Academic Journal of Management and Social Sciences
ISSN: 2958-4396 | Vol. 4, No. 1, 2023

Skillfully Learn "Debt Investment" and "Bonds Payable"

Li Jiang *, Qijun Ding, Wen Zhang

School of Accounting, Anhui University of Finance and Economics, Bengbu, Anhui 233030, China
*** Corresponding author:** Li Jiang (Email: 736251287@qq.com)

Abstract: Financial assets and financial liabilities have always been the focus and difficulty in the teaching process of Intermediate Financial Accounting. The interpretation of the standards is very professional but abstract, coupled with complex calculations, making it difficult for students to learn. This article links the "debt investment" and "payable bonds" among them, and through case comparison, uses the "T" type account method for analysis to help everyone understand its basic principles and easily grasp the corresponding accounting processing.

Keywords: Debt Investment; Bonds Payable; Amortized Cost.

1. Introduction

Intermediate Financial Accounting is a compulsory course for accounting majors and its core course. It is a common foundation course for subsequent courses such as *Advanced Financial Accounting*, *Audit*, *Cost Management Accounting*, and *Financial Statement Analysis*, and has a huge radiating effect. However, financial instruments and equity investments have always been the focus and difficulty in the teaching process of Intermediate Financial Accounting. Many students have become confused and believe that accounting is too difficult to learn, resulting in resistance and fear. In fact, "debt investment" and "payable bonds" are the results of accounting treatment conducted by different accounting entities from their respective perspectives. Based on years of teaching experience, I compared the two through case studies and used the "T" account method for analysis, helping everyone understand its basic principles and easily grasp the corresponding accounting methods.

2. Understand the Issuance Methods of Bonds

Table 1. Issuance Methods of Bonds

Issuance method	Coupon rate and market rate	Issuers	Purchasers
Parity issuance	Coupon rate= Market rate	Issued at face value	Purchase at face value
Premium issuance	Coupon rate > Market rate	Pay extra interest in the future, Request compensation in advance, Issuance above face value.	In the future, there will be more interest, Bear the cost in advance, Purchase above face value.
Discount issuance	Coupon rate < Market rate	Pay less interest in the future, Bear the cost in advance, Issued below par.	In the future, the interest will be reduced, Request compensation in advance, Purchase below face value.

Understanding the issuance methods of bonds is to better understand and grasp the amortization of bond premiums and discounts. As is well known, the main purpose of issuing bonds by enterprises is to raise funds, and in the future, it is necessary to repay the principal and interest of the bond buyer. Therefore, the issuance price of bonds is determined by the present value of the cash flow outflow during the bond issuance period, which includes two parts: the present value of the cash flow of the bond principal and the present value of the cash flow of the bond interest. There are three types of bond issuance: face value issuance, premium issuance, and discount issuance. The issuance of bonds at a premium or discount is not a gain or loss for the issuing company, but rather an adjustment of interest expenses by the issuing company during the bond's lifespan. The specific content is shown in Table 1.

3. Master the Setting of Accounting Subjects

In the same bond business, there are similarities between the issuer and the purchaser in the setting of accounting accounts. Mastering the specific content of each accounting account (including detailed accounts) is the key to subsequent accounting. The specific subject settings are shown in Table 2 below:

Table 2. Comparison Table of Accounting Subjects

Edger account	Detailed accounts	Ledger account	Detailed accounts
Debt investment	Cost	Bonds payable	Face value
	Interest adjustment		Interest adjustment
	Accrued interest		Accrued interest

It should be noted that "debt investment cost" only calculates the face value of bonds, not the initial investment cost; The difference between the actual amount paid (received) and the face value of the bond, as well as transaction costs, are included in the "interest adjustment" detailed account; The "accrued interest" detailed account is only opened when the bond is subject to a one-time repayment of principal and interest at maturity. If the bond is subject to installment interest payment and principal repayment at maturity, the

interest is calculated through the "receivable (payable) interest" account.

