CLAY TOKENS

The Uniform Accounting Monthly Report | June 30, 2022

Deficiencies in GAAP/IFRS vis-a-vis Uniform Accounting

Depreciation accounting standards have not stood the test of time

It is a great compliment to say something ages like fine wine.

It means that something has gotten better over the years. Over time, fine wine develops a more nuanced and complex flavor that is often thought of as higher quality. Similarly, a person who has "aged like fine wine" has gotten better over the years, often by becoming more dashing in appearance or more well-rounded in personality.

The reason this saying is considered so complimentary is that so few things actually do get better with age. This is particularly true when talking about the monetary value of said thing.

Aside from certain collectibles and luxury goods, virtually all goods and items degrade in value (and physically) over time. Computers from the early 2000s are seen as historical relics when compared to modern laptops and have little to no resale value. Mass produced cars see their values drop by half as soon as they pull out of the lot. Factories that launched industrial revolutions can be in such a state of disrepair that they actually decrease the value of the property on which they stand.

This reduction in the value of an asset through time is known most commonly as depreciation.

While depreciation has multiple definitions, and is used commonly when talking about the relative value of currencies, it has a more specific meaning from a financial reporting standpoint.

Depreciation, or rather depreciation expense, typically arises from a company's use of fixed assets, particularly those classified as Property, Plant, and Equipment (PP&E).

We've criticized accounting standards setters before in their efforts to make accountants focus on estimating the value of certain non-cash line items. And while on the surface depreciation is a non-cash expense, as it does not represent an actual outlay of cash in any single year, accounting standard setters were right in including it as an expense in the income statement.

Presented to the UAFRS Advisory Council

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Deficiencies in GAAP/IFRS vis-a-vis Uniform Accounting

Maintenance capex refers to the capital expenditures, or cash outlays, that are necessary for a company to continue operating in its current form. This maintenance capex extends to common business needs such as routine machine repairs, replacing old equipment, and putting in new flooring. It is the amount necessary to maintain the same level of assets in the business over the course of several years.

Unfortunately, the real cash outlay when companies spend maintenance capital expenditures to replace old assets does not show up anywhere on the income statement and can be difficult to discern from the statement of cash flows.

While FASB and other standard boards had good intentions when deciding to include depreciation in the income statement, they failed in terms of its execution. GAAP and IFRS-derived depreciation is a horrible estimator of the true maintenance capex of a business.

This is due to a number of issues at once.

As stated by Analyse Financiere, a leading publication used for professional finance education internationally, “depreciation is [a] major source of [earnings] distortions. First, because there are so many [depreciation] methods…”

From straight line depreciation, which splits depreciation evenly over time, to methods such as double declining balance and sum of years digits, which accelerate or decelerate the recognition of depreciation over time, to the units of production method, which depreciates based on amount of use rather than time, CFOs and companies are inundated with choices on how to account for depreciation.

As such, it becomes close to impossible to have comparability across companies when each has different methods of estimating the depreciation value intended to resemble the real cost of tangible assets to the company. And companies may use different methods across different parts of their asset base, further complicating matters.

But what makes this even worse, is that even though “different depreciation methods are used for different fixed assets… neither the financial statements nor the explanatory notes ever give a breakout of the depreciation calculation.”

With no explanation of the calculation, depreciation instantly becomes one of the most, if not the most, challenging accounting numbers to interpret.

Deficiencies in GAAP/IFRS vis-a-vis Uniform Accounting

To reiterate, depreciation can be calculated in ways that result in vastly different values, but companies don't have to dive into the details as to how they are calculated. How can depreciation be trusted as an accurate projection if there is no uniformity or explanation?

And the opaque nature of depreciation calculations doesn't end there as the "useful lives of equipment are estimated by each firm with only scant guidelines from accounting rules."

Companies are free to play around with the "useful life" of an asset. Those reading financial statements are left without a way to really verify the accuracy of the determination.

Lastly, as consumers in the United States are experiencing daily, inflation is also a major concern when considering if depreciation is accomplishing its purpose as a maintenance capex proxy.

