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Introduction to Financial Accounting

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In this note, we are going to introduce the basics of financial accounting. By the end, you will be able to understand and interpret simple financial statements. This note is intended for managers who need to use financial statements but not prepare them. Accounting is the language of business, used by managers to report financial information. Accounting does three things: a) it identifies events and transactions that have an economic impact on the firm, b) it records, classifies and summarizes these events, and c) it communicates this information to interested parties.

When accounting information is produced for internal purposes, we refer to it as *managerial accounting*. Managers use accounting information to make economic decisions to run the firm efficiently. In contrast, when accounting information is used to report the firm's financial performance to *outsiders*, we refer to this activity as *financial accounting*. In other words, financial accounting is the process of taking financial data from the firm's accounting records, making a summary in the form of an annual report and publishing it for the benefit of people outside the firm.

Managers are responsible for preparing the *annual report*, which is a booklet that contains the financial statements of the firm, explanatory notes and a detailed discussion and analysis of the results. The annual report is made public periodically, usually every year, and it is filed with local authorities. The annual report is used by people outside the firm to assess its performance and to evaluate management. As you can imagine, managers face perverse incentives as they are the ones who prepare the annual report. To avoid this conflict of interests, the financial statements in the annual report are verified by an external independent party, the auditor. The auditor reviews the accounts and produces a letter called the *auditor's report*, in which the auditor expresses its opinion about whether the financial statements have been prepared in accordance with the legislation in force and present a true and fair view of the firm's financial position. The auditor's opinion is part of the annual report. To help the task of the external auditor, the firm may also employ internal auditors who verify that the internal control procedures work as expected.

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Users of Financial Accounting

The external users of financial accounting are:

a) *Investors*: current investors use financial accounting to assess the performance of the firm; prospective investors use financial accounting to decide whether or not to invest in the firm.

b) *Creditors*: banks, suppliers, etc. Lenders of money or goods use financial accounting to decide whether or not to grant credit to the firm or to assess the likelihood of recovering their debts.

c) *Government agencies*: tax authorities, regulators, etc.

d) *Employees*: trade unions use financial accounting in collective bargaining over wages, benefits and working conditions for their members.

e) *Public interest groups*: environmentalists, groups pursuing corporate social responsibility, etc., also use financial accounting information to evaluate firms' policies in these dimensions.

Objective of Financial Accounting

The objective of financial accounting is to provide information to external users that is useful in making resource allocation decisions. Financial information is useful when it is *relevant* and *faithfully represents* what it purports to represent. The usefulness of financial information is enhanced if it is comparable, verifiable, timely and understandable. Relevant financial information is capable of making a difference in the decisions made by users. Financial information is capable of making a difference in decisions if it has predictive value, confirmatory value or both.[1]

Accounting Standards

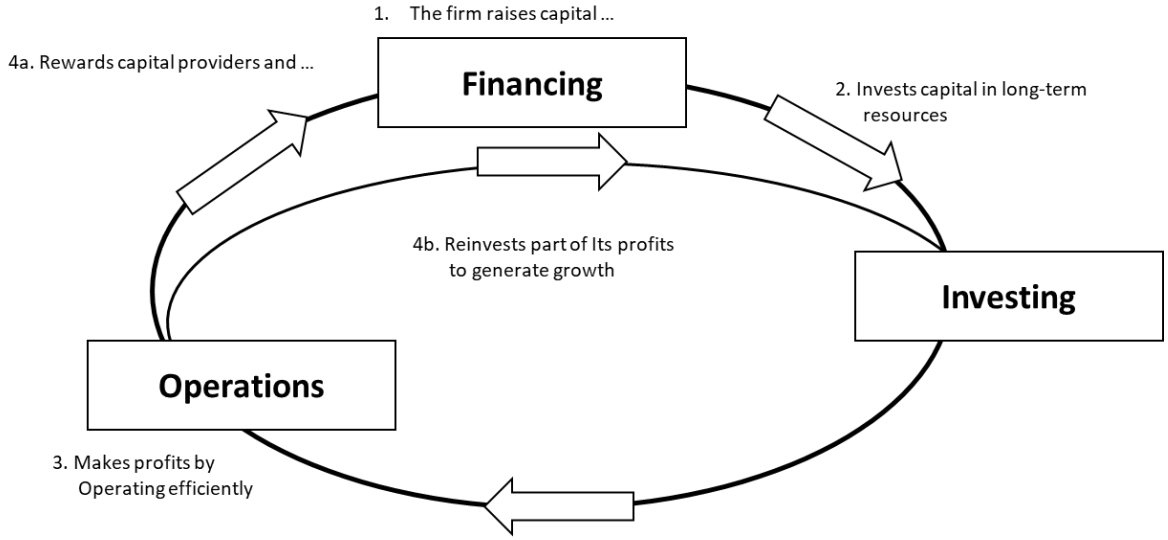
The previous enumeration of users of financial information shows that they are many and diverse. Their needs, objectives and backgrounds are very different. This makes it necessary to follow certain rules and conventions so that all users can understand and interpret the information correctly across companies and over time. These rules are the *accounting standards*. In this note, we are going to use two sets of accounting standards: IFRS and U.S. GAAP. They are fairly similar for most of the aspects that are relevant for managers. IFRS stands for International Financial Reporting Standards and these are issued by a private body, the International Accounting Standards Board (IASB). IFRS have been adopted by the European Union and by approximately 120 countries outside the EU. U.S. GAAP – meaning United States Generally Accepted Accounting Principles – are the accounting standards used in the United States. They are issued by another private body, the Financial Accounting Standards Board (FASB). The IASB and FASB were working together on the convergence of IFRS and U.S. GAAP to eliminate the differences between both sets of standards or reduce them to a minimum. Unfortunately, these efforts have stalled due to irreconcilable differences.

