英文会計 中級

Ver.QE

The Time Value of Money
Cash
Marketable Securities

ProActive

Chapter 1

The Time Value of Money

INTRODUCTION

The concept of the time value of money plays a very important role in accounting. According to generally accepted accounting principles (GAAP), assets and liabilities must be presented on the balance sheet at their "present values." Long-term notes receivable and payable, leases, pensions, and amortization of bond premiums and discounts all must take into consideration the value of time. If they do not, they violate GAAP.

What exactly do we mean by the "time value of money" and "present value"? This chapter answers these questions by presenting a detailed description of these concepts together with practical examples.

To begin with, the time value of money involves interest calculations. There are two types of interest: simple interest and compound interest. Under *simple interest*, interest is earned only on the principal; under *compound interest*, interest is earned on the interest as well as on the principal.

THE FUTURE VALUE OF $1

The future value of $1 answers the following question: "If I deposit $1 today in the bank (or in some other investment), how much will it be worth in the future? "Naturally, it will be worth more than $1 because of the interest factor. But exactly how much will it be worth?

EXAMPLE

If I deposit $1 today for 6 years and the interest rate is 5% compounded annually, the future value tells us that this will grow into 1.340 ($1.34) in 6 years.

EXAMPLE

If I deposit $1,000 for 10 years and the rate is10% compounded annually, the future value yields a value of 2.594. Multiplying this by the deposit of $1,000 yields a future value of $2,594.

THE PRESENT VALUE OF $1

The present value of $1 answers the following question: "How much do I have to deposit today to receive $1 in the future?" This is the opposite side of the coin of the future value of 1. There the question was what will be the amount of the future withdrawal. Here the question is what is the amount of the present deposit.

EXAMPLE

If I wish to withdraw $8,000 seven years from now and the interest rate is 12% compounded annually, the present value is 0.452; multiplying this by $8,000 yields $3,616. This means that to receive $8,000 seven years from now, I must deposit $3,616 today.

THE FUTURE VALUE OF AN ANNUITY OF $1

The future value of an annuity of $1 answers the following question: "If I make a series of equal deposits of $1 each over several periods, how much will they accumulate to in the future?" Notice the key difference between this situation and the two previous situations. In the previous situation, I made just one deposit; here I am making a series of deposits.

There are two types of annuities: ordinary annuities and annuities due. In the case of an *ordinary annuity*, the deposits are made at the end of each interest period; in the case of an *annuity due*, they are made at the beginning of each interest period. In other words, for ordinary annuities, the deposits begin one period into the future, while for annuities due, they begin immediately today.

EXAMPLE

If today is January 1, 20X7, and I plan to make a series of three deposits over the next 3 years with each deposit being made at the end of each year (December 31, 20X7, December 31, 20X8, December 31, 20X9), this is an example of an ordinary annuity. Notice that the deposits do not begin immediately.

However, if each deposit will be made at the beginning of the year (January 1, 20X7, January 1, 20X8, January 1, 20X9), then we are dealing with an annuity due. Notice that the deposits begin right away.

In both cases, the withdrawal takes place on December 31, 20X9. In the first case, therefore, the last deposit is made and withdrawn on the same day.

EXAMPLE

If I make a series of $5,000 deposits at the end of each of the next 5 years and the interest rate is 12% compounded annually, the future value of these deposits will be:

6.353 (5 deposits, 12%)
×$5,000
$31,765

THE PRESENT VALUE OF AN ANNUITY OF $1

The present value of an annuity of $1 answers the following question: “How much do I have to deposit today to be able to make several equal withdrawals, of $1 each, over equal periods, in the future?” Note carefully the difference between this and the future value of an annuity. In that situation there were several deposits and one withdrawal. In this situation there is one deposit and several withdrawals.

Once again, we have two types of annuities: ordinary annuities and annuities due. In the former case the first withdrawal is made one period after the deposit, while in the latter case it is made immediately (i.e., right after the deposit is made).

EXAMPLE

If today, January 1, 20X7, I made one big deposit with the intention of making three withdrawals starting one period after today (December 31, 20X7, December 31, 20X8, December 31, 20X9), then it is an ordinary annuity situation.

However, if the first withdrawal takes place immediately (i.e., the withdrawal dates are January 1, 20X7, January 1, 20X8, January 1 20X9), then it is an annuity due.

EXAMPLE

How much must one deposit now to be able to withdraw $1,000 per year at the end of each of the next 5 years if the interest rate is 14%? Since the first withdrawal does not take place immediately, this is an ordinary annuity.

3.433 for 5 periods, 14%
×$1,000
$3,433 is the present value

Chapter 2

Cash and Temporary Investments

DEFINITION OF CASH

Cash is generally a current asset, although - as we will soon see - it occasionally is classified as long-term. For an item to be recorded as "cash," it must be readily available for the payment of current obligations and be free from any contractual restrictions that limit its use.

