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Fixed Assets Accounting: How It Can Impact Employees, Auditors & Shareholders

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by

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Introduction

In this thesis, I demonstrate how the proper, or improper, accounting of fixed assets can distinctly impact employees, auditors, and shareholders of publicly traded companies. As a foundation for this thesis, I give an overview of fixed assets accounting by explaining its magnitude on the balance sheet and income statement in addition to the differences between financial and tax accounting for fixed assets. Next, I focus on three areas relating to fixed assets accounting that I find the most compelling for this thesis: capital expenditures, auditing and fraud. Each of these subtopics will share studies, procedures, and stories on how fixed assets accounting impacts key stakeholders.

Balance Sheet Representation & Analysis of PP&E

Fixed assets accounting and its impact on the balance sheet can typically be found under the "Property, plant and equipment, net" (PP&E) line item for companies who use Generally Accepted Accounting Principles (GAAP). The PP&E line item represents the total cost of property, plant & equipment minus any accumulated depreciation, resulting in "net" PP&E. As a formal accounting term, accumulated depreciation can be defined as the "total amount of depreciation expense allocated to a specific asset since the asset was put into use" (Corporate Finance Institute, 2022). Of the three elements that make up a balance sheet (assets, liabilities & equity), it is important to identify that PP&E are categorized as "assets" on a company's balance sheet. According to the Financial Accounting Standards Board (FASB) and its Conceptual Framework, "assets are probable future economic benefits obtained or controlled by a particular entity as a result of past transactions or events" (FASB, 2020).

With the balance sheet line item defined, it is important to analyze how much PP&E on the balance sheet is considered "normal". However, the truth to this analysis greatly depends on the type of industry a company is a part of. When it comes to fixed assets, different industries require different levels. For example, a financial services company, such as Berkshire Hathaway, has lower levels of PP&E than an energy company, like Exxon Mobil, which needs a much greater amount of PP&E for the exploration and transportation of oil and gas. According to Berkshire Hathaway's 10-K for Fiscal Year 2021 (FY21), the firm has over $743 billion in total assets with only $20.8 billion in net PP&E. While $20.8 billion is still a large number, it only makes up 2.8% of Berkshire Hathaway's total assets (Berkshire Hathaway Form 10-K). On the other hand, Exxon Mobil has over $216.5 billion in net PP&E equating to an enormous 63.89% of their $338.9 billion of total assets at the end of FY21 (Exxon Mobil Corporation Form 10-K). It is interesting to see the vast difference in amounts of PP&E between two companies that are both part of the S&P 500 index. To further examine how PP&E levels can vary between companies and sectors, "Table 1" shows PP&E levels and total assets for the top ten weighted companies in the S&P 500 index, as of February 20th, 2023. The referenced example between Berkshire Hathaway and Exxon Mobil represents the two companies in the list that have the lowest and highest levels of net PP&E as a percentage of their total assets, respectively.

Table 1

Top 10 Largest S&P 500 Companies by Weight & Their Net PP&E					
Weight	Company	GICS Sector	Net PP&E (Millions)	Total Assets (Millions)	% of Total Assets
6.679151	Apple Inc.	Information Technology	$ 39,440	$ 351,002	**11.24%**
4.632485	Microsoft Corporation	Information Technology	$ 59,715	$ 333,779	**17.89%**
2.525914	Amazon.com Inc.	Consumer Discretionary	$ 160,281	$ 420,549	**38.11%**
1.650049	Alphabet Inc. Class A	Communication Services	$ 97,599	$ 359,268	**27.17%**
1.637087	Tesla Inc.	Consumer Discretionary	$ 18,884	$ 62,131	**30.39%**
1.626076	Berkshire Hathaway Inc. Class B	Financials	$ 20,834	$ 743,323	**2.80%**
1.561062	NVIDIA Corporation	Information Technology	$ 2,149	$ 28,791	**7.46%**
1.466418	Alphabet Inc. Class C	Communication Services	$ 97,599	$ 359,268	**27.17%**
1.365341	UnitedHealth Group Incorporated	Health Care	$ 8,969	$ 212,206	**4.23%**
1.341822	Exxon Mobil Corporation	Energy	$ 216,552	$ 338,923	**63.89%**
Data and weights taken on Feb. 20th, 2023 and is based off FY21 figures					

