The Evolution of Fair Value Measurement*

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Abstract
While measurement is a fundamental process to the preparation of financial statements, the conceptual frameworks established by both the International Accounting Standards Board (IASB) and the Financial Accounting Standards Board (FASB) offer limited guidance on selecting an appropriate measurement basis for assets and liabilities. This paper examines the historical progression of fair value measurement, a measurement basis that is at the center of some of the most polarizing views. We believe that understanding the evolution of fair value measurement is pivotal for aiding academics and practitioners in shaping the future trajectory of measurement. This is particularly crucial given the technological advances in corporate reporting and the need to enhance the connectivity between financial and non-financial reporting.

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1. Introduction

In the conceptual frameworks of both the International Accounting Standards Board (IASB) and the Financial Accounting Standards Board (FASB) the objective of financial reporting is to provide decision useful information for a range of investors, including current and future equity and debt holders. For example, the IASB states that "The objective of general purpose financial reporting is to provide financial information about the reporting entity that is useful to existing and potential investors, lenders and other creditors in making decisions relating to providing resources to the entity" (IASB, 2018). Fundamental to the preparation of financial statements is a measurement process, where a monetary value is assigned to the elements recognized in the financial statements.

Currently the conceptual frameworks of FASB and IASB provide limited guidance on how to decide a measurement basis for an element. The FASB framework (FASB 2023) merely describes five measurement attributes, historical cost, current cost, current market value, net realizable value and present value of future cash flows, but provides no conceptual guidance about how to choose between them or even why these are the right bases to include in the conceptual framework. The IASB conceptual framework describes two categories of measurement bases: historical cost and current value (IASB 2018). Current value includes fair value, value in use (fulfillment value for liabilities), and current cost. The framework dedicates paragraphs 6.23-6.42 to explaining the information provided by each measurement basis in the statement of financial position and the statement(s) of financial performance and states that the nature of this information should be considered when selecting a measurement basis. The framework states that information should be useful to users of financial statements, but fails to provide guidance on which concepts should be given priority when making initial and subsequent measurement decisions (Linsmeier

2020). Storey and Storey (1998) provide context to the lack of conceptual clarity and rigour in this part of the framework, explaining that the Board understood any decisions were likely to be highly controversial. Recognition and measurement are the most practical aspects of the framework and are likely to draw attention and scrutiny from practicing accountants. Succinctly put "accountants have strongly-held, and ultimately-polarizing, views of which is the most relevant and reliable attribute to be measured" (Storey and Storey, 1998 p. 158).

In addition to *how* to measure something, the accounting standards must also consider *when* to measure something, i.e., an accounting system must consider both measurement and remeasurement. At recognition in the accounting system an item must be initially measured, typically at an entry price or at an exit price that is usually equal to an entry price. Accounting regulations include guidance on how to measure an item subsequent to its initial recognition. While there is significant discussion about how to initially measure an item in the financial statements, e.g., should loans for a bank be measured at fair value at initial measurement, it is remeasurement that causes the greatest debates, e.g., whether loans for a bank should be maintained at fair value. When an asset or a liability initially measured at exit price is remeasured at exit price at the end of a reporting period, the change in value needs to be recorded in the financial statements. There are three choices: as a component of net income, a component of comprehensive income or directly into equity. This remeasurement may result in an increase in income volatility. Many preparers and other stakeholders believe that this volatility should not be included in a firm's performance measure as it is out of the control of management. Remeasurement is really at the heart of the argument.

In this paper, we review the historical evolution and discuss the future direction of one measurement basis that is at the center of some of the most polarizing views: fair value

measurement. Our work complements the study by McDonough, Panaretou, and Shakespeare (2020), which provides an overview of the current institutional background and documents the extent of the use of fair value measurement across various industries and countries. Additionally, we outline the opportunities and challenges posed by advancements in financial technology and the need to enhance the connectivity between financial and non-financial information and highlight new opportunities for future research.

The rest of the paper is organized as follows. Section 2 discusses the development of fair value accounting. Section 3 provides a brief overview of the fair value literature and Section 4 discusses future directions in fair value measurement. Finally, Section 5 concludes and outlines opportunities for future research.

2. Development of fair value accounting

Currently, fair value is defined by both FASB and IASB as "the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date" (IASB 2011, FASB ASC 820-10). This definition focuses on a market participant and does not require an active market. However, the term has only relatively recently been defined in the accounting literature. Some of the earliest references to fair value in modern accounting standards go back to the Accounting Research Bulletins (ARB) issued by the Committee on Accounting Practice of the American Institute of Accountants. ARB No. 3, on the accounting for "Quasi-Reorganization or Corporate Adjustments", adopted in 1934, states that "if the fair value of any asset is not readily determinable a conservative estimate may be used", but no definition of fair value is provided. ARB No. 37, on the "Accounting for Compensation in the Form of Stock Options", adopted in 1948, provides a description of how fair value might be determined in paragraph 11. It is not until the adoption of Statement of Financial Accounting

Standards (SFAS) 115 by FASB in 1990 that we really see fair value as a measurement attribute for both day one and subsequent recognition (Emerson, Karim and Rutledge 2010). However, the concept behind the term has a much longer history and it is interesting to trace its evolution.

Accounting is one of the world's oldest professions. Its roots can be traced back to ancient Mesopotamia (Ezzamel 2002). Accounting practices in ancient times were more concerned with scribing and auditing records than contemplating a measurement attribute. Museums around the world are filled with artefacts that document accounting in the ancient world. Scrolls, papyri and cylinder seals all document the mundane details of ancient life including the details on grain allotments, type of workers all designed to help "leaders organize, manage and archive information" (Brown 2021). However, measurement was confined to a simple tallying of what was present rather than to a system that allowed for conversion into monetary units.