[1] International Accounting Standards Board, *Conceptual Framework for Financial Reporting 2010*.

The Business Cycle

Any firm performs three key activities: 1) it raises capital 2) to acquire long-term resources, which are used 3) to generate profits for the providers of capital.[2] This is known as the business cycle.

Figure 1
The Business Cycle



To put this explanation in context, let's suppose that an entrepreneur has a business idea to make long-lasting batteries for portable devices. First, she will need to raise capital (i.e., money) to carry out her business plan. The capital can come from her own wealth, from other parties interested in being part of this project or from lenders (banks). This first activity is known as the *financing* round of the business cycle. Next, she will use the funds raised to acquire long-term resources: a warehouse, machines, tools, fixtures, etc. We call this second activity the *investing* round. Finally, these long-term resources will be put to work to produce and sell the batteries. This final activity is the *operations* round of the business cycle. If things go as expected and the product is successful, the firm will generate profits. Part of the profits will be used to reward the capital providers and the rest will be reinvested in the business to generate growth (i.e., the firm will acquire more long-term resources, to produce more and increase sales). The business cycle repeats itself every year throughout the life of the firm.

To control the three stages of the business cycle, firms use accounting. Firms always track where the capital is coming from and how it is being used. To see how this is done, let's use a real-life example.

[2] In this note, the words "profit," "earnings" and "income" mean the same thing and they will be used interchangeably.

Illustration of the Accounting Process: The Balance Sheet and the Income Statement

Debbie, Sarah and Jane are three close friends who love the outdoors. They are avid skiers and have an entrepreneurial spirit. They decide to create a small company to import and sell high-end Swiss skis. They call the company DSJ. Each partner contributes €10,000. They incorporate DSJ on June 30 of year 1, and each owner receives 2,000 shares with a nominal value of €5. On the same day, DSJ borrows €9,000 from a local bank at an annual interest rate of 4%. The loan and the interest are to be repaid in full on December 31 of year 1. All the money is deposited in DSJ's checking account. On June 30, DSJ rents a warehouse and pays €5,400 for six months' rent in advance. To keep track of these transactions, DSJ prepares two lists: one with all the capital sources and another detailing how the capital has been used.

Table 1
Balance Sheet of DSJ as of June 30, Year 1

Uses of capital		Capital sources	
Cash	33,600	Bank loan	9,000
Prepaid rent	5,400	Share capital	30,000
Total	€ 39,000	Total	€ 39,000

The list on the right contains a description of who has provided capital to the firm: the bank and the three owners. The capital provided by the owners is called share capital.[3] The list on the left simply shows that the funds raised from these two sources have been used to rent a warehouse, where DSJ plans to conduct its operations, and that the unused funds are sitting in DSJ's checking account. Notice that the totals of each list are the same by design. This financial statement is called the *balance sheet* and it contains a list of the firm's resources on the left (cash and prepaid rent, in our case) and a list of the providers of capital on the right (the bank and the owners). The balance sheet is a depiction of the firm's financial position on a specific date: here, at the end of June 30 of year 1. Every day, the firm will engage in new transactions and the composition of the balance sheet will change accordingly.

The firm's resources are called *assets* and the sources of capital receive two different names depending on their nature. If the funds must be returned to their providers, they are called *liabilities*; if the capital is going to be invested permanently in the firm, these funds are called *owners' (or shareholders') equity*. On June 30 of year 1, DSJ has total assets worth €39,000, liabilities of €9,000 and owners' equity of €30,000. By definition, assets always equal liabilities plus owners' equity. This is called the *accounting identity: A = L + OE*. In summary, the assets are the firm's resources, the liabilities are its obligations with third parties and the owners' equity is the wealth of the firm's owners. You can think of owners' equity as the residual claim of the owners on the firm's assets once all the liabilities have been paid: A − L = OE. The difference between assets and liabilities (A − L) is called *net assets*. Therefore, NA = OE.

[3] The term "share capital" is used in Europe. In the United States, it is called "capital stock."

With this new terminology, the balance sheet looks like this:

Table 2
Balance Sheet of DSJ as of June 30, Year 1

Assets		Liabilities	
Cash	33,600	Bank loan	9,000
Prepaid rent	5,400		
Total assets	39,000	**Owners' equity**	
		Share capital	30,000
		Total L & OE	€ 39,000

DSJ is legally bound by contract to repay the loan to the bank at the end of six months. For this reason, the loan is a liability. However, DSJ is not legally obliged to return the capital to its owners and, for this reason, the owners' equity is considered permanent capital of the firm and not a liability. The firm's owners may decide to return part of the capital to themselves but this would be a company decision approved by the owners, not a legal obligation.

Now that we understand the purpose of the balance sheet, we can continue recording the transactions that take place in the period from July to September of year 1:

1) In early July, DSJ pays €4,000 in cash for equipment. The equipment is expected to have a useful economic life of five years and zero residual value at the end of its life. The figure below shows the effect of this transaction on the balance sheet. Column 1 shows the status of the balance sheet at the end of June 30. The purchase of equipment creates a new asset, equipment, worth €4,000, and the payment reduces the cash balance by the same amount. The new cash balance is €29,600. Note how the entries always balance: the change in assets always equals the change in liabilities and owners' equity. If this were not the case, then we would have made a mistake. The effect on the balance sheet is:

Table 3

	Balance June 30	(1)
Assets		
Cash	33,600	−4,000
Prepaid rent	5,400	
Equipment		+4,000
Total assets	€ 39,000	€ 0
Liabilities		
Bank loan	9,000	
Owners' equity		
Share capital	30,000	
Total L & OE	€ 39,000	€ 0

