Impact of Revaluation of Biological Assets on the Profitability

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Abstract

Agricultural firms' biological assets are valued using a combination of fair value and historical cost methodologies. biological assets in this research refers to biological assets held by plantation corporations, especially. This research also intends to show that organizations utilizing the fair values method have a greater tendency to smooth their revenue than those using the historical cost approach. Aiming to show that the fair value technique has a greater impact on profits volatility than the historical cost approach, the study's final goal is to demonstrate Assets' value and volatility, return on assets and revenue and profits do not change significantly amongst groups of investors, according to the results of statistical studies. Using the fair value technique does not have a major impact on the volatility of the company's profits.

Keywords: *Biological Assets; Agriculture; Revaluation,*

Introduction

Debates have erupted in recent years as a consequence of the shift in accounting rules toward the use of fair value accounting as the foundation for accounting. Due to the rise of worldwide accounting convergence, which tends to employ the fair value technique for accounting measurement and reporting, this is the primary factor. An agricultural company sample that use fair value and historical cost methodologies to valuing biological assets will be used in this research to give empirical evidence for evaluating biological assets using fair value. Analytical descriptions of financial accounts, such as assets, incomes, and profits with their absolute amounts and standard deviations, are included in this research. An early discussion of how the fair value and historical cost techniques are used to evaluate a company's assets, particularly biological assets in agricultural firms, is the primary goal of this research.

Literature Review

Kobiljon Khushvakhtzoda (Barfiev) et.al (2021) As a series of events, scientists and practitioners endeavour to comprehend the character and substance of biological assets in many parts of the study of biological assets in agricultural operations. Based on the rules of International Financial Reporting System (IFRS), this paper examines the principles of accounting for biological assets in the agricultural businesses' economic life of the Republic of Tajikistan and finds causes and methods for their reflection. As the world economy moves toward a digital format, new accounting models are being developed, and the author provides his own interpretation of these approaches and builds an information module for accounting for biological assets and results of biotransformation based on the web

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services architecture (WSA). PHP (Hypertext Preprocessor) is used to create this architecture, as well as one of the methods for measuring biological assets' worth using the idea of fuzzy sets, which takes into account investment inefficiency risk.

Marilene van Biljon et.al (2020) Determine whether the biological asset fair valuation difficulties are country-specific or agricultural-sector specific. Analyze how the valuers' inputs and challenges relate to the industry's problems. Comparative study of 50 publicly traded companies in 10 countries between 2012 and 2015, with a focus on qualitative and relational content analysis via in-depth interviews with 24 biological asset valuers. There was no association found between the size of big agricultural enterprises and the scope of disclosures of biological assets, which contradicts previous studies. Inconsistencies in the parameters used by the valuers seem to have a direct influence on the issues faced by the industry when it comes to valuing and disclosing biological assets.

Rafael Todescato Cavalheiro et.al (2019) A multi-disciplinary approach is needed to assess agricultural biological assets, which are often not traded and whose value is influenced by a variety of variables, including climate and the environment, as well as biological processes. Thus, this article tries to suggest an integrated approach to assessing agricultural biological assets' worth, which takes into account both agronomic and environmental considerations. An exploratory-descriptive approach to bibliographic research was used as a strategy. A theoretical framework based on the disciplines of accounting, economics, and agronomy, with an emphasis on agrometeorological modelling, was constructed to support the multidisciplinary methodological approach. Sugarcane was used as a case study to show the variables' range and behaviour in addition to a theoretical argument. An unique measuring approach that emphasises agronomic issues in accounting measurement has been proposed in this research, which may result in an increase in the quality of the information, particularly in terms of dependability. Codes O32, Q16 and C18.

Habeeb Mohamed Nijam (2018) The study's goal is to find out why companies choose to disclose their fixed assets at their revalued value. Mann–Whitney U tests and bivariate and multivariate logistic regressions were used to investigate 30 manufacturing companies listed on the Colombo Stock Exchange (CSE) for two years from 2012 to 2013. PP&E tends to be reported at a revalued amount by manufacturing companies whose fixed assets are dominated by land and buildings, whereas PP&E tends to be reported at historical cost by companies whose fixed assets are dominated by plant and machinery. It is important for financial analysts and investors to understand the reasons behind the revaluation of fixed assets in different nations. There has to be more attention paid to the value of revaluation decisions by corporations in emerging nations. The frequency of successive revaluations should be taken into consideration while making revaluation choices. Sri Lankan researchers have never before looked at the reasons for revaluation of fixed assets.