When it comes to net PP&E on the balance sheet, another question that arises pertains to the preferences of shareholders of publicly traded companies. Do shareholders prefer higher or lower levels of net PP&E? In 2016, Harvard Business Review conducted analysis that compared average revenue multiples for industries in the 2015 S&P 1500 with their average net PP&E as a percentage of total assets. The analysis made the following conclusion: "industries with the very highest multiples were those with the lowest percentage of physical assets" (Harvard Business Review, 2016). While this would lead to the interpretation that shareholders prefer lower levels of net PP&E, it is not fair to make a general assumption in either direction. As an example, the largest weighted company in the S&P 500, Apple Inc., had 15.956 billion shares outstanding for the quarter ending December 31, 2022 (Macro Tends, 2023). Due to the vast number of shareholders that Apple has, it would be difficult to reach a general assumption on whether shareholders ultimately prefer a higher or lower level of net PP&E on Apple's balance sheet.

Income Statement Impact & Analysis of Depreciation Expense

The income statement impact made by fixed assets accounting generally comes in the form of depreciation expense. Depreciation expense "is used to better match the expense of a long-term asset to periods it offers benefits or to the revenue it generates" (CFI, 2022). When a fixed asset is purchased, the cost of the asset is capitalized rather than expensed, creating PP&E on the balance sheet. Over time, a majority of fixed assets incur a yearly, or monthly, depreciation expense which increases accumulated depreciation and lowers net PP&E. Sometimes, it can be difficult to identify where depreciation expense appears on an income statement. For fixed assets that relate to the production of goods, depreciation expense can be grouped under the income statement item "Cost of Goods Sold" (COGS). For fixed assets that do not relate to production, their appropriate depreciation expenses are typically grouped with "total operating expenses" which are subtracted from total revenue and lower the "bottom line" net income on the income statement. Similar to levels of net PP&E on the balance sheet, companies can have varying levels of depreciation expense as a percentage of their operating expenses.

Financial vs. Tax Calculation of Depreciation

While the main focus of this thesis is on financial accounting of fixed assets and its reporting for publicly traded corporations, it is important to understand tax accounting fundamentals how they contrast. The main way the two are different from each other is through

their unique calculations of depreciation expense. As a foundation for this section, it is helpful to explain the key differences between financial and tax accounting and why firms use two types of accounting systems.

For financial accounting, Generally Accepted Accounting Principles (GAAP) are typically used when firm is constructing their financial statements. GAAP is especially crucial for public companies who are required to use GAAP when reporting their financial statements to the United States Securities and Exchange Commission (SEC) for required public viewing. As for tax accounting, firms follow the Internal Revenue Code set by the United States Congress to fill out their tax returns which are not required to be viewed by the public, even for publicly traded companies.

When it comes to financial accounting for fixed assets and following GAAP, the most common way to calculate depreciation expense is through the straight-line method. According to PricewaterhouseCoopers Viewpoint tool, the method is typically used "when the pattern of consumption of an asset's economic benefit is expected to be delivered steadily over the estimated useful life". Under the straight-line method, "the cost of the asset, less the estimated salvage value, is charged to the income statement ratably over the asset's estimated useful life" (PwC, 2022). Although not as common, the other three acceptable depreciation methods under GAAP are the declining-balance, sum-of-the-years'-digits, and units-of-production methods (PwC, 2022).

