

Ohio Energy Company: Accounting for Joint Ventures: Instructor Guide

Title:

Ohio Energy Company: Accounting for Joint Ventures

Author:

Dr. Philip G. Cottell Jr.
315A Laws Hall
Miami University
Oxford, OH 45056
cottelpg@muohio.edu



This work by Philip Cottell is licensed under a [Creative Commons Attribution-NonCommercial 4.0 International License](https://creativecommons.org/licenses/by-nc/4.0/).

As an open educational resource, feel free to modify and distribute this work under the conditions stated by the Creative Commons license. Originally developed as a part of the [PBL Clearinghouse](#) at the University of Delaware.

Discipline:

Accounting

Target Audience

Intermediate, accounting majors and finance majors

Keywords

Equity method, investments, joint ventures

Length of Time/Staging

The problem takes two fifty minute sessions.

Abstract

Having worked through the Ohio Energy Company unfolding problem, students will understand the equity method at a level well beyond that presented in intermediate accounting textbooks.



The problem engages the students with transactions in a context where the equity method is most commonly used in today's economy, the joint venture investment. In addition to accounting for the cost of the investment and income earned by the joint venture, the problem adds the element of a contribution of technology by one of the joint venture partners. Once they have completed the problem, students will understand how to account for and reconcile differences in outside basis and inside basis.

Date Submitted

2/11/2003

Date Published

6/28/2003

Format of Delivery

The problem is delivered in a cooperative learning setting with mini-lectures interspersed.

Student Learning Objectives

Having worked through the Ohio Energy Company Problem-Based Learning Case, students should be able to accomplish the following:

1. Understand the basic concepts of the Equity method for accounting for investments.
2. Account for investments in joint ventures where both monetary capital and intellectual capital are involved.
3. Be able to recognize and account for differences in inside basis and outside basis.
 - a. Amortization of difference
 - b. Accounting for and reporting on the equity in the earnings of the joint venture.
4. Understand the treatment of Goodwill. Goodwill is no longer amortized, but is tested for impairment.
5. Account for an infusion of capital from an unrelated party.
 - a. Gains and losses from increases or decreases in equity of the joint venture.
 - b. Amortization of the difference between the inside basis and the outside basis.
 - c. Reconcile the remaining difference between inside basis and outside basis with the remaining future amortization.

Student Resources

Students may use an intermediate financial accounting text as a resource.

Instructor Resources

The author gratefully acknowledges the research support provided by the Richard T. Farmer School of Business and the Department of Accountancy at Miami University. Bob Bitter,



Deloitte and touche, provided invaluable assistance with this project.

Author's Teaching Notes

The Ohio Energy Company is designed to teach the equity method of accounting for investments in a more realistic setting than that found in traditional intermediate accounting textbooks. The problem is staged as an investment in a joint venture, an equity method transaction more common in today's business world than the purchase of stock scenario found in textbooks. In the early stages of the problem, students learn to account for the investment in the joint venture and for the income earned by the joint venture. They also learn how to account for a situation where the ownership proportions of the investing companies are not the same as the proportions of money invested. They learn the difference between the inside basis and the outside basis and how to amortize this difference. In the final phases of the problem, students are confronted with a transaction where another investor is brought into the joint venture. The problem unfolds in four phases. Below is an outline of how to deliver this problem in a cooperative learning environment. (Please also see notes from review below.)

1. Pass out Phase 1 of the unfolding problem. Monitor groups as students deliberate upon what they know and what they need to know, filling out the PBL worksheet. Call for reports after an allotted time period.
 - a. The students should recognize that Wardwell Solutions, Inc. is a **joint venture**.
 - i. As such, it will record assets on the books equal to what the investing companies contribute.
 - ii. Each of the investing companies will set up an investment account to record their proportion of interest in the joint venture.
 - iii. The investing companies will account for their investment in the joint venture using the equity method.
 - b. The equity method
 - i. When a company owns more than 20% but less than a majority interest in another company, the former company is presumed to have **significant influence** over the latter.
 - ii. In these cases the **equity method** is used.
 - iii. The initial investment is recorded at cost.
 - iv. When the investor's cost is more than the book value of the shares, two reasons are possible:
 1. The assets of the acquired firm are undervalued on its balance sheet. This is usually inventory or property, plant, and equipment.
 2. "Goodwill." Goodwill exists because of heightened earnings potential of the acquired company. This goodwill is not recorded.
 3. The investor must amortize the excesses.
 - a. Note the excesses will have differing useful lives. Inventory is usually one year. Property plant and equipment is the useful life of the asset. Goodwill is no longer amortized, but is tested for impairment.
 - b. The amortization will reduce the investor's investment account and simultaneously its reported income.