Fixed assets are presently recorded at their original cost, causing a "major understatement after a few years if inflation is present, [which] carries over naturally to depreciation."

We covered this issue in detail in our June 2021 issue of Clay Tokens, highlighting the issues with original cost and the impact of inflation on PP&E-based accounting dislocations.

Depending on when the depreciating assets were purchased, and an estimate of the newness of those assets, depreciation can be way off.

For example, if factory machinery is really new, then depreciation is an awfully high estimate of maintenance capital expenditures over the next few years. The company won't be salvaging and repurchasing those assets for a while.

On the other hand, if the machines are really old, then depreciation is too low a calculation, as the lumpy replacement cost will be coming very soon and will be far higher than depreciation expense would estimate.

As we mentioned last year, to currency-adjust these assets, we take into account a number of factors, including depreciation schedules, net-to-gross PP&E ratios, and depreciable life, to get a rough estimate of the age of a firm's depreciable assets. From there, we can adjust to current-day cost equivalents based on changes in relative dollar value. This results in a better baseline off which to build economically real depreciation calculations.

As explained by the examples above, in any single year, depreciation expense can be a terrible estimate of maintenance capital expenditures.

Deficiencies in GAAP/IFRS vis-a-vis Uniform Accounting

To properly adjust for the year-to-year problems of "depreciation," depreciation expense should be added back to the earnings calculation. Then, an estimate of a business' required annual maintenance capex should be removed to reflect a truer real cost. Computing a slightly restated depreciation expense provides a more accurate estimate of "smoothed" maintenance capital expenditures.

We coin this "Economic Depreciation." It is an estimate of the actual cash flow required to replace depreciating parts, based on the lives of the asset base. In other words, it represents the cost of maintaining those assets.

Economic Depreciation is calculated as depreciating assets divided by asset life.

Depreciating assets consist of adjusted PP&E, capitalized operating leases, and capitalized R&D investments. This numerator requires some adjustments, including the inflation one mentioned above, as well as others to make sure, for instance, that management has not restated the value of assets still in use through "asset impairment" write-offs.

To estimate the charges from these assets that are needed to sustain the current business, we calculate their estimated useful lives, by comparing the average ratio of depreciation expense historically to the adjusted depreciating asset base. This builds off our findings that depreciation expense, while a horrible predictor of maintenance expense in a single-year period, is not a bad estimate when smoothed over several years.

Using a multi-year median of these ratios is critical to help get rid of timing issues such as partial year depreciation when PP&E comes onto the books. As we discussed in our September issue of Clay Tokens, focused on M&A accounting, the addition of "full year" assets and only partial year expenses leads to a horrible mismatch when it comes to performance evaluation.

When assets are added to the balance sheet without their corresponding inflows, depreciation will be consistently understated.

All the aforementioned adjustments are necessary to help rectify the multitude of issues causing as-reported depreciation to be misstated and removed from economic reality.

The cumulative impact of economic depreciation adjustments is uncertain. Sometimes, these adjustments have the effect of improving Uniform Earnings, when depreciation is overstated, and sometimes they can reduce Uniform Earnings, when depreciation is understated.

Deficiencies in GAAP/IFRS vis-a-vis Uniform Accounting

Yet ultimately, these adjustments are critical in better understanding the true maintenance capex costs a company will need to face going forward. Without them, the effectiveness of the evaluation of companies, particularly asset-intensive ones, is significantly reduced.

There is a long line of firms, from various sectors, where as-reported earnings do not represent economic reality due to the inaccurate estimation of real maintenance capex costs through "depreciation."

This month, we highlight three companies wherein the improper handling of depreciation and tangible asset bases limits the reliability of the firm's reported earnings-based ratios:

- Black Stone Minerals, a US oil and gas mineral rights company;
- O-I Glass, or Owens-Illinois, a leading glass bottle manufacturer; and
- Seagate Technology, an American data storage company

In the pages and charts below, we show the Uniform economic depreciation and as-reported depreciation expense for these firms and the difference between as-reported GAAP Earnings and UAFRS-based Earnings.

