



A Beginner's Guide to the Balance Sheet¹

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Introduction

This paper introduces the balance sheet and shows how to perform a simple balance sheet analysis. It also provides an outline of the purposes and fundamental features of the balance sheet. The outline supplies the information that is needed to assemble and analyze an accurate and detailed balance sheet.

What is a Balance Sheet?

The balance sheet presents the firm's financial structure. It shows the assets, liabilities and equity of the firm on a specific day. Most balance sheets are produced quarterly although some farm firms use an annual balance sheet. Any firm with annual sales greater than \$200,000 should use the quarterly system because the firm needs more frequent information on its financial structure than is supplied annually.

Assets are what the firm has, and liabilities are what the firm owes. The difference between the two, or equity, is what the firm owns. For example, if the firm's assets are \$1 million and its liabilities are \$600,000, its equity is \$400,000. Assets minus liabilities equal equity. Or, assets equal liabilities plus

equity. The balance sheet is typically written in this latter form, with assets listed on the left and liabilities plus equity listed on the right.

Farm assets are conventionally divided into current, intermediate and long-term assets. Farm liabilities are classified similarly and are conventionally listed opposite their assets. For example, if an intermediate asset is valued at \$100,000 and the firm owes \$80,000 on an intermediate loan for this asset, the asset and liability would be listed opposite each other as shown in Table 1. The table also shows that the firm currently has \$20,000 ownership in this asset.

What Does a Balance Sheet Look Like?

The total assets on the left equal the total liabilities and equity on the right. One hundred thousand dollars of assets minus the \$80,000 in liabilities provides the firm's equity in this specific asset. Thus, equity is the residual after deducting liabilities from assets (Table 1).

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Assets

Current assets are listed first on a balance sheet. They are the most liquid assets in that they can be turned into cash quickly without a discount. They include items like cash; bank accounts; investments in stocks, bonds or mutual funds; receivables; inventories for sale in the period between the balance sheets; supplies on hand and the value of growing crops. Usually, the greater the proportion of current to total assets, the better the financial structure. This is because of the importance of liquidity. Maintaining liquidity is increasingly important as market volatility grows. Traditional agricultural markets are more volatile today, particularly since the Freedom to Farm Act of 1996. Volatility requires quick access to cash; fixed or guaranteed prices do not. Approximately seven percent of U.S. farm assets can be classified as current. Thus, farms generally show relatively little liquidity.

Intermediate assets include depreciable capital assets, such as machinery, vehicles, equipment, fruit trees and breeding stock. They are less liquid than current assets because it is harder to obtain cash for them quickly without discounting their value. Typically, intermediate assets average about 17 percent of total assets on an average U.S. farm.

Long-term assets are typically made up from buildings and land. Long-term assets represent the remaining 76 percent of total farm assets on average. They are the least liquid of all assets because it is obviously difficult to sell land or buildings quickly without discounting their price. Consequently, farms show little liquidity compared with industries like retailers or automobiles. Farming may well be the least liquid industry in the world, simply because of the importance of land in farming.

The three asset types are, therefore, essentially separated by their liquidity. This separation is convenient and is not inflexible. Some assets can be classified one way by one firm and another way by another firm. For example, poultry houses can often be either an intermediate or a long-term asset. Still, the classification is important. Liquidity decreases from current to intermediate to long-term assets. Firms today need to show that they are liquid.

Farmers show this by renting rather than buying extra land or leasing equipment and breeding animals rather than using their scarce liquidity in ownership.

Current Assets

Current assets are probably the most important assets in any business today because they are the most liquid. Liquidity is shown in the current section of the balance sheet by examining current assets and current liabilities. A typical list of current assets for a farm is provided in Table 2. This list suggests that the farm will be selling both crops and steers during the next quarter.

Intermediate Assets

Intermediate assets are capital assets that usually depreciate. Their depreciation runs more than one year but usually not longer than seven years. Examples include vehicles, equipment, machinery, breeding animals and fruit trees. The non-farm world rarely uses an intermediate asset classification. All intermediate assets, such as plants and machinery, are treated as long-term assets. Typically, the proportion of current and long-term assets will be about 60 percent/40 percent. So, non-farm firms look liquid. In comparison, a normal U.S. farm would have a 7-percent and 93-percent proportion and look very illiquid. Including an intermediate category improves the liquidity picture. Experienced lenders know that farms may appear illiquid, even when they are not. Some intermediate assets are listed in Table 3.