Bohusova H et.al (2017) The purpose of this study is to assess the effect of the recent revisions to the IAS 16 and IAS 41 – Agriculture: Bearer Plants on financial reporting in agriculture. Biodiversity assets are now treated as bearer plants in accordance with IAS 16 and IAS 41, however this study compares this approach to current IFRS13 methodology and the revisions to these standards. The chosen bearer plant's statistical data were utilised to calculate the quantification. An apple orchard was seen as an appropriate example of a plant that produces fruit. The DCF approach is based on an estimate that needs a substantial amount of input data for this calculation throughout the useful life of bearer plants, as shown by the study findings. However, the impact on asset value and profit or loss over the course of the useful life might be contentious and variable. Fair value assessment is supposed to provide a real and accurate picture, but in this situation, it's at least a little iffy since biological assets like bearer plants can't be exchanged on their own.

Methodology

The results for each item. We were able to collect the items needed to test hypothesis 4, which we will discuss in detail in section 3. 1 These methods may be separated into two sections. First, we calculated the discretionary accruals by comparing the means of three models.

Test To Compare The Means

Using a Mann-Whitney test, we compared the earnings management levels of the groups "companies that adopt discounted cash flow versus another method" – hypothesis 1, "companies that adopt discounted cash flow and disclose the discount rate versus others that use discounted cash flow" – hypothesis 2, "companies listed in enhanced corporate governance trading segments of the BM&FBovespa versus companies listed in traditional segment" – hypoth This is one of the most effective nonparametric tests for two independent samples, according to Fávero et al. The null hypothesis states that the Z-statistic does not show any difference between the groups:

$$Z_{cal} = \frac{(U - N_1 * N_2 / 2)}{\sqrt{\frac{N_1 * N_2}{N(N-1)}\left(\frac{N^3 - N}{12} - \sum_{i=1}^{g} \frac{t_i^3 - t_i}{12}\right)}}$$

Where $\sum_{i=1}^{g} \frac{t^3 - t}{12}$ is a correction factor when there are ties, g is the number of groups with tied ranks; ti is the number of tied observations in group i; N1 is the number of cases in group 1, which is that with the fewest number of observations; N2 is the number of cases in group 2, which has the highest number of observations; and U = min(U1, U2), with $U_1 = N_1 \times N_2 + \frac{N_1(N_1+1)}{2} - R_1$ and $U_2 = N_1 \times N_2 + \frac{N_2(N_2+1)}{2} - R_2$; R_1 is the sum of the ranks of group 1; and R2 is the sum of the ranks of group 2 (FÁVERO et al., 2009).

Research model

Value relevance of recognized biological assets is assessed by using a regression model that incorporates the firm's book value of equity and profits to determine the firm's market capitalization. To test this, we use MV as the dependent variable, BV as the independent variable, and E as the dependent variable, in the first equation. This model also incorporates two control variables, namely the firm's size (SIZE) and the sector in which it resides (SECTOR).

MV it= b0 +b1BVit +b2Eit+ b3SIZEit+ b4$\sum^{j=1,2,3}$ SECTORjit +uit

Analysis

Descriptive Statistics

According to Table 1, the average value of biological assets increased steadily from 2009 to 2012, with the lowest value occurring in 2009. Assuming that biological assets represent changes in the firms' net worth, these statistics show an increase in wealth associated with biological assets. However, the ratio between biological assets and total assets declined during this period, indicating that other accounts composing total assets grew more strongly.

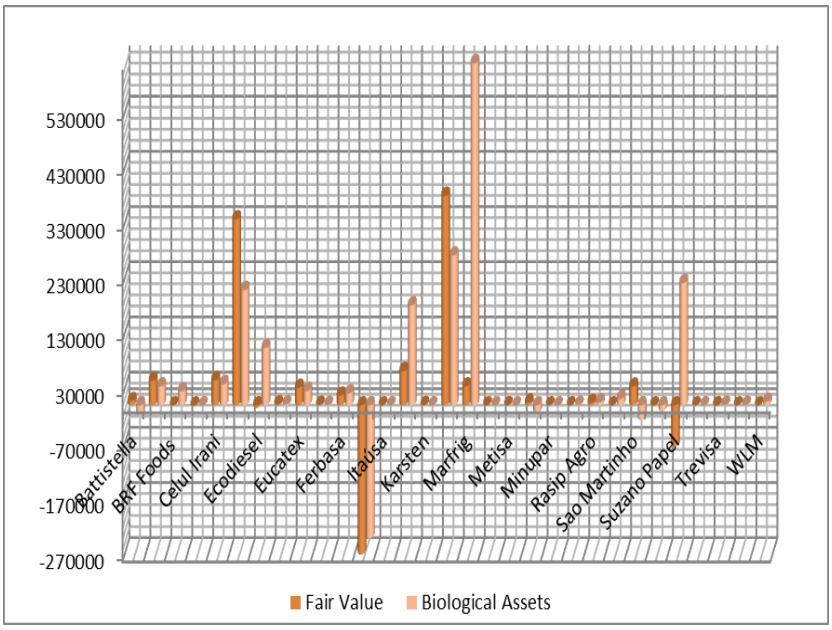
Table 1: Biological Valuation Model

	Biological Assets 2017	Biological Assets 2018	Biological Assets 2019	Biological Assets 2020
Mean	388,925	436,763	486,356	580,251
Median	40,658	69,807	68,469	62,268