2) The company purchases merchandise inventory (i.e., skis) worth €28,000 on credit. A new asset appears on the balance sheet called merchandise inventory, which reflects the value of the purchased skis. Because the supplier of the inventory sells it on credit, DSJ must recognize a liability showing that it owes €28,000 to the supplier. This account is called accounts payable. Notice that the supplier is providing financing to DSJ (i.e., as if DSJ were getting a loan from the supplier). Again, the change in assets equals the change in liabilities and owners' equity. The effect on the balance sheet is shown in column 2:

Table 4

	Balance June 30	(1)	(2)
Assets			
Cash	33,600	−4,000	
Merchandise inventory			+28,000
Prepaid rent	5,400		
Equipment		+4,000	
Total	€39,000	€0	€28,000
Liabilities			
Accounts payable			+28,000
Bank loan	9,000		
Owners' equity			
Share capital	30,000		
Total	€39,000	€0	€28,000

3) DSJ sells skis costing €21,000 for €32,000. All sales are on account except for €3,000, which are for cash. This is a crucial and important transaction as it is the first time DSJ's operations generate profits: the company sells skis worth €21,000 for €32,000, making a gross profit of €11,000. This profit belongs to the owners and it is accumulated in a new account within owners' equity called profit for the period, which captures the firm's performance during this three-month period. Profit (or earnings) is the result of revenues minus expenses. DSJ earns €32,000 in revenues when it delivers the products to the customers. Revenues are increases in owners' equity as a result of operations. Revenues make the owners richer. Note that a substantial portion of the revenues (€29,000) will be collected in the near future. However, DSJ recognizes revenues of €32,000 because it has earned them (it has delivered the skis) and it expects to collect all the amount due. From this discussion, you can see that revenues are not equal to cash collections. This is an important point because, in colloquial parlance, we tend to equate revenues with cash inflows. In accounting, this is not the case. Revenue is a technical concept that describes the increase in owners' equity as a result of operations conducted by the firm with the intention of generating profits. From the accounting identity A − L = OE, you can deduce that the increase in owners' equity will be matched by an equal increase in net assets. In our case, cash increases by €3,000 and a new account called accounts receivable increases by €29,000. This account reflects the amount owed to the firm by credit customers. This is an asset for the firm because the firm expects to convert the receivables into cash in the near future. The owners are richer because now they have more assets (more cash and more accounts receivable). The new cash balance is €32,600. You can see the effect on the balance sheet in column 3a below.

To generate the revenues, DSJ has to incur certain costs. In this case, the cost is the value of the skis delivered to the customers. This transaction reduces the wealth of the owners: they become poorer because they no longer have the skis and this is reflected in a reduction in owners' equity. This cost is an expense, another technical concept in accounting. *Expenses are reductions in owners' equity as a result of operations*. From the accounting identity A – L = OE, you can conclude that expenses also reduce assets or increase liabilities. In this transaction, the expense is called the cost of goods sold (COGS) expense. In column 3b below you can see how the reduction in owners' equity is balanced by an equal reduction in merchandise inventory. The owners are poorer because now they have less merchandise inventory. Note that the recognition of this expense does not imply a cash payment. Again, in common parlance, we tend to equate expenses with cash outflows. This is not the case in accounting. The expense is incurred when the skis are delivered to the customers, even though the cash outflow will occur when DSJ pays the ski suppliers in the near future. The overall effect on the balance sheet is shown in columns 3a and 3b:

Table 5

	Balance June 30	(1)	(2)	(3a)	(3b)
Assets					
Cash	33,600	−4,000		+3,000	
Accounts receivable				+29,000	
Merchandise inventory			+28,000		−21,000
Prepaid rent	5,400				
Equipment		+4,000			
Total	€ 39,000	€ 0	€ 28,000	€ 32,000	−€21,000
Liabilities					
Accounts payable			+28,000		
Bank loan	9,000				
Owners' equity					
Share capital	30,000				
Profit for the period				+32,000 Sales revenue	−21,000 COGS expense
Total	€ 39,000	€ 0	€ 28,000	€ 32,000	−€21,000

The result of transaction 3 is a gross increase of €11,000 in the owners' wealth. Now the total owners' equity is €41,000: €30,000 contributed by the owners and €11,000 generated by the operations. The balance sheet always distinguishes the contributed capital (share capital) from the earned capital (profits).

4) The company receives €1,500 from a customer as a deposit for an order to be delivered in October. This transaction is a prepaid sale. The company increases its cash by €1,500 and recognizes a liability of the same amount called deposits from customers.[4] DSJ cannot recognize revenue because it has not delivered the product yet. In the meantime, the

[4] This account is also called advances from customers, unearned revenue or deferred revenue.

company owes €1,500 to the customer: if DSJ fails to deliver the order, it will have to reimburse the customer. Here you have an instance of a cash inflow that is not revenue. Remember that revenues are increases in owners' equity as a result of operations. DSJ will earn the revenues when it completes the sale by delivering the skis. The effect on the balance sheet is shown in column 4 of Table 6 below, which also shows the effect on the balance sheet of the rest of the transactions to avoid having too many exhibits. From now on, in the description of each new transaction, you will be referred to this Table 6.

5) The company collects €11,500 from credit customers. This transaction results in a reduction in accounts receivable and in an increase in cash of €11,500. Here we have another cash inflow that does not result in the recognition of revenues. The reason is that the revenues were already recognized in full in transaction 3a. Now, DSJ just collects part of the uncollected revenues. The credit customers still owe DSJ €17,500 and the new cash balance is €45,600. The effect on the balance sheet is shown in column 5 of Table 6.

6) DSJ pays €26,000 to the suppliers of merchandise inventory. This transaction produces a €26,000 reduction in cash and an equal reduction in accounts payable. The new cash balance is €19,600. Now the amount owed to the suppliers of merchandise inventory is only €2,000. Note that this cash outflow did not involve the recognition of an expense. The reason is that part of expense was recognized in transaction 3b when the inventory was delivered to the customers. The effect on the balance sheet is shown in column 6 of Table 6.