4. Understand Relevant Concepts

4.1. Amortized Costs

According to the Enterprise Accounting Standards, the so-called amortized cost refers to the result formed by adjusting the initial recognition amount of financial assets or financial liabilities based on the following: (1) deducting the repaid principal; (2) Add or subtract the accumulated amortization amount formed by amortizing the difference between the initial recognition amount and the maturity date amount using the effective interest rate method; (3) Deduction of accumulated credit impairment provisions (only applicable to financial assets). It can be seen that amortized cost is a concept of time point, which reflects the actual value of assets or liabilities at a certain time point. However, this concept is difficult for beginners to understand. For simplicity, this article does not consider the provision for credit impairment in debt investments.

4.2. Effective Interest Rate Method.

The effective interest rate method refers to the method of calculating the amortized cost of financial assets or financial liabilities and allocating interest income or interest expenses to each accounting period. The actual interest rate refers to the interest rate used to discount the estimated future cash flow of a financial asset or financial liability over its expected lifespan into the carrying amount of the financial asset (excluding impairment) or the amortized cost of the financial liability. It is an interest rate that considers the time value of funds, but should not consider expected credit losses, usually the market interest rate at the time of bond issuance. Therefore, when calculating the actual interest rate, the concepts of compound interest present value and annuity present value should be used. Once the actual interest rate is determined, it remains unchanged throughout the entire duration of the bond.

5. Specific Accounting Treatment

Whether it is a premium purchase (or issuance) or a discount purchase (or issuance), it can be divided into two situations: installment payment of interest and one-time repayment of principal and interest upon maturity. In the teaching of debt investment and payable bonds, almost all textbooks use the table analysis method to introduce the amortization of premiums and discounts, and prepare the "amortization calculation table under the effective interest rate method" to introduce the calculation of amortized costs. In terms of student learning, it is difficult to compile this table separately. This article adopts the "T" type account method for analysis, which is more intuitive and easier to understand. For the convenience of explanation, this article makes the following assumptions: firstly, it does not consider the provision for impairment of debt investments; Secondly, the calculation of interpolation method is not introduced, and the actual interest rate question is directly given; Thirdly, due to space issues, we will only use the example of issuing (purchasing) bonds at a premium to illustrate its accounting treatment:

5.1. If it is a Bond with Installment Interest and One-time Repayment of Principal

Table 3. Relevant accounting treatment of the purchaser and issuer (1)

	Purchaser (Company A)	Issuer (Company B)
At the beginning of 2×20 1)	Dr: Debt Investment -- Costs 1000 -- Interest adjustment 56.53 Cr: Bank deposit 1056.53	Dr: Bank deposit 1056.53 Cr: Bonds payable -- Face value 1000 -- Interest adjustment 56.53
At the end of 2×20 2)	Dr: Interest receivable (1000×5%) 50 Cr: Investment income (1056.53×3%) 31.70 Debt Investment--Interest adjustment 18.30	Dr: Financial expenses (1056.53×3%) 31.70 Bonds payable--Interest adjustment 18.30 Cr: Interest payable (1000×5%) 50
	Dr: Bank deposit 50 Cr: Interest receivable 50	Dr: Interest payable 50 Cr: Bank deposit 50
At the end of 2×21 3)	Dr: Interest receivable (1000×5%) 50 Cr: Investment income (1038.23×3%) 31.15 Debt Investment --Interest adjustment 18.85	Dr: Financial expenses (1038.23×3%) 31.15 Bonds payable--Interest adjustment 18.85 Cr: Interest payable (1000×5%) 50
	Dr: Bank deposit 50 Cr: Interest receivable 50	Dr: Interest payable 50 Cr: Bank deposit 50
At the end of 2×22 4)	Dr: Interest receivable (1000×5%) 50 Cr: Investment income 30.62 Debt Investment-- Interest adjustment 19.38 (56.53-18.30-18.85)	Dr: Financial expenses 30.62 Bonds payable -- Interest adjustment 19.38 (56.53-18.30-18.85) Cr: Interest payable (1000×5%) 50
	Dr: Bank deposit 50 Cr: Interest receivable 50	Dr: Interest payable 50 Cr: Bank deposit 50
At the beginning of 2×23 5)	Dr: Bank deposit 1000 Cr: Debt Investment -- Cost 1000	Dr: Bonds payable-- face value 1000 Cr: Bank deposit 1000