As currencies became more widely available and the merchant class began to build wealth, the accounting records developed into single column ledgers. It is during this period that some of the earliest concepts of remeasurement can be seen. The 14th century ledgers of Francesco Datini, an Italian merchant from Pisa, show evidence of the impairment charges for some furniture among other adjusting entries (Kuter, Sangster and Gurskaya 2020). While double entry accounting was in use in the 14th century, it does not appear in writing until 1494, when Fra. Luca Pacioli writes "*Summa de Arithmetica, Geometria, Proportioni et Proportionalita"* that dealt with ledgers and provided the first description of the accounting cycle to be used by Venetian merchants. The book is a summary of state of the art mathematical knowledge. Fra. Pacioli tutored Leonardi DaVinci in geometry and many of DaVinci's now famous sketches of geometrical shapes are likely influenced by his association with Pacioli (Swetz 2024). Accounting was at the forefront of the development

of mathematics. However, as complex and cutting edge as accounting was perceived at the time, this famous book does not deal with measurement.

Edwards (2019) examines how accounting thinkers during the early modern period (1550–1800) considered how profits and assets should be measured. The study reports that a number of different measurement bases were recommended for use, depending on the type of asset. These include cost, market price (either buying or selling), valuation (potentially based on estimated market selling price or current replacement cost), and arithmetic balance (estimated as original cost plus expenses less receipts). This demonstrates that many of the current measurement issues were also subjects of attention during a period when accounting choices were unconstrained by regulation. It was not until the reign of Louis XIV in France that we see the first accounting regulation with the publication of the Ordinance in 1673 for private firms (Howard 1932). This first regulation forms the framework for the 1807 Commercial Code that requires all businesses to draw up an annual inventory of assets and liabilities and include examples showing market values (Richard 2005). Though market values were showing up in the accounts, there were concerns about the consequences. In the UK, concerns about measurement uncertainty leads, in part, to the Joint Stock Company legislation in the late 1800s (Maltby 1998). Also, the creation of corporate income taxes by the Revenue Acts of the early 1900s incentivize corporations to push for historical cost accounting (Markarian 2014).

Among academics, the measurement debate develops significantly with the work of Littleton, Paton and May. Littleton and Paton both agreed that the purpose of measuring income was to determine an enterprise's earning power (Paton and Littleton 1940). However, they differed greatly on how this measurement should be achieved. Paton earned a PhD in economics and his training likely heavily influenced his thinking. He thought income should be measured as the

change in the economic value of the entity from one period to the next, a Hicksian view of income. Littleton took a vastly different view of income measurement, perceiving the purpose of accounting was record keeping and disclosures, but not valuation. For Littleton, historical cost was the appropriate measurement basis for income (Bedford and Ziegler 1975). Their differences in views over the purpose of income and method of its measurement represents, in some respect, the start of the long and sometimes heated academic debate about measurement in financial statements.

There is less debate at this time in the accounting regulations and standard setting. In the US, the rules are heavily influenced by the experiences of one of the founding Security and Exchange Commission commissioners, Robert Healy. Healy had been the chief counsel at the Federal Trade Commission in the 1920s and witnessed market manipulation by public utility companies. These experiences left him wary of upward revaluations of assets. As a result, he strongly opposed any upward revaluations or general price-level restatements of fixed assets (Zeff 2007). This favouring of historical cost accounting is seen in US GAAP and regulations and influences rules around the world for many decades.

One exception to the favoring of historical cost accounting is found in financial reporting of mutual funds. The first modern mutual fund was launched in the US in 1924, and after the stock market crash in 1929 regulators recognize the need to safeguard mutual fund investors. This led to the requirement that mutual funds register with the SEC and disclose their holdings and performance. The Investment Company Act of 1940 put in place additional regulations and required disclosures. Among its provisions, the Act required each fund to regularly compute and report the net asset value (NAV) of its holdings. According to the Act, securities for which quotations are readily available are valued at current market value, and other securities or assets

are valued at a fair value determined in good faith by the management of the company (Smith, Smith and Williams 2001).

The concepts of value discussed in these early debates of the 20th century did not examine in depth how value might be defined other than a market-based concept. The Merriam-Webster dictionary defines value as "the monetary worth of something" and "a numerical quantity that is assigned or is determined by calculation or measurement" (Merrimam-Webster, n.d.). However, these definitions do not provide much guidance on how to actually measure value. There are several possible refinements to these definitions, but these refinements could produce different values for the same asset or liability.[1] For example, what is the value of a share that is actively traded in a deep and liquid exchange? Should the value be the bid price, the ask price, the high or low traded price for the day? The answer will depend on many factors, including the purpose of the information. Gjesdal (1981) states that one possibility is to define the objectives of financial reporting as the reasons why the information is needed. For instance, if there is a demand for information about managers' actions (stewardship demand), the information provided must be hard, leaving as little room as possible for dispute.

During the mid-20th century, academics developed the notion of value that we have loosely grouped into three basic types: exit price, entry price and value in use. An exit price is the price that an investor would receive for the sale of the asset or would pay to transfer the liability, i.e., it is the price to exit the market. An entry price is the price that an investor would pay to purchase an asset or would receive to assume a liability. In essence, the bid and ask price for a share are

[1] The International Valuation Standards Council, a non-profit organization dedicated to establishing and promoting global valuation standards, identifies numerous bases of value (IVSC 2017) including market value, investment value and liquidation value. The standards describe the bases of value as the "fundamental premises on which the reported values will be based" (IVS 104, paragraph 10.1). The basis of value may dictate "the methods inputs and assumptions" used to determine the amount (IVS 104, paragraph 10.1).

equivalent to an entry and exit price. As the name suggests, value in use is the value placed on an asset currently in use by the entity. It is during this period that the notion of current cost of accounting really takes hold, though the development of the system can be traced at least as far back as Bonbright (1937) and his treatise on the valuation of property. Edwards and Bell (1961), Solomons (1966) and Baxter (1975), among others, argued that a form of current cost accounting provides useful information for evaluating performance.

