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A Visualization of Teaching the Indirect Method for Computing Cash from Operations

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INTRODUCTION

The Statement of Cash Flows (SCF) complements the Statement of Financial Position and the Statement of Comprehensive Income by explaining where the cash came from (cash receipts) and how the cash was spent (cash payments) (Harrison Jr. et al. 2011; Powers and Needles Jr. 2010). International Accounting Standard (IAS) 7 requires companies to classify cash flows during the accounting period according to operating, investing and financing activities (International Accounting Standards Board 2010). IAS 7 also requires companies to report net cash flows from operating activities using either the direct method or the indirect method (International Accounting Standards Board 2010).

Most companies adopt the indirect method in preparing the net cash flows from operating activities section of SCF (American Institute of Certified Public Accountants 2010; Harrison Jr. et al. 2011; Powers and Needles Jr. 2010; Romeo and Bao 2011). The American Institute of Certified Public Accountants conducted a survey and found that 99 per cent of respondents use the indirect method (American Institute of Certified Public Accountants 2010). As the indirect method is predominantly used by companies, it is important to ensure that students understand the indirect method of preparing SCF. This paper presents a visualization method to teach the indirect method in order to enhance the understanding of students.

TEACHING THE INDIRECT METHOD

The indirect method starts with the net income from the Statement of Comprehensive Income, which is prepared based on accrual basis. The indirect method adjusts the accrual basis net income to obtain the cash basis net cash flows from operating activities (Powers and Needles Jr. 2010). Under the indirect method, a template of the net cash flows from operating activities section of SCF appears as follows (Harrison Jr. et al. 2011, pg 720).

Cash flows from operating activities

Net income
Adjustments to reconcile net income to net cash flows from operating activities:
+ Depreciation/depletion/amortization expense } *Step 1*
+ Loss on sale of long-term assets } *Step 2*
– Gain on sale of long-term assets
– Increases in current assets other than cash } *Step 3*
+ Decreases in current assets other than cash
+ Increases in current liabilities
– Decreases in current liabilities
Net cash provided by (used for) operating activities

The adjustments can be summarized into three steps (Harrison Jr. et al. 2011). First, the depreciation, depletion and amortization expenses are added to net income. Second, gains on the

sale of non-current assets are deducted from net income while losses on the sale of non-current assets are added to net income. Last, all changes in working capital, except for cash and cash equivalents are adjusted. Working capital consists of current assets and current liabilities. Decreases in current assets and increases in current liabilities are added to net income. On the other hand, increases in current assets and decreases in current liabilities are deducted from net income. The following table summarizes the adjustments to net income for changes in current assets and current liabilities (Powers and Needles Jr. 2010, pg 553).

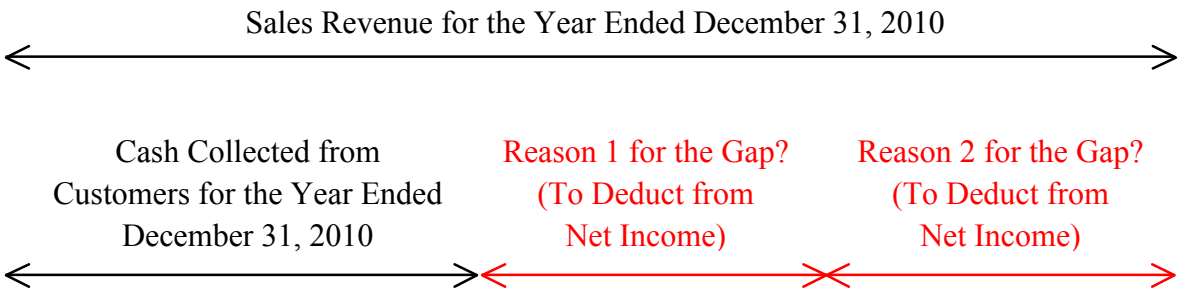
	Add to Net Income (+)	Deduct from Net Income (−)
Current Assets	↓ Decrease	↑ Increase
Current Liabilities	↑ Increase	↓ Decrease

Students typically have no issues with the first two steps of the adjustment process to obtain the net cash flows from operating activities from net income. For the first step, they understand that the depreciation, depletion and amortization expenses are non-cash expense items that require adjustments. As for the second step, they are aware that gains and losses on the sale of non-current assets are non-operating items and should not be reflected under the operating activities section of SCF. However, students may approach the third step mechanically. They will simply determine the direction of the changes in current assets and current liabilities and apply the formula accordingly. They may not truly understand why they have to add to net income when there is a decrease in current assets (increase in current liabilities) or deduct from net income when there is an increase in current assets (decrease in current liabilities).

This paper aims to present a visualization method to explain the third step of the adjustment process to account for changes in the working capital. A key item of net cash flows from operating activities is cash collected from customers. Cash collected from customers result from sales revenue but these two figures normally do not match due to timing differences. If a company sells on account, it may have movement in accounts receivable, a current asset. If a company collects cash in advance without delivering the goods/performing the services, it may have movement in unearned revenue, a current liability. Thus, changes in accounts receivable and unearned revenue have to be adjusted in order to obtain the cash collected from customers from sales revenue.

