

Introduction

The framework developed in this book belongs to the accounting-measurement tradition associated with Mattessich (1964), Chambers (1966), Sterling (1970), and Ijiri (1975). It also draws upon the distinction between accounting quantities and economic valuation developed in financial economics and capital-market research (Fisher, 1930; Hicks, 1946; Ball and Brown, 1968; Ohlson, 1995).

1.1 Accounting Measurement

Let

$$\mathcal{E} \tag{1.1}$$

denote the economic state of an entity. It contains the resources, obligations, expectations, risks, and opportunities that determine the entity's present and future economic consequences.

An accounting system does not reproduce this state directly. It applies a set of institutional rules and produces a financial representation:

$$\mathbf{FS} = \mathcal{A}(\mathcal{E}), \tag{1.2}$$

where

$$\mathcal{A} \tag{1.3}$$

is the **accounting measurement operator**.

The operator determines:

- which economic objects are recognized;
- which measurement bases are applied;
- when changes are recorded;
- how uncertainty is estimated;

- how amounts are classified and disclosed.

Accounting is therefore more than a system of recording transactions. A transaction is an economic event. The amount reported in the financial statements is the output of an institutional measurement process applied to that event.

The distinction may be represented as

$$\text{Economic event} \neq \text{Accounting representation of the event.} \quad (1.4)$$

A transaction price, a carrying amount, and an estimate of economic value may coincide at a particular date. They remain conceptually distinct quantities.

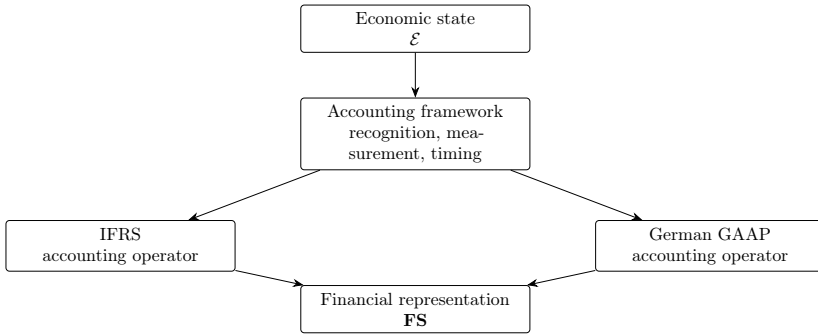


Figure 1.1: Accounting frameworks as alternative transformations of the same economic state.

1.2 Book Value and Economic Value

Let (x) denote an economic object. It may be an asset, a liability, a contractual right, an obligation, an expected cash flow, an economic event, or the entity as a whole.

The accounting value assigned to (x) is denoted by

$$V_B(x). \quad (1.5)$$

This is its **book value**.

The corresponding economic value is denoted by

$$V_E(x). \quad (1.6)$$

Economic value represents the monetary value of the economic consequences associated with the object. In general,

$$V_E(x, t) = f(E_t[CF], r_t, \sigma_t, \mathbf{z}_t), \quad (1.7)$$

where

- $E_t[CF]$ denotes expected future cash flows;
- r_t denotes the relevant discount rate;
- σ_t denotes risk or uncertainty;
- $\mathbf{z}_t$ denotes other economically relevant variables.

Book value is instead conditional upon the applicable accounting framework:

$$V_B(x, t) = \mathcal{A}(x, t). \quad (1.8)$$

There is no general identity requiring

$$V_B(x, t) = V_E(x, t). \quad (1.9)$$

More generally,

$$V_B(x, t) \neq V_E(x, t). \quad (1.10)$$

This divergence does not necessarily imply accounting error. It may arise because accounting and economic valuation represent different attributes, operate at different dates, or pursue different institutional objectives.

Historical cost, for example, represents an original transaction amount. Economic value reflects current expected consequences. Fair value may approximate a current market exit price, while value in use reflects entity-specific cash flows. These quantities answer different measurement questions.

1.3 Accounting Bias

The central concept developed in this book is **Accounting Bias**.

Definition 1.1 (Accounting Bias). For an economic object (x), Accounting Bias is the difference between its book value and its economic value:

$$B(x, t) = V_B(x, t) - V_E(x, t). \quad (1.11)$$

The sign of Accounting Bias has the following interpretation:

$$B(x, t) > 0 \implies \text{book value exceeds economic value}, \quad (1.12)$$

$$B(x, t) < 0 \implies \text{book value is below economic value}, \quad (1.13)$$

and

$$B(x, t) = 0 \implies V_B(x, t) = V_E(x, t). \quad (1.14)$$

The term *bias* is used in a measurement-theoretical sense. It does not denote fraud, manipulation, or incorrect application of accounting standards.