Notes: To avoid the tail difference of decimal points, the "interest adjustment" is calculated first in the last year, and then the "investment income (financial expenses)" is calculated backwards. After the bond matures, the balance of the "debt investment (payable bonds)" account is zero.

[Case 1] On January 1, 2×20, Company A (a manufacturing enterprise) paid a price of 10.5653 million yuan (including transaction fees) to purchase the 3-year corporate bonds issued by Company B on the same day from the open market.

The total face value of the bonds was 10 million yuan, with an annual coupon rate of 5% and an actual interest rate of 3%. The interest on the bonds for the current year was paid at the end of the year, and the principal was repaid in one lump sum at the maturity of the bonds. The contract stipulates that the issuer of the bond can redeem the bond in specific circumstances and does not need to pay additional fees for early redemption. When Company A purchases the bond, it is expected that the issuer will not redeem it in advance. Company A classifies the bond as a financial asset measured at amortized cost based on its business model of managing the bond and the contractual cash flow characteristics of the bond. The analysis of accounting treatment between both parties is as Table 3.

The amortized cost for each year under the T-shaped accounts of "debt investment" and "bonds payable" is calculated as follows:

Table 4. Debt Investment (1)

(Cost)1) 1000 (Interest adjustment) 1) 56.53	
Opening amortized cost 1056.53	2) 18.30 (Interest adjustment at the end of the first year)
Amortized cost at the end of the first year 1038.23	3) 18.85 (Interest adjustment at the end of the second year)
Amortized cost at the end of the second year 1019.38	4) 19.38 (Interest adjustment at the end of the third year)
Amortized cost at the end of the third year 1000	5) 1000 (Recover)
0	

Table 5. Bonds payable (1)

	1) 1000 (face value) 1) 56.53 (Interest adjustment)
(Interest adjustment at the end of the first year) 2) 18.30	1056.53 Amortized cost at the beginning of the period
(Interest adjustment at the end of the second year) 3) 18.85	1038.23 Amortized cost at the end of the first year
(Interest adjustment at the end of the third year) 4) 19.38	1019.38 Amortized cost at the end of the second year
(Cash) 5) 1000	1000 Amortized cost at the end of the third year
	0

5.2. If it is a Bond with a One-time Repayment of Principal and Interest at Maturity

[Case 2] Following [Case 1], if the bond matures with a one-time repayment of principal and interest, the actual payment price is 10.5237 million yuan, and other conditions remain unchanged. The relevant accounting treatment analysis of both parties is as follows:

Table 6. Accounting Treatment of Purchasers and Issuers (II)