As far as tax accounting for fixed assets, the main way to calculate depreciation expense is through the Modified Accelerated Cost Recovery System (MACRS) which is "used to recover the basis of most business and investment property placed in service after 1986" (IRS). MACRS is used by the United States Internal Revenue Service as a way to spread tax return deductions from the purchase and use of fixed assets over time. Various types of fixed assets are grouped into "property classes" which dictate how long the asset will be depreciated for. For example, assets such as "tractor units for over-the-road use" and "any race horse over 2 years old when placed in service" would fall into the "3-year property" class and be depreciated accordingly (IRS). As can be inferred, MACRS covers a vast array of fixed assets which can include live animals.

Differences between financial and tax accounting for fixed assets can greatly influence the tax planning and strategy of large corporations. As a present-day example, one of the products of the Inflation Reduction Act passed by congress in August 2022 was a new "U.S. corporate alternative minimum tax (CAMT)" of 15% that went into effect in 2023 (Forbes, 2023). The minimum tax will impact "any corporation with average annual adjusted financial statement income in excess of $1 billion for three consecutive tax years" (Forbes, 2023). Even if corporations have taxable income below the $1 billion threshold, they will still be subject to the minimum tax (Forbes, 2023). The calculation of depreciation expense will play an important factor as to whether a corporation is subject to the tax. According to the IRS, "tax depreciation deductions - as opposed to financial statement depreciation expense - are considered when calculating adjusted financial statement income for CAMT liability" (Forbes, 2023).

The differences between financial and tax accounting for fixed assets can be found to impact all three stakeholders that are being focused on in this thesis. In terms of shareholders, tax accounting rules and the use of the MACRS depreciation dictates how much firms owe in taxes in addition to whether they will be subject to the new corporate alternative minimum tax of 15%. Taxation influences profitability, which can be a driver of stock returns and impact shareholders. For employees, especially those working in a fixed assets accounting division, the ability to

distinguish between financial and tax accounting procedures can help a firm plan for how much they will owe to the United States government. Lastly, auditors are impacted by needing to know the difference between the two when formulating an opinion on a firm's financial statements and determining if depreciation expense is calculated and represented fairly.

Capital Expenditures on the Financial Statements

As a definition, capital expenditures can be thought of as the "payment with either cash or credit to purchase long-term physical or fixed assets used in a business's operations" (CFI, 2023). They are a key part of fixed assets accounting because without capital expenditures, or "capex" for short, there would be no net PP&E on the balance sheet. On a set of audited financial statements, capital expenditures can be found as the line item "capital expenditures and investments" in the "investing" section of the statement of cash flows. Much like net PP&E and depreciation expense, the amount of capital expenditures can vary amongst companies and from year to year.

Capital Expenditures and Stock Returns

When analyzing the amount of capital expenditures that a firm makes according to its financial statements, it is interesting think about how shareholders may feel about an increase, or decrease, in this number. Does an increase in "capex" translate to a change in stock price? There are a few academic studies that have conducted research relating to this question.

In research done in 2004 by Sheridan Titman, K.C. John Wei, and Feixue Xei, the authors take a look at the relationship between capital investments (capital expenditures) of firms and their corresponding stock returns. The authors acknowledge reasons why an increase in expenditures should be viewed favorably such as "investment expenditures are likely to be associated with greater investment opportunities" and "capital markets, which provide financing for the investment, have greater confidence in the firm and its management" (Titman et al., 2004). However, the ultimate conclusion of the research is "firms that increase their level of capital investment the most tend to achieve lower stock returns for five subsequent years" (Titman et al., 2004). It is stated that "investors tend to underreact to the empire building implications of increased investment expenditures" (Titman et al., 2004). The term "empire building" describes the "process that an individual or entity undertakes to broaden the scope of its influence and power" (CFI, 2022). According to Titman et al., those who are empire builders "invest for their own benefits rather than the benefits of the firm's shareholders" (Titman et al., 2004).

Another academic research paper, Fairfield et al (2003), found a similar conclusion to Titman et al. (2004). When taking a look at the growth of long-term net operating assets, the authors found that investors "overvalue accruals and growth in long-term net operating assets relative to their association with one-year-ahead ROA" (Fairfield el al., 2003). In simpler terms, capital expenditures to increase net PP&E are overvalued in the stock market according to Fairfield et al. (2003).