An accounting amount may comply fully with the applicable framework and still exhibit non-zero Accounting Bias. Indeed, some reporting rules deliberately produce asymmetric outcomes. Prudence, impairment, recognition thresholds, and restrictions on uncertain gains may reduce the probability of overstatement while increasing the probability of understatement.

Accounting Bias must therefore be distinguished from reporting error. Let

$$\varepsilon_R \quad (1.15)$$

denote error arising from incorrect application, manipulation, or implementation noise. The reported amount may then be expressed as

$$V_{\text{reported}} = V_E + B + \varepsilon_R. \quad (1.16)$$

Accounting Bias arises from the design of the measurement system. Reporting error arises from its imperfect application.

1.4 The Accounting Operator

The accounting operator is not a single measurement rule. It is a composition of institutional procedures.

Let

$$\mathcal{R} \tag{1.17}$$

denote the recognition operator,

$$\mathcal{M} \tag{1.18}$$

the measurement operator,

$$\mathcal{T} \tag{1.19}$$

the timing operator,

$$\mathcal{P} \tag{1.20}$$

the prudence operator, and

$$\mathcal{D} \tag{1.21}$$

the disclosure and presentation operator.

A simplified representation of the accounting system is

$$\mathcal{A} = \mathcal{D} \circ \mathcal{T} \circ \mathcal{P} \circ \mathcal{M} \circ \mathcal{R}. \tag{1.22}$$

Accordingly,

$$\mathbf{FS} = \mathcal{D} \circ \mathcal{T} \circ \mathcal{P} \circ \mathcal{M} \circ \mathcal{R}(\mathcal{E}). \tag{1.23}$$

The order in equation (1.22) is conceptual. In practice, the interaction among recognition, measurement, impairment, timing, and disclosure differs across accounting items.

Accounting Bias can consequently be written as

$$B = \mathcal{A}(\mathcal{E}) - V_E(\mathcal{E}). \tag{1.24}$$

This expression states the principal thesis of the book:

Accounting is an institutional transformation of economic reality, and Accounting Bias is the divergence produced by that transformation relative to a specified economic benchmark.

1.5 Accounting Frameworks

Accounting Bias is conditional upon the accounting system applied.

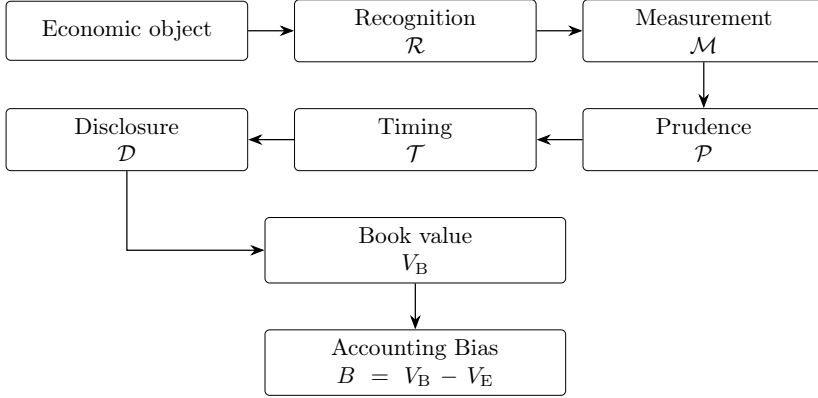


Figure 1.2: The accounting operator and the production of Accounting Bias.

Let

$$\mathcal{A}_{\text{IFRS}} \quad (1.25)$$

denote the operator generated by International Financial Reporting Standards and

$$\mathcal{A}_{\text{HGB}} \quad (1.26)$$

the operator generated by German commercial accounting law.

For the same economic state, it may be the case that

$$\mathcal{A}_{\text{IFRS}}(\mathcal{E}) \neq \mathcal{A}_{\text{HGB}}(\mathcal{E}). \quad (1.27)$$

The corresponding biases are

$$B_{\text{IFRS}} = \mathcal{A}_{\text{IFRS}}(\mathcal{E}) - V_{\text{E}}(\mathcal{E}), \quad (1.28)$$

and

$$B_{\text{HGB}} = \mathcal{A}_{\text{HGB}}(\mathcal{E}) - V_{\text{E}}(\mathcal{E}). \quad (1.29)$$

Generally,

$$B_{\text{IFRS}} \neq B_{\text{HGB}}. \quad (1.30)$$

The difference follows from the distinct objectives and institutional constraints embedded in the two systems.