	Purchaser (Company A)	Issuer (Company B)
At the beginning of 2×20 1)	Dr: Debt Investment -- Costs 1000 -- Interest adjustment 52.37 Cr: Bank deposit 1052.37	Dr: Bank deposit 1052.37 Cr: Bonds payable-- Face value 1000 -- Interest adjustment 52.37
At the end of 2×20 2)	Dr: Debt Investment--Accrued interest 50 Cr: Investment income (1052.37×3%) 31.57 Debt Investment-- Interest adjustment 18.43	Dr: Financial expenses(1052.37×3%)31.57 Bonds payable -- Interest adjustment 18.43 Cr: Bonds payable -- Accrued interest 50
At the end of 2×21 3)	Dr: Debt Investment-- Accrued interest 50 Cr: Investment income(1083.94×3%)32.52 Investment-- Interest adjustment 17.48	Dr: Financial expenses(1083.94×3%)32.52 Bonds payable-- Interest adjustment 17.48 Cr: Bonds payable -- Accrued interest 50
At the end of 2×22 4)	Dr: Debt Investment-- Accrued interest 50 Cr: Investment income 33.54 Debt Investment-- Interest adjustment 16.46 (52.37-18.43-17.48)	Dr: Financial expenses 33.54 Bonds payable -- Interest adjustment 16.46 (52.37-18.43-17.48) Cr: Bonds payable -- Accrued interest 50
At the beginning of 2×23 5)	Dr: Bank deposit 1050 Cr: Debt Investment-- Costs 1000 -- Accrued interest 150	Dr: Bonds payable-- Face value 1000 -- Accrued interest 150 Cr: Bank deposit 1050

Notes: To avoid decimal point errors, the "interest adjustment" is calculated first in the last year, and then the "investment income (financial expenses)" is calculated backwards. After the bond matures, the balance of the "debt investment (payable bonds)" account is zero.

The amortized cost for each year under the T-shaped accounts of "debt investment" and "bonds payable" is calculated as follows:

Table 7. Debt Investment (II)

(Cost) 1) 1000 (Interest adjustment) 1) 52.37	
Amortized cost at the beginning of the period 1052.37 2) 50	2) 18.43(Interest adjustment at the end of the first year)
Amortized cost at the end of the first year 1083.94 3) 50	3) 17.48(Interest adjustment at the end of the second year)
Amortized cost at the end of the second year 1116.46 4) 50	4) 16.46(Interest adjustment at the end of the third year)
Amortized cost at the end of the third year 1150	5) 1000 (Cost) 5) 150 (Three year interest)
0	

Table 8. Bonds Payable (II)

	1) 1000 (Face value) 1) 52.37 (Interest adjustment)
(Interest adjustment at the end of the first year) 2) 18.43	1052.37 Amortized cost at the beginning of the period 2) 50
(Interest adjustment at the end of the second year) 3) 17.48	1083.94 Amortized cost at the end of the first year 3) 50
(Interest adjustment at the end of the third year) 4) 16.46	1116.46 Amortized cost at the end of the second year 4)
(Face value) 5) 1000 (Three year interest) 5) 150	1150 Amortized cost at the end of the third year
	0

As can be seen from the above, using the T-shaped account method and the structural thinking of accounting accounts, the data of each period is registered in the T-shaped account for addition and subtraction calculation, and then the amortized cost of each period is calculated. This borrowing accounting thinking solves the difficulties in accounting calculation, making it easier for students to fundamentally understand the entire idea of amortization using the actual interest rate method. Compared to the commonly used table method in various textbooks, it is more intuitive. Moreover, the T-type account method takes the entire debt investment (or payable bonds) as a whole, and the connection between the annual data and the previous and subsequent annual data can be clearly presented. The logical relationship is clearer, making it easier for students to learn and understand, and improving learning efficiency. Due to space limitations, this article only uses the example of issuing (purchasing) bonds at a premium for explanation. If issuing (purchasing) bonds at a discount, the above method can be used for analysis using a T-shaped account.

References

[1] Accounting Qualification Evaluation Center of the Ministry of Finance. Intermediate Accounting Practice [M]. Beijing: Economic Science Press, 2023(4).

[2] Compiled by the China Institute of Certified Public Accountants. Accounting [M]. Beijing: China Financial and Economic Publishing House, 2023(3).

[3] Liu Yongze, Chen Lijun. Intermediate Financial Accounting [M]. Dalian: Northeast University of Finance and Economics Press, 2022(5).

[4] Ministry of Finance Accounting Standard for Business Enterprises No. 22- Recognition and Measurement of Financial Instruments, 2017(4).