to interest rates but also impacts future earnings and involve customer relationships such as commercial loans, mortgages held by originating banks and core deposits;
 - (c) receivable allowances and warranty liabilities as the value to shareholders is derived by servicing these items, not what the market would charge;
 - (d) insurance assets and liabilities other than investments;
 - (e) real estate used as input to business enterprise such as real estate development and rentals; and
 - (f) environmental clean-up liabilities – similarly to performance obligations, fair value ignores the anticipated cost to the firm to manage the problem.

Disadvantages

- 14 Laux and Leuz consider that historical cost as a measurement basis has similar or more weaknesses than fair value - it does not provide relevant information and therefore is not a method to address potential market inefficiencies. Historical cost may create the incentive for banks to engage in inefficient asset sales in order to be able to realise earnings early.
- 15 Furthermore, the lack of transparency (i.e. where changes in values have not been captured) may create more volatility in times of crisis.

Appendix 2: VIU in practice

Introduction

- 1 This appendix shows some of the disclosures provided by HSBC in the 2017 financial statements, on the use of VIU when considering impairment of its interest in an associate.

Bank of Communications Co., Limited

The Group's significant influence in Bank of Communications Co., Limited ('BoCom') was established via representation on BoCom's board of directors and a technical cooperation and exchange programme. Under this programme, a number of HSBC staff have been seconded to assist in the maintenance of BoCom's financial and operating policies.

Impairment testing

At 31 December 2017, the fair value of HSBC's investment in BoCom had been below the carrying amount for approximately 68 months. As a result, the Group performed an impairment test on the carrying amount of the investment in BoCom, which confirmed there was no impairment at 31 December 2017.

	At 31 Dec 2017			At 31 Dec 2016		
	VIU	Carrying value	Fair value	VIU	Carrying value	Fair value
	\$bn	\$bn	\$bn	\$bn	\$bn	\$bn
Bank of Communications Co., Limited	18.3	18.1	10.5	16.1	15.8	10.2

Basis of recoverable amount

The impairment test was performed by comparing the recoverable amount of BoCom, determined by a value in use ('VIU') calculation, with its carrying amount. The VIU calculation uses discounted cash flow projections based on management's estimates of earnings. Cash flows beyond the short to medium term are extrapolated in perpetuity using a long-term growth rate to derive a terminal value, which comprises the majority of VIU. An imputed capital maintenance charge ('CMC') is calculated to reflect expected regulatory capital requirements, and is deducted from forecast cash flows. The principal inputs to the CMC calculation include estimates of asset growth, the ratio of risk-weighted assets to total assets, and the expected minimum regulatory capital requirements. An increase in the CMC as a result of a change to these principal inputs would reduce VIU. Additionally, management considers other factors (including qualitative factors) to ensure that the inputs to the VIU calculation remain appropriate. Significant management judgement is required in estimating the future cash flows of BoCom.

Key assumptions in value in use calculation

We used a number of assumptions in our VIU calculation:

- Long-term profit growth rate of 3% (2016: 5%) for periods after 2020, which does not exceed forecast GDP growth in mainland China and is within the range forecast by external analysts.
- Long-term asset growth rate of 3% (2016: 4%) for periods after 2020, which is the rate that assets are expected to grow to achieve long-term profit growth of 3%.
- Discount rate of 11.85% (2016: 13.0%), which is based on a capital asset pricing model ('CAPM') calculation for BoCom, using market data. Management also compares rates derived from the CAPM with discount rates from external sources. The discount rate used was within the range of 10.2% to 13.4% (2016: 10.2% to 15.0%) indicated by external sources.
- Loan impairment charge as a percentage of customer advances: a range from 0.66% to 0.82% (2016: 0.72% to 0.87%) in the short to medium term, largely based on forecasts disclosed by external analysts. For periods after 2020, the ratio is 0.70% (2016: 0.70%), slightly higher than the historical average.
- Risk-weighted assets as a percentage of total assets: 62% (2016: 62%) for all forecast periods. This is consistent with the forecasts disclosed by external analysts.
- Cost-income ratio: ranges from 37.1% to 38.0% (2016: 40.0%) in the short to medium term. This is slightly higher than the forecasts disclosed by external analysts.

The long-term profit growth rate, long-term asset growth rate and discount rate assumptions were updated in 2017 to better align with market practice when setting long-term assumptions in VIU calculations. The long-term profit growth rate was set at the lower end of the range forecast by external analysts and there was a corresponding change to the long-term asset growth rate. These changes reduced management's uncertainty in respect of estimated future cash flows and accordingly the discount rate was set based on CAPM with no adjustment for uncertainty in future cash flows.

The following table shows the change to each key assumption in the VIU calculation that on its own would reduce the headroom to nil.

Key assumption	Changes to key assumption to reduce headroom to nil
• Long-term profit growth rate	• Decrease by 11 basis points
• Long-term asset growth rate	• Increase by 10 basis points
• Discount rate	• Increase by 13 basis points
• Loan impairment charge as a percentage of customer advances	• Increase by 2 basis points
• Risk-weighted assets as a percentage of total assets	• Increase by 63 basis points
• Cost-income ratio	• Increase by 46 basis points

The following table illustrates the effect on VIU of reasonably possible changes to key assumptions. This reflects the sensitivity of the VIU to each key assumption on its own, and it is possible that more than one favourable and/or unfavourable change will occur at the same time. The selected rates of reasonably possible changes to key assumptions is largely based on external analysts' forecasts which can change period to period.

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Sensitivity of VIU to reasonably possible changes in key assumptions

	Favourable change			Unfavourable change			
	Increase in VIU		VIU	Decrease in VIU		VIU	
	bps	\$bn	\$bn	bps	\$bn	\$bn	
At 31 Dec 2017							
Long-term profit growth rate	200	6.6	24.9	–	–	18.3	
Long-term asset growth rate	(20)	0.5	18.9	200	(7.1)	11.2	
Discount rate	(35)	0.7	19.1	65	(1.2)	17.1	
Loan impairment charge as a percentage of customer advances	2017-20: 0.71% 2021 onwards: 0.70%		0.1	18.5	2017-20: 0.90% 2021 onwards: 0.77%		(1.3)
Risk-weighted assets as a percentage of total assets	(60)	0.2	18.6	30	(0.1)	18.2	
Cost-income ratio	(173)	1.5	19.8	–	–	18.3	
At 31 Dec 2016							
Long-term profit growth rate	–	–	16.1	(150)	(3.3)	12.8	
Long-term asset growth rate	(80)	1.8	17.8	–	–	16.1	
Discount rate	(100)	2.3	18.4	–	–	16.1	
Loan impairment charge as a percentage of customer advances	–	–	16.1	2016-19: 0.93% 2020 onwards: 0.80%		(1.1)	
Risk-weighted assets as a percentage of total assets	(30)	0.1	16.2	170	(0.6)	15.5	
Cost-income ratio	(170)	0.9	17.0	250	(1.4)	14.7	

Considering the interrelationship of the changes set out in the table above, management estimates that the reasonably possible range of VIU is \$14.7bn to \$21.1bn (2016: \$10.8bn to \$19.0bn).

HSBC then also provides further selected financial information about the associate.