Chapter 3: Double-Entry Bookkeeping

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•Double-entry bookkeeping underpins accounting

•A way of systematically recording the financial transactions of a company so that each transaction is recorded twice.

•Basic accounting equation:

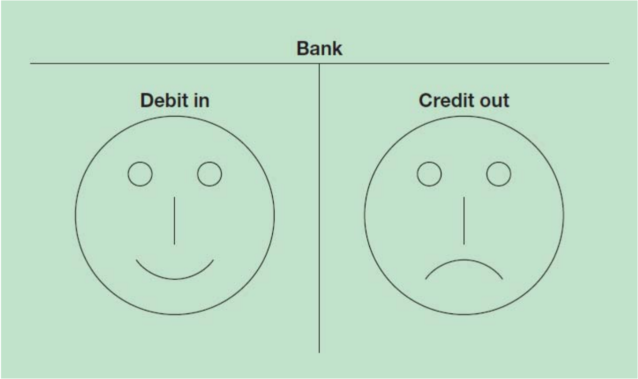
Assets = Liabilities + Equity + Profit (Income-Expenses)

Assets + Expenses = Liabilities + Equity+ Income

'T' Account (ledger account)	
Assets and expenses on The left-hand side DEBIT	Incomes, liabilities and Capital on the right-hand side CREDIT

Basic Rules

1. For every transaction there will be a **debit** and **credit entry**.
2. These debits and credits will be **equal and opposite**.
3. E.g. in bank account all records are **paid in** on **debit side** and **paid out** on **credit side**.



- The choice of the right account side is the core of the art of bookkeeping

- debiting an account → make an entry on the left-hand side of an account
- crediting an account → make an entry on the right-hand side of an account

Derived rules

Recall the basic accounting equation

Assets + Expenses = Liabilities + Equity+ Income

⇨ if a debit increases assets, then a credit counter item has to increase liabilities or owner‘s equity

⇨ i.e. increases and decreases in assets and liabilities (or owner‘s equity) must be recorded opposite to each other!

- Increases in assets are debited. Decreases in assets are credited.
- Increases in liabilities are credited. Decreases in liabilities are debited.

Assets

Debit for Increase	Credit for Decrease

Liabilities

Debit for Decrease	Credit for Increase

Owner‘s Equity

- Recall that owner‘s investments and revenues increase owner‘s equity, while owner‘s withdrawals and expenses decrease owner‘s equity.
- Frequently separate accounts are kept for these items.

(a) **Owner‘s Capital**. This account is affected by, for example, owner‘s investment.

- Increases in owner‘s capital are credited. Decreases in owner‘s capital are debited.

Owner's Capital

Debit for Decrease	Credit for Increase

Owner‘s Withdrawals

(b) **Owner‘s Withdrawals**

- The owner may, for example, withdraw cash for personal use. It could be debited directly to Owner‘s Capital but a separate account is kept to determine total withdrawals.

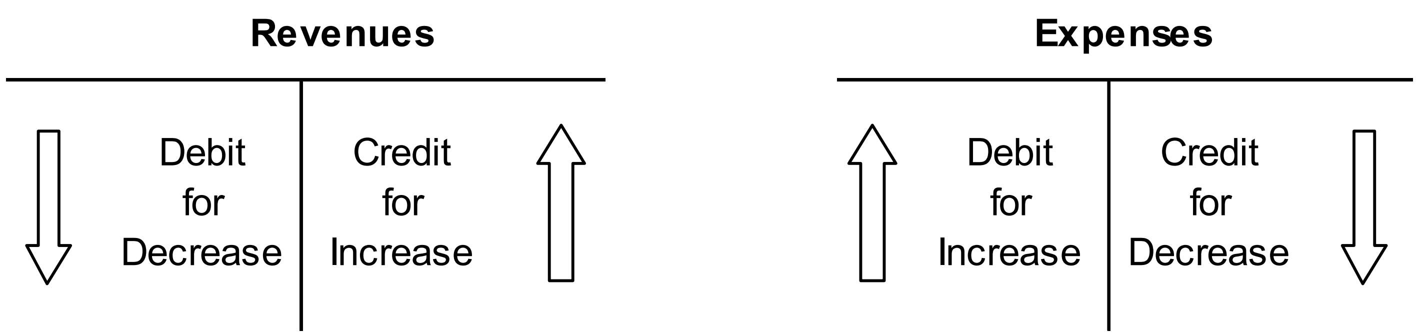
- Increases in owner‘s withdrawals are debited. Decreases in owner‘s withdrawals are credited.