The assets are listed using their depreciated values. For example, the tractors have been depreciated to \$180,000. Items are depreciated using IRS rates, so most assets are entered at their book value. Market values are used when an asset is about to be sold. If the market value of the two tractors is \$200,000 and they are sold in the next quarter, their balance sheet entry would be \$200,000.

Long-Term Assets

Long-term assets include land and permanent buildings. Land does not depreciate unless it is mined; buildings do depreciate. However, neither is liquid unless sold. Long-term assets are presented in

Table 4. Buildings and fruit trees are at book value, and land is at appraised value. This land valuation is conventional.

Liabilities

Current Liabilities

Current liabilities are debts to be paid within the period between balance sheets (Table 5.) If the balance sheet is quarterly, the current portion of our liabilities, or \$50,000, must be paid within the next quarter. Current liabilities consume liquidity. This is a common financial problem faced by farms as they are often unable to pay bills because they are insufficiently liquid. These bills include the current portion of notes and mortgages as well as payables, such as supplies and labor. Farms today face immediate liquidity rather than solvency problems.

Intermediate Liabilities

Intermediate liabilities match the intermediate assets. They are notes and money borrowed to purchase intermediate assets (machinery, breeding stock, equipment). Intermediate liabilities are what remains due on these notes after paying the current portion reported under current liabilities (Table 6). For example, \$5,000 in current liability is due on the trucks in the next quarter (Table 5), and the remaining \$30,000 is due on the trucks after this next quarter (Table 6). So, on March 31, the total truck debt is \$35,000, with \$5,000 to be paid in the next quarter and \$30,000 to be paid later.

Long-Term Liabilities

Long-term liabilities are mortgages on land and buildings (Table 7). The farm owes \$210,000 for land. The current liability of the mortgage is \$10,000 due next quarter and \$200,000 to be paid later.

Equity

Equity is what is owned. It is the amount remaining after paying all the liabilities. The balance sheet shows that, after subtracting liabilities from assets, the firm has \$450,000 in equity.

Analysis of the Balance Sheet

Why analyze the balance sheet? Analyzing the balance sheet provides information on changes in the financial structure of a firm. Observing changes and identifying trends helps to identify what good and bad things are happening to the firm. Trends are more useful than numbers. They provide the knowledge, first, to see if there is a trend; second, to determine whether the trend is good or bad; and third, to take appropriate action.

Doctors use their education, experience and, occasionally, some inspiration in diagnosing the physical health of a patient. A doctor typically runs through a series of tests and compares the test results with the patient's condition before the tests, rather than merely concentrating on the test results. The doctor is looking for good and bad trends. The subsequent analysis will identify what the patient might do to accentuate the good trends and to reduce the bad trends.

Balance sheet analysis similarly looks at the financial health of a firm. The analysis runs the business through a series of tests and, like the doctor, needs more than one number to show the complete picture. The balance sheet in Table 8 shows equity of \$450,000. That sounds good, but it would be more useful to have a series of numbers as a trend. Say, for example, the equity was \$100,000 in 1992; \$150,000 in 1993; \$200,000 in 1994; \$250,000 in 1995; \$300,000 in 1996; \$350,000 in 1997; \$400,000 in 1998 and \$450,000 today. These numbers show a good trend that should be expanded.

Analytical Tools

One type of analytical tools is liquidity tools. Liquidity is the ability of the firm to meet debts when they become due. This means that the firm must have sufficient cash to meet current liabilities. These liabilities include accounts payable, operating loans and the current portion of notes and mortgages. The cash to pay these debts comes from current assets. Current assets include items such as cash, cash equivalents, inventory and receivables. There must be enough of these, as cash, to pay the bills. If there is, the firm is liquid. If there is insufficient cash, the firm

is illiquid and must raise cash by selling assets or borrowing to meet the current liabilities.

Working Capital is a useful liquidity tool. It is determined by subtracting current liabilities from current assets (CA - CL). The balance sheet in Table 8 shows CA of \$100,000 and CL of \$50,000. There is, therefore, \$50,000 of working capital. In other words, after paying all the bills, there is still \$50,000 of working capital left. This is good news.

Quick Working Capital looks at working capital more critically. Its concept is that some current assets are not as liquid as other assets. For instance, growing crops are not as easy to sell as crops in storage. Nor are crops or animals that need a few more weeks of production before they can be sold, compared with items that are ready for market. Nothing is as liquid as cash. Liquid current assets include items that can be sold quickly without a discount. CA - inventory - CL is a useful definition of quick working capital. If, for example, the entire inventory is growing crops, there is only \$15,000 in quick working capital (100,000 - 35,000 - 50,000). Thus, the firm is not as liquid as the working capital of \$50,000 implied.