Therefore, cash consists of coins, petty cash, currency, checking account balances, checks, money orders, certified checks, and bank checks. Savings account balances are considered cash even though banks have a legal right to demand notice before withdrawal, since they rarely exercise this right.

Money market funds and short-term certificates of deposit (CDs) should be classified not as cash but as short-term investments, since they usually contain restrictions or penalties on their early conversion to cash. However, money market funds that have checking account privileges without penalty are considered to be cash.

Postdated checks and IOUs should be considered as receivables; postage stamps are considered office supplies. The treatment of travel advances to employees depends on whether or not they must be repaid to the employer. If yes, they are receivables; if not, they should be considered as prepaid expenses.

Short-term, highly liquid investments that are *both* readily convertible to known amounts of cash *and* so close to maturity that they bear an insignificant risk of losing value due to changes in the marketplace are considered cash. Generally, only investments with original maturities of 3 months or less meet these criteria. Some companies classify these as cash; others place them under the caption "Cash and Cash Equivalents."

Some banks require their checking account customers to maintain a certain minimum balance in their accounts. These are referred to as *compensating balances*. Banks require this arrangement from customers to whom they have lent money, since it results in a higher effective interest rate than the stated rate.

The Securities and Exchange Commission (SEC) recommends that compensating balances held against short-term borrowings be stated separately in the current asset section, while those held against long-term borrowings be stated separately in the non-current asset (investments) section.

Cash that is restricted and cannot be used for regular operating needs should be segregated from unrestricted cash. Examples of this would be cash set aside for plant expansion or retirement of debt. If the cash is to be used within 1 year, it is classified as current; if not, it is classified as noncurrent.

Some banks offer overdraft privileges on their checking accounts. This means that if a customer writes a check in excess of the checking account balance, the bank will advance the required funds to "cover" the check, rather than have the check "bounce." Such advances are considered to be current liabilities.

If a company has a positive checking account balance in one bank and a negative balance (overdraft) in another, they may not be offset against each other but must be separately disclosed on the balance sheet. If both accounts are at the same bank, however, offsetting is permitted.

EXAMPLE

Feldbrand Corporation has a positive $500 checking account balance at Bank A and a negative $300 balance at Bank B. Its balance sheet would show a current asset (cash) of $500, and a current liability of $300. Offsetting the $300 against the $500 to yield a net of $200 is prohibited

EXAMPLE

Poverty Corporation has a positive $150 balance in one checking account at Bank A and a negative $70 balance in another checking account, also at Bank A. It may offset the two and show the net amount of $80 as a current asset.

BANK RECONCILIATIONS

If you have a checking account, you know that once a month, the bank sends you a statement together with the canceled checks that cleared during the month. The statement shows all the transactions that took place in the account during the month: beginning balance, deposits and other credits, withdrawals and other debits, and ending balance.

Very often the ending balance will not agree with your checkbook (or, for a business, with the Cash T-account). There are several possible reasons for this disparity.

1. *Outstanding checks* – checks that you wrote, which you subtracted on your books, but which have not yet cleared the bank. Thus the bank is unaware of them at this point.

2. *Deposit in transit* - deposits that you made which have not yet been received and recorded by the bank. This often occurs when you mail deposits to the bank, or place them in an overnight depository. Thus, while you are aware of these deposits, the bank is not.

3. *Special charges (debits)* - the bank charged your account for various reasons (service charges, bad checks, collection fees, etc.) and you were unaware of these charges until now and have thus not yet recorded them on your books.

4. *Special credits* - the bank increased your account for various reasons (collection of notes receivable, interest, etc.) and you were unaware of these transactions until now.

5. *Errors* – either you or the bank committed an error.

A *bank reconciliation* is a form that tries to reconcile the bank statement balance with the book balance in order to arrive at the correct, updated balance. Once this is done, special journal entries usually have to be made to bring the books up to date. Let's take a look at an example.

EXAMPLE

On November 30, 20X1, the Cash T-account (after all postings have been made) for Company AA shows a balance of $4,200. The bank statement, however, shows a balance of $5,000 After an examination of the bank statement, the books, and the returned checks, the accountant noted the following:

1. Check no. 482 for $1,200 and check no. 491 for $800 are still outstanding.
2. A check for $200 that was received from Mr. Poor has “bounced.” It has been returned with the bank statement and marked “NSF,” for “not sufficient funds.” This check was in payment for services performed by us on account for Mr. Poor.
3. A deposit we made on November 29 for $3,000 does not appear on the bank statement
4. The bank charged us a $10 service fee to handle the NSF check.
5. The bank also charged us a $15 monthly checking account fee.
6. Check no. 474 for $85 was mistakenly charged by the bank for only $58.
7. The bank collected a $2,000 note for us and deposited the proceeds into our account.
8. The checking account earned $30 interest during the month.
9. The bank mistakenly charged us for a check of $32 which we never wrote; it was written by Company AB.