7) On July 1, DSJ hires an employee. His monthly salary is €1,200 and is paid in cash at the end of each month. To generate the revenues, in addition to the COGS expense, DSJ has to incur additional expenses. The cost of the employee for the three-month period is an expense because it reduces cash by €3,600 and it makes the owners poorer. The new cash balance is €16,000. The effect on the balance sheet is shown in column 7 of Table 6.

8) Other operating expenses (utilities, etc.) amount to €2,710 and are paid in full in the period. Similarly to the previous transaction, cash declines by €2,710 and a new expense called other operating expenses is recognized. The new cash balance is €13,290. The effect on the balance sheet is shown in column 8 of Table 6.

9) At the end of September, DSJ records a depreciation expense of €200 to recognize that the equipment is not new anymore. To generate revenues, DSJ has used the equipment. These items have lost some value and this makes the owners poorer. Therefore, DSJ recognizes a depreciation expense of €200 (4,000/60 months × 3 months). Note that DSJ is assuming that the expected useful life of the equipment is five years with no residual value at the end. DSJ is also assuming that the decrease in the equipment's value is linear over time. Accounting standards do not mandate specific figures for the useful life of depreciable assets or the depreciation method but require that reasonable assumptions be made. The figure chosen for the life of the equipment, five years, is going to affect profit. If a longer life is selected, the depreciation expense will be smaller and the profit will be bigger. The effect on the balance sheet is shown in column 9 of Table 6. Now, the net book value of the equipment is €3,800.

10) The company also records the rent expense for the three-month period. Recall that DSJ paid six months' rent in advance. On June 30, the prepaid rent was an asset for the firm because it gave it the right to use the premises for six months to conduct its operations. After three months, half of the prepaid rent has been consumed. Therefore, the value of the asset prepaid rent declines by €2,700 (€5,400/2). The rent of the warehouse was a necessary cost to carry out the operations. The consumption of this asset decreases profit and makes the owners poorer. The effect on the balance sheet is shown in column 10 of Table 6.

11) The interest expense incurred during this three-month period is €90, which is not paid. To finance its operations, DSJ obtained a €9,000 loan with interest at 4% per year. The cost of using borrowed money is the interest expense, which makes the owners poorer. The interest expense amounts to €90 (€9,000 × 4% × 3/12). Because DSJ does not have to pay the interest until December 31, it must recognize an interest payable liability with the bank. Here is another instance where the recognition of an expense does not imply an immediate cash outflow. The effect on the balance sheet is shown in column 11 of Table 6.

12) The income tax rate is 25%. DSJ recognizes an income tax expense of €425, which will be paid in November. At the end of September, the profit generated before taking into account tax costs is €1,700. (You can verify this below in Table 6 by adding all the revenues and expenses.) The income tax expense is €425 (€1,700 × 25%) and it is recognized as a reduction in owners' equity. Because this amount will not be paid until November, the firm also recognizes a liability called income tax payable of the same amount. The effect on the balance sheet is shown in column 12 of Table 6.

13) Finally, the three friends realize that, at the end of September, the cash balance is only €13,290. They realize that they are going to need additional financing to maintain liquidity until the company achieves higher sales and profitability. They negotiate a three-year bank loan of €15,000, which is secured with personal assets of the three owners, and receive the cash on September 30. This is a simple transaction that increases cash and creates a new liability called long-term loan. The effect on the balance sheet is shown in column 13 of Table 6.

Table 6
DSJ Transactions During the Period From July to September of Year 1

	Balance June 30	(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	Balance Sept. 30
Assets																
Cash	33,600	-4,000		+3,000		+1,500	+11,500	-26,000	-3,600	-2,710					+15,000	= 28,290
Accounts receivable				+29,000			-11,500									= 17,500
Merchandise inventory			+28,000		-21,000											= 7,000
Prepaid rent	5,400											-2,700				= 2,700
Equipment		+4,000									-200					= 3,800
Total	€39,000	€0	€28,000	€32,000	-€21,000	€1,500	€0	-€26,000	-€3,600	-€2,710	-€200	-€2,700	€0	0,000	€15,000	€59,290
Liabilities																
Accounts payable			+28,000					-26,000								= 2,000
Deposits from customers						+1,500										= 1,500
Interest payable													+90			= 90
Taxes payable														+425		= 425
Bank loan	9,000															= 9,000
Long-term loan															+15,000	= 15,000
Owners' equity																
Share capital	30,000															= 30,000
Profit for the period				+32,000 Sales revenue	-21,000 COGS expense				-3,600 Salary expense	-2,710 Other oper. expenses	-200 Deprec. expense	-2,700 Rent expense	-90 Interest expense	-425 Tax expense		= 1,275
Total	39,000	€0	€28,000	€32,000	-€21,000	€1,500	€0	-€26,000	-€3,600	-€2,710	-€200	-€2,700	€0	€0	€15,000	€59,290

After the first quarter in business, DSJ's management prepares the firm's financial statements in order to assess its performance. With the information in Table 6, we can calculate the ending balances of all the accounts. The balance sheet of DSJ at the end of September of year 1 is as follows:

Table 7
DSJ Balance Sheets

	30-Jun Year 1	Sept. 30 Year 1
Current assets		
Cash	33,600	28,290
Accounts receivable	0	17,500
Merchandise inventory	0	7,000
Prepaid rent	5,400	2,700
Noncurrent assets		
Equipment, net of depreciation	0	3,800
Total assets	€ 39,000	€ 59,290
Current liabilities		
Accounts payable	0	2,000
Deposits from customers	0	1,500
Interest payable	0	90
Income tax payable	0	425
Bank loan	9,000	9,000
Noncurrent liabilities		
Long-term bank loan	0	15,000
Owners' equity		
Share capital	30,000	30,000
Retained profits	0	1,275
Total liabilities & owners' equity	€ 39,000	€ 59,290

