

S. DAVID YOUNG • JACOB COHEN • DANIEL A. BENS

Corporate Financial Reporting and Analysis

A Global Perspective

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S. David Young,

Jacob Cohen

and

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To Diane – S. David Young

To my parents – Jacob Cohen

To Katrina, Lincoln and Lydia – Daniel Bens

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An Introduction to Financial Statements

Imagine that you're a banker, and you have to determine which companies to lend to and on what terms. Or you're an investor who wants to know which companies are likely to outperform the market averages over the next year or two. In short, where should you invest your capital? To answer this question, investors turn to corporate financial statements.

Financial statements exist to provide useful information on businesses to people who have, or may have, an economic stake in those businesses. These statements should help:

- *investors*, to make more intelligent decisions on where to put their scarce capital;
- *bankers*, to determine whether or not a company will be able to service its debts;
- *suppliers*, to assess whether or not a potential customer is a good credit risk;
- *customers*, to determine whether or not the company is strong enough financially to deliver on long-term promises of service and warranty coverage;
- *tax authorities*, to determine whether or not a company is paying its fair share of taxes;
- *trade union representatives*, in forming their negotiating positions with management;
- *competitors*, to benchmark their performance;
- *courts of law*, to measure, for example, the damage caused by one firm to another as a result of alleged unfair trade practices;
- *antitrust regulators*, to measure market share and profits relative to competitors;
- *prospective employees*, to determine whether the company is worth pursuing as a long-term employer.

You may notice one important constituency missing from this list of financial statement users: corporate management. Financial statements are the responsibility of management, but are not designed to meet their own informational needs. Financial statements are a means for company managers to communicate the financial strength and profitability of their businesses to investors and other groups, but are not really intended for internal management use. To understand why, let's take a brief look at the financial statements (shown in Exhibits 1.1–1.3) of Taiwan Semiconductor Manufacturing Company (TSMC), one of the world's largest manufacturers of integrated circuits and semiconductors. Based in Taiwan, they supply components for a variety of consumer and industrial electronic devices.

The three principal financial statements – the balance sheet, the income statement, and the statement of cash flows – are highly aggregated documents: masses of detail accumulated in a small number of line items. Without this aggregation, the statements would be unreadable; however, a lot of details are missing. While this lack of detail might be appropriate for potential investors, who have to compare financial data across many different companies, the information

found in these financial statements is not sufficiently detailed to be of any practical use to managers in corporate decision-making.

This is not to say that managers shouldn't care about the financial statements. Managers must understand their financial statements because these are the most important sources of information used by the investing community to determine where to invest capital. Managers who don't understand the signals that their financial statements are sending to investors are not in a position to compete effectively in the global capital markets. However, internal decision-making and management control require data that are far more detailed (by product line, region, cost categories, etc.) than the data found in annual reports.

In addition, financial statements are mainly historical. The balance sheet reflects the financial position at a precise moment in the recent past. The income statement shows profits over a period of time in the recent past – for example, the year just completed. Similarly, the statement of cash flows reports on the sources and uses of cash over a period of time already past. But while appreciating the insights of these statements is critical to managers in understanding their business and its competitiveness in the capital markets, they need information systems that are forward-looking in nature. Managers plan, budget, and forecast – and they therefore need systems that help them to perform these critical functions.

Another problem with financial accounting from a management perspective is that accounting rules that are designed to measure costs or value assets can result in misleading figures, even when calculated in good faith by managers. For example, when a manufacturing company measures the cost of its inventory, it must include not only direct costs of production, such as labor and materials, but also manufacturing overhead (such as depreciation on equipment, power and electricity, and maintenance costs). In contrast with direct costs, overhead cannot be directly traced to individual units of production. Instead, they are assigned to individual products (and to inventory accounts) using an arbitrary allocation technique. The resulting inventory figures may be acceptable for the broad overview that an investor wants from the financial statements, but can be seriously misleading if management intends to use them to calculate product-line profitability, to set pricing policy, or to make product-mix decisions. In short, managers need cost-accounting systems that provide more detailed, and more accurate, costing data.

The Three Principal Financial Statements

The corporate financial reporting process focuses on the three principal financial statements – the balance sheet, the income statement, and the statement of cash flows.

