

Accounting practices for exploration for and evaluation expenditures in Philippine mining industry

Herminigilda E. Salendrez

De La Salle University

Manila, Philippines

herminigilda.salendrez@dlsu.edu.ph

Alger C. Tang

De La Salle University

Manila, Philippines

alger.tang@dlsu.edu.ph

ABSTRACT

Prior to 2006, there has been no accounting standard that specifically addresses the accounting policies for mining industry in the Philippines. The Financial Reporting Standards Council (FRSC) adopted the International Financial Reporting Standards (IFRS) 6 Exploration for and Evaluation of Mineral Resources effective January 1, 2006. This paper aims to investigate the accounting practices on expenditures incurred by mining entities in connection with the exploration for and evaluation of mineral resources and its implication to the company's firm value. Successful effort approach and Full Cost approach are the two competing approaches employed in practice to account for exploration costs. IFRS 6 does not require or prohibit any specific accounting policies for the recognition and measurement of exploration and evaluation expenditures. All listed companies in the Philippine mining sector are utilized in this paper. The authors aim to contribute useful findings to various stakeholders of extractive industries including the regulatory bodies.

Keywords: exploration for and evaluation expenditures, exploration and evaluation assets, accounting policy, firm value

INTRODUCTION

Entities operating in the mining or extractive industry are involved in the search for mineral resources, including minerals, oils, natural gas and similar non-regenerative resources. The extractive industry is considered to be a dynamic industry because of its inherent risk nature (Zhou, Birt and Rankin, 2015). According to Wise and Spear (2002), companies in extractive industries have to face up to the high exploration risks, rapid technology development, dynamic market supply and demand, complex international intention, increasing operation costs and government influence.

Because of high exploration and evaluation costs being incurred by mining companies, proper accounting policy must be employed to account for these costs. Accounting policies are necessary for providing more reliable and relevant information in financial statements on the effects of transactions, other events or conditions on the entity's financial position. The accounting policies have a very big impact on the financial

statements (Bialas, 2013). IAS 1 states that an entity should clearly disclose the accounting policies it has used while preparing the financial statements. Users of financial statements will not be able to compare the financial information with other entities if the accounting policies are not clearly outlined (Alayemi, 2015).

In 2006, the Philippines adapted IFRS 6 to account for exploration and evaluation expenditures. Based on IFRS 6, the exploration and evaluation expenditures are expenditures incurred by an entity in connection with the exploration for and evaluation of mineral resources before the technical feasibility and commercial viability of extracting a mineral resource are demonstrable. This accounting standard does not require or prohibit any specific accounting policies for the recognition and measurement of exploration for and evaluation expenditures.

IFRS 6 permits entities to continue to use their existing accounting policies for exploration and evaluation assets, provided that such policies result in information that is relevant and reliable. For this reason, our paper is aimed to investigate on how exploration for and evaluation expenditures are recognized and presented in the financial statements of listed Philippine mining companies and what kind of influence does this accounting recognition on the firm value of the mining company.

LITERATURE REVIEW

IFRS 6 - Exploration for and Evaluation of Mineral Resources

Exploration and evaluation expenditures contribute a large proportion of the total mining costs for mining companies in the exploration and evaluation phases (Zhou et al, 2015). The accounting treatment of exploration and evaluation expenditure can have a fundamental impact on the financial statements of a mining entity, particularly for junior mining companies with no producing assets (PWC, 2007). IFRS 6 prescribes that a mining entity has to determine an accounting policy specifying which expenditures on exploration and evaluation activities will be recorded as assets and apply the policy consistently. However, an entity may change the accounting policies for exploration and evaluation expenditures if the change makes the financial statements more relevant to the economic decision-making needs of users and no less reliable, or more reliable and no less relevant to those needs, judged using the criteria in IAS 8 *Accounting Policies, Changes in Accounting Estimates and Errors*.