Owner's Withdrawal

⇧ Debit for Increase	Credit for Decrease ⇩

Revenues and Expenses

- Revenues increase owner‘s equity, just as an increase in owner‘s capital does. Thus, debiting and crediting of a revenue account is the same as debiting and crediting of owner‘s capital account. Expenses, however, have the opposite effect.



- Increases in revenues are credited. Decreases in revenues are debited.
- Increases in expenses are debited. Decreases in expenses are credited.

Balancing off the accounts

When all entries completed, we need to balance off the accounts

- All Income Statement items will be closed off
- All Balance Sheet items brought forward

- Balancing off enables us to:
  1. Prepare a trial balance
  2. Close down income and expense accounts
  3. Bring forward assets, liabilities and equity

Balancing off the cash account

1. Sum the entries on the larger side below the line
2. repeat the sum below the line on the other side
3. strike the balance: insert the amount missing such that the sums of entries on both sides are equal (i.e. solving the account equation)
4. enter the counter item to the appropriate account e.g. Trial Balance

Cash

Beginning balance 100	**Outflows 400**
Inflows 400	3. **Balance 600**
200	
300	
1. **1000**	2. **1000**

Trial Balance

4. **Beginning balance 600**	

Debit and Credit Balance

total of debit amounts > total of credit amounts ➡ debit balance

total of debit amounts < total of credit amounts ➡ credit balance

- note that a debit balance occurs on the credit side on account closing and vice versa.
- <u>normal balance</u> ≡ side (debit or credit) that increases the stock or flow represented in the account

Booking of the counter item (in theory)

- appropriate account need not be the trial balance
  - could be a hierarchically superior closing account, e.g. “cash and cash equivalents”
  - this could be closed to the balance sheet
  - in order to reopen accounts for the next period the line item cash and cash equivalents in the balance sheet could be counterbooked to an account which is closed by booking out the individual items to the respective accounts, e.g. the cash account for the next period

- This is not the practical procedure, this theoretically possible procedure shall only make clear the mechanics of double entry bookkeeping

Example

A small company named ZiscoSys. The transactions are stated in chronological order:

(1) € 8.000 Owner‘s Investment to start up the business

(2) Purchase of equipment for € 4.000 paid in cash

(3) Purchase of supplies on credit for € 500

(4) € 400 payment of a liability (accounts payable resulting from delivery of supplies)

(5) € 5.000 revenues earned on credit

(6) € 3.000 collection of accounts receivable

(7) Incurring expenses of € 500 for rent (cash) and € 200 (on credit) for utility and prepaid insurance of € 1.200

(8) reception of a down payment of € 2.400 for services to be performed (unearned revenue or deferred revenue), and

(9) Owner‘s withdrawal of € 800.

Transaction 1 – initial investment

Cash	
8.000	

Owner's Equity	
	8.000

Increase in cash is debited; increase in owner‘s equity is credited.

Transaction 2 – purchase of equipment

Cash	
	4.000

Equipment	
4.000	

Decrease in cash is credited; increase in equipment is credited.

Transaction 5 – services rendered on credit

Accounts Receivable	
5.000	

Revenues	
	5.000

Increase in accounts receivable is debited; incr. in revenues is credited.

Transaction 7 – insurance policy bought

Prepaid Insurance	
1.200	

Cash	
	1.200

Increase in prepaid insurance is debited; decrease in cash is credited.

Asset Accounts

Cash

8.000	4.000
3.000	400
2.400	500
	1.200
	800
6.500	

Accounts Receivable

5.000	3.000
2.000	

Equipment

4.000	
4.000	

Supplies

500	
500	

Prepaid Insurance

1.200	
1.200	

=

Liability Accounts

Accounts Payable

400	500
	200
	300

Unearned Revenue

	2.400
	2.400

+

Owner's Equity Accounts

Owner's Investment

	8.000
	8.000

Owner's Withdrawal

800	
800	

Revenues

	5.000
	5.000

Expenses

500	
200	
700	

Commonly Used Accounts

- Different enterprises may use different accounts ⇒ the number and type (and name) depends on the nature of business and the size of the enterprise