In the seminal work, Edwards and Bell (1961) provide two important contributions to our understanding of measurement. First, they propose that income should be separated into two components: holding gains/losses and operating gains/losses. Holding gains accrue over time and operating gains result from operations. Both income types can be present in realized gains. The second major innovation is that assets and liabilities should be maintained at current value. This would help ensure that holding gains and operating gains are separated on the income statement, with the authors suggesting the income statement be divided into two parts, one for each income type. Edwards and Bell identify two choices for current value: entry price and exit price. While they see both systems as being feasible, they believe that entry price is more relevant for a going concern business. Entry price reflects the current cost of assets, while exit price reflects an opportunity cost. These concepts of value as current cost accounting are embedded in the accounting standards a decade later to deal with hyperinflationary environments.

Edwards and Bell's theory of measurement based on an entry price is not the only concept to be developed in the 1960s. Many trace the measurement of value to an exit price to the work of Chambers. Chambers (1966) advocates an accounting system that would value the assets at the price that could be sold for at the date of the balance sheet. Chambers argues that if accounting does not measure something, as opposed to simply recording, it is not clear of what value it is and

key to any measurement system was the ability to combine units measured on the same basis (Chambers 1965). Chambers referred to this system of measurement as "Continuously Contemporary Accounting".

Value in use is less frequently debated, but is discussed in Baxter (1971). Baxter (1971) discusses reasons why the change in value and depreciation charge should be distinguished within an accounting system, including when there is an unpredicted value loss and in certain budgetary discussions. A value change is calculated by "comparing the present values of all perpetuities for all the future payments" (Baxter 1971, p. 162).

As academics debated measurement, regulators and standard setters also grappled with the appropriate measurement basis to use for accounting transactions. Historically, accounting across just about all jurisdictions has been based on historical cost, an entry price measurement system with adjustments to this value encompassing depreciation, amortization and impairment charges.[2] The hyperinflationary economies of the 1970s and 80s forced action. In hyperinflationary environments, accounting systems face significant challenges when transactions are measured (and remeasured) at prices that are not current. For instance, if an accounting system records inventory costs and sales at invoice prices without accounting for inflation, for a given quantity of output, nominal sales will rise proportionally with inflation. Actual taxable profits and after-tax accounting profits will increase at a rate surpassing the actual inflation rate. This occurs because inventory costs are logged at earlier, lower prices that do not reflect the current cost of replacement.

Following the dissolution of the Bretton Woods system and the OPEC oil embargo, high inflation prompted several countries, including the USA, UK, and Australia, to adopt some variant

[2] As highlighted earlier, in the US, from its founding in 1934 until 1972, the SEC maintained a strong opposition to upward revaluations or general price-level restatements of fixed assets.

of current cost accounting.[3] In the UK, the Statement of Standard Accounting Practice (SSAP) 16, issued in 1980, employed a "value to business" model (IASC 1980). In this, the current cost was defined as the lower of replacement cost and recoverable amount. Recoverable amount is the higher of the present value of the asset and its net realizable value. In the US, SFAS 33 issued in 1979 mandated supplementary disclosures on the effect of general inflation and income from continuing operations on a current cost basis (FASB 1979). For current cost income, expenses were measured at current cost or lower recoverable amount.[4]

After the inflation declined, both SSAP 16 and SFAS 33 were suspended. While historical cost accounting served again as the basis for financial reporting, there were some exceptions. The door to remeasurement was opened and no longer was allocation, i.e., depreciation, amortization and impairment, the sole method of recording changes in the financial statements. For example, in the UK, companies were permitted to disclose the fair value of real estate, if the book value of these assets was very different from the current value (Companies Act 1985). Additionally, it was made possible to recognize the fair value of real estate assets in the financial statements, if it provided a more accurate representation of the true and fair view. Any increments resulting from revaluation were then recognized in the equity reserve. Asset revaluation was also permitted in Australia (AASB 1999). Market value was also used to modify historical cost accounting in some circumstances. An example is the valuation of inventories at the lower of cost or market value.

Another economic crisis spurred standard setters to reassess measurement practices. The US savings and loans crisis in the late 1980s highlighted the limitations of historical cost

[3] Annual inflation peaked at 24% in the UK during 1975. Annual inflation reached over 15% in Australia in 1974 and the USA hit close to 13.5% in 1980. High or hyperinflationary periods are not limited to the end of the Bretton Woods system and the OPEC embargo, Argentina's inflation rate was 25.5% for the month of December 2023 alone (https://www.indec.gob.ar/indec/web/Nivel4-Tema-3-5-31 accessed 2/8/2024).
[4] For a detailed discussion on inflation accounting, see Whittington (2017).

accounting for financial instruments. Many US banks relied on short-term variable-rate deposits to finance long-term fixed-rate mortgage loans, exposing them to interest rate risk due to duration mismatches. Under US GAAP at the time, both loans and deposits were recorded at amortized historical cost, and their fair value was not required to be disclosed. As interest rates climbed, cash flows from assets became insufficient to cover liabilities, exposing banks to significant interest risk, which was not promptly reflected in the financial statements. Consequently, many banks filed for bankruptcy before the problem was evident to investors. It was argued that accounting obscured the adverse impact of rising interest rates on banks' financial performance over time, allowing troubled institutions to remain undetected (Linsmeier 2011).

In an attempt to deal with these issues, the FASB issued Statement of Financial Accounting Standards (SFAS) 107, *Disclosures about Fair Value of Financial Instruments,* in 1991 (FASB 1991). The standard mandates the disclosure of fair values for financial instruments, both assets and liabilities, for which estimating fair value is feasible. Also, it requires that entities disclose the methods and significant assumptions used in estimating fair values. SFAS 115, *Accounting for Certain Investments in Debt and Equity Securities* (FASB 1993), introduces fair value measurement for marketable securities. Trading securities are reported at fair value with unrealized gains and losses included in earnings, while available for sale securities are reported at fair value with unrealized gains and losses excluded from earnings and reported in equity.