The bank reconciliation appears as follows:

Company AA
Bank
Reconciliation
November 30, 20X1

Balance per Bank Statement	$5,000	Balance per Books:	$4,200
Outstanding Checks		NSF Check	(200)
No. 482 $1,200		Service Fee on NSF Check	(10)
No. 491 800	(2,000)	Monthly Fee	(15)
Deposits in Transit	3,000	Collection of Note	2,000
Error in Check No. 474;	(27)	Interest Earned	30
Difference of			
Check of Company AB Charged			
in Error to Us	32		
Adjusted Bank Balance	$6,005	Adjusted book Balance	$6,005

Prepare a bank reconciliation from the following information

Balance per Bank Statement	$2,000
Balance per Books	1,500
Interest on Checking Account	50
Outstanding Checks	800
Note Collected by Bank as Our Agent	500
Deposits in Transit	1,000
Bank Charged Us for a Check Written by Another Company with a Similar Name	150
Check No.564 Was Journalized on Our Books as Repair Expense for $700; Actual Check was $400	

SOLUTION

Balance per Bank Statement:	$2,000	Balance per Books:	$1,500
Outstanding Checks	(800)	Interest	50
Deposits in Transit	1,000	Collection of Note	500
Other Company Check	150	Error in Check No.564	300
Adjusted Bank Balance	$2,350	Adjusted Book Balance	$2,350

Evaluation and Reporting of Investments

These securities are divided into the following categories:

1. Held - to - maturity securities
2. Trading securities
3. Available - for - sale securities

Held - to - maturity securities are instruments which the company has *both* the positive intent *and* the ability to hold until they mature. If the intention is to hold the securities merely indefinitely, they do not qualify for this category.

Held - to - maturity securities are reported on the balance sheet at amortized cost (acquisition cost adjusted for premium and discount amortization). They are *not* adjusted up or down to fair market value.

Trading securities, on the other hand, are held with the intention of selling them in the near team. A typical example is securities held by dealers. Discounts and premiums are *not* amortized, and the securities are adjusted to fair market value, *both* up *and* down. The difference, whether a gain or loss, is reported on the income statement as a component of income from continuing operations, and thus affects the net income.

Available - for - sale securities are securities being held for an indefinite time period. There is neither a definite intention to hold them to maturity nor to sell them in the short run. These, like trading securities, *are* adjusted up or down to fair market value, with one major difference. Any gains or losses are reported on the income statement *below* the net income as an element of “other comprehensive income.” They also appear in the owners’ equity section of the balance sheet under the caption “accumulated other comprehensive income”.

EXAMPLE

Company Green has debt securities with an amortized cost of $5,000. These are classified as held-to-maturity. In this case, the securities are reported on the balance sheet at $5,000; their market value is ignored.

EXAMPLE

Assume the same information, except that the securities are of the trading type. If the market value is $6,000, the following entry is made:

Investment	1,000	
Unrealized Holding Gain - Income		1,000

EXAMPLE

Assume the same information, except that the market value is only $4,000. The entry is:

Unrealized Holding Loss - Income	1,000	
Investment		1,000

EVALUATION AND REPORTING OF INVESTMENTS

EXAMPLE

Brown Corp. has available - for - sale (AFS) securities with amortized cost of $5,000 and market value of $6,000. The entry is:

Valuation Allowance	1,000	
Unrealized Holding Gain – Equity		1,000

Notice that the gain does not go to an income account but directly to stockholders' equity. Thus net income is unaffected. If the market value was $4,000, the end would be

Unrealized Holding Loss – Equity	1,000	
Valuation Allowance		1,000

Once again, net income is unaffected.

Up to this point, we've been discussing debt securities. Equity securities receive the same treatment, except that they are divided into only *two* categories:

1. Trading securities
2. Available – for - sale securities

There is no held-to-maturity category, since stocks do not have a maturity date.

If securities (whether debt or equity) are transferred to the trading category, they are transferred at market value and a gain or loss is recognized in income. If they are transferred to the available – for – sale category from the held – to - maturity category, they are also transferred at market value, but the gain or loss bypasses the net income and goes directly to stockholders' equity (as other comprehensive income).

Transfer from → Transfer to ↓	Held to maturity	Available for sale	Trading
Held to maturity	NA	Establish HTM account at FV. Unrealized G/L in OCI:	Establish HTM account at FV. Unrealized G/L is recorded in income.
Available for sale	Establish AFS account at FV. Unrealized G/L is recorded in OCI.	NA	Establish AFS account at FV. Unrealized G/L is recorded in income.
Trading	Establish Trading account at FV. Unrealized G/L in is recorded in income.	Establish Trading account at FV. Unrealized G/L is recorded in income.	NA