The Balance Sheet¹

Take glance at TSMC's balance sheet (Exhibit 1.1). One of the first things you should notice is that the balance sheet reports on the company's financial position at a moment in time, in this case the end of 2015 and 2016. In other words, it's a snapshot, taken at the end of each period, of the assets owned by the company and the financing for those assets. Assets are economic resources with the ability or potential to provide future benefits to a business, such as profits or cash flow.

The financing of assets occurs in two basic forms: liabilities and shareholders' equity. Liabilities are the company's debts or obligations. They are the claims on the assets held by a firm's creditors. Shareholders' equity shows the amount of financing provided by owners of the business, both in the form of direct investment (when shareholders contribute cash in exchange for shares) and indirect investment (when profits are reinvested in the firm).

Exhibit 1-1 TSMC Consolidated Balance Sheet (in NT\$ millions)

	December 31	
	2016	2015
CURRENT ASSETS		
Cash and equivalents	541,254	562,689
Financial assets	94,957	27,779
Notes and accounts receivable, net	128,335	85,060
Inventories	48,682	67,052
Other	4,502	4,164
Total current assets	817,730	746,744
NONCURRENT ASSETS		
Financial assets	26,411	10,902
Investments accounted for using the equity method	19,585	23,971
Property, Plant and Equipment	997,778	853,470
Intangible assets	14,615	14,066
Deferred income tax assets	8,271	6,385
Other	1,908	1,860
Total noncurrent assets	1,068,568	910,654
TOTAL ASSETS	1,886,298	1,657,398
CURRENT LIABILITIES		
Short term loans and financial liabilities	58,149	39,547
Accounts payable	26,062	18,575
Salaries, bonus, and profit sharing payables	36,576	32,661
Payables to contractors and suppliers	63,155	26,012
Income tax payable	70,353	60,445
Provisions	18,038	10,164
Long-term liabilities - current portion	38,110	23,518
Accrued expenses and other	37,844	28,851
Total Current Liabilities	348,287	239,773
NONCURRENT LIABILITIES		
Bonds payable and long term bank loans	153,116	191,998
Deferred income tax liabilities	141	31
Net defined benefit liability	8,551	7,448
Guarantee deposits	14,670	21,565
Other	1,687	1,613
Total Noncurrent Liabilities	178,165	222,655
TOTAL LIABILITIES	526,452	462,428

(Continued)

Exhibit 1-1 (Continued)

	December 31	
	2016	2015
SHAREHOLDERS' EQUITY		
Capital stock	259,304	259,304
Capital surplus	56,272	56,300
Retained earnings	1,041,811	866,630
Other	1,664	11,774
Noncontrolling interests	795	962
TOTAL SHAREHOLDERS' EQUITY	1,359,846	1,194,970
TOTAL LIABILITIES AND SHAREHOLDERS' EQUITY	1,886,298	1,657,398

The accompanying notes are an integral part of these consolidated financial statements.

The organization of the balance sheet can thus be summarized like this:

$$\text{Assets} = \text{Liabilities} + \text{Shareholders' Equity}$$

The term “balance sheet” is derived from this equation. It simply reminds us that the right side and the left side must always equal, for all companies, in all industries, in all countries, without exception. Simply put, the balance sheet must balance. The reason why this is can be seen from the right side of the equation. Liabilities and shareholders’ equity don’t just represent financing, they also represent claims on the assets from the left side. In the event of liquidation (i.e., when a company goes out of business), the first claim on resources belongs to creditors. The claims held by shareholders are residual in nature, which means that they are entitled to whatever is left over after the creditors have been paid off. Because shareholders’ equity represents a residual claim on the assets, it will be whatever size it needs to be in order to ensure that the two sides of the balance sheet are equal.

TSMC’s balance sheet confirms this equality. Total assets at the end of 2016 of NT\$1,886 billion equal the sum of liabilities, NT\$526 billion, and shareholders’ equity, NT\$1,360 billion.

The Income Statement

The income statement reports on a company’s profits, or revenues less expenses, during the accounting period. Unlike the balance sheet, it’s not a snapshot, but rather reflects what a firm has accomplished over a period of time. In the case of TSMC, the income statement (Exhibit 1.2) reports on the company’s performance for the years 2014, 2015, and 2016. Notice that the accounting year (sometimes called the “fiscal year”) is the same as the calendar year (1 January–31 December). This is not required, however. For example, most major retailers in the United States have accounting years that end between late January and the end of March. This is done to avoid having to close the books and prepare financial statements at the busiest time of the year.