Notice how the information has been organized. First, it is standard practice to present two consecutive balance sheets so that the reader can see how the different line items have changed between the dates of the two balance sheets: in our case, between June 30 and September 30 of year 1. The opening balance sheet contains very few items (most of the accounts have a zero balance) because the company had just been founded. Second, all the revenues and expenses have been accumulated in the account called retained profits (or retained earnings), which has a balance of €1,275 on September 30. This number summarizes the performance of DSJ during the three-month period ending September 30. This figure is very important because it tells us how well DSJ did in the quarter under consideration. However, this form of displaying the information is too condensed and users of financial statements want to see how this figure has been obtained. In other words, they want to see a summary of the revenues and expenses that produced a profit of €1,275. As it is not practical to display these items on the balance sheet

because it would become unmanageable, firms prepare a separate financial statement called the *income statement*, or the *profit and loss account* (P&L), which contains the revenues and expenses of the period. In DSJ's case, it is as follows:

Table 8
DSJ Income Statement for the Quarter Ended September 30, Year 1

Sales revenue	**32,000**
COGS expense	−21,000
Gross profit	11,000
Salary expense	−3,600
Other operating expenses	−2,710
Depreciation expense	−200
Rent expense	−2,700
Operating profit	1,790
Interest expense	−90
Profit before income tax	1,700
Income tax expense	−425
Net profit	**1,275**

Note that the income statement measures the firm's performance over a period of time, July to September in our case. The top line of the income statement is always revenues, the inflow of net assets as a result of selling goods or performing services. The following line is the cost of the goods sold (cost of sales) or of the services performed. The difference between revenue and cost of sales (or services) is called *gross profit*. After this subtotal, firms report the rest of the operating expenses incurred to generate the revenues (salaries, utilities, rent, depreciation, etc.). The difference between revenue and all the operating expenses is called *operating profit*. Next, firms report financing costs (e.g., interest expense) and income from financial assets such as interest earned from cash deposits. The subtotal at this point is called *profit before income tax*. Next, the firm reports the income tax expense. Finally, the difference between all the revenues and expenses is the *net profit* (or net earnings or net income). Net profit is an important figure because it tells the reader whether the firm is making money or not. It is a summary figure of the firm's performance.

Let's now go back to the balance sheet. We observe that the owners' equity section of the balance sheet contains two main accounts: the capital contributed by the owners (share capital) and the profit generated by the operations and retained inside the firm (retained profits). The account of retained profits will change every period because of the profit generated in the period and not distributed to the owners. The last sentence requires some explanation. During its first three months in business, DSJ has generated a net profit of €1,275 and it has not distributed this profit to its shareholders, so the ending balance of retained profits is €1,275 (= 0 + €1,275). The initial balance of retained profits was zero because the firm had no previous history. However, if DSJ had decided to distribute part of the profit, it would have done so by paying a dividend to the shareholders. The dividend reduces cash and retained profits. The dividend is not an expense and it is not part of the income statement. It is simply a distribution of profits. A dividend payment is considered a financing transaction because the firm returns cash to its owners.

In summary, the account of retained profits accumulates the profits generated by the firm. Retained profits increase because of the period's net profit and they decrease because of the dividends distributed in the period. Because net profit is an important summary measure of performance, firms prepare a separate financial statement, the income statement, which contains the revenues and expenses that generated the net profit.

After this long detour to introduce the income statement, let's continue our analysis of the balance sheet. Assets are classified into two categories: current assets and noncurrent assets. *Current assets* are the firm's resources, which are either cash or resources that the firm expects to convert into cash or to sell or to consume in less than one year.[5] In DSJ's balance sheet, accounts receivable will be collected and inventories will be sold in the following few months. Prepaid rent will be consumed by the end of December. *Noncurrent assets* – assets that are not current – are resources that the firm intends to use for a long period of time to conduct its operations. Noncurrent assets include property, plant, equipment, and long-term investments.

By the same token, liabilities are classified into current and noncurrent liabilities. *Current liabilities* are present obligations of the firm that have to be paid in less than one year. They include accounts payable to suppliers, interest payable, deposits from customers, taxes payable, and short-term loans. *Noncurrent liabilities* are present obligations of the firm that will be paid in more than one year. They include long-term debt, and long-term obligations with employees (e.g., pension plans).

Finally, the owners' equity section of the balance sheet contains the owners' claims on the firm's assets after all liabilities have been paid (A − L = OE). As already mentioned above, the main accounts in owners' equity are the capital contributed by the owners (share capital) and the net profit generated and retained in the firm (retained profits).

The balance sheet is the most important financial statement as it contains a wealth of information about the firm. The balance sheet of DSJ at the end of September of year 1 shows that the firm had successful operations in its first quarter in business. We see that the ending balance of retained profits is €1,275. To check how this profit was generated, we consult the income statement for the period from July to September of year 1. We see that DSJ was able to sell some skis and that it incurred certain expenses. The profit margin of 3.98% (net profit/sales) is not high but DSJ has been able to avoid losses, which is unusual at such an early stage in a company's life. The owners invested €30,000 and, in three months, they have obtained a return of €1,275. The return on the equity capital invested has been 4.25% (1,275/30,000). This ratio is known as the return on equity (ROE). The annualized ROE equals 17%, which is an excellent return.