More challenges on the use of historical cost accounting for financial instruments were posed with the development of financial engineering in general, and derivatives in particular. Derivatives are instruments that are highly levered and their value can change very quickly. For example, a forward contract has no value at inception and therefore, will not be recorded in the financial statements prepared under historical cost accounting. But the forward contract can

become very quickly an asset or a liability to the firm. A series of high-profile derivative scandals in the US raised the issue of transparency on derivatives. In April 1994, Gibson Greetings Inc. lost nearly $20 million on derivative contracts and Procter and Gamble announced a one-time loss of $152 million connected to interest rate swaps, both had been sold the contracts by Bankers Trust. However, these losses paled in comparison to the 1994 bankruptcy of Orange County after derivative losses of $1.7 billion, the 1998 bail out of Long-Term Capital Management for $3.6 billion and the 1995 collapse of Barings Bank, one of the oldest merchant banks in the UK. Politicians called for action.

In response to these scandals, the FASB introduced several standards. Disclosure of the fair value of all derivatives becomes mandatory with SFAS 119 (FASB 1994), in order to provide a better picture of the risk exposure of the entity. Fair value measurement of derivatives followed with the introduction of SFAS 133, *Accounting for Derivative Instruments and Hedging activities* (FASB 1998). The standard also provides the basic rules for hedge accounting treatment that determines the accounting for changes in the fair value of these instruments.

The IASC, succeeded by IASB, introduced similar standards to address the recognition and disclosure of information about derivatives and other financial instruments. Those standards were later adopted by the IASB. IAS 32, *Financial Instruments: Presentation* (IASB 2003a), is primarily a disclosure standard, similar to the FASB's SFAS 107 and SFAS 119. The disclosure provisions in IAS 32 were replaced by IFRS 7, *Financial Instruments: Disclosures*, in 2005 (IASB 2005). IAS 39, *Financial Instruments: Recognition and Measurement* (IASB 2003b), establishes the principles for recognizing and measuring financial instruments and contracts to buy or sell non-financial items. The standard also prescribes principles for derecognition of financial instruments and hedge accounting. IAS 39 has been amended several times, and was superseded by IFRS 9,

Financial Instruments (IASB 2014), in 2018. While the standards dealing with financial instruments did provide significantly more information about the firm's exposures, both Boards failed to define what they meant by fair value. The term was loosely used to infer a market price, but there was limited discussion of what it meant in settings where active markets did not exist. This pattern, of not defining fair value, is also found in the accounting standards dealing with the accounting for asset securitization issued around the same time. In our opinion, it is the accounting prescribed in this standard that is at the heart of the crisis that ensued after the collapse of Lehman Brothers in 2008. The ability to manipulate measurement to constantly achieve a gain on sale, resulted in many financial institutions becoming addicted to securitizations (Dechow and Shakespeare 2009; Dechow Myers and Shakespeare 2010).[5]

Recognizing the need to provide a more coherent framework for applying fair value measurement, to improve associated disclosures, and emphasize the responsibility of management in this process, FASB released SFAS 157, *Fair Value Measurement*, in 2006 (FASB 2006). The standard enshrines in GAAP the concept of an exit price. If an active market does not exist, management must use assumptions to determine price that an independent market participant would make. IFRS 13, *Fair Value Measurement* (IASB 2011), provides the same definition of fair value. Standard setters are clearly favouring the ideas of Chambers over others. This choice of standard setters has come under significant scrutiny and criticism (e.g., American Bankers Association, 2009 and Dichev 2017) and it is reasonable to ask why it diverges from theories of Edwards and Bell and Baxter. We believe that this is key to understanding the purpose of standard

[5] During this time period, a securitization transaction could be classified as either collateralized borrowing or a sale of accounts receivables. In the sales treatment, receivables were replaced with cash and a retained interest asset, which represented the firm's interest in future cash flows. A gain or loss was recorded to ensure balanced accounts. The retained interest was required to be measured at fair value. Since these retained interest assets did not traded in active markets, this approach allowed significant flexibility in valuing the retained asset, resulting in a gain being recorded in income for nearly all securitizations.

setting. Standards setters are focused on providing decision useful information to a broad range of investors. While minimizing abuse is not a primary driver, accounting practices that can easily be manipulated are less likely to provide useful information. A fair value measurement system that is focused on prices formed by, or assumptions made by, market participants creates discipline. For example, when the numbers are audited, the firm must be able to explain why the assumptions would be made by a market participant. This is not to say the system is free from the potential for manipulation, but it does create a discipline around pricing. It is harder to achieve this discipline for measurement systems based on entry price or value in use. These measurement systems rely more on internal management assumptions.

Another critical aspect to consider is the nature of the accounting transactions that involve consideration of fair value. Fair value measurement is used predominately in accounting for financial instruments, in business combinations and assessing impairment. Business combinations are by their very nature grounded in a market transaction. The purchase price is required to be allocated across individual assets and liabilities acquired based on their fair values. While some assets or liabilities valuations may create challenges, particularly for some intangible assets, it is difficult to perceive how we would do accounting for these transactions without some consideration about an exit price or fair value. Finally, impairment assessments are focused on recoverability. One measure of recoverability is the price the firm can receive in an open market transaction.

The current measurement system for the financial statements has developed more in response to crises rather than a systematic approach that is theory-based. This has resulted in what is referred to as a mixed attribute reporting model, where we comingle both amortized historical cost and fair value into one net income number, but provide limited disclosure on the earnings

generated under each measurement system. While standard setters have typically considered disclosure as a solution for this mixed model, academics have taken the discussion a step further and considered the properties of net income measurement that consider the financial reporting system as a whole (Grambovas, García Lara, Ohlson and Walker, 2017).

3. Academic research on fair value measurement

Academics have used the changes in accounting standards to examine a plethora of questions related to fair value measurement. There is a large and ever-growing literature on this topic. In this section, we highlight some key observations and do not intend to provide an in-depth literature review. Empirical research finds an association between price and fair value measures (e.g. Barth, Beaver and Landsman 2001; Hodder, Hopkins and Schipper 2014). However, the results generally find that investors often price fair value measures at a discount, particularly for unverifiable estimates sensitive to managerial discretion. Fair value measurement is less relevant for financial liabilities than financial assets, but relevance increases if settlement is over shorter durations (Koonce, Nelson and Shakespeare 2011). There is mixed evidence on the fair value hierarchy required by the standards intended to give investors an insight into valuation uncertainty. Investors discount less reliable measures more (Song, Thomas and Yi 2010; Kolev 2019), but this might be centered around the financial crisis (Goh, Li, Ng and Yong 2015). Additionally, Lawrence, Siriviriyakul and Sloan (2016) find only small differences across the hierarchy, and the study of Altamuro and Zhang (2013) finds that level 3 mortgage servicing rights are more value relevant than level 2 ones.