IFRS financial reporting is principally directed toward the provision

of decision-useful information to investors, lenders, and other creditors (International Accounting Standards Board, 2018). Its measurement requirements make substantial use of current values, discounted cash-flow estimates, and market-based information where these are considered relevant and faithfully representable.

German commercial accounting operates additionally within a legal system in which creditor protection, capital maintenance, distribution restrictions, prudence, and documentary evidence have historically played a central role (Bundesrepublik Deutschland, 2026b,c). These objectives can justify measurements that are more strongly anchored to historical cost and asymmetric loss recognition.

The theoretical distinction can be summarized as follows.

Table 1.1: Simplified institutional orientation of IFRS and German GAAP.

Dimension	IFRS	German GAAP under HGB
Principal orientation	Decision-useful financial information	Creditor protection, capital maintenance, and legal reporting
Measurement tendency	Mixed measurement with significant use of current-value and expectation-based measures	Strong historical-cost orientation and restricted upward measurement
Prudence	Applied within the objective of neutral and faithful representation	More prominent through asymmetric recognition and valuation rules
Expected bias pattern	Greater exposure to estimation and market-model uncertainty	Greater exposure to historical-cost and prudence-related understatement

The table describes general tendencies rather than universal rules. IFRS contains historical-cost and prudential mechanisms, while German GAAP also incorporates estimates and current information in selected areas.

The purpose of comparing the two frameworks is not to determine which system is universally superior. Each system distributes measurement error differently among relevance, verifiability, comparability,

prudence, stability, and cost.

1.6 Measurement Quality

A measurement system cannot be evaluated solely by minimizing Accounting Bias.

Let accounting measurement quality be represented as

$$Q_A = Q(|B|, \sigma_M, C, V, T, R), \quad (1.31)$$

where

- $|B|$ denotes the absolute magnitude of Accounting Bias;
- σ_M denotes measurement uncertainty;
- (C) denotes comparability;
- (V) denotes verifiability;
- (T) denotes timeliness;
- (R) denotes relevance.

A current-value estimate may reduce the distance from a selected economic benchmark while increasing model uncertainty. Historical cost may increase the distance from current economic value while providing a verifiable transaction amount.

Accounting systems therefore solve a constrained measurement problem.

Conceptually,

$$\min_A E[L(B, \sigma_M, C, V, T, K)], \quad (1.32)$$

where (K) denotes the cost of producing and verifying information.

The formulation does not imply that standard setters explicitly solve equation (1.32). It expresses the institutional trade-offs underlying accounting design.

Proposition 1.2. *An accounting system may rationally produce non-zero expected Accounting Bias if the resulting measurement improves verifiability, comparability, legal enforceability, or another relevant institutional property.*

Consequently, lower Accounting Bias does not automatically imply superior accounting.

1.7 A Simple Illustration

Suppose land is acquired at time (0) for

$$P_0 = 100. \quad (1.33)$$

At time (t), its economic value is

$$V_E(t) = 160. \quad (1.34)$$

Under an unadjusted historical-cost measurement,

$$V_{B,HC}(t) = 100. \quad (1.35)$$

Accounting Bias is

$$B_{HC}(t) = 100 - 160 = -60. \quad (1.36)$$

Suppose an alternative accounting system measures the land at a current market amount of

$$V_{B,CV}(t) = 155. \quad (1.37)$$

Its Accounting Bias is

$$B_{CV}(t) = 155 - 160 = -5. \quad (1.38)$$

The current-value measurement is closer to the selected economic benchmark:

$$|B_{CV}| < |B_{HC}|. \quad (1.39)$$

This comparison does not establish that current-value measurement is superior in every respect. The amount (155) may depend upon an illiquid market, a valuation model, or uncertain assumptions. Historical cost may be less relevant to current value but more directly verifiable.

The example illustrates the distinction between:

$$\text{measurement distance} \quad (1.40)$$

and

measurement quality. (1.41)

1.8 Objectives of the Book

The book has four principal objectives.

First, it develops a formal interpretation of accounting as an institutional measurement system.

