TB Financial Reporting Scheme

A prototype special purpose financial reporting scheme

By Charles Hoffman, CPA (Charles.Hoffman@me.com)

Last Revised – October 25, 2020 (DRAFT)

"I skate to where the puck is going to be, not where it has been." *Wayne Gretzky*, legendary Canadian hockey star

Executive summary:

- XBRL can be used for general purpose financial reporting but also for special purpose financial reporting.
- This is a prototype special purpose XBRL-based digital financial reporting scheme.
- The purpose of this reporting scheme is to demonstrate how to effectively automate the record to report process.

The purpose of this document is to provide a small financial reporting scheme conceptual framework in order to demonstrate how to represent a reporting scheme using the XBRL technical syntax and how to use that financial reporting scheme to automate a record to report process.

This document defines a prototype financial reporting scheme, MINI financial reporting scheme. This reporting scheme is grounded in FASB's SFAC 6. FASB SFAC 6[1] explicitly defines 10 elements of a financial statement. The elements of financial statements are the building blocks from which financial statements are constructed. The elements are the classes of items that comprise a financial statement.

This document builds on SFAC 6 and specifies not only the elements of a financial statement but also the statements themselves, the mathematical interrelations between the elements, fundamental interrelationships between the statements, and the basic disclosures required to be provided per this MINI financial reporting scheme.

Double-Entry Accounting Model

The TB financial reporting scheme follows the double entry accounting model.

The foundational basis of double-entry accounting is straightforward. Quoting David Ellerman from his paper *The Math of Double-Entry Bookkeeping: Part I (scalars)*[2]:

> "Given an equation w + … + x = y + … + z, it is not possible to change just one term in the equation and have it still hold. Two or more terms must be changed."

And so, the left-hand side of the equation "w + … + x" (the DEBIT side) must always equal the right-hand side of the equation "y + … + z" (the CREDIT side) in double-entry accounting. The reason that double-entry accounting is used, as contrast to single-entry accounting, is double-entry accounting's capability to detect errors and to distinguish an error from fraud.

Fundamental feature is that DEBITS must equal CREDITS.

Accounting Equation

DEBITS specify what an economic entity owns and CREDITS specify what an economic entity owes. While the model "DEBITS = CREDITS" this financial reporting scheme specifies that

[1] FASB, *Statement of Financial Reporting Concepts No. 6 (SFAC 6)*, *Elements of Financial Statements*, https://www.fasb.org/jsp/FASB/Document_C/DocumentPage?cid=1218220132802

[2] David Ellerman, *The Math of Double-Entry Bookkeeping: Part I (scalars)*, http://www.ellerman.org/the-math-ofdouble-entry-bookkeeping-part-i-scalars/

"Assets" are defined as what an economic entity owns, "Equity" specifies what is owed to owners of the economic entity and "Liabilities" specify what is owed to creditors of an economic entity and that:

"Assets = Liabilities + Equity"

Elements of Financial Statement (Terms)

The TB financial reporting scheme defines the following elements of a financial statement which are the building blocks with which financial statements are constructed—the classes of items that financial statements comprise. The items in financial statements represent in words and numbers certain entity resources, claims to those resources, and the effects of transactions and other events and circumstances that result in changes in those resources and claims.

- **Assets** are probable future economic benefits obtained or controlled by a particular entity as a result of past transactions or events.
- **Liabilities** are probable future sacrifices of economic benefits arising from present obligations of a particular entity to transfer assets or provide services to other entities in the future as a result of past transactions or events.
- **Equity** or net assets is the residual interest in the assets of an entity that remains after deducting its liabilities.
- **Investments by owners** are increases in equity of a particular business enterprise resulting from transfers to it from other entities of something valuable to obtain or increase ownership interests (or equity) in it.
- **Distributions to owners** are decreases in equity of a particular business enterprise resulting from transferring assets, rendering services, or incurring liabilities by the enterprise to owners. **Comprehensive income** is the change in equity of a business enterprise during a period from transactions and other events and circumstances from nonowner sources. It includes all changes in equity during a period except those resulting from investments by owners and distributions to owners.
- **Revenues** are inflows or other enhancements of assets of an entity or settlements of its liabilities (or a combination of both) from delivering or producing goods, rendering services, or other activities that constitute the entity's ongoing major or central operations.
- **Expenses** are outflows or other using up of assets or incurrences of liabilities (or a combination of both) from delivering or producing goods, rendering services, or carrying out other activities that constitute the entity's ongoing major or central operations.
- **Gains** are increases in equity (net assets) from peripheral or incidental transactions of an entity and from all other transactions and other events and circumstances affecting the entity except those that result from revenues or investments by owners.