Under IFRS 6, in determining the accounting policy, an entity should consider the degree to which the expenditure can be associated with finding specific mineral resources. The following are examples of expenditures that might be included in the initial measurement of exploration and evaluation assets: acquisition of rights to explore; topographical, geological, geochemical and geophysical studies; exploratory drilling; trenching; sampling; and activities in relation to evaluating the technical feasibility and commercial viability of extracting a mineral resource. Expenditures related to the development of mineral resources shall not be recognised as exploration and evaluation assets.

Accounting policies for exploration and evaluation expenditures

All the exploration and evaluation costs associated with discovering new reserves may be written off as incurred or capitalized pending evaluation. The Full Cost method advocates capitalizing the costs of drilling all oil wells; while the Successful Efforts method

advocates capitalizing only the cost of successful wells, unsuccessful exploration are expensed as incurred. Once technical feasibility and commercial viability of production has been demonstrated, exploration and evaluation costs are reclassified as development costs and subject to impairment testing.

Table 1. Comparison of Successful Efforts and Full Cost method

Successful Efforts	Full Cost
<ul style="list-style-type: none"> • Expense exploration and evaluation costs for unsuccessful wells • Cannot capitalize General & Administration expense • Lower depreciation / amortization expense since dry hole costs are expensed • Results in earnings volatility 	<ul style="list-style-type: none"> • Capitalize exploration and evaluation costs for unsuccessful wells • Capitalize portions of General & Administration expenses • Higher depreciation / amortization expense as the dry hole costs are capitalized • Results in smoothed earnings

Source: Accounting for Exploration and Evaluation Costs, Zori (2011)

The Full Cost method treats the expenditure as investing activity, whereas under the Successful Efforts approach companies classify it as operating activity as it is deducted from earnings before income tax.

Prior research in the mining industry

There have been several studies on accounting policy adopted by extractive industries. In 2000, Bryant concluded that capitalised exploration and evaluation expenditures have been found to be value relevant and useful for external users. Further, in 2003, Bryant examined the association between oil and gas firms' market values and exploration and development costs. He claimed that the Full Cost method for accounting exploration and development expenditures expenditure provides more relevant information than the Successful Efforts method.

Berry and Wright (2001) (as cited in Zhou et al, 2015) discovered a positive association between a mining firm's market value and resource explorations and mining field development disclosures. They examined whether the disclosures of mining companies under either the Full Cost or Successful Efforts accounting methods conveys value-relevant information of the companies' efforts and ability to discover reserves. They hypothesised that mining firms using the Full Cost approach provide value-relevant information on proven developed reserves and undeveloped reserves to the market. Both Berry and Wright (2001) and Bryant (2003) found that disclosures of extractive firms under the Full Cost accounting method convey value relevant information to the stock market.

The argument of Berry and Wright (2001) is consistent with Healy and Palepu's (2001) and Gul and Qin's (2002) (as cited in Zhou et al, 2015) discussions about the impact of accounting regulations on value relevance and information asymmetry. They concluded that the disclosed exploration cost under Full Cost method appears to be a positive signal to investors about the future investment opportunity of Full Cost firms. Their study also provided supporting evidence that the market is more confident of the effort and ability of mining firms who used Successful Efforts accounting while looking for the additional information about the ability of Full Cost companies (Zhou et al, 2015).

The study of Siy in 2013 on disclosure practices of seventeen listed mining companies in the Philippines showed that sixty-five percent of companies (11 out of 17 companies) went for deferral of exploration and evaluation costs while only a handful (five out of 17 companies) expensed the said costs prior to determination of reserves.

In 2015, Zhou et al investigated the value relevance of exploration and evaluation expenditures disclosed under Australian Accounting Standards Board (AASB) 6. They showed that exploration and evaluation expenditures (both capitalised and written off exploration and evaluation expenditures) are relevant to the value of extractive firms. Second, the implementation of AASB 6 has led to an improvement in the disclosure of exploration and evaluation expenditures.

FRAMEWORK AND METHODS

The following framework (Figure 1) was used in conducting this study.