While all of the 130+ adjustments have been applied, we hone in on how these line items in particular can create material deviations from economic reality.

In each case shown below, it's quite obvious the stock market does not and has not valued firms on GAAP earnings.

These examples highlight just how bad the as-reported numbers are, from a database of more than 32,000 companies wherein Uniform Accounting and GAAP/IFRS accounting differences are shown.

The report name "Clay Tokens" comes from the earliest known form of accounting and bookkeeping and a foundation for tracking the earliest debits and credits. In this regard, Uniform Accounting is an attempt to get financial statements back to the foundations of the purpose of accounting… to be useful to the users of the accounting information. Clay Tokens is produced monthly by Valens Research on behalf of and for the UAFRS Advisory Council for Uniform Adjusted Financial Reporting Standards.

Deficiencies in GAAP/IFRS vis-a-vis Uniform Accounting

BSM – Black Stone Minerals, L.P.

Since 2019, BSM has seen declining profitability, falling from near corporate averages to below cost-of-capital levels (Exhibit 1a).

Reflecting this UAFRS-based earnings trend, the firm has seen a material depreciation in stock price, generally moving in the same direction as its Uniform-calculated earnings.

Meanwhile, GAAP earnings have remained largely flat over this same time period. This steady performance fails to explain the firm's poor stock price results, displaying how current accounting standards enable a dislocation between economic reality and as-reported performance.

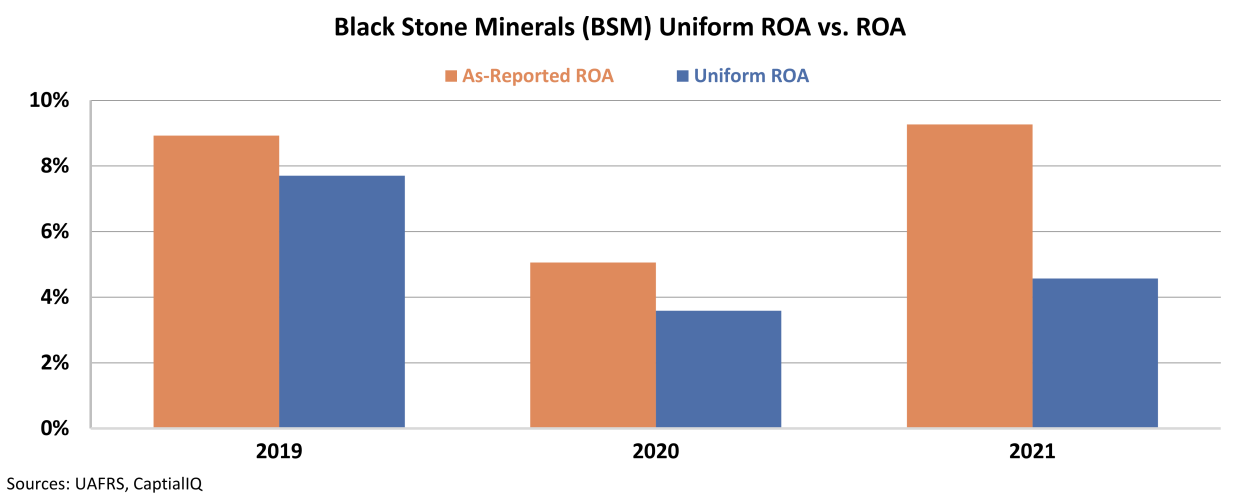
Since 2019, BSM share prices decreased materially in value, falling from $18/share to $10/share by the end of 2021, a 40%+ decline (Exhibit 1b). That said, according to as-reported metrics, BSM appeared to be a firm that remained stable, with minimal movement in profitability over the same time period. This steady performance implies the firm's negative stock price movements were wholly unwarranted.