Fair value measures are correlated with various measures of risk. Full fair value income correlates with measures of bank risk. The volatility of incremental full fair value income captures elements of bank risk that the capital markets price and that the volatilities of net income and

incremental comprehensive income omit (Hodder, Hopkins, Wahlen 2006). Implied equity betas for level 3 financial assets are significantly larger relative to those for level 1 or 2 financial assets, with implied betas increasing monotonically across the level 1, 2, and 3 categories, consistent with increasing opacity. These differences increase for lower quality information environments (Riedl and Serafeim 2011). Leverage ratios based on fair values explain more variation in credit risk than leverage ratios based on other measurement systems (Blankespoor, Linsmeier, Petroni and Shakespeare 2013).

Fair valuing liabilities results in a recognition of a gain when the entity's own credit risk deteriorates. Specifically, as the credit risk of the firm increases, the discount rate required to compensate for the increased risk also increases and the value of the liability decreases. In this way, the firm recognizes a gain. This is considered as counterintuitive and potentially misleading for investors (e.g., Lipe 2002). Barth, Hodder and Stubben (2008) show that the effect of changes in a firm's credit risk on equity returns is attenuated by the presence of debt. They conclude that gains and losses on liabilities arising from own credit risk changes, referred to as debt valuation adjustments (DVAs), should be included in income in order to faithfully represent an entity's liabilities and economic performance. Gaynor, McDaniel and Yohn (2011) find that disclosures about DVAs are not sufficient to avoid misleading interpretations. However, there is growing empirical evidence that investors find the disclosures to be decision useful. Fair value measurement of assets is associated with noticeably lower information asymmetry and this reduction is larger when banks also recognize DVAs (Fontes, Panaretou and Peasnell 2018). Entities adopting the fair value option for liabilities and recognizing DVAs exhibit lower bid-ask spread compared to non-adopters (Schneider and Tran 2015), DVAs are positively associated with stock returns (Chung, Lee, Lobo and Yong 2023, Cedergren, Chen and Chen 2019) and DVAs on

level 3 liabilities are associated with future credit risk changes (Lin, Panaretou, Pawlina and Shakespeare 2023).

While fair value accounting enhances relevance in financial reporting, it can lead to unintended consequences, especially regarding the role of accounting in contracting. For example, Ball, Li and Shivakumar (2015) provide evidence that fair value accounting is a primary factor in the decline of accounting-based debt covenants post-IFRS adoption, concluding that net income influenced by fair value gains and losses is less useful for debt contracting. Additionally, DeFond, Hu, Hung, and Li (2020) find that fair value provisions are associated with a decreased correlation between net income and executive cash pay, concluding that fair value accounting reduces the usefulness of earnings in evaluating management performance. In contrast, Demerjian, Donovan, and Larson (2016) find that accounting-based covenants are not significantly affected by the adoption of the fair value option for assets and liabilities introduced by SFAS 159 (FASB 2007). They conclude that, on average, fair value accounting under SFAS 159 does not harm the debt contracting usefulness of accounting information.

These unintended consequences highlight the importance of considering the decision context. As we highlight above, the standard setters write standards for general purpose financial statements, i.e., for users that lack other information sources. However, information from financial statements are used extensively in contracting. Standardized information saves significant costs in contracting. For example, the partners do not have to negotiate what is an asset but instead can focus their efforts on determining adjustments to the assets that might be necessary for the contract. Starting with Basu (1997), a large literature has examined the properties of conditional conservatism in a variety of settings, showing that this measurement system is important in a variety of stewardship settings. Conditional conservatism can be viewed as an asymmetric form of

fair value accounting, i.e., firms use fair value for bad news but record no gain when there is good news. The inherent tension embedded in the needs of different users creates challenges for a single measurement attribute in the financial statements.

While the fair value numbers disclosed in the financial statements are used extensively in research, it is perhaps surprisingly, there is not a large body of work on the narrative disclosures, i.e., the text required by financial reporting standards (e.g., IFRS 7) that supports these numbers. It is not uncommon for these disclosures to take up many pages of the financial statements. The usefulness of fair value numbers is often conditional on financial statement users understanding the information they are provided through relevant financial disclosures (Gaynor et al. 2011). The firm's information environment plays an important role in determining the usefulness of fair value information to capital market participants. Voluntary disclosures are associated with higher market pricing and lower information risk for level 3 fair value estimates (Chung, Goh, Ng and Yong 2017). Making fair value changes more salient in the income statement allows users to better incorporate disclosed measurement differences into their judgments (Griffin 2014). Further, fair value narrative disclosures increase in length, after the issuance of SEC comment letters to registrants that identify fair value reporting deficiencies (Bens, Cheng and Neamtiu 2016), and this increase is greater when the auditors have expertise in fair value accounting (Ahn, Hoitash and Hoitash 2020).

4. Future directions in fair value measurement

What is next in the evolution of fair value measurement? We can find some clues in the most recent FASB conceptual framework exposure draft on measurement (FASB, 2023). The exposure draft describes two measurement systems, an entry price system and an exit price system. An entry price is defined as "the price paid (the value of what was given up) to acquire an asset or

received to assume a liability in an exchange transaction" and an exit price is defined as "the price received (the value of what was received) to sell an asset or paid to transfer or settle a liability in an exchange transaction". It is expected that entry and exit price systems will achieve the same measurement when assets are sold, or liabilities are transferred or settled. However, the two systems differ on subsequent accounting. The entry price system requires the costs to be accumulated and allocated over a benefit period or accrued over an obligation period, subject to consideration of recoverability and settleability. The exit price system requires remeasurement at each reporting date.