Auditing PP&E

Auditing PP&E is essential in an effort to reasonably assure the amount of PP&E displayed on a firm's balance sheet is presented fairly and in accordance with GAAP. In this section, audit risk of PP&E is examined as well as an academic study which looks at the relationship between company PP&E levels and the audit fees charged by their external auditors.

Internal vs. External Auditing

For this section, a brief explanation of the difference between internal and external auditors is essential. External auditors are independent of the companies they audit, whereas

internal auditors are employees of the company they audit. Typically, external auditors are concerned with forming an audit opinion on the fairness of a company's financial statements, while internal auditors can focus on areas such as compliance or the operating effectiveness of the company they work for. In order to issue an audit report for a publicly traded company, external auditors are required to register with the Public Company Accounting Oversight Board (PCAOB). Although they are considered employees of the company they audit, it is important to note that internal auditors typically report to their company's Board of Directors rather than the Head Controller or the CFO.

Audit Risk of PP&E

The term "audit risk" can be defined as "the risk that the auditor expresses an inappropriate audit opinion when the financial statements are materially misstated" according to the PCAOB (PCAOB). The audit risk of PP&E is considered to be lower relative to other items on the financial statements (Bobber, 2015). Calculations that go into a final net PP&E figure, such as depreciation expense and residual value, are some of the simplest and most straightforward to calculate among items on the financial statements. Despite its simplicity in nature, the proper auditing of PP&E is important in order for an external auditor to form an appropriate audit opinion and prevent PP&E fraud. Both internal and external auditors can evaluate a company's internal controls as a way of ensuring PP&E is reported correctly. A couple examples of PP&E controls include reconciling general ledger control accounts to an equipment subledger and evaluating receipts from the purchase of fixed assets to prove their existence (Bobber, 2015). All in all, the collective process of auditing PP&E has generally been found to have low risk. However, this does not mean there is zero risk. There have been various cases of PP&E account misstatements or blatant PP&E accounting fraud. Three examples of PP&E fraud in varying time periods will be covered in the next section.

Relationship PP&E Levels and Audit Fees

As a definition, an "audit fee" is the "amount payable to an auditor for an audit" (Oxford Reference). In the case of publicly traded companies, they are legally required to obtain an annual audit of their financial statements by an independent auditor (IAS). Auditors expect to be compensated for their services in the form of audit fees which can vary from company to company. This sub section examines a study that tests the relationship between company PP&E levels and audit fees charged by auditors.

In a 2020 academic study by Daqun Zhang, Keval Amin, and Donald Deis, the authors test the "relationship between features of long-lived tangible assets and a common proxy for audit risk: audit fees" (Zhang et al., 2020). At the onset of the study, the authors acknowledge that fixed assets are often "deemed low- to moderate – risk in practice" due to their simplicity in audit practice and that audit fees can be used as a possible barometer of how risky an audit client can be (Zhang et al., 2020). After testing, it is ultimately concluded by the authors that "the intensity of property, plant and equipment (PP&E) is negatively associated with audit fees" (Zhang et al., 2020). Meaning, audit firms will charge less in audit fees to companies that have more PP&E and vice versa. In addition, it is found that this negative relationship between PP&E levels and audit fees can be "moderated in the presence of an audit change" likely due to the fact a new auditor has to "verify the beginning balances of long-lived asset accounts" among other things in the earliest stages of auditing a new client (Zhang et al., 2020).

Fixed Assets Fraud History

While audit practices can reasonably assure a set of financial statements are represented fairly, there remains a history of fixed asset accounting fraud within publicly traded companies.