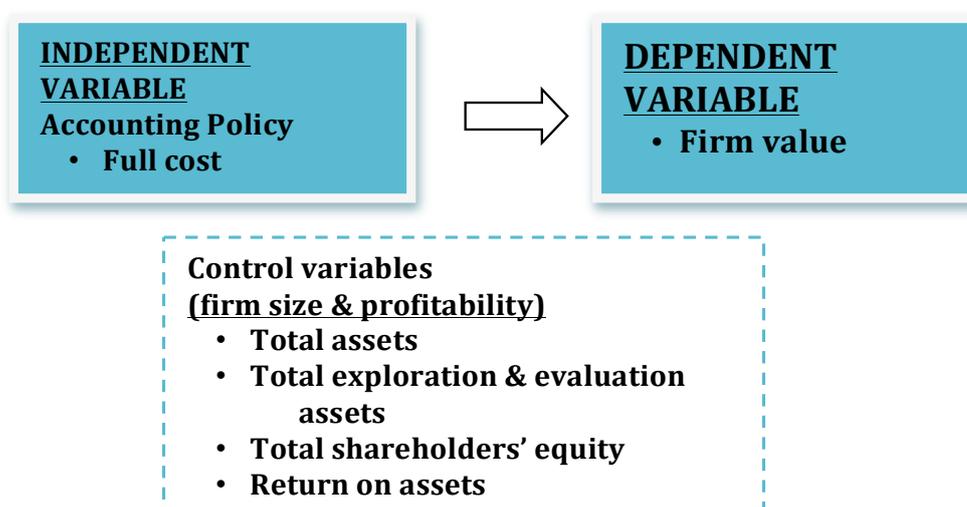


Figure 1. Framework of the study

Our study aimed to determine the accounting policy adopted by Philippine publicly listed mining companies on exploration and evaluation expenditures, whether Full Cost or Successful Efforts. The effect of accounting policy choice on exploration and evaluation expenditures on firm value was also established in this study.

The firm value or enterprise value is an economic measure reflecting the market value of a business. Stated otherwise, firm value tells us how much a business is worth. It is a sum of claims by all claimants at market value: all creditors whether secured or unsecured, preferred shareholders and common shareholders.

We used total assets, total shareholders' equity, exploration and evaluation assets and return on assets as control variables.

Research Design

There are twenty listed mining companies in the Philippine Stock Exchange. The study covers all Philippine listed companies in the mining sector. The 2015 annual reports of these companies were collected from PSE Edge website. Other financial data were gathered from OSIRIS database like firm value and return on assets.

The notes to financial statements were analyzed to verify the accounting policy used by the mining firms on exploration and evaluation expenditures. This study is descriptive in nature and examines the content of the 2015 notes to financial statements of the listed corporations in the mining industry. From the annual reports, the notes to financial statements disclosed the accounting policies that each company adopts. The profile of the mining companies as to the total assets (TA), exploration and evaluation assets (E&E Assets) and total shareholders' equity (SHE) is shown in Figure 2.