However, using Uniform Accounting, we can identify distortions such as faulty accounting of depreciation expense, which fails to consistently and accurately estimate real maintenance capex costs for the firm. This can over- or understate the true cash flow required to replace depreciating assets, which can lead to artificially deflated or inflated earnings, respectively (Exhibit 1c).

UAFRS-adjusted metrics paint a significantly different picture of BSM, where Uniform ROA declined from 8% in 2019 to 5% in 2021, suggesting that the decline in the firm's stock price has likely been justified.

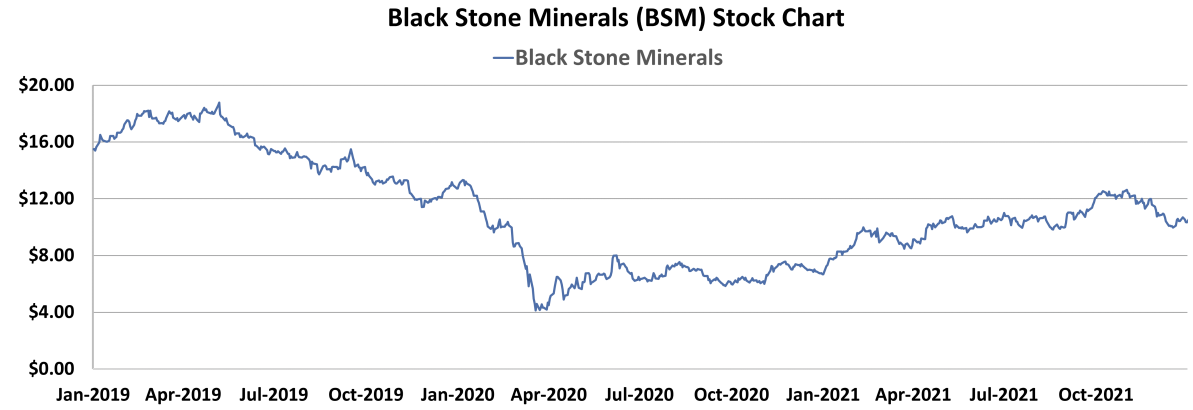
Deficiencies in GAAP/IFRS vis-a-vis Uniform Accounting

Exhibit 1a



Sources: UAFRS, CaptialIQ

Exhibit 1b



Source: CapitalIQ

Exhibit 1c

BSM - Black Stone Minerals	2019	2020	2021
Economic Depreciation	155.7	155.5	140.8
Depreciation Expense	109.6	133.0	61.0
Uniform Earnings	211.2	95.4	118.6
Net Income	214.4	121.8	192.0
% Variance	-1%	-22%	-38%
Uniform ROA	7.7%	3.6%	4.6%
As-Reported ROA	8.9%	5.1%	9.3%
Uniform ROA vs As-Reported ROA - Variance	-1.2%	-1.5%	-4.7%

Deficiencies in GAAP/IFRS vis-a-vis Uniform Accounting

OI – O-I Glass, Inc.

OI has seen a sharp drop in its profitability in recent years, falling from average profitability levels in 2019 to below the cost of capital (Exhibit 2a).

Reflecting this UAFRS-based earnings trend, the firm saw its stock performance vastly underperform the broader market, and it generally moved in the same direction as its Uniform-calculated earnings.

Yet, GAAP earnings show a firm with profitability that remained flat, and even marginally improved, over the same time period. This stagnant performance is misaligned with the firm's paltry stock performance, displaying how current accounting standards enable a dislocation between economic reality and as-reported performance.