As for the financial strength of DSJ, we observe that it has current liabilities of €13,015. This means that DSJ has to pay this amount in the following 12 months. To verify whether there will be difficulties in making the payments, we look at the current assets. The cash balance is €28,290, which is more than enough to meet the payments. In addition, DSJ is owed €17,500 by its customers, an amount that will be in the cash account soon. DSJ also has long-term obligations – a €15,000 loan that will have to be repaid in three years. Most likely, DSJ will be able to make this payment as it already has enough cash. Obviously, everything depends on DSJ's ability to sell its products and collect the amounts owed by its customers.

[5] This threshold of one year can be longer if the firm's operating cycle exceeds 12 months.

Finally, note that the only noncurrent asset, equipment, is reported net of depreciation. On the balance sheet, some firms report the original cost of depreciable noncurrent assets and below a negative line called *accumulated depreciation*, which accumulates the depreciation recognized up to the balance sheet date. In this case, the assets section would look like this:

Table 9
DSJ Balance Sheets

	June 30 Year 1	Sept. 30 Year 1
Current assets		
Cash	33,300	28,290
Accounts receivable	0	17,500
Merchandise inventory	0	7,000
Prepaid rent	5,400	2,700
Noncurrent assets		
Equipment, at cost	0	4,000
Less: Accumulated depreciation	0	−200
Equipment, net of depreciation	0	3,800
Total assets	€ 39,000	€ 59,290

Now that you are familiar with the balance sheet and the income statement, we can provide the technical definitions of the elements that constitute them:

Assets are resources owned by the firm that are expected to generate future economic benefits and that arise from a past transaction.

Liabilities are present obligations of the firm that arise from a past transaction. To settle the obligations, the firm will have to give up economic benefits in the future (i.e., make payments).

Owners' equity is the capital contributed by the owners plus the capital generated by the operations and retained in the firm. It is the difference between assets and liabilities and captures the owners' wealth in the firm.

Revenues are increases in owners' equity as a result of operations conducted by the firm with the intention of generating profits.

Expenses are decreases in owners' equity as a result of operations conducted by the firm with the intention of generating profits.

The Statement of Cash Flows

The balance sheets at the end of June and September (Table 6) show that the cash account declined from €33,600 to €28,290, a net decrease of €5,310. However, the net profit was €1,275. How can a firm that reports positive profit have such a decline in cash? Part of the explanation is that not all the revenues are cash inflows and not all the expenses are cash outflows in the period. In addition, the firm can be investing in plant and equipment or repaying loans – items that do not generate expenses equal to the amounts paid.

Cash is extremely important and maintaining liquidity is essential to guarantee the survival of any firm. The vast majority of business failures occur because firms run out of cash. Sometimes the business model was sound but the initial financing was not sufficient to keep the firm alive during the initial years in which cash outflows tend to be larger than cash inflows until the firm establishes itself and sales pick up. For these reasons, users of financial information want to know how cash is generated and how cash is used in every period, in addition to how profit is earned.

In the same way that firms prepare the income statement to explain the change in the retained profits account, firms also prepare a new financial statement, the *statement of cash flows*, to explain the change in the cash account. The statement of cash flows shows how cash is generated and how cash is used in every period and it classifies the different cash flows into three categories: *cash from operations*, *cash from investments* and *cash from financing*. This classification is based on the nature of the business cycle described above (Figure 1). Financing cash flows include capital contributions by owners, new borrowings, repayment of existing borrowings, and payment of dividends. Investment cash flows include purchases or disposals of property, plant and equipment, purchases or sales of financial assets (i.e., shares of other firms, treasury bills, etc.), and purchases or disposals of other firms (i.e., mergers and acquisitions). All other cash flows are operating cash flows, which include collections from customers, payments to suppliers and employees, payments to tax authorities, and payments for operating expenses (i.e., rent, insurance, utilities, etc.). Interest paid or received and dividends received from financial investments are usually classified as operating cash flows.

To prepare the statement of cash flows for DSJ, we can use the information in the cash account in Table 6, which contains all the cash inflows and outflows for the period from July to September of year 1. We just need to group the different cash flows in the three categories. The usual presentation of the statement of cash flows is as follows:

Table 10

DSJ Statement of Cash Flows for the Quarter Ending September 30, Year 1

Operating activities:	
Collections from customers (3,000 + 1,500 + 11,500)	16,000
Payments to suppliers	−26,000
Payments to employees	−3,600
Payments for other operating expenses	−2,710
Cash flow from (used in) operations (CFO)	**−16,310**
Investing activities:	
Purchase of equipment	−4,000
Cash flow from (used in) investments (CFI)	**−4,000**
Financing activities:	
New long-term loan	15,000
Cash flow from financing (CFF)	**15,000**
Change in cash (CFO + CFI + CFF)	**−5,310**
Cash, beginning balance	33,600
+ Change in cash	−5,310
Cash, ending balance	€ 28,290

The sign convention is such that cash inflows are positive numbers and cash outflows negative numbers. Note that the statement of cash flows shows the cash generated and consumed during a period: July to September of year 1. The analysis of DSJ's statement of cash flows indicates that the operations were net consumers of cash, with a total usage of €16,310. This is not unusual for newly created companies. DSJ also invested €4,000 in the purchase of equipment. To compensate for these two large cash outflows and to avoid running out in the near future, DSJ obtained additional financing by borrowing €15,000 for the following three years. Despite the new loan, the cash balance declined by €5,310. Hopefully, the operations of DSJ will generate more cash in the coming quarters as the company becomes better known and its sales increase.

This presentation of the statement of cash flows is fairly straightforward and intuitive – a simple list of cash collections and payments classified by their nature: operations, investing or financing. This form of deriving the cash flow from operations is known as the *direct method.* It requires access to the movements in the cash account. There is an alternative way of deriving the cash from operations when no access to the cash account is available. This method starts off with net profit and adjusts it to obtain the cash flow from operations. It is called the *indirect method* of deriving the cash flow from operations. It is more complicated and it is the subject of another note. Obviously, both methods produce the same results.