Standard Deviation	838,813	850,283	857,192	968,636
Minimum	0	0	0	0
Maximum	3,791,084	3,550,636	3,264,210	3,441,495
Sum	12,056,687	13,539,642	15,077,024	17,987,779
Observations	31	31	31	31
	Fair Value 2017	Fair Value 2018	Fair Value 2019	Fair Value 2020
Mean	4,081	21,811	-2,418	-2,784
Median	0	992	0	0
Standard Deviation	106,537	78,534	55,819	124,596
Minimum	-268,214	-152,475	-280,564	-339,140
Maximum	469,541	381,894	68,791	521,823
Sum	126,506	676,137	-74,971	-86,302
Observations	31	31	31	31
	Biological Assets 2017/ Total Assets 2017	Biological Assets 2018/ Total Assets 2018	Biological Assets 2019/ Total Assets 2019	Biological Assets 2020/ Total Assets 2020
Mean	10,49%	8,40%	7,03%	6,88%
Median	5,25%	6,04%	2,99%	2,73%
Standart Deviation	12,63%	8,70%	9,08%	9,04%
Minimum	0,00%	0,00%	0,00%	0,00%
Maximum	43,37%	32,53%	38,37%	33,38%
Observations	31	31	31	31
	Fair Value/ Revenue 2017	Fair Value/ Revenue 2018	Fair Value/ Revenue 2019	Fair Value/ Revenue 2020
Mean	4,69%	7,18%	0,02%	2,07%
Median	0,00%	0,18%	0,00%	0,00%

Standart Deviation	32,08%	27,07%	1,94%	6,24%
Minimum	-22,54%	-15,03%	-5,06%	-3,81%
Maximum	172,66%	118,53%	4,85%	26,98%
Observations	31	31	31	31

With respect to the variation of fair value, there was an increase of nearly R$ 22 million in 2018, but the values declined in 2019 and 2020, contributing to reduce the value of biological assets. The ratio between fair value and revenue fell from 4.69% to 2.07% in the period. Note there was an increase of 434% (R$ 126,506 thousand in 2017 to R$ 676,137 thousand in 2018) in the variation of fair value net of depletion due to adjustment to market value, growth of R$ 549,631 thousand. This is coherent with the expected effects of the first year of mandatory adoption of IFRS. This growth was decomposed among the firms in the sample as indicated in the graph below.



Graph 1: Comparing Biological assets and fair value

Graph 1 shows the breakdown of the change in fair value between 2019 and 2020 as a result of adjustments to market value and biological assets. Depletion costs are not included in the fair value. The writers prepared this source.

Observation of this diagram demonstrates that Cosan, Fibria, and Klabin have had the greatest swings in fair value. In contrast, manufacturers like as Cosan, Fibria, JBS, Klabin, Marfrig, and Suzano Papel reported the greatest variance in biological value. JBS and Marfrig, two meat-packing firms, were not among the companies with the widest ranges in fair value net of depletion because their herds had a short life cycle. Fair value varies from region to region since Fibria and Klabin have large planted forests that need many years to mature before they can be harvested. For example, a fall in Klabin's weighted-average cost of capital, which is employed in the discounted cash flow technique, results in a substantial variance in net fair value after depletion charge. As a result, the company's 2012 financial statements could not explain why the cost of capital decreased.

It's also worth noting that the vast majority of companies tested that used CPC 29 failed to meet even the most basic criteria set out in the standard. In addition to making, it difficult to compare businesses within a given industry, low levels of compliance decrease the usefulness of financial statements. Thus, even if Table 1 shows that applying CPC 29 results in statistics that aren't all that outstanding, it is essential to evaluate the financial statement quality, since

transparency is a key factor in drawing in investments that will help the country's economy grow. In addition, Brazil is a key factor in the discussion and revision of international standards, particularly CPC 29, since it is one of the primary rising nations that has embraced IFRS and the production of agricultural commodities accounts for a significant portion of its overall output (IAS 41).