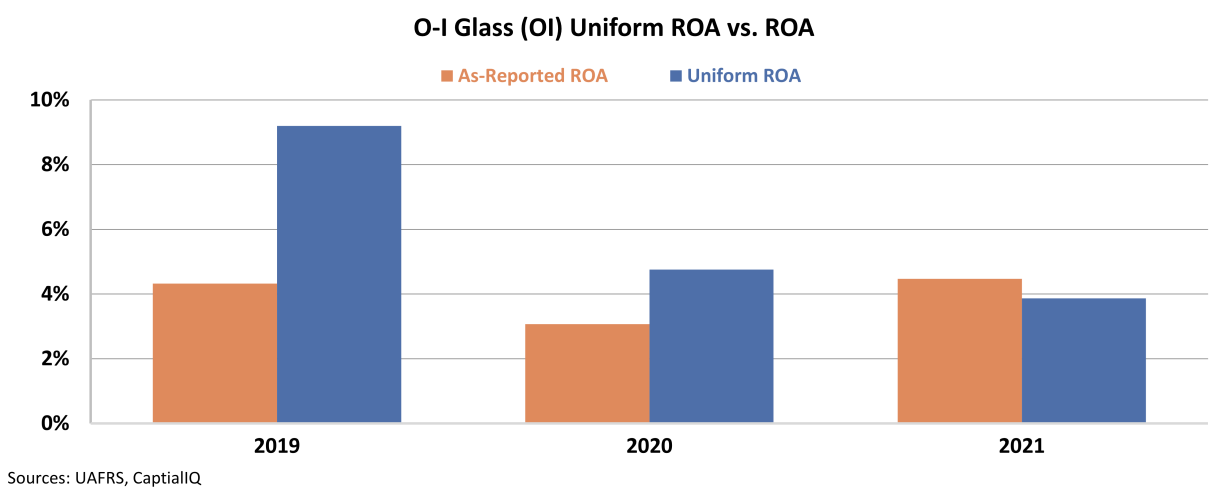
OI shares fell from $20/share at the beginning of 2019 to $11/share at the end of 2021, a 45% decline (Exhibit 2b). That said, according to as-reported metrics, OI appears to be a firm which saw a slight improvement in profitability, as ROA rose from 4% in 2019 to 5% in 2021. This does not appear to be a firm deserving of significantly declining performance, rather a stock that should arguably be seeing slight improvement.

However, using Uniform Accounting, we can identify distortions such as faulty accounting of depreciation expense, which fails to consistently and accurately estimate real maintenance capex costs for the firm. This can over- or understate the true cash flow required to replace depreciating assets, which can lead to artificially deflated or inflated earnings, respectively (Exhibit 2c).

UAFRS-adjusted metrics paint a significantly different picture of OI, where Uniform ROA declined in the same three-year period, collapsing from 9% in 2019 to below cost-of-capital levels of 4% in 2021. This earning trend justifies the firm's stock price performance.

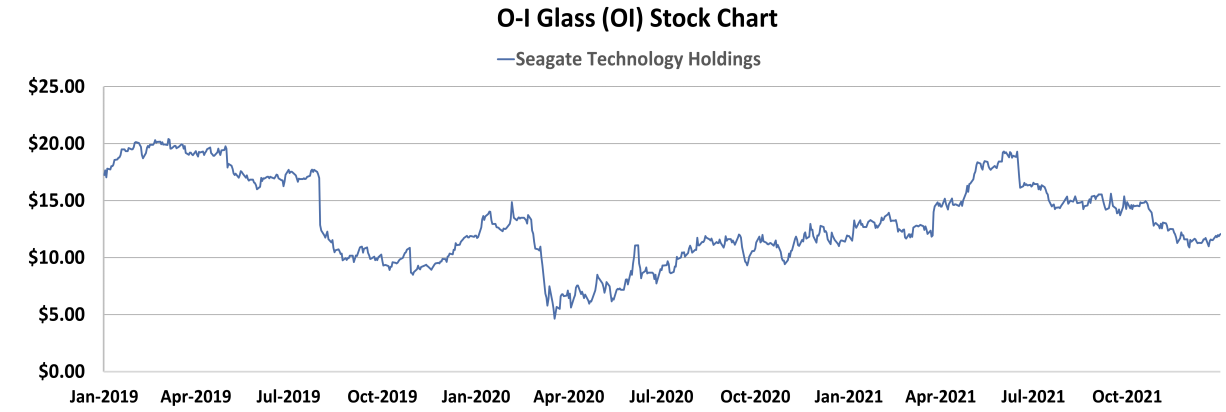
Deficiencies in GAAP/IFRS vis-a-vis Uniform Accounting

