

# Pedagogical and Practical Applications of a Modified Accounting Equation

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## Abstract

The following original Accounting Equation, which represents a Balance Sheet, is modified in order to enhance its Pedagogical as well as Practical Applications:

$$\text{Assets (A)} = \text{Liabilities (L)} + \text{Equity (E)}$$
$$A = L + E$$

The Modified Accounting Equation, as shown below, includes Total Revenues (R), Total Expenses (X), and Dividends (D) for any given period of time:

$$A+X+D=L+E+R$$

This modified Accounting Equation has significant Pedagogical as well as Practical applications. This equation makes it easier for the Educators/Students, as well as Business Managers to determine: 1) Sources and Uses of Funds and 2) Debit-Credit parts of any transaction for making accurate accounting entries. Changes in Items listed on the left and right sides of the equal sign, over a period of time, make it easier to determine Sources and Uses of Funds as well as Debit and Credit parts of each financial transactions.

Sources and Uses of Funds, as determined, can be easily sorted out to prepare the Statements of Cash Flows. In addition, it can be one of the most important tools in the hands of Business Managers that ought to know where did the Funds come from and where did they go in order to prevent misuse and/or embezzlements of funds.

Debit-Credit Rules used in journalizing and posting of transactions in Accounting, if not impossible, are difficult to memorize. The simple easy to understand the Modified Accounting Equation makes memorization of Debit-Credit Rules unnecessary. Journalizing and Posting of all financial transactions correctly, with right Debit-Credit signs, is imperative to prevent the lengthy time consuming process of detecting and correcting wrongly made entries.

A survey of several Textbooks of Finance and Accounting failed to show any coverage of this particular significant, easy to remember, Modified Accounting Equation that has a potential not only to help Educators/Students enhance Teaching/Learning Experiences, but also to help Business Managers in tracking of cash flows as well as ensuring the accuracy of accounting work.

## Introduction

A survey of several Accounting and Finance Textbooks as well as an exploration of Google Search Engine failed to find any mention of the Modified Accounting Equation as proposed and developed in this paper. For this reason, this paper does not include any references. The main purpose of this paper is to demonstrate the Pedagogical and Practical Applications of This Equation that makes it a lot easier to determine Sources (S) and Uses (U) of funds for preparing a Statement of Cash flows, as well as the Debit (DR)-Credit (CR) Rules for journalizing and posting of financial transactions accurately. Often Students and even Accounting and Finance Professionals make mistakes in determination of these two items of vital importance.

## Modified Accounting Equation

Step-wise mathematical explanation as to how the following Accounting Equation was modified is explained here:

$$\text{Assets (A)} = \text{Liabilities (L)} + \text{Equity (E)}$$

$$A = L + E$$

Step-1: Income Statement for a given period of time can be written as follows:

$$\text{Net Income (NI)} = \text{Total of all Revenues (R)} - \text{Total of all Expenses (X)}$$

$$NI = R - X$$

$$\text{Addition to Retained Earnings (RE)} = \text{Net Income (NI)} - \text{Dividends (D)}$$

$$\text{Addition to RE} = R - X - D$$

Step-2: Addition to RE, which is one of the Permanent Equity Accounts on a Balance Sheet, is achieved by so called "Accounts Closing Process". End result of this process is to close all Temporary Income Statement Accounts by bringing their balances to zero and adding the balance of the NI onto the RE Account. Incidentally, all of the Balance Sheet Accounts are Permanent Accounts and they are never closed. Mathematically, result of the closing process can be written as follows:

$$A = L + E (+\text{Addition of RE})$$

$$A = L + E + R - X - D$$

By rearranging the above equation so that there are no negative items on either side of the equal sign, we get the following Modified Accounting Equation:

$$A + X + D = L + E + R$$

### Applications of the Modified Accounting Equation

1. Sources (S) and Uses (U) of Funds can be easily determined (See Figure-1), with the help of the two consecutive periods' Balance Sheets, by figuring out the changes in the various accounts on the left and right sides of the equal sign:

Figure-1: Sources (S) and Uses (U) of Funds  
Changes in Accounts = (Current – Previous) Balance Sheets

A+X+D		L+E+R	
Positive(+) is U	Negative(-) is S	Positive (+) is S	Negative(-) is U

Once, the total of Sources (S) and Total of Uses (U) of Funds for a given Period are known, the amount of cash listed on the current Balance Sheet can be verified as follows:

$$\begin{aligned} \text{Cash Listed on Previous Balance Sheet} &= \text{Cash1} \\ &+ \text{Plus (+) Increase in Cash} = \text{Total (S – U)} \\ \text{Cash on Current Balance Sheet (Cash2)} &= \text{Cash1} + \text{Total(S-U)} \end{aligned}$$

If the Cash2 does not agree with the amount of Cash on the current Balance Sheet, it calls for an investigation in order to make sure that there is no accounting errors and/or misuse or embezzlements of funds.

2. The Figure-2 shows as to how DR and CR parts of all Financial Transactions can be easily determined:

Figure-2: Debit (DR) and Credit (CR) Rules  
Changes in Accounts = (Current – Previous) Balance Sheets

A+X+D		L+E+R	
Positive(+) is DR	Negative(-) is CR	Positive (+) is CR	Negative(-) is DR

The above Figure-2 makes memorization of DR-CR Rules unnecessary and ensure that all entries made for financial transactions are accurate.

### Conclusions

One of the most important functions of all Managers, particularly those of small public and/or private business operations, should be to determine, at the end of a certain predetermined period to find out as to what were the sources and uses of funds that resulted

in a certain amount of Loss or Profit. This is very important in order to prevent misuse and/or embezzlement of funds.

Generally, the large firms and corporations have full complement of Finance and Accounting staff that includes Internal as well as External Auditors. Unfortunately, many Managers do not know and understand how easy it is to figure out the sources and uses of funds by using Financial Statements. In addition, a good understanding of Debit-Credit Rules will help in detecting fudged and/or inaccurately made accounting entries, a method often used by embezzlers.

### **Recommendations**

Current students of Finance and Accounting are future Managers and as such they must be taught properly in order to understand the significance of managing efficiently and effectively all of the Finance/Accounting functions of businesses.

Those Business Managers, who are present in this prestigious 2016 International Association of Business Management Conference, and those who happened to read this paper, can take advantage of the applications of this Modified Accounting Equation in their respective Accounting/Finance Departments.