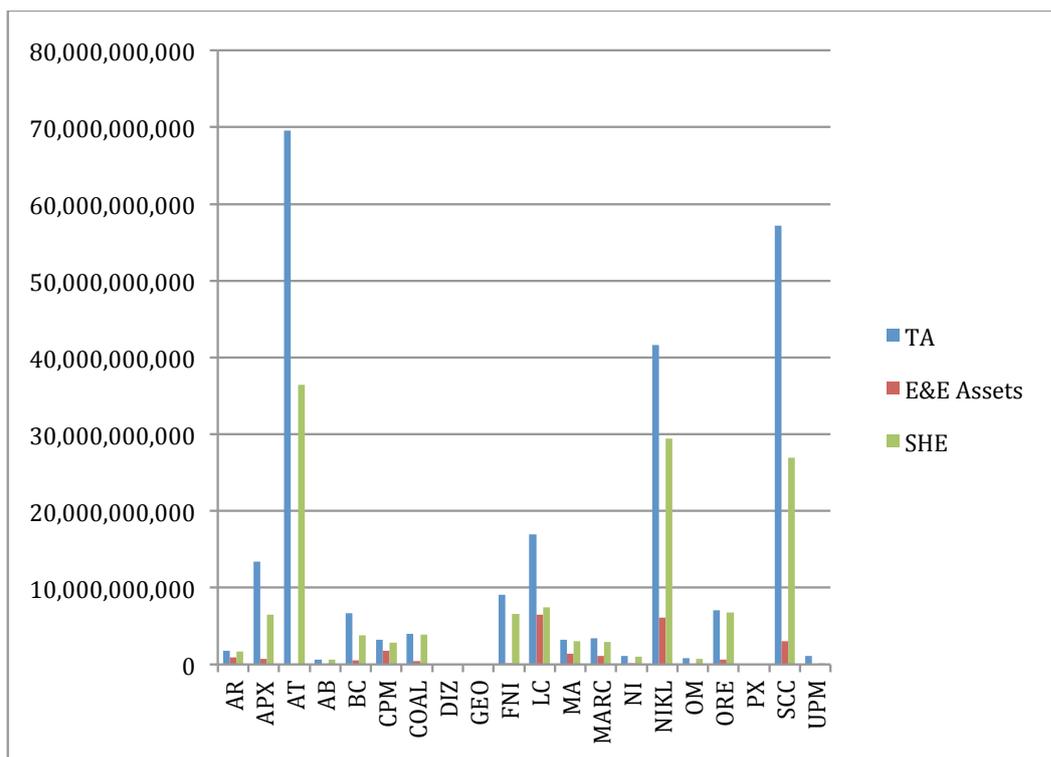


Figure 2. TA, E&E Assets and SHE of Philippine Mining Companies

To establish the effect of the choice of accounting policy for exploration and evaluation assets, we used the following regression model:

$$LFV_i = \beta_0 + \beta_1 FC_i + \beta_2 LASST_i + \beta_3 LEQTY_i + \beta_4 LEEASSTS_i + \beta_5 ROA_i + \varepsilon_i$$

where: LFV = log of firm value (in P1,000s). The independent and control variables are defined in Table 2.

Table 2. Variable definitions

Variable Name	Description
FC	Dummy variable, 1 if the entity uses the full cost method and 0 if the entity uses the successful efforts method
LASST	Log of total assets
LEQTY	Log of total shareholders' equity
LEEASSTS	Log of exploration and evaluation assets
ROA	Return on assets

FINDINGS

We found out that 15 companies used full cost method, 3 companies used successful efforts while the remaining 2 companies did not disclose their accounting policy, hence, excluded from this study, which is consistent with Siy (2013) that full cost is more widely used in the Philippines than successful effort.

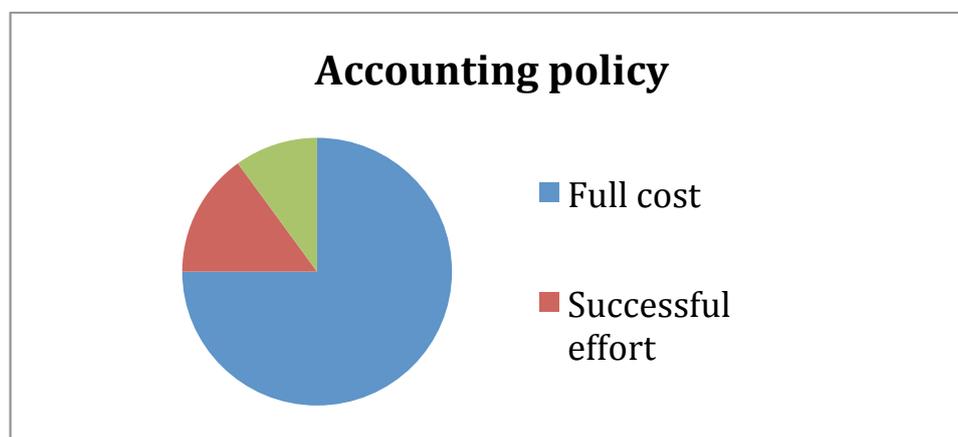


Figure 3. Exploration and Evaluation Costs Policy

Table 3. Descriptive Statistics of Mining Companies

	Mean	Std. Dev.	Min.	Max.
Firm Value	1.77e+07	3.87e+07	364,416	1.60e+08
Total Assets	1.59e+07	2.23e+07	83,635	6.96e+07
Total Shareholders' Equity	9,472,045	1.21e+07	70,202	3.65e+07
Total Exploration and Evaluation Assets	2,747,411	5,832,090	0	2.40e+07
Return on Assets	2.534706	10.57414	-15.21	30.43