Exhibit 2a



Sources: UAFRS, CaptialIQ

Exhibit 2b



Source: CapitalIQ

Exhibit 2c

OI - O-I Glass	2019	2020	2021
Economic Depreciation	652.1	582.6	560.6
Depreciation Expense	390.0	369.0	356.0
Uniform Earnings	610.9	318.6	250.2
Net Income	-400.0	249.0	149.0
% Variance	-253%	28%	68%
Uniform ROA	9.2%	4.8%	3.9%
As-Reported ROA	4.3%	3.1%	4.5%
Uniform ROA vs As-Reported ROA - Variance	4.9%	1.7%	-0.6%

Deficiencies in GAAP/IFRS vis-a-vis Uniform Accounting

STX – Seagate Technology Holdings

Since 2019, STX has seen massively improved profitability, driven by heightened demand for data storage (Exhibit 3a).

To accompany this trend in Uniform-calculated earnings, the firm's stock price has dramatically risen from 2019 to 2021.

Meanwhile, GAAP earnings have remained fairly stagnant over this same time period, portraying a company that has failed to see any benefit from increased demand. Faulty accounting treatment distorts the economic reality of the firm's performance.

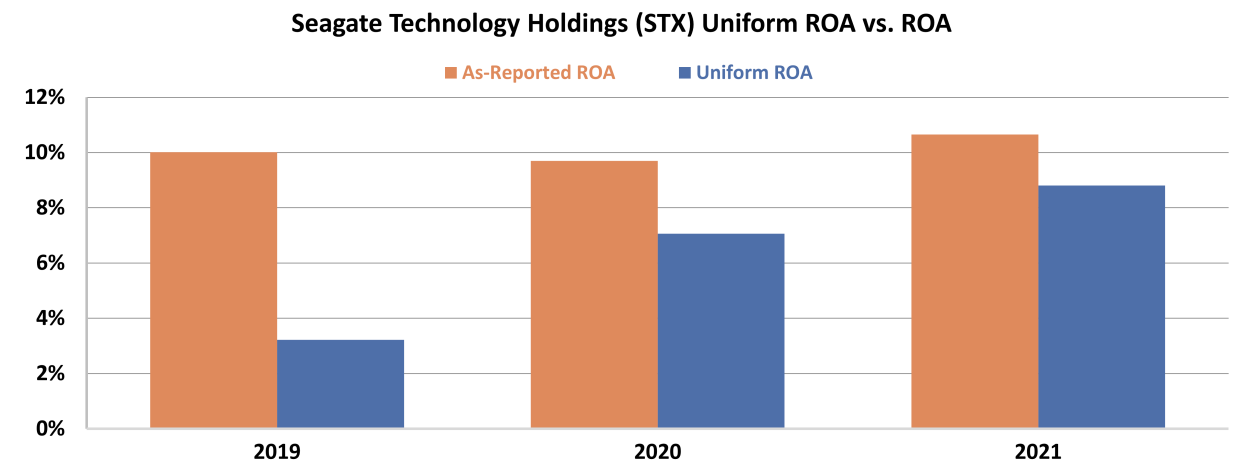
Since 2019, STX shares have seen material appreciation, rising from $38/share at the beginning of 2019 to $113/share at the end of 2021 (Exhibit 3b), an almost 200% increase. That said, according to as-reported metrics, STX appeared to be a firm with stagnant profitability and minimal improvement in the same time period, as ROA only rose from 10% to 11%. This does not appear to be a firm with sufficiently strengthening fundamentals that would justify the company's stock performance.

However, using Uniform Accounting, we can identify distortions such as faulty accounting of depreciation expense, which fails to consistently and accurately estimate real maintenance capex costs for the firm. This can over- or understate the true cash flow required to replace depreciating assets, which can lead to artificially deflated or inflated earnings, respectively (Exhibit 3c).