This section examines three examples of fixed asset accounting fraud that have occurred in differing time periods. Two of the three cases being examined took place before the passage of the Sarbanes-Oxley Act of 2002 (SOX) by United States Congress which sought to "help protect investors from fraudulent financial reporting by corporations" (Investopedia, 2022). The act introduced many new rules and requirements in response to fraudulent accounting practices by publicly traded companies such as Enron and WorldCom in the early 2000s. One of the main requirements called for the managers and auditors of corporations to "establish internal controls and reporting methods to ensure the adequacy of those controls" (Investopedia, 2022). It is widely acknowledged that SOX changed the landscape of corporate financial reporting forever. Fraudulent financial reporting can greatly impact the lives of employees, auditors and shareholders which is the purpose of this thesis as well as this section in specific.

Example One: Waste Management (1992-1997)

Waste Management, a publicly traded environmental services company, was accused of committing fixed asset accounting fraud from 1992-1997, before the passage of SOX. According to the U.S. Securities and Exchange Commission (SEC), Waste Management's founder and CEO during the time, Dean L. Buntrock, and other defendants "engaged in a systematic scheme to falsify Waste Management's earnings and other measures of financial performance" (SEC Litigation, 2002). The central way Buntrock and others engaged in this scheme pertained to the accounting of Waste Management's fixed assets. An SEC court case accused that the defendants "improperly eliminated or deferred current period expenses in order to inflate earnings" by avoiding depreciation expenses (SEC Litigation, 2002). The defendants would avoid these expenses by "extending the estimated useful lives of the Company's garbage trucks while, at the same time, making unsupported increases to the trucks' salvage values" (SEC Litigation, 2002). At the end of the day, both actions were unsupported and falsified the bottom-line net income of Waste Management. It is important to mention there was a motive behind falsifying the bottom-line net income from upper-level management. The SEC accuses that the falsification of these numbers was through "top-level adjustments" made by the CEO and defendants in order to satisfy their annual earnings targets (SEC Litigation, 2002). Hitting these "targets" would result in the defendants awarding themselves "with substantial bonuses that, in some instances, doubled their annual compensation" (SEC Litigation, 2002). Waste Management's auditor at the time, Arthur Andersen, "repeatedly issued unqualified audit reports on the Company's materially false and misleading annual financial statements" despite the ongoing fraud (SEC Litigation, 2002). In other words, Arthur Andersen continued to reasonably assure that Waste Management's financial statements were represented fairly when they were not. As a result of the fraud, the shareholders of Waste Management were impacted negatively. When it was discovered that Waste Management had been overstating net income, the SEC estimated "shareholders lost over $6 billion in the market value of their investments when the stock price plummeted from $35 to $22 per share" (SEC Litigation, 2002). In addition, employees of Waste Management were greatly impacted. Following the fraud, Waste Management was acquired by a smaller company and ended up closing their headquarters in Illinois which resulted in "about 1,500 of the 1,700 employees" to be terminated (SEC Litigation, 2002).

Example Two: WorldCom (1999-2002)

As mentioned earlier, the passage of the Sarbanes-Oxley Act of 2002 by U.S. Congress was mainly in response to major accounting scandals of the early 2000s. One of the biggest scandals of this period took place at WorldCom. In an effort to please shareholders and remain financially viable to the public eye, the telecommunications company was accused by the SEC of