This requirement to remeasure means the exit price system must articulate how to measure the asset and liability, if a market price is not observed. This system has two options to measure the price, the market participant perspective and the entity-specific perspective. The market participant perspective requires that the price should be calculated using assumptions that a market participant would make. The entity-specific perspective requires that the measurement process would consider unique advantages or disadvantages of the entity to determine the value of the cash flows. The critical difference between the two ways of measuring an exit price is based on the unique nature of the cash flows. The exposure draft does not define unique, and it will be interesting to see if the final conceptual statement retains this language. If it does, we will have, for the first time, a concept level acknowledgment of three measurement systems that have long been debated by academics. The entry price system describes historical cost, the exit price system using a market participant perspective describes fair value and the exit price system using an entity-specific perspective describes something very like value in use. It is important to note that even if

these concepts make it into the final FASB framework, it is unclear if and how these concepts will change current practice.[6]

Finally, the future development of accounting measurement, and fair value measurement in particular, cannot be independent of the need for connectivity between financial and non-financial information and advances in financial technology.

As climate-related risks become more pronounced, there is a strong demand from the market to incorporate these risks into financial reporting and standard setters already acknowledge this. For example, the IFRS Foundation has established the International Sustainability Standards Board (ISSB), which is responsible for developing the Sustainability Disclosure Standards. At the same time, the need for connectivity between financial and sustainability reporting regimes is highlighted by preparers, users, and standard setters.[7] While connectivity as a concept is not mentioned in the IASB's Conceptual Framework, entities that report under the standards of the ISSB are required to provide information in a way that enables users to understand how sustainability-related risks and opportunities can affect the entity's prospects (IFRS S1, para. 21) (ISSB 2013). Fair value measurement has the potential to reflect the impacts of climate change, enhancing the transparency and relevance of financial information for stakeholders. While some steps in this direction have already taken place, more academic research and guidance from standard setters is required in this area.[8]

Technologies like big data analytics, artificial intelligence (AI), and blockchain are revolutionizing how financial information is gathered, processed and verified. For example, AI

[6] US standard setters are not required to apply the conceptual framework when promulgating standards.
[7] See for example the keynote address from the Andreas Barckow, IASB Chair, at the EAA Annual Congress: https://www.ifrs.org/news-and-events/news/2024/05/keynote-iasb-chair-andreas-barckow-at-eaa-annual-congress/
[8] See for example the discussion in Kvaal, Löw, Novotny-Farkas, Panaretou, Renders and Sampers (2023) regarding measurement of sustainability linked instruments.

can enhance the precision of accounting valuation models by analyzing vast datasets quickly and identifying patterns that human analysts might miss. AI also enables financial statement users to process financial information more efficiently. However, these advancements also present challenges. For example, analyzing unstructured data can be more complex than analyzing structured data due to the need for more advanced pre-processing and more storage. Projects like the U.S. GAAP and IFRS taxonomies aim to facilitate the use of these technological advances, providing a standardized framework that supports the integration and effective utilization of new technologies in financial reporting.

5. Conclusions and opportunities for future research

Accounting is one of the world's oldest professions, tracing its roots to ancient times. The development of writing, mathematics and commerce are all closely linked to accounting. Key to any accounting system is the concept of measurement. However, it is only relatively recently that measurement has been seriously debated by both academics and regulators. Fair value measurement has its roots in mercantile Europe, but it is not until the 20th century that we really see discussions of exit and entry price. Academics led the discussions throughout these periods with regulatory changes happening in response to crises. However, more recently, it is not clear whether academics are still the thought leaders they once were in this field. Edwards and Bell's seminal work on income measurement is over 60 years old and while a significant amount of work has been published since then, the concepts espoused in this book are still the concepts we debate today. Is it time for academics to challenge the concepts of measurement again? We believe that two world events might make it an opportune time. First, the disruptive impact of technology will transform how we prepare and use financial information. How can we use this to present multiple types of information simultaneously in the recognized financial statements? For example, how

could we present financial statements using multiple measurement attributes? Second, climate change poses significant risks to the planet. How do we incorporate measurement of the impact of these changes in the financial statements of firms and other organizations? We believe that the accounting academic community can support and lead standard setters and regulators in addressing these major challenges.

References

Ahn, J., Hoitash, R. and Hoitash, U., 2020. Auditor task-specific expertise: The case of fair value accounting. *The Accounting Review*, 95(3), 1-32.

Altamuro, J., and Zhang, H., 2013. The financial reporting of fair value based on managerial inputs versus market inputs: Evidence from mortgage servicing rights. *Review of Accounting Studies*, 18(3), 833–858.

American Bankers Association (ABA). (2009). ABA Comment Letter to IASB on the Exposure Draft to Financial Instruments: Classification and Measurement, September 14 (Washington, DC: ABA).

Australian Accounting Standards Board (AASB). 1999. AASB No 1010, Recoverable amount of non-current assets. Melbourne, Australia.

Ball, R., Li, X., and Shivakumar, L., 2015. Contractibility and transparency of financial statement information prepared under IFRS: Evidence from debt contracts around IFRS adoption. *Journal of Accounting Research*, 53(5), 915-963.

Barth, M.E., Beaver, W.H., and Landsman, W.R., 2001. The relevance of the value relevance literature for financial accounting standard setting: Another view. *Journal of Accounting and Economics*, 31, 77–104.

Barth, M. E., Hodder, L.D., and Stubben, S.R., 2008. Fair value accounting for liabilities and own credit risk. *The Accounting Review*, 83(3), 629–664.

Basu, S., 1997. The conservatism principle and the asymmetric timeliness of earnings. *Journal of Accounting and Economics*, 24, 3–37.

Baxter, W.T., 1971. Depreciation. London: Sweet and Maxwell.

Baxter, W.T., 1975. Accounting values and inflation. New York and London: McGraw-Hill.

Bedford, N., and Ziegler, R., 1975. The Contributions of A. C. Littleton to accounting thought and practice. *The Accounting Review*, 50 (3), 434-443.