UAFRS-adjusted metrics paint a significantly different picture of STX, where Uniform ROA rose from 3% in 2019 to 9% in 2021. These improving profitability metrics better explain the rationale behind the firm's stock price appreciation over this time period.

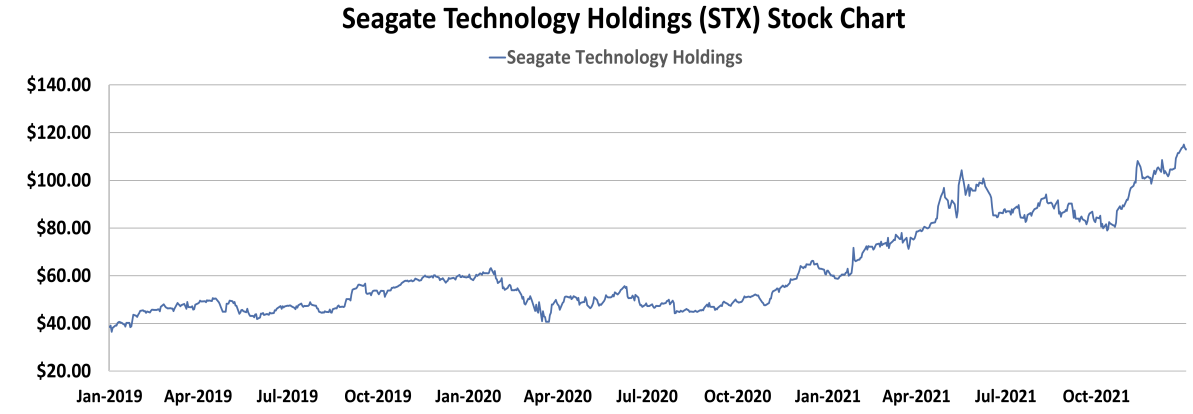
Deficiencies in GAAP/IFRS vis-a-vis Uniform Accounting

Exhibit 3a



Sources: UAFRS, CaptialIQ

Exhibit 3b



Source: CapitalIQ

Exhibit 3c

STX - Seagate Technology Holdings	2019	2020	2021
Economic Depreciation	1872.6	1811.0	1625.5
Depreciation Expense	464.0	326.0	368.0
Uniform Earnings	947.0	1225.2	1297.7
Net Income	2012.0	1004.0	1314.0
% Variance	-53%	22%	-1%
Uniform ROA	3.2%	7.1%	8.8%
As-Reported ROA	10.0%	9.7%	10.7%
Uniform ROA vs As-Reported ROA - Variance	-6.8%	-2.6%	-1.9%

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Definitions

Uniform Net Assets **–** Net Asset' is calculated as Net Working Capital + Long Term Non-Depreciating Operating Assets (including Land and Non-Depreciating Operating Intangible Assets, excluding Goodwill and other acquisition-related Intangible Assets) + Inflation-Adjusted Net PP&E + Net Capitalized R&D + Net Capitalized Leases + Net Depreciating Operating Intangible Assets

Uniform ROA – UAFRS-adjusted ROA is a cleaned up Return on Asset ratio, used to understand the operating fundamentals of the company. UAFRS-adjusted ROA is Earnings' divided by Asset'.

Uniform Earnings is calculated as Net Income + Special Items + Interest Expense + Depreciation and Amortization Expense + R&D Expense + Rental Expense + Minority Interest Expense + Pension Charges + LIFO to FIFO adjustments + Stock Option Expense + Purchase Accounting Cash Flow Adjustments - Non-Operating (Investment) Income - Asset Life Based Charge on Depreciating Assets. Asset' is Net Asset', or Net Working Capital + Long-Term Non-Depreciating Operating Assets (including Land and Non-Depreciating Operating Intangible Assets, excluding Goodwill and other acquisition related Intangible Assets) + Inflation Net PP&E + Net Capitalized R&D + Net Capitalized Leases + Net Depreciating Operating Intangible Assets.

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