overstating "the income it reported in its financial statements by approximately $9 billion" (SEC v. WorldCom, 2002). One of the ways WorldCom was overstating their income came from "recharacterizing certain expenses as capital assets" (SEC v. WorldCom, 2002). Essentially, WorldCom was capitalizing costs instead of immediately expensing them as operating expenses which in turn, inflated the net income shown on their income statement. When WorldCom should have been reporting a net loss, they instead "exaggerated profits by $3.8 billion in 2001 and $787 million in the first quarter of 2002" (Investopedia, 2022). WorldCom's auditor of their 2001 financial statements, Arthur Andersen, failed to detect the fraud and "was found to have ignored memos from WorldCom executives informing them that the company was inflating profits by improperly accounting for expenses" (Investopedia, 2022). WorldCom was a blatant case of fraudulent financial reporting that misled shareholders, creditors, and any party that used WorldCom's financial statements. It is important to share this case of fraud because it shows how key the difference between capitalizing costs as "assets" instead of expensing those costs as current-period operating expenses can be. In the case of WorldCom, costs were capitalized without "any supporting documentation" in addition to "a manner inconsistent with GAAP" (SEC v. WorldCom, 2002). WorldCom and responsible executives faced major consequences to their accounting fraud. Due to their adjustment of earnings, WorldCom was forced to file Chapter 11 bankruptcy in 2002. As for responsible executives, former WorldCom CEO Bernard Ebbers was "convicted on nine counts of securities fraud and sentenced to 25 years in prison" while the former CFO, Scott Sullivan, received a jail sentence of five years (Investopedia, 2022).

Example Three: Miller Energy (2008-2015)

The case of Miller Energy is the only example of the three that took place after the passage of the Sarbanes-Oxley Act. Miller Energy, an oil exploration and production firm, acquired Alaskan assets from energy company Pacific Energy Resource Ltd. in 2009 for "$2.25 million in cash along with the assumption of $2.22 millions of liabilities" (Crumbley). To put the size of Miller Energy into perspective, the firm had "total assets just a little under $3 million" in 2008 before the acquisition of these Alaskan assets (Crumbley). After the acquisition, Miller Energy reported total assets of around $493 million and "total reserves of $368 million" in a 2010 10-Q (Crumbley). Miller Energy's assets had grown exponentially in such a short period of time and this growth was reflected in the firm's stock price despite the relatively low level of total assets Miller Energy had before the Alaskan acquisition. Before the acquisition, Miller Energy's stock price typically traded for under one dollar. After the acquisition, their stock "rose to nearly $9 per share" until 2013 (Crumbley). It is important to recognize that Miller Energy had two different auditors during the time from the Alaskan asset acquisition until late 2013. At the time of the acquisition, Miller Energy was audited by Sherb & Co., LLP but later switched to major accounting firm KPMG (Crumbley). After the global oil price fell in 2014, Miller Energy started to unravel and revealed in its 2014 annual filing "that its oil and gas properties had shrunk nearly 71% from the previous April" (Crumbley). In 2015, the SEC recommended a "civil action against the company because of the valuation related to the Alaskan acquisition" (Crumbley). As it turns out, Miller Energy had incorrectly accounted for the assets they acquired in 2009. As a result of the recommended civil action against Miller Energy, the firm was delisted from the New York Stock Exchange and later filed for bankruptcy. According to the SEC, there were "numerous anomalies by Miller along with its auditors Sherb & Co. and KPMG in connection with the Alaskan acquisition" (Crumbley). Miller Energy had falsified the amount of assets they had on their balance sheet which showcased an incorrect book value for the firm and influenced shareholders to buy and grow the firm's stock price. Part of Miller's incorrect accounting for

their acquired assets included “double counting $110 million” worth of fixed assets. As a result of Miller Energy’s fraudulent reporting, auditor KPMG “agreed to pay more than $6.2 million to settle charged that it failed to property audit the financial statements of an oil and gas company” and lead engagement partner, John Riordan, paid a fine and was “suspended from appearing or practicing before the SEC as an accountant” (SEC Press Release, 2017).

Conclusion

In this thesis, I hoped to demonstrate how the proper, or improper, accounting of fixed assets can distinctly impact employees, auditors, and shareholders of publicly traded companies. The first section of this thesis gave an overview of fixed assets accounting, while the corresponding sections dove deeper into three areas relating to fixed assets accounting that I found to be the most intriguing: capital expenditures, auditing and fraud. These areas elaborated on how important the proper accounting for fixed assets can be and how it can impact stakeholders and the world around us. Upon the completion of reading this thesis, I hope the reader enhanced their knowledge on fixed assets accounting and gained a greater appreciation for its practice.

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