- v. The investment account is increased by the pro rata share of the owned firm's income and decreased by dividends received from that firm.
2. Pass out Phase 2 of the unfolding problem. Monitor groups as students deliberate upon the new information. Call for reports after an allotted time period.
- a. In the initial entry, there is no accounting for the Intellectual capital. Ohio Energy Company will record their investment at the book value of the assets they contributed to the joint venture, one million dollars in cash.

Dr. Investment in Joint Venture	\$1,000,000
Cr. Cash (and/or other hard assets)	\$1,000,000

To record investment in Wardwell Solutions, Inc.

- b. Each utility has a one third interest in the joint venture. Note the joint venture has \$5,000,000 in hard assets. Therefore each utility has an interest in one third of this, or \$1,666,667 apiece. The technical terms used for this kind of situation are **outside basis** and **inside basis**. The **outside basis** for Ohio Energy Company is \$1,000,000 and the **inside basis** is \$1,666,667.
- c. The accounting principle used here is the "as if liquidated basis." You basically ask the question, "What would you get if you liquidated the joint venture?" Here the answer is \$1,666,667. Therefore we have "negative goodwill," which is hidden within the accounts of Ohio Energy Company.
- d. The difference between the inside basis and the outside basis must be amortized over the useful life of the intellectual capital. A company must keep up with this difference "off the books," perhaps with memorandum entries. The amortization will be recorded at year-end; at the same time Ohio Energy Company records its share of the earnings of Wardwell Solutions, Inc.

Inside basis	\$1,666,667
Outside Basis	<u>\$1,000,000</u>
Amount to be amortized	\$666,667
Useful life	div. by 5 years
Amortization	\$133,333

e. Entry:

Dr. Investment in Joint Venture	\$133,333
Cr. Equity in Earnings of Joint Venture	\$133,333

To record amortization of "negative goodwill"

Dr. Investment in Joint Venture ¹	\$100,000
Cr. Equity in Earnings of Joint Venture	\$100,000

To record share of earnings in joint venture.

¹ For the share of earnings \$300,000 / 3



- f. The "Equity in Earnings of Joint Venture" is an Other Income account on the income statement. Note to the students that despite its title "equity," it is an income statement (revenue) account. Interestingly, it must appear as a separate line item irrespective of materiality.
- g. Ledger for the investment in joint venture:

Beginning balance	\$1,000,000
Amortization of the basis difference	\$133,333
Share of joint venture earnings	<u>\$100,000</u>
Ending balance	\$1,233,333

- h. Ledger balances of the other two partners:

Beginning balance	\$2,000,000
Share of joint venture earnings	<u>\$100,000</u>
Ending balance	\$2,100,000

3. Pass out Phase 3 of the unfolding problem. Monitor groups as they deliberate upon the new twist in the problem. After an allotted time, call on groups to report.
 - a. The infusion of new capital represents a sale by Ohio Energy Company of part of its interest in the joint venture. As such, Ohio Energy Company will realize a "gain" on its investment with a corresponding change in the book value of the investment.
 - i. The gain is calculated as the difference between Ohio Energy Company's inside basis after the infusion of new capital and the inside basis before the infusion of new capital.
 - ii. The "gain" is not recorded as such, but is credited directly to retained earnings.
 - b. Amortization of the difference between the inside basis and the outside basis will continue as before.
4. Pass out Phase 4 of the unfolding problem. Monitor groups as they deliberate upon the required calculations and the entries. Call for group reports.
 - a. In order to record the infusion of new capital, we must calculate Ohio Energy Company's basis after the transaction and before the transaction.
 - i. Inside basis after the transaction:

Original capital invested	\$5,000,000
Income from the first year	<u>\$300,000</u>
Investment by Kobalt, Krafty & Robbin	<u>\$5,300,000</u>
New joint venture basis	<u>\$10,300,000</u>
Ohio Energy Company share (20%)	\$2,060,000
-new inside basis	

ii. Inside basis before the transaction:

Original capital invested	\$5,000,000
Income from the first year	<u>\$300,000</u>
New joint venture basis	<u>\$5,300,000</u>
Ohio Energy Company share (33.33%)	\$1,766,667
-old inside basis	

iii. Calculation of gain:

New inside basis	\$2,060,000
Old inside basis	<u>\$1,766,667</u>
Gain credited to retained earnings	\$ 293,333

iv. Entry for infusion of new capital:

Dr. Investment in Joint Venture	\$293,333
Cr. Retained Earnings	\$293,333

To record infusion of new capital

b. Year end entry:

Dr. Investment in Joint Venture ²	\$133,333	
Cr. Equity in Earnings of Joint Venture		\$133,333

To record amortization of "negative goodwill."

Dr. Investment in Joint Venture ³	\$200,000	
Cr. Equity in Earnings of Joint Venture		\$200,000

To record share of earnings in joint venture.

c. Ledger for the investment in the joint venture:

Beginning balance	\$1,233,333
Gain from capital infusion	\$293,333
Amortization of the basis difference	\$133,333
Share of joint venture earnings	<u>\$200,000</u>
Ending balance	\$1,859,999

² For the amortization (\$666,667 / 5 years). This does not change.

³ For the share of earnings (\$2,000,000 * 20%)



- d. You might note to the students how well this all turned out for Ohio Energy Company. Not only do they record a "gain" for the original infusion of capital, but also increasing revenue for a smaller share of the joint venture. Their original investment has nearly doubled. Of course a lot of this depends on the joint venture being able to generate the income.
- e. Reconciliation:

Inside basis before earnings	\$2,060,000
Share of earnings	<u>\$200,000</u>
Adjusted inside basis	\$2,260,000
Outside basis	<u>\$1,859,999</u>
Present difference	\$400,000

Annual amortization \$133,333

Years remaining * 3

Remaining difference \$399,999

Notes from review

Extracted from reviewer's report:

This is an excellent case, but it has one drawback and I suggest that it should be revised before publishing to reduce the complaints instructors will face from students. The case introduces an accounting problem that is not covered by most textbooks. This worries me. In my view, until the use of PBL cases is popularized in accounting education and students stop relying solely on their textbooks, it is important that the cases avoid dealing with real-life accounting issues that are not covered in textbooks.

My suggestion is twofold: First, instructors using the case should be alerted of the unique accounting problem that the case introduces so that they can in turn alert their students on how to deal with this unique situation. Second, the case does not cover the usual cases of equity accounting problems that are often covered in textbooks. Examples are situation where the investor pays an amount greater than the book value for his/her share of interest in the business. These cases are commonly discussed in textbooks and are explained by two possible scenarios. One is the existence of assets whose market value is greater than book value, and the other is explained by the existence of goodwill. This case does not deal with such possibilities. I suggest that additional unfolding phases be added to the case to cover such situations.

Extracted from author's response:

I think I philosophically disagree with the reviewer on this one. In my view, one of the best reasons to use PBL is that textbooks do not fully cover all real life situations. Moreover, many things textbooks do cover are not good representations of the "real world." This is the reason I have written these PBL unfolding problems from work with accounting practitioners.



That said, I would be willing to rewrite the introduction to alert the instructors that the case does not fit standard textbook coverage. Please let me know if this will suffice.

Assessment Strategies

The PBL Worksheet that is included contains a block at the bottom of the second page that asks students what they have learned. Throughout the process, the instructor may use student responses on the worksheet to assess learning (formative assessment). Having worked through this problem, students should be able to successfully take traditional accounting tests containing problems and questions about accounting for defined benefit plans (summative assessment).