The Accrual Basis of Accounting

Financial accounting recognizes revenues and expenses on the accounts when the revenues are earned or when the expenses are incurred. For instance, in transaction 3, DSJ recognizes revenues of €32,000 even though it receives only €3,000 in cash and recognizes a COGS expense of €21,000 even though no payment has been made to the supplier of the goods. In transaction 11, DSJ recognizes an interest expense of €90 even though no payment has been made to the bank. This means that the economic impact of events and transactions is recognized in the financial statements when the events and transactions occur, not when cash exchanges hands. This procedure is called the *accrual basis of accounting* or, simply, *accrual accounting*, and it is one of the main characteristics of financial accounting. In other words, accrual accounting recognizes revenues when the firm sells goods or performs services; at the same time, it also recognizes the expenses incurred to generate the revenues. The firm tries to match the revenues with the expenses incurred to generate the revenues. The goal is to measure profit correctly, recognizing all the revenues and all the expenses incurred, regardless of when cash is collected or paid.

Without being aware of it, we all use accrual accounting in our daily life. For instance, when we purchase something with our credit card, no payment is involved and our bank account's balance is not affected. Nevertheless, we are aware that we have incurred an expense that needs to be paid in the coming weeks. The same is true when we earn our salary at work. Most people receive their salary at the end of each month. If, in the middle of the month, we are asked how much salary we have earned, we will respond that we have earned 50% of the monthly salary. Implicitly we are using accrual accounting because we recognize that we have earned half of our salary even though we still have not received any cash.

Accounting Records, T-Accounts and Journal Entries

Although Table 6 is a useful pedagogical tool to understand the balance sheet, it does not provide a process to prepare the balance sheet and the income statement in a systematic way. To overcome these limitations, firms use a device called a *T-account*. T-accounts are a simple way of recording and accumulating the effect of transactions in the individual accounts affected.

A T-account has the form of the letter T – each individual account of the balance sheet has its own T; on one side of the vertical line, we record increases in the account and on the other side we record decreases in the account. For any asset account, increases in the account are recorded on the left and decreases are recorded on the right. However, for liability and owners' equity accounts, the convention is reversed and increases are recorded on the right and decreases on the left. This is the long-standing practice adopted everywhere. The schematic drawing below explains in simple terms how T-accounts work.

Table 11

Assets		Liabilities and owners' equity	
Beginning balance			Beginning balance
Increases debit (Dr.) +	Decreases credit (Cr.) –	Decreases debit (Dr.) –	Increases credit (Cr.) +
Ending balance			Ending balance

The left side of a T-account is called the *debit* side and the right side is called the *credit* side. Accounts abbreviate debit as (Dr.) and credit as (Cr.). Debit and credit mean left and right, respectively, regardless of the type of account. For instance, let's suppose that a firm obtains a loan of €10,000. You know that this transaction increases an asset (cash) and a liability (loan) of this amount. Using T-accounts, the entries are as follows (in €000):

Tabla 12

+ Cash –		– Loan +	
BB 12			0 BB
10			10
EB 22			10 EB

In the cash T-account, the entry is recorded on the debit side (left) because cash increases. In the loan T-account, the entry is recorded on the credit side because the liability increases as well. The cash account had a beginning balance (BB) of 12 and the loan account a beginning balance of 0 (i.e., the firm did not have any loans outstanding). After the transaction has been recorded, the ending balance (EB) of the cash account is 22 and the ending balance of the loan account is 10. Note that debit and credit do not mean increases and decreases because it depends on the type of account: debits increase asset accounts and decrease liability and owners' equity accounts; credits decrease asset accounts and increase liability and owners' equity accounts.

To clarify how T-accounts work in practice, Table 13 contains the T-accounts with the transactions of DSJ during the quarter from July to September of year 1:

Table 13
DSJ T-Accounts

+	Cash			–
BB	33,600			
(3a)	3,000	4,000	(1)	
(4)	1,500	26,000	(6)	
(5)	11,500	3,600	(7)	
(13)	15,000	2,710	(8)	
EB	28,290			

+	Accounts receivable			–
BB	0			
(3a)	29,000	11,500	(5)	
EB	17,500			

+	Merchandise inventory			–
BB	0			
(2)	28,000	21,000	(5)	
EB	7,000			

+	Prepaid rent			–
BB	5,400			
		2,700	(10)	
EB	2,700			

+	Equipment, at cost			–
BB	0			
(1)	4,000			
EB	4,000			

+	Accum. depreciation			–
		0	BB	
		200	(9)	
		200	EB	

–	Accounts payable		+
		0	BB
	26,000	28,000	(2)
		2,000	EB

–	Deposits from customers		+
		0	BB
		1,500	(4)
		1,500	EB

–	Interest payable		+
		0	BB
		90	(11)
		90	EB

–	Taxes payable		+
		0	BB
		425	(12)
		425	EB

–	Bank loan		+
		9,000	BB
		9,000	EB

–	Long-term loan		+
		0	BB
		15,000	(13)
		15,000	EB

–	Share capital		+
		30,000	BB
		30,000	EB

–	Retained profits		+
		0	BB
		1,275	(CE)
		1,275	EB

–	Profit for the period		+	
COGS exp.	(3b)	21,000	32,000	(3a) Sales rev.
Salary exp.	(7)	3,600		
Other oper. exp.	(8)	2,710		
Deprec. exp.	(9)	200		
Rent exp.	(10)	2,700		
Interest exp.	(11)	90		
Tax exp.	(12)	425		
			1,275	Net profit
	(CE)	1,275		
			0	(EB)