- **Losses** are decreases in equity (net assets) from peripheral or incidental transactions of an entity and from all other transactions and other events and circumstances affecting the entity except those that result from expenses or distributions to owners.

The 10 elements of a financial statement summarized above are enhanced and supplemented per the following additional notions:

- **Current** is the notion contrast to "noncurrent" which indicates that an *asset* or *liability* will benefit or sacrifice benefit within one year or within an economic entity's normal operating cycle, whichever is longer.
- **Noncurrent** is defined to be assets and liabilities that are not "current".
- **Net cash flow** is the sum of all changes in *cash and cash equivalents* between the beginning balance sheet date and the ending balance sheet date. Net cash flows are always grouped into three distinct categories which are: operating activities, investing activities, and financing activities.
- **Operating** indicates revenues, expenses, gains, and losses related to ongoing major or central operations of an economic entity.
- **Nonoperating** indicates revenues, expenses, gains, and losses related to peripheral or incidental transactions of an economic entity. By definition, "nonoperating" is everything that is not "operating".
- **Controlling interest** indicates the interests that are in legal control of an economic entity.
- **Noncontrolling interest** indicates the interests that are not in legal control of an economic entity.

As stated, the elements of a financial statement are interrelated mathematically. The following are the mathematical interrelationships between the elements of a financial statement:

- Assets = Liabilities + Equity
- Comprehensive Income = Revenues - Expenses + Gains – Losses
- 0 = (Equity^{T0} + Revenue^{P1} - Expenses^{P1} + Gains^{P1} - Losses^{P1} + Investments by Owners^{P1} – Distributions to Owners^{P1}) + Liabilities^{T1} - Assets^{T1}
- Cash and Cash Equivalents ^{T1} = Cash and Cash Equivalents ^{T0} + Net Cash Flow ^{P1}
- Net Cash Flow = Net Cash Flow from Operating Activities + Net Cash Flow from Investing Activities + Net Cash Flow from Financing Activities

Financial Statement (Structures)

The following is a summary of the four core financial statements that always must appear within a set of financial statements created using the MINI financial reporting scheme:

- **Statement of financial position** or balance sheet is a snapshot of the financial position of an economic entity as of a point in time. A statement of financial position reports assets, liabilities, and equity.

- **Statement of financial performance** or income statement is a moving picture of the financial performance of an economic entity between two balance sheet dates. A statement of financial performance reports *comprehensive income*, *revenues*, *expenses*, *gains*, and *losses*.
- **Statement of cash flows** is a moving picture of the *net cash flows* of an economic entity between two balance sheet dates. A statement of cash flows reports net cash flows categorized into operating activities, investing activities, and financing activities.
- **Statement of changes in equity** is a moving picture of the equity of an economic entity between two balance sheet dates. A statement of changes in equity reports *comprehensive income*, *investments by owners*, and *distributions to owners*.

Mathematical Associations (Rules)

The financial statements are fundamentally interrelated and connected mathematically which is the notion of articulation. The following example financial statements "shell" show the fundamental interrelations and connections that exist between the four core financial statements:

Statement of Financial Position (Balance sheet):

Balance Sheet [Abstract]	Period [Axis]	
	2020-12-31	2019-12-31
Balance Sheet [Abstract]		
Assets [Roll Up]		
Current Assets	3,500	0
Noncurrent Assets	0	0
Assets	3,500	0
Liabilities and Equity [Roll Up]		
Liabilities [Roll Up]		
Current Liabilities	0	0
Noncurrent Liabilities	0	0
Liabilities	0	0
Equity [Roll Up]		
Equity Attributable to Controlling Interest	3,500	0
Equity Attributable to Noncontrolling Interest	0	0
Equity	3,500	0
Liabilities and Equity	3,500	0

Statement of Financial Performance (Comprehensive income):

Comprehensive Income Statement [Abstract]	Period [Axis] 2020-01-01 - 2020-12-31
Comprehensive Income Statement [Abstract]	
Comprehensive Income [Roll Up]	
Revenues	7,000
(Expenses)	(3,000)
Gains	1,000
(Losses)	(2,000)
Comprehensive Income	3,000

Statement of Cash Flow:

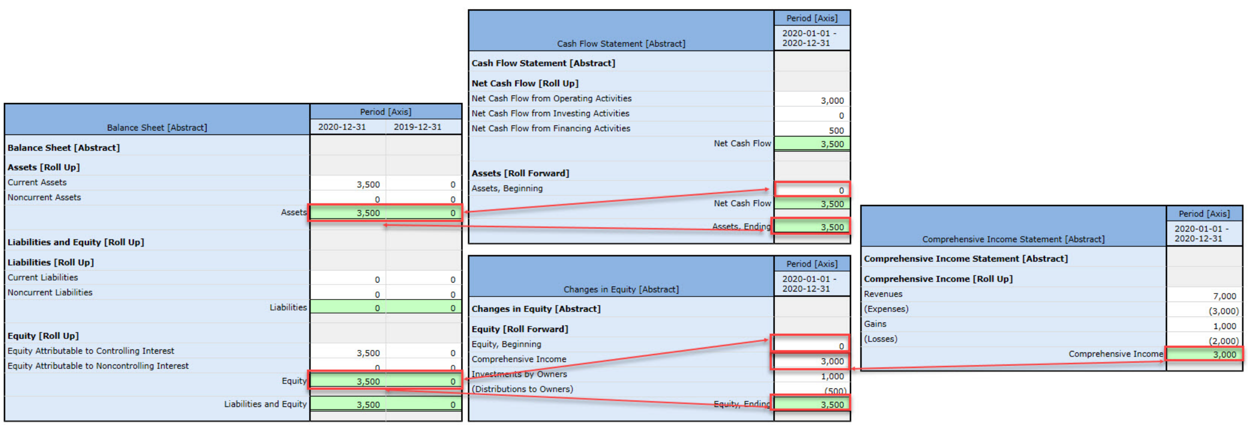
Cash Flow Statement [Abstract]	Period [Axis] 2020-01-01 - 2020-12-31
Cash Flow Statement [Abstract]	
Net Cash Flow [Roll Up]	
Net Cash Flow from Operating Activities	3,000
Net Cash Flow from Investing Activities	0
Net Cash Flow from Financing Activities	500
Net Cash Flow	3,500
Assets [Roll Forward]	
Assets, Beginning	0
Net Cash Flow	3,500
Assets, Ending	3,500

Note that on a cash flow statement normally the roll forward is for Cash and Cash Equivalents. As we are not yet down to that level of detail, we are using Assets to provide the roll forward.

Statement of Changes in Equity:

Changes in Equity [Abstract]	Period [Axis] 2020-01-01 - 2020-12-31
Changes in Equity [Abstract]	
Equity [Roll Forward]	
Equity, Beginning	0
Comprehensive Income	3,000
Investments by Owners	1,000
(Distributions to Owners)	(500)
Equity, Ending	3,500

The four statements above show the details of the statement line items; the graphic below shows the interrelationships between the four primary financial statements:



The details and the relationships can be tested by running the supporting XBRL taxonomy and XBRL instance that define the elements, the associations between the elements, and the assertions which show mathematical relations between the elements processed by an XBRL formula processor:

id	satisfied	message
ASSERTION_elements_Equality_AccountingEquation (evaluation 1)	satisfied	$Assets=0 = $Liabilities=0 + $Equity=0
ASSERTION_elements_Equality_AccountingEquation (evaluation 2)	satisfied	$Assets=3500 = $Liabilities=0 + $Equity=3500
ASSERTION_elements_Equality_AccountingEquation_NetAssetsApproach (evaluation 1)	satisfied	$NetAssets=0 = $Assets=0 - $Liabilities=0
ASSERTION_elements_Equality_AccountingEquation_NetAssetsApproach (evaluation 2)	satisfied	$NetAssets=3500 = $Assets=3500 - $Liabilities=0
ASSERTION_elements_ROLLUP_ComprehensiveIncome (evaluation 1)	satisfied	$ComprehensiveIncome=3000 = ($Revenues=7000 + $Gains=1000 - $Expenses=3000 - $Losses=2000)
ASSERTION_elements_ROLLFORWARD_Equity (evaluation 1)	satisfied	$Equity_BalanceStart=0 + $ComprehensiveIncome=3000 + $InvestmentsByOwners=1000 - $DistributionsToOwners=500 = $Equity_BalanceEnd=3500
ASSERTION_elements_ROLLFORWARD_Assets (evaluation 1)	satisfied	$Assets_BalanceStart=0 + $NetCashFlow=3500 = $Assets_BalanceEnd=3500
ASSERTION_elements_CONCEPTUAL_FRAMEWORK_RECONCILATION (evaluation 1)	satisfied	0= (($Equity_BalanceStart=0 + (($Revenues=7000 - $Expenses=3000) + ($Gains=1000 - $Losses=2000)) + ($InvestmentsByOwners=1000 - $DistributionsToOwners=500)) + ($Liabilities_BalanceEnd=0 - $Assets_BalanceEnd=3500))

This verifies that the XBRL-based report and the logical relations articulated via that report are as would be expected. Further, other structures that are not part of the four common statements also proven to be correct and do not conflict with or contradict the four core financial statements.