Correlation Coefficients

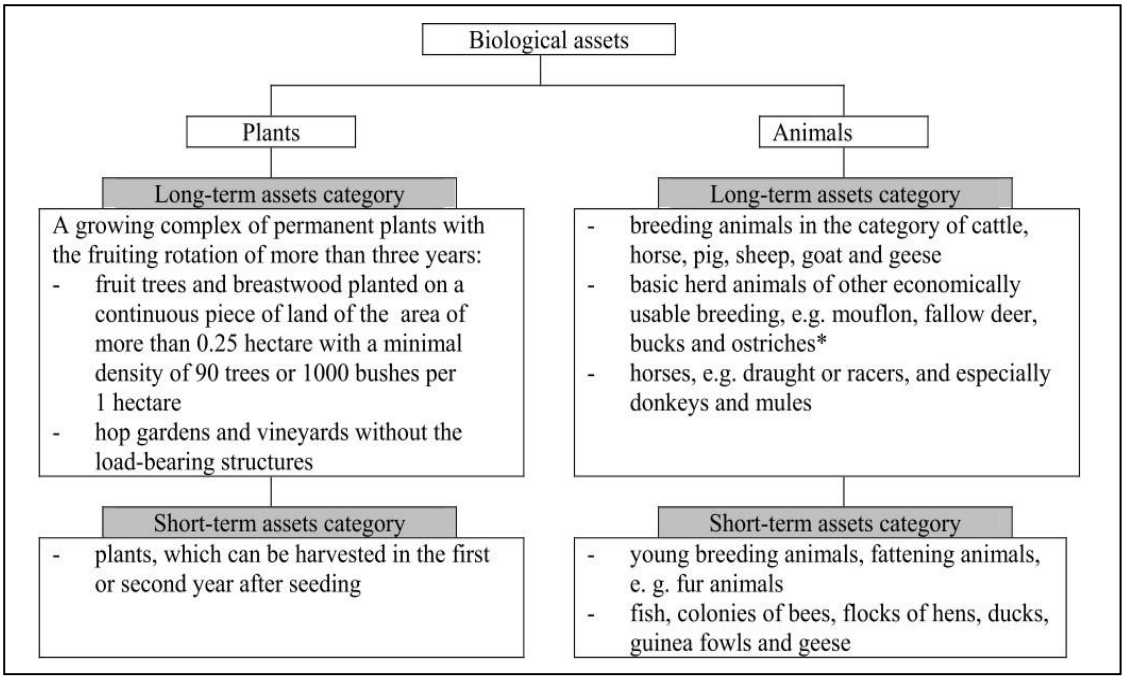
Table 2. Correlations (Pearson/Spearman)

	MV	*BV*	*BV-BA*	*BA*	*E*	*SIZE*
MV		**0.934**	**0.889**	**0.658**	**0.754**	**0.566**
BV	**0.887**		**0.955**	**0.733**	**0.687**	**0.511**
BV-BA	**0.812**	**0.949**		**0.584**	**0.656**	**0.496**
BA	**0.757**	**0.789**	**0.554**		**0.454**	**0.316**
E	**0.787**	**0.733**	**0.642**	**0.682**		**0.421**
SIZE	**0.304**	**0.245**	**0.297**	0.067	**0.180**	

Rank correlation coefficients from Pearson and Spearman are shown in Table 2 below the diagonal and above the diagonal. It is clear from both sets of correlations that all of the independent variables are positively linked with the stock price. A number of variables (BV and BV-BA) are strongly linked to the dependent variable. The correlation coefficient of the BA variable serves as a preliminary indicator that biological assets are of value on a one-to-one basis in the first hypothesis. Correlations between independent variables that surpass 0.80 or 0.90 are considered safe in multivariate analysis, according to the conventional wisdom (Gujarati, 1995). No matter how close to 0.90 BV and BV-correlation BA's coefficients are to each other, they are not employed in the same regressions.

A number of conditions must be met in order for long-term life cycle assets to be included in the balance sheet. These include, for example, that the asset will provide future economic benefit, that it has a market price, and that the asset owner has complete control and management of the future benefits (see Figure 1)

Figure 1: Biological assets classification scheme



Conclusion

When valuing biological assets under IAS 41 – Agriculture, there are a number of situations in which accounting assumptions are required. Because of its complexity and cost-benefit analysis, it has been the subject of much dispute since it was first introduced in the industry. Issues encountered during practical implementation include challenges calculating fair value when there is no active market, a single measuring technique that did not match all biological asset categories, and the influence on earnings volatility. Several studies have shown that the costs of applying fair value for biological assets exceed the benefits for various stakeholders.. Only a tiny percentage of organisations who have revealed the measurement method for long-term biological assets completely comply with the standards of IAS 41 and assess all biological assets at fair value.

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