The reference numbers next to each entry refer to the corresponding transaction. Looking at the spreadsheet in Table 6, you can verify how each account is constructed. For instance, the cash T-account contains all the cash collections on the debit side and all the cash payments on the credit side. Transaction 1 was the purchase of equipment worth €4,000 for cash. The transaction was recorded by debiting equipment (A+) and crediting cash (A−) both for €4,000. The notation in parenthesis is only for pedagogical purposes to indicate that the asset equipment increased and the asset cash decreased. Likewise, if a liability increases or decreases, the notation will be (L+) or (L−), respectively. If an owners' equity account increases or decreases, the notation will be (OE+) or (OE−), respectively. Transaction 2 was the purchase of inventory on account for €28,000. This transaction was recorded by debiting merchandise inventory (A+) and accounts payable (L+), both for €28,000. Transaction 3 consisted of the sale of skis that cost €21,000 for €32,000, and the latter amount was received partly in cash, €3,000, and the rest on account, €29,000. The revenue side of this transaction is recorded debiting cash (A+) of €3,000 and accounts receivable (A+) of €29,000, and crediting profit for the period (OE+) with sales revenue of €32,000. Remember that the account profit for the period is part of owners' equity and it accumulates the revenues and expenses generated in the period. Therefore, this account increases on the credit side when revenues are recognized and decreases on the debit side when expenses are recognized. The expense side of transaction 3 consists of debiting profit for the period (OE−) with €21,000 of COGS expense and crediting merchandise inventory (A−) of €21,000. The other transactions are recorded similarly.

After the final transaction, the accountant proceeds to close the T-accounts. This means obtaining the ending balances of each account. You can verify that the ending balances coincide with the values reported in the last column of Table 6. Next, the balance sheet is prepared by arranging the accounts as in Table 7. With the account of profit for the period, the accountant prepares the income statement by rearranging the revenues and expenses as depicted in Table 8. Notice that the balance of profit for the period is €1,275, the net profit of the period, which is transferred to retained profits. To do so, the accountant debits profit for the period and credits retained profit, both for €1,275. This last entry is known as the closing entry (CE). Now the balance of profit for the period is zero and retained profits contains the net profit generated. This procedure permits the beginning of a new period with a clean profit for the period account, so that the revenues and expenses of the new period are not mixed with those of previous periods.

A final comment is in order to enable the account of accumulated depreciation to be understood. In Table 6, we directly reduced the value of equipment by €200 to recognize the depreciation of the equipment after three months of use. In real life, firms do not use this shortcut because they want to keep the original cost of the equipment purchased in the system. To accomplish this, the account of equipment, at cost, is used. Below this account, a new auxiliary account called accumulated depreciation is created to accumulate the depreciation of this and future periods. The function of this account is to adjust downwards the value of the asset account equipment at cost. For this reason, sometimes it is referred to as a contra-asset account. Even though it is located on the asset side of the balance sheet, it increases on the credit side and decreases on the debit side. Every period, the net value of the equipment equals its cost less the accumulated depreciation. For example, in the period from October to December of year 1, DSJ will recognize €200 of additional depreciation expense. At the end of December, the balance of accumulated depreciation will be €400, and the net value of the equipment will be €3,600.

In real life, accountants perform a previous step before they prepare the T accounts. They enter transactions into the accounting system as they occur by using *journal entries*. A journal entry is a standardized way of indicating which accounts are debited and credited and the amounts.

In practice, it is a computer screen in which the accountant tells the system which accounts to debit and credit. For instance, transaction 1 implies the recognition of a new asset, equipment, worth €4,000 and an equal decrease in cash. The accountant will introduce into the accounting system the first two lines in Table 14 below. She will continue entering the rest of the transactions in the same way. Once all the transactions have been recorded, the accounting system automatically posts (i.e., transfers) the journal entries to the appropriate T-accounts.

Table 14

		Dr.	Cr.
1)	Dr. Equipment (A+)	4,000	
	Cr. Cash (A−)		4,000
2)	Dr. Merchandise inventory (A+)	28,000	
	Cr. Accounts payable (L+)		28,000
3.a)	Dr. Cash (A+)	3,000	
	Dr. Accounts receivable (A+)	29,000	
	Cr. Profit for the period: Sales revenue (OE+)		32,000
3.b)	Dr. Profit for the period: COGS expense (OE−)	21,000	
	Cr. Merchandise inventory (A−)		21,000
4)	Dr. Cash (A+)	1,500	
	Cr. Deposits from customers (L+)		1,500
5)	Dr. Cash (A+)	11,500	
	Cr. Accounts receivable (A−)		11,500
6)	Dr. Accounts payable (L−)	26,000	
	Cr. Cash (A−)		26,000
7)	Dr. Profit for the period: Salary expense (OE-)	3,600	
	Cr. Cash (A−)		3,600
8)	Dr. Profit for the period: Other operating expense (OE−)	2,710	
	Cr. Cash (A−)		2,710
9)	Dr. Profit for the period: Depreciation expense (OE−)	200	
	Cr. Accumulated depreciation		200
10)	Dr. Profit for the period: Rent expense (OE−)	2,700	
	Cr. Prepaid rent (A−)		2,700
11)	Dr. Profit for the period: Interest expense (OE−)	90	
	Cr. Interest payable (L+)		90
12)	Dr. Profit for the period: Tax expense (OE−)	425	
	Cr. Taxes payable (L+)		425
13)	Dr. Cash (A+)	15,000	
	Cr. Long-term loan (L+)		15,000
CE)	Dr. Profit for the period (OE−)	1,275	
	Cr. Retained profits (OE+)		1,275

Journal entries are a powerful device because it is easy to verify whether mistakes have been made. For the balance sheet to balance, in each transaction the debits must always equal the credits. You can verify that this is the case in Table 12. Accounting knowledge is demonstrated by correctly recording the journal entries. Posting the entries to the T-accounts is a mechanical task.