Based from Table 3, we can see that there is a large variation in the firm value, firm size, and firm performance. This implies that the publicly listed mining companies in the Philippines are very different in terms of its size, business scope, and valuation. Furthermore, the performance of these firms varies by a large margin with a mining company reporting a return on asset of -15.21% while another reporting a return on asset of 30.43%.

Table 4. Descriptive Statistics of Mining Companies Using Full Cost

	Mean	Std. Dev.	Min.	Max.
Firm Value	9,239,369	1.31e+07	364,416	3.90e+07
Total Assets	1.41e+07	2.07e+07	83,635	6.96e+07
Total Shareholders' Equity	8,872,178	1.18e+07	70,202	3.65e+07
Total Exploration and Evaluation Assets	2,095,960	6,191,934	0	2.40e+07
Return on Assets	2.758667	9.511027	-6.09	30.43

Table 5. Descriptive Statistics of Mining Companies Using Successful Efforts

	Mean	Std. Dev.	Min.	Max.
Firm Value	8.13e+07	1.12e+08	2,423,746	1.60e+08
Total Assets	2.91e+07	3.96e+07	1,085,638	5.72e+07
Total Shareholders' Equity	1.40e+07	1.83e+07	1,041,011	2.69e+07
Total Exploration and Evaluation Assets	1,558,300	2,060,743	101,134	3,015,465
Return on Assets	0.855	22.71934	-15.21	16.92

Table 4 and 5 presents the descriptive statistics for mining firms that employ Full Cost and Successful Efforts, respectively. We can see here that on the average, mining firms that use Successful Efforts are larger in size (in terms of firm value, assets and equity) as compared to those that use Full Cost. Moreover, there is larger variation for the firm performance of those that use Successful Efforts that is to be expected due to the higher risk associated with such accounting policy.

To support the initial findings in the descriptive statistics, we employed regression analysis to determine any significant difference in the firm value between mining companies that use Full Cost and mining companies that use Successful efforts.

Table 6. Results of the Regression Analysis

Independent Variable	Model 1 (with all independent variables)		
	Coefficient	p-value	VIF
Constant	1.051363	0.694	
FC	-1.596729	0.010 ***	0.99
LASST	1.529413	0.003 ***	9.09
LEQTY	-0.5711579	0.148	9.10
LEEASSTS	0.0226846	0.824	1.21
ROA	0.0015606	0.955	1.60

The variance inflation factors of the independent variables were all less than 10 indicating that the model does not suffer from problems associated with severe multicollinearity. The Breusch-Pagan test for heteroscedasticity yielded a p-value of 0.5185 indicating that the model does not suffer from violations of constant variance. The Ramsey RESET test also resulted in an insignificant p-value of 0.1166 thereby, we fail to reject the hypothesis that our model has no omitted variables.

The results of the regression analysis show that firms that use the Full Cost method have a -1.60% lower firm value than those that use the Successful Efforts method. This is consistent with the findings of Bialas (2013) and Zhou et al (2015) that accounting policies impact the financial statements as well as decision-making by investors. However, the results of our study contradict the earlier findings of Berry and Wright (2001), Healy and Palepu (2001) as well as Gul and Qin (2002). This may be because one of the largest mining firms in terms of firm valuation, SCC Mining, makes use of the successful efforts method. SCC Mining is also involved in the power industry and is the only power producer in the country that was able to conduct backward horizontal integration which may have caused the high firm value.