Second, it identifies the mechanisms through which book value diverges from economic value. These mechanisms include recognition, measurement, timing, prudence, estimation, market conditions, disclosure, and aggregation.

Third, it applies the framework to the principal elements of financial statements. The analysis covers assets, liabilities, income, expenses, equity, and aggregate firm-level measures.

Fourth, it develops methods through which Accounting Bias may be classified, normalized, aggregated, and examined empirically.

The analysis addresses the following questions:

1. Under which conditions does book value diverge from economic value?
2. Which accounting rules determine the sign and magnitude of the divergence?
3. How do alternative accounting frameworks distribute different forms of Accounting Bias?
4. Can item-level biases be aggregated into theoretically meaningful firm-level measures?

The approach is theoretical and analytical. For each accounting object, the analysis follows a common sequence:

1. define the economic object;
2. specify the economic-value benchmark;
3. identify the applicable accounting operator;
4. derive the resulting Accounting Bias;
5. examine its sign and determining variables;
6. construct a normalized or aggregate measure where appropriate.

Economic value is not assumed to be perfectly observable. In many applications, it must be estimated. The uncertainty surrounding the economic benchmark is therefore part of the theory rather than an external limitation.

Let the estimated economic value be

$$\widehat{V}_E = V_E + \varepsilon_E, \quad (1.42)$$

where ε_E denotes economic-valuation error.

The estimated Accounting Bias is then

$$\widehat{B} = V_B - \widehat{V}_E \quad (1.43)$$

$$= B - \varepsilon_E. \quad (1.44)$$

The precision of any empirical bias estimate therefore depends upon the precision of the economic benchmark.

1.9 Scope

The theory does not require financial statements to reproduce market value, intrinsic value, or entity value perfectly.

Accounting serves several institutional purposes, including:

- investment decision-making;
- stewardship;
- creditor protection;
- contractual enforcement;
- taxation;
- dividend and capital-maintenance restrictions;
- regulatory supervision.

These purposes impose requirements that may conflict with direct economic valuation.

The framework developed in this book is therefore comparative rather than prescriptive. It does not identify one universally correct accounting operator. It identifies the consequences of alternative operators.

An accounting rule may reduce one form of bias while increasing another. Historical cost may reduce model uncertainty while increasing

temporal divergence. Fair value may reduce historical-cost bias while introducing market noise. Prudence may limit optimistic overstatement while generating systematic understatement.

Accounting standards do not simply create or eliminate bias. They determine its distribution.

References to IFRS and German GAAP throughout the book serve to illustrate this general framework. They are not intended to provide a comprehensive commentary on individual standards or statutory provisions.

1.10 Structure of the Book

The book is divided into seven parts.

Part I develops the theoretical foundations. It defines accounting as a measurement system, states the axioms of accounting measurement, and examines recognition, measurement, and the economic function of financial reporting.

Part II studies the institutional and informational environment of accounting. It analyzes investors, reporting firms, disclosure incentives, auditing, and accounting standards as elements of an information system.

Part III develops the general theory of Accounting Bias. It examines prudence, historical cost, realization, fair value, estimation, and uncertainty as distinct but interacting sources of measurement divergence.

Part IV applies the theory to assets. It considers cash, receivables, inventories, property, plant and equipment, intangible assets, goodwill, financial instruments, and other asset classes.

Part V applies the theory to liabilities and equity. It considers financial liabilities, trade payables, provisions, pensions, deferred taxes, lease obligations, and residual claims.

Part VI extends the framework to financial performance. It examines revenue, expenses, profit, comprehensive income, and the temporal relation between balance-sheet and income-statement bias.

Part VII develops the aggregate and empirical framework. It introduces a taxonomy of Accounting Bias, firm-level indices, empirical measurement approaches, implications for financial analysis, and consequences for accounting standard-setting.

1.11 Conclusion

Accounting transforms an economic state into a standardized financial representation.

The transformation is governed by recognition, measurement, prudence, timing, estimation, presentation, and disclosure rules. Different accounting systems apply different operators and therefore generate different relationships between book value and economic value.

Accounting Bias is defined as

$$B = V_B - V_E. \quad (1.45)$$

The divergence is neither necessarily accidental nor necessarily undesirable. It may be the predictable consequence of a reporting system designed under constraints of verifiability, comparability, legal certainty, prudence, and information cost.

The following chapter develops the accounting operator more formally. It examines accounting as a measurement system and establishes the distinction between the complete economic state of an entity and the restricted representation contained in its financial statements.