Current Ratio also measures liquidity. It is calculated by dividing current assets by current liabilities (CA/CL.) Thus, if the current ratio of a firm at a specific point in time is 1.5, this means that there is \$1.50 of current assets for every \$1 of current liabilities. Or, there is \$1.50 available now to cover every \$1.00 of the firm's bills. Today, it is important to maintain this ratio at least at 2. As a rule of thumb, for ratios above 3, there is sufficient cash to invest; for ratios below 1.5, start worrying about becoming liquid.

The Current Debt Ratio shows what proportion of all the firm's debt is due in the next period. This ratio is found by dividing CL by total liabilities (CL/TL). Current liabilities are \$50,000, and total debt is \$550,000 (Table 8). The current debt ratio is, therefore, \$50,000/\$550,000, or .09. This means that nine cents of every dollar of debt is due in the next period. That is a good number. For an average firm with average debt, the ratio should be no higher than 10 cents. Otherwise, it will hurt the firm's cash flow

in that too much of the firm's cash is earmarked for debt repayment.

Solvency

Solvency is a long-run term. It shows whether the firm can pay all its debts if it sells all its assets. If the firm's assets are greater than its liabilities, it is solvent. If they are not, it is bankrupt. *Equity* is the single best measure of solvency. If the firm has equity, it is solvent because there are more assets than liabilities. A positive equity trend is a useful indicator of a firm's financial health.

Leverage Ratio

The leverage ratio is calculated by Total Debt/Equity. In Table 8, the total debt is \$550,000, and equity is \$450,000. Our leverage ratio here is 1.2. For every one dollar in equity, there is \$1.20 in debt. Ideally, this number should be less than 1, but the ratio depends on things like the owners' ages, whether there has been a disaster and whether the firm is new. Young owners, new firms and disasters will usually induce higher leverage ratios than old owners, old firms and smooth waters.

Ideally, keep the leverage ratio at no more than 1, and try to reduce it to 0.5 whenever possible. A high leverage ratio is nothing to be ashamed of; it is something to get out of.

The following examples show its importance: Suppose, for example, that a firm will get a guaranteed 20 percent return on its assets. It has \$4 million to invest so at the end of the year it will get \$4.8 million (that is, \$4 million x 1.2 = \$4.8 million). Putting these numbers onto two balance sheets shows what happened to the firm's financial structure (Table 9). The firm had no debt. So, its return on its equity was the same as its return on assets, namely 20 percent.

The real benefit of borrowing money is that the firm can do things with the money that it could not do otherwise. Debt availability is essential for any business. Borrowing money creates leverage. There are advantages in borrowing money for good

investment opportunities. Suppose that the firm only has \$1 million, that both assets and equity are \$1 million and that it has no debt but likes the guaranteed 20 percent return and decides to borrow some money to take advantage of this investment. The bank allows the firm a leverage ratio of 3, so it can borrow \$3 for every \$1 of equity. The firm now has \$4 million in assets and will invest it at 20 percent. The two balance sheets show the starting and ending financial structures (Table 10).

The \$4 million increased to \$4.8 million as before because of the 20 percent return on assets. But, with the 3-to-1 leverage, the firm's equity has increased from \$1 million to \$1.8 million, or by 80 percent. This is the joy of leverage. The ending balance sheet also shows that the leverage ratio fell to 1.67. The investment was successful in that the return to equity was substantial, and the leverage ratio fell.

Leverage is, of course, a two-edged sword. When things go wrong, the firm is worse off if it has borrowed money. So, the final example illustrates a negative 20 percent return, starting with a leverage ratio of 3. The firm has its original \$1 million equity and borrows an additional \$3 million as before. But this time it lost 20 percent of its asset value. The two balance sheets show what happened (Table 11).

Assets fell to \$3.2 million (that is, \$4 million \times 0.8 = \$3.2 million). The firm still has \$3 million in debt. Because assets minus liabilities equal equity, the firm's equity has now fallen to \$200,000, or to one-fifth of what it was. And the leverage ratio, which started at 3, has now increased to 15 (that is, 3,000/200). The firm now owes \$15 for every \$1 it owns. This is an almost impossible position from which to recover. The point of these examples is obvious. High leverage brings high returns if it works but disaster if it does not work. Consequently, it is not generally good to maintain a leverage ratio in farming that is much above 1.