Bens, D.A., Cheng, M. and Neamtiu, M., 2016. The impact of SEC disclosure monitoring on the uncertainty of fair value estimates. *The Accounting Review*, 91(2), 349-375.

Blankespoor, E., Linsmeier, T. J., Petroni, K., and Shakespeare, C., 2013. Fair value accounting for financial instruments: Does it improve the association between bank leverage and credit risk? *The Accounting Review*, 88(4), 1143–1177.

Bonbright, J.C., 1937. The valuation of property volume I. New York and London: McGraw-Hill Book Company Inc.

Brown, S., (2021, Apr 27). Where Did Writing Come From?. Getty, News & Stories. https://www.getty.edu/news/where-did-writing-come-from/, accessed 2/1/2024.

Cedergren, M. C., Chen, C., and Chen, K., 2019. The implication of unrecognized asset value on the relation between market valuation and debt valuation adjustment. *Review of Accounting Studies*, 24(2), 426–455.

Chambers, R.J., 1965. Measurement in accounting. *Journal of Accounting Research*, 3(1), 32-62.

Chambers, R.J., 1966. A study of a price level study. *Abacus*, 2(2), 97-118.

Chung, S. G., Goh, B.W., Ng, J., and Yong, K.O., 2017. Voluntary fair value disclosures beyond SFAS 157's three-level estimates. *Review of Accounting Studies*, 22(1), 430–468.

Chung, S. G., Lee, C., Lobo, G. J., and Yong, K.O., 2023. Valuation implications of FAS 159 reported gains and losses from fair value accounting for liabilities. *Journal of Accounting, Auditing & Finance*, 38(4), 833-856.

DeFond, M., Hu, J., Hung, M., and Li, S., 2020. The effect of fair value accounting on the performance evaluation role of earnings. *Journal of Accounting and Economics*, 70(2-3), 101341.

Demerjian, P.R., Donovan, J., and Larson, C.R., 2016. Fair value accounting and debt contracting: Evidence from adoption of SFAS 159. *Journal of Accounting Research*, 54(4), 1041–1076.

Dechow, P. M., Myers, L. A., and Shakespeare, C., 2010. Fair value accounting and gains from asset securitizations: A convenient earnings management tool with compensation side-benefits. *Journal of Accounting and Economics*, 49(1-2), 2-25.

Dechow, P. M., and Shakespeare C., 2009. Do managers time securitization transactions to obtain accounting benefits?. *The Accounting Review*, 84(1), 99-132.

Dichev, I. D. (2017). On the conceptual foundations of financial reporting. *Accounting and Business Research*, *47*(6), 617–632

Edwards, J. R., 2019. *A history of corporate financial reporting in Britain*. New York, London: Routledge.

Edwards, E.O., and Bell, P.W., 1961. The Theory and measurement of business income. 7 ed. Berkeley: University of California Press.

Emerson, D. J., Karim, K.E., and Rutledge, R.W., 2010. Fair value accounting: A historical review of the most controversial accounting issue in decades. Journal of Business and Economics Research, 8(4), 77-86.

Ezzamel, M., 2002. Accounting working for the state: Tax assessment and collection during the New Kingdom, ancient Egypt. *Accounting and Business Research*, 32(1), 17–39.

Financial Accounting Standards Board (FASB). 1979. Statement of Financial Accounting Standards No. 33, Financial Reporting and Changing Prices. Norwalk, CT.

Financial Accounting Standards Board (FASB). 1991. Statement of Financial Accounting Standards No. 107, Disclosures about Fair Value of Financial Instruments. Norwalk, CT.

Financial Accounting Standards Board (FASB). 1993. Statement of Financial Accounting Standards No. 115, Accounting for Certain Investments in Debt and Equity Securities. Norwalk, CT.

Financial Accounting Standards Board (FASB). 1994. Statement of Financial Accounting Standards No. 119, Disclosure about Derivative Financial Instruments and Fair Value of Financial Instruments. Norwalk, CT.

Financial Accounting Standards Board (FASB). 1998. Statement of Financial Accounting Standards No. 133, Accounting for Derivative Instruments and Hedging Activities. Norwalk, CT.

Financial Accounting Standards Board (FASB). 2006. Statement of Financial Accounting Standards No. 157, Fair Value Measurement. Norwalk, CT.

Financial Accounting Standards Board (FASB). 2007. Statement of Financial Accounting Standards No. 159, The Fair Value Option for Financial Assets and Financial Liabilities - Including an amendment of FASB Statement No. 115. Norwalk, CT.

Financial Accounting Standards Board (FASB). 2023. Conceptual Framework for Financial Reporting - Chapter 6: Measurement. Norwalk, CT.

Financial Accounting Standards Board (FASB). nd. ASC 820-10 Fair value measurement. https://asc.fasb.org/. Accessed 2/1/2024

Fontes, J. C., Panaretou, A., and Peasnell, K., 2018. The impact of fair value measurement for bank assets on information asymmetry and the moderating effect of own credit risk gains and losses. *The Accounting Review*, 93(6), 127–147.

Gaynor, G. M., McDaniel, L., and Yohn, T.L., 2011. Fair value accounting for liabilities: The role of disclosures in unravelling the counterintuitive income statement effect from credit risk changes. *Accounting, Organizations and Society*, 36(3), 125–134.

Gjesdal, F., 1981. Accounting for Stewardship. *Journal of Accounting Research*, 19(1), 208–231.

Goh, B.W., Li, D., Ng, J., and Yong, K.O., 2015. Market pricing of banks' fair value assets reported under SFAS 157 since the 2008 financial crisis. *Journal of Accounting and Public Policy*, 34(2), 129–145.

Grambovas, C.A., García Lara, J.M., Ohlson, J., and Walker M., 2017. Earnings: Concepts versus Reported, *Journal of Law, Finance, and Accounting*, 2(2), 347-384.

Griffin, J.B., 2014. The effects of uncertainty and disclosure on auditors' fair value materiality decisions. *Journal of Accounting Research*, 52(5), 1165–1193.