CONCLUSIONS

Our findings suggest that the policy choice in accounting for exploration and evaluation efforts have a significant effect in the valuation of the company. We found that firms using the successful efforts method have a significantly higher firm value as compared to firms that use full cost method. Future research may expand this current study by incorporating more time periods as well as a cross-country study.

REFERENCES

- Abra Mining and Industrial Corporation. (2015). *Annual reports*.
- Alayemi, S. (2015), Choice of accounting policy: Effects on analysis and interpretation of financial statements, *American Journal of Economics, Finance and Management*, Vol. 1, No. 3, pp. 190-194
- Apex Mining Company, Inc. (2015). *Annual reports*.
- Atlas Consolidated Mining and Development Corporation. (2015). *Annual reports*.
- Atok-Big Wedge Company, Inc. (2015). *Annual reports*.
- Benguet Corporation. (2015). *Annual reports*.
- Berry, K. T. & Wright, J. W. (2001), The value relevance of oil and gas disclosures: An assessment of the market's perception of firms' effort and ability to discover reserves, *Journal of Business Finance & Accounting*, Vol. 28, No. 5&6, June/July, pp.741-769
- Bialas, M. (2013), The impact of the accounting policies on the share prices of companies and banks, *European Scientific Journal*, Special edition No. 1, pp. 258-263
- Bryant, L. (2000), Value-relevance of capitalizing successful exploration activities: implications for R&D accounting, working paper presented to Social Science Research Network
- Bryant, L. (2003), Relative value relevance of the successful efforts and full cost accounting methods in the oil and gas industry, *Review of Accounting Studies*, Vol. 8, pp.5–28
- Century Peak Metals Holdings, Inc. (2015). *Annual reports*.
- Coal Asia Holdings Incorporated. (2015). *Annual reports*.
- Dizon Copper-Silver Mines, Inc. (2015). *Annual reports*.
- GEOGRACE Resources Philippines, Inc. (2015). *Annual reports*.
- Global Ferronickel Holdings, Inc. (2015). *Annual reports*.
- Healy, P. M. & Palepu, K. G. (2001), Information asymmetry, corporate disclosure, and the capital markets: a review of the empirical disclosure literatures, *Journal of Accounting and Economics*, Vol. 31, pp. 405-444.
- International Accounting Standards Board. (2009). *IFRS 6: Exploration for and Evaluation of Mineral Resources*. IASC Foundation Education.
- Lepanto Consolidated Mining Company. (2015). *Annual reports*.
- Marcventures Holdings, Inc. (2015). *Annual reports*.
- Manila Mining Corporation. (2015). *Annual reports*.
- Nickel Asia Corporation. (2015). *Annual report*.
- NiHao Mineral Resources Company International, Inc. (2015). *Annual reports*.
- Omico Corporation. (2015). *Annual reports*.
- Oriental Peninsula Resources Group, Inc. (2015). *Annual reports*.
- Philex Mining Corporation. (2015). *Annual reports*.
- PricewaterhouseCoopers. (2007). *Financial reporting in the mining industry – International*

Financial Reporting Standards. London: PricewaterhouseCoopers International Limited.

Semirara Mining Corporation. (2015). *Annual reports*.

Siy, J. (2013), Disclosure practices of listed Philippine mining companies, 2006-2010, *Philippine Management Review*, Vol. 20, pp. 83-110

United Paragon Mining Corporation. (2015). *Annual reports*.

Wise, T., & Spear, N. (2002). Factors and forces of the extractive industry environment, and their implications for accounting measurement and financial reporting. *Petroleum Accounting and Financial Management Journal*, Vol. 21 No.3, pp.1-28.

Zhou, T., Birt, J., & Rankin, M. (2015), The value relevance of exploration and evaluation expenditures, *Accounting Research Journal*, Vol. 28, Issue 3, pp. 228-250.

Zori, S. (2011). Ghana Discovers Oil: Accounting for Exploration & Evaluation Costs. <http://solomonzori.blogspot.com/2011/09/accounting-for-exploration-evaluation.html> Accessed Feb. 8, 2017.