Conclusion

In conclusion, the balance sheet is the essential tool for illustrating a firm's financial structure. Quarterly balance sheets provide liquidity and solvency information that is vital for mapping a firm's financial future. A firm cannot operate without

access to balance sheets. Spend time with them. A firm will gain profoundly.

Table 1. A Simple Balance Sheet for One Item.

Balance Sheet for 31 December 200X			
Assets		Liabilities	
Item	100,000	Liability	80,000
		Equity	20,000
Total	\$100,000	Total	\$100,000

Table 2. Current Assets, 31 December 200X

Current Assets	
Cash	20,000
Certificate of Deposit	10,000
Accounts Receivable	20,000
Crops for Sale	10,000
Steers for Sale	20,000
Supplies	20,000
Total	\$100,000

Table 3. Intermediate Assets, 31 December 200X.

Intermediate Assets	
Tractors (2)	180,000
Trucks (2)	40,000
Pole Barns	20,000
Breeding Stock	50,000
Field Equipment	10,000
Total	\$300,000

Table 4. Long-Term Assets, 31 December 200X.

Long-Term Assets	
Barn	100,000
Lane	400,000
Mature Fruit Trees	100,000
Total	\$600,000

Table 5. Current Liabilities, 31 March 200X.

Current Liabilities	
Chemical company	1,500
Local equipment/supplies distributor	500
XXX Fuel	500
Mortgage payments (land)	3,000
Mortgage payments (buildings)	4,500
Tractor payments due in next quarter	10,000
Truck payments due in next quarter	5,000
Labor expense	20,000
Insurance payments for next quarter	5,000
Total	\$50,000

Table 6. Intermediate Liabilities, 31 March 200X.

Intermediate Liabilities	
Tractors	170,000
Trucks	30,000
Total	\$200,000

Table 7. Long-Term Liabilities, 31 March 2000X.

Long-Term Liabilities	
Barn	100,000
Land	200,000
Total	\$300,000

Table 8. Balance Sheet Example, 31 December 200X.

Assets		Liabilities	
<i>Current</i>		<i>Current</i>	
Cash and	45,000	Mortgage payments due in next quarter	10,000
Accounts receivable	20,000	Tractor payments due in next quarter	10,000
Inventory	35,000	Truck payments due in next quarter	5,000
		Labor expense for next quarter	20,000
		Insurance payments due in next	5,000
		Quarter	50,000
Total	\$100,000	Total	\$50,000

Table 8. Balance Sheet Example, 31 December 200X.

<i>Intermediate</i>		<i>Intermediate</i>	
Tractors (2)	180,000	Tractor loans outstanding	170,000
Trucks (2)	40,000	Truck loans outstanding	30,000
Pole Barns	20,000		
New Fruit Trees	50,000		
Field Equipment	10,000		
Total	\$300,000	Total	\$200,000
<i>Long-Term</i>		<i>Long-Term</i>	
Land	400,000	Mortgage on land	200,000
Barn	200,000	Mortgage on barn	100,000
Total	\$600,000	Total	\$300,000
		Total Liabilities	550,000
		Equity	450,000
Total	\$1,000,000	Total	\$1,000,000

Table 9. Comparison of Two Balance Sheets (A).

(\$'000)					
Balance Sheet #1		START	Balance Sheet #2		END
<i>Assets</i>	<i>Liabilities + Equity</i>		<i>Assets</i>	<i>Liabilities + Equity</i>	
		L = 0			L = 0
		E = 4,000			E = 4,000
Total	\$4,000	\$4,000	Total	\$4,800	\$4,800

Table 10. Comparison of Two Balance Sheets (B).

(\$'000)					
Balance Sheet # 1		START	Balance Sheet #2		END
<i>Assets</i>	<i>Liabilities + Equity</i>		<i>Assets</i>	<i>Liabilities + Equity</i>	
		L = 3,000			L = 3,000
		E = 1,000			E = 1,800
Total	\$4,000	\$4,000	Total	\$4,800	\$4,800

Table 11. Comparison of Two Balance Sheets (C).

(\$'000)					
Balance Sheet #1 START			Balance Sheet #2 END		
<i>Assets</i>	<i>Liabilities + Equity</i>		<i>Assets</i>	<i>Liabilities + Equity</i>	
		L = 3,000			L = 3,000
		E = 1,000			E = 200
Total	\$4,000	\$4,000	Total	\$3,200	\$3,200