Hodder, L.D., Hopkins, P.E., and Wahlen, J.M., 2006. Risk-relevance of fair-value income measures for commercial banks. *The Accounting Review*, 81(2), 337–375.

Hodder, L.D., Hopkins, P.E., and Schipper, K., 2014. Fair value measurement in financial reporting. *Foundations and Trends in Accounting*, 8(3-4), 143–270.

Howard, S.E., 1932. Public rules for private accounting in France, 1673 and 1807. *The Accounting Review*, 7(2), 91-102.

Internal Accounting Standards Committee (IASC). 1980. Statement of Standard Accounting Practice 16, Current Cost Accounting. London, UK.

International Accounting Standards Board (IASB). 2003a. International Accounting Standard 32, Financial Instruments: Presentation. London, UK.

International Accounting Standards Board (IASB). 2003b. International Accounting Standard 39, Financial Instruments: Recognition and Measurement. London, UK.

International Accounting Standards Board (IASB). 2005. International Financial Reporting Standard 7, Financial Instruments: Disclosures. London, UK.

International Accounting Standards Board (IASB). 2011. *International Financial Reporting Standard 13, Fair Value Measurement*. London, UK.

International Accounting Standards Board (IASB). 2014. *International Financial Reporting Standard 9, Financial Instruments*. London, UK.

International Accounting Standards Board (IASB). 2018. *The Conceptual Framework for Financial Reporting*. London, UK.

International Sustainability Standards Board (ISSB). 2023. *IFRS S1 General Requirements for Disclosure of Sustainability-related Financial Information*. London, UK.

International Valuation Standards Council (IVSC). 2017. International Valuation Standard (IVS) 104: Bases of value. Available online: www.ivsc.org (accessed on 19 January 2020).

Kolev, K.S., 2019. Do investors perceive marking-to-model as marking-to-myth? Early evidence from FAS 157 disclosure. *Quarterly Journal of Finance*, 9(2), 1–47.

Koonce, L., Nelson, K.K., and Shakespeare, C., 2011. Judging the relevance of fair value for financial instruments. *The Accounting Review*, 86(6), 2075–2098.

Kuter, M., Sangster, A., and Gurskaya, M., 2020. The formation and use of a profit reserve at the end of the fourteenth century. *Accounting History*, 25(1), 69-88.

Kvaal, E., Löw, E., Novotny-Farkas, Z., Panaretou, A., Renders, A., and Sampers, P., 2023. Classification and Measurement under IFRS 9: A Commentary and Suggestions for Future Research. *Accounting in Europe*, 1–22.

Lawrence, A., Siriviriyakul, S., and Sloan, R.G., 2016. Who's the fairest of them all? Evidence from closed-end funds. *The Accounting Review*, 91(1), 207–227.

Lin, W., Panaretou, A., Pawlina, G., and Shakespeare, C., 2023. What can we learn about credit risk from debt valuation adjustments?. *Review of Accounting Studies*, 28(4), 2556-2588.

Linsmeier, T.J., 2011. Financial reporting and financial crises: The case for measuring financial instruments at fair value in the financial statements. *Accounting Horizons*, 25(2), 409–417.

Linsmeier, T.J., 2020. Discussion of "Moving the Conceptual Framework forward: Accounting for uncertainty.". *Contemporary Accounting Research*, 37(1), 346-53.

Lipe, R.C., 2002. Fair valuing debt turns deteriorating credit quality into positive signals for Boston Chicken. *Accounting Horizons*, 16(2), 169–181.

Maltby, J., 1998. UK joint stock companies legislation 1844-1900: Accounting publicity and "mercantile caution". *Accounting History*, 3 (1), 9-32.

Markarian, G., 2014. The Crisis and Fair Values: Echoes of Early Twentieth Century Debates? *Accounting Historian's Journal,* 41 (1), 35-60.

Merriam-Webster. (n.d.). Value. In Merriam-Webster.com dictionary. Retrieved September 8, 2024, from https://www.merriam-webster.com/dictionary/value

McDonough, R., Panaretou, A., and Shakespeare, C., 2020. Fair value accounting: Current practice and perspectives for future research. Journal of Business Finance & Accounting, 47(3-4), 303-332.

Paton, W. A., and Littleton, A.C., 1940. An Introduction to Corporate Accounting Standards. Vol. Monograph No. 3. Chicago, IL: American Accounting Association.

Riedl, E.J., and Serafeim, G., 2011. Information risk and fair values: An examination of equity betas. *Journal of Accounting Research*, 49(4), 1083-1122.

Richard, J., 2005. The concept of fair value in French and German accounting regulations from 1673 to 1914 and its consequences for the interpretation of the stages of development of capitalist accounting. *Critical Perspectives on Accounting*, 16(6), 825-850.

Smith, J.K., Smith, R. L., and Williams, K., 2001. The SEC's fair value standard for mutual fund investment in restricted shares and other illiquid securities. *Fordham Journal of Corporate and Financial Law,* 6(2), 421-474.

Song, C. J., Thomas, W.B., and Yi, H., 2010. Value relevance of FAS No. 157 fair value hierarchy information and the impact of corporate governance mechanisms. *The Accounting Review*, 85(4), 1375–1410.

Schneider, F., and Tran, D.H., 2015. On the relation between the fair value option and bid-ask spreads: Descriptive evidence on the recognition of credit risk changes under IFRS. *Journal of Business Economics*, 85(9), 1049–1081.

Storey, R.K., and Storey., S.H., 1998. The framework of financial accounting concepts and standards. *Financial Accounting Standards Board*, Norwalk, CT.

Solomons, D., 1966. Economic and accounting concepts of cost and value. edited by M. Backer: Prentice-Hall.

Swetz, F.J., 2024. *Leonardo da Vinci's Geometric Sketches*, The Pennsylvania State University, Leonardo da Vinci's Geometric Sketches (maa.org).

Whittington, G., 2017. *Value and profit: An introduction to measurement in financial reporting*. Cambridge University Press.

Zeff, S.A., 2007. Some obstacles to global financial reporting comparability and convergence at a high level of quality. *The British Accounting Review*, 39(4), 290-302.