Caretaker service

✓ sole proprietorship

✓ one account for wage expenses

✓ (probably) no account for plant and property

... rather low number of accounts

Automobile manufacturer

✓ corporate giant

✓ separate accounts for wage expenses of, say, production and clerical workers

✓ certainly (at least) one account for plant and property

... numerous accounts

Some important accounts common to most enterprises

Chart of Accounts for a Small Business					
Assets		**Liabilities**		**Revenues**	
Cash	111	Notes Payable	211	Sales	411
Notes Receivable	112	Accounts Payable	212	Commissions Earned	412
Accounts Receivable	113	Wages Payable	213		
Fees Receivable	114	Unearned Revenues	231	**Expenses**	
Office Supplies	115				
Prepaid Rent	116	**Owner's Equity**		Wages Expense	511
Prepaid Insurance	117			Utility Expense	512
Land	141	Capital	311	Telephone Expense	513
Building	142	Withdrawal	312	Insurance Expense	514
Equipment	148	Income Summary	313	Depreciation Expense, Equipment	521
				Depreciation Expense, Building	522

- For tractability reasons, accounts are numbered!

The Recording Process
Step 1: Journalizing

- The journal is a complete and chronological list of all transactions that occurred.

  ↳ journal is the book of original entry!

- common to have more than one kind of journal → special purpose journals, e.g. cash receipts journal or sales journal

- general journal: all transactions are recorded in this journal

- a complete entry provides the following information
  - date of recording
  - date of transaction
  - accounts and amounts to be debited and credited
  - short explanation of the transaction
  - number of account (if posted)

ZiscoSys‘ general journal

General Journal					**Page 1**
Date		**Description**	**Post. Ref.**	**Debit**	**Credit**
2013	1	Cash		8.000	
Sept.		Owner´s Investment			8.000
		Personal funds transferred to the account of ZiscoSys			
	3	Equipment		4.000	
		Cash			4.000
		Equipment bought with cash payment			
	8	Supplies		500	
		Cash			400
		Accounts Payable			100
		Purchase of supplies partially with cash and on credit			

Simple entry

Compound entry

Simple entry ⇒ one debit and credit entry *Compound entry* ⇒ more than one debit and/or credit entry

Journal: the basic accounting document

- The journal contains the complete information on transactions that enter the accounting system
  - it is the basic documentation and serves as instrument of evidence in litigation
  - it is not allowed to cancel journal entries
    - mistaken entries have to be reversed by a contra-entry
- In electronic accounting systems the journal is the only data base on transactions
  - the system has to assure that once an entry is made, it can no longer be influenced or altered by anyone
  - ledger accounts are „views" of the data base that are generated online, they are not records in their own right (Principle of data integrity: any information is only stored once)
    - the system of ledger accounts can thus be altered at any time according to new needs for analysis
  - A sufficient number of safety copies (mirror images) of the journal have to be kept up-to-date.

Step 2: Posting

- all accounts taken together in one file ⇒ the ledger
- process of transferring journal entries to the ledger accounts ⇒ posting
- as with journals, there may be more than one kind of ledger
- general ledger contains all accounts

general ledger

asset accounts

cash
accounts receivable
prepaid expenses
equipment

liability accounts

notes payable
accounts payable
unearned revenues
bonds

owner‵s equity accounts

owner‵s capital
owner‵s withdrawal
expenses
revenues

Posting – ZiscoSys Magdeburg

General Journal					Page 2
Date		**Description**	**Post. Ref.**	**Debit**	**Credit**
2013 Sept.	3	Equipment	148	4.000	
		Cash	111		4.000
		Equipment bought with cash payment			

General Ledger						
Equipment					**Account No. 148**	
					Balance	
Date	**Item**	**Post. Ref.**	**Debit**	**Credit**	**Debit**	**Credit**
2013 Sept. 2		J1	1.000		1.000	
3		J2	4.000		5.000	

General Ledger						
Cash					**Account No. 111**	
					Balance	
Date	**Item**	**Post. Ref.**	**Debit**	**Credit**	**Debit**	**Credit**
2013 Sept. 1		J1	8.000		8.000	
3		J2		4000	4.000	

date

page in journal

account numbers

The Trial Balance

- .... is a list of accounts and their balances at any equal point in time
- usually prepared periodically (end of accounting period)
- used to double-check equality of debits and credits
- limitations: omission errors cannot be detected!
  possibly offsetting errors!
- Input to preparation of financial statements (we‘ll see that later)

Trial Balance – ZiscoSys Magdeburg

Trial Balance		
ZiscoSys Magdeburg Trial Balance September 30, 2013		
Cash	6.500	
Accounts Receivable	2.000	
Equipment	4.000	
Supplies	500	
Prepaid Insurance	1.200	
Accounts Payable		300
Unearned Revenue		2.400
Owner´s Investment		8.000
Owner´s Withdrawal	800	
Revenues		5.000
Expenses	700	
	15.700	**15.700**