To visualize the indirect method, one must draw a diagram in which students can see that cash collected from customers do not match sales revenue. There are two other possible scenarios. Sales revenue can be greater or less than cash collected from customers.

Scenario 1 (Sales Revenue is Greater Than Cash Collected from Customers)



Based on the above diagram, students can see that sales revenue is greater than cash collected from customers for the year ended December 31, 2010. Students are told that the gap is caused by timing differences between the accrual basis net income and the cash basis cash collected from customers. Next, students are prompted to think of two reasons for the gap. What are two business transactions that will increase sales revenue but have no impact on cash collection? As sales revenue is greater than cash collected from customers, both reasons require deduction from net income in order to obtain cash collected from customers.

The first reason relates to credit sales made on account in 2010 for which cash has not yet been collected in the same year, 2010. The corresponding journal entry for the business transaction is:

DR Accounts Receivable *(↑ Increase in Current Asset)*
CR Sales Revenue *(↑ Increase in Sales Revenue)*

Based on the above journal entry, students can see that this business transaction increases accounts receivable and sales revenue but has no impact on cash collection. Accounts receivable is a current asset. Thus, an increase in current asset requires a deduction from net income.

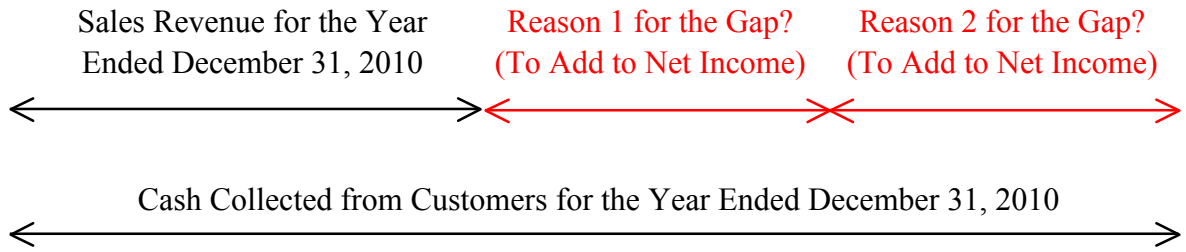
The second reason relates to cash collected in the previous year (2009) but the goods are delivered and/or services are performed in 2010. The corresponding journal entry for the business transaction is:

DR Unearned Revenue *(↓ Decrease in Current Liability)*
CR Sales Revenue *(↑ Increase in Sales Revenue)*

Based on the above journal entry, students can see that this business transaction decreases unearned revenue. It also increases the sale revenue but has no impact on cash collection. Unearned revenue is a current liability. Thus, a decrease in current liability requires a deduction from net income.

To summarise, the above diagram and related journal entries enable students to understand why they have to deduct from net income when there is an increase in current assets and a decrease in current liabilities.

Scenario 2 (Sales Revenue is Less Than Cash Collected from Customers)



Based on the above diagram, students can see that sales revenue is less than cash collected from customers for the year ended December 31, 2010. Similarly, students are told that the gap is caused by timing differences between the accrual basis net income and the cash basis cash collected from customers. Next, students are prompted to think of two reasons for the gap. What are two business transactions that will increase cash collection but have no impact on sales revenue? As sales revenue is less than cash collected from customers, both reasons require addition to net income in order to obtain cash collected from customers.

The first reason relates to credit sales made on account in the previous year, 2009 for which cash has only been collected in 2010. The corresponding journal entry for the business transaction is:

DR Cash *(↑ Increase in Cash Collection)*
CR Accounts Receivable *(↓ Decrease in Current Asset)*

Based on the above journal entry, students can see that this business transaction decreases accounts receivable. It also increases cash collection but has no impact on sales revenue. Accounts receivable is a current asset. Thus, a decrease in current asset requires an addition to net income.

The second reason relates to cash collected in advance in 2010 but the goods will be delivered and/or services will be performed in the next year, 2011. The corresponding journal entry for the business transaction is:

DR Cash *(↑ Increase in Cash Collection)*
CR Unearned Revenue *(↑ Increase in Current Liability)*

Based on the above journal entry, students can see that this business transaction increases unearned revenue and cash collection but has no impact on sales revenue. Unearned revenue is a current liability. Thus, an increase in current liability requires an addition to net income.

To summarise, the above diagram and related journal entries enable students to understand why they have to add to net income when there is a decrease in current assets and an increase in current liabilities.

CONCLUSION

As the indirect method is predominantly used by companies, it is important to ensure that students understand the indirect method of preparing SCF. Under the indirect method, all changes in current assets and current liabilities have to be accounted in order to adjust accrual basis net income to cash basis net cash flows from operating activities. Students may simply determine the direction of the changes in the current assets and current liabilities and adjust mechanically without truly understanding why they have to add to net income or deduct from net income. This paper presents a visualization method to teach the indirect method in order to enhance the understanding of students. Using this visualization method, students could understand why they have to add to net income when there is a decrease in current assets (increase in current liabilities) or deduct from net income when there is an increase in current assets (decrease in current liabilities).

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