The top line of the income statement, *revenues* (also called “sales” or “sales revenues”), represents the monetary value of goods or services sold to customers. Expenses represent the cost of resources used by the company to earn revenues during the period.

Exhibit 1-2

TSMC Consolidated Income Statements (in NT\$ millions)

	Year Ended December 31		
	2016	2015	2014
Revenue	947,938	843,497	762,807
Cost of revenue	473,106	433,103	385,084
Gross profit	474,832	410,394	377,723
Research and development	71,208	65,546	56,829
General and administrative	19,796	17,257	18,933
Marketing	5,901	5,665	5,087
Other operating expenses (income)	(30)	1,881	1,002
Income from operations	377,957	320,045	295,872
Share of profits of associates and joint ventures	3,458	4,196	3,920
Finance costs	(3,306)	(3,190)	(3,236)
Foreign exchange gain	1,161	2,481	2,111
Other income	6,651	26,943	3,408
Income before income tax	385,921	350,475	302,075
Income tax expense	54,124	47,645	47,890
Net income	331,797	302,830	254,185

The accompanying notes are an integral part of these consolidated financial statements.

Profit (also known as “earnings” or “income”) is shown in several ways on an income statement. For example, gross profit, sometimes called “gross margin,” measures revenues, net of manufacturing costs. For a nonmanufacturing company, such as a retailer or distributor, gross profit equals revenues net of the cost of merchandise sold during the year.

Operating income equals sales net of all operating expenses, excluding taxes. It measures how well the company has done in a given period from its normal, recurring, day-to-day activities of producing and selling its products. For TSMC, gross profit and operating income in 2016 were NT\$475 billion and NT\$378 billion, respectively.

When taxes and the nonoperating sources of income and expense are added or subtracted from operating income, as appropriate, the result is net income, the “bottom line” of the income statement. For 2016, TSMC reports net income of NT\$332 billion. Note that companies have discretion in how they categorize these costs. This discretion, otherwise known as accounting choice, is a theme we will return to throughout the book. In the case of TSMC, there are significant income items listed as “nonoperating” that might be classified as operating by other companies. Such choices can have significant effects. In this case, for example, TSMC’s nonoperating income was nearly 10% of income before tax in 2015.

The Statement of Cash Flows

The statement of cash flows summarizes the inflows and outflows of cash that arise from the three primary activities of a typical business: operations, investing, and financing. For TSMC, operating activities refer mainly (but not exclusively) to the routine, recurring actions involved in the design, manufacture, and distribution of semiconductors and integrated circuits. Investing

activities involve the buying and selling of long-term assets such as machinery and equipment, companies or parts of companies, and financial securities such as government bonds. Financing activities refer mainly to actions involving the capital markets such as borrowing, paying off loans, issuing shares, share buybacks, and the payment of dividends.

The statement is structured in such a way that the net cash flows during the period for all three activities must equal the change in cash. In other words, the net cash flows from operating, investing, and financing activities must equal the net increase or decrease in the cash balance for the year. You can easily confirm this reconciliation in TSMC's statement of cash flows.

What makes this statement so interesting is not just that it summarizes cash flows, and in so doing reconciles beginning and ending cash, but that it also reveals the sort of activities that gave rise to those cash flows. In short, the statement reveals where a company's cash came from during the year, and what the company did with it.

For example, TSMC's statement of cash flows (Exhibit 1.3) shows operating cash flow of nearly NT\$540 billion in 2016. Much of this cash generated from TSMC's day-to-day operations was reinvested in the company. We know this is true because of the negative cash flows from investing activities (shown in parentheses). Of those investments, most (NT\$329 billion) was committed to property, plant, and equipment. From the financing section, we see that TSMC returned significant amounts of cash to its shareholders in the form of dividends (NT\$155.5 billion in 2016).

Exhibit 1-3
TSMC Consolidated Statements of Cash Flows
(in NT\$ millions)

	Year Ended December 31		
	2016	2015	2014
Cash flows from operating activities			
Income before income tax	385,921	350,475	302,075
Adjustments for:			
Depreciation expense	220,085	219,303	197,645
Amortization expense	3,743	3,202	2,606
Finance costs	3,306	3,190	3,236
Share of profits of associates and joint venture	(3,458)	(4,196)	(3,920)
Interest income	(6,318)	(4,129)	(2,731)
Gain on disposal of property, plant and equipment, net	(47)	(434)	(15)
Asset impairments	122	2,759	1,187
Loss (gain) on financial assets	(2,707)	(19,585)	3,742
Loss (gain) on disposal of equity method investments and subsidiaries	325	(2,369)	(2,084)
Dividend income	(137)	(622)	(650)
Changes in operating assets and liabilities:			
Financial instruments at fair value through profit and loss, and other financial assets	(6,368)	492	(2,269)
Notes and accounts receivable, net	(49,828)	26,491	(43,128)
Inventories	18,370	(655)	(28,872)
Other assets	(251)	265	(743)

Exhibit 1-3 (Continued)

	Year Ended December 31		
	2016	2015	2014
Accounts payable	7,295	(2,693)	6,634
Accrued expenses and other current liabilities	3,833	(4,147)	8,238
Salary, bonus and profit sharing payables	3,913	3,805	7,595
Provisions	7,932	(383)	2,837
Net defined benefit liability	46	53	60
Cash generated from operations	585,778	570,822	451,442
Income taxes paid	(45,943)	(40,943)	(29,918)
Net cash generated by operating activities	539,835	529,879	421,524
Cash flows from investing activities			
Acquisitions of:			
Financial assets	(117,435)	(44,656)	(6,518)
Property, plant and equipment	(328,851)	(257,517)	(288,540)
Intangible assets	(4,243)	(4,284)	(3,860)
Proceeds from disposal or redemption of:			
Financial assets	40,753	74,665	4,139
Investments accounted for using equity method	0	5,172	3,472
Property, plant and equipment	98	817	200
Interest received	6,353	3,642	2,579
Proceeds from government grants	1,537	0	0
Net cash flow from disposal and acquisition of subsidiaries	0	549	0
Dividends received from investments using equity method	5,479	3,407	3,223
Other dividends received	137	617	646
Refundable deposits refunded (paid)	732	342	2,239
Net cash used in investing activities	(395,440)	(217,246)	(282,421)
Cash flows from financing activities			
Increase in short-term loans	18,969	3,139	18,564
Repayment of bonds, long-term bank loans, and finance leases	(23,480)	(29)	(28)
Interest paid	(3,302)	(3,156)	(3,193)
Guarantee deposits received net refunds	5,831	12	30,135
Cash dividends	(155,582)	(116,684)	(77,786)
Proceeds from exercise of stock options	0	34	47
Decrease in noncontrolling interests	(236)	(50)	(67)
Net cash used in financing activities	(157,800)	(116,734)	(32,328)

(Continued)

Exhibit 1-3 (Continued)

	Year Ended December 31		
	2016	2015	2014
Effect of exchange rates on cash and equivalents	(8,030)	8,259	9,060
Net increase (decrease) in cash and equivalents	(21,435)	204,158	115,836
Cash and cash equivalents included in other noncurrent assets, beginning of year	0	82	0
Cash and equivalents beginning of year	562,689	358,449	242,695
Cash and equivalents end of year	541,254	562,689	358,531
Cash and cash equivalents included in other noncurrent assets	0	0	(82)
Cash and equivalents per the balance sheet	541,254	562,689	358,449

The accompanying notes are an integral part of these consolidated financial statements.

How the Financial Statements Relate to Each Other

Although each statement is a separate, discrete entity, it is also linked with the other two. For example, the net income from the income statement (e.g., NT\$332 billion in 2016 for TSMC Group) is reflected in both retained earnings (from the shareholders' equity section of the balance sheet) and in the operations section of the statement of cash flows. Also, the net cash flows from the statement of cash flows (see final line) plus beginning cash (on the balance sheet) must equal ending cash. These relationships should come as no surprise because, logically, we would expect a company's performance, as reflected in its income statement, to influence its cash flows, and for both profit and cash flows to influence its financial position (i.e., the balance sheet).

To illustrate these relationships, let's take another look at TSMC's financial statements. Net income in 2016 was NT\$332 billion. As revealed in the statement of cash flows, the company paid NT\$156 billion in dividends that year. Retained earnings (on the balance sheet in the shareholders' equity section) represent all of the net income a company has ever earned in its history that has not yet been paid to shareholders as a dividend. In other words, it measures all of the profits retained by the business for reinvestment. We would expect retained earnings to change each year by an amount equal to the year's net income, less any dividends paid in that year. In the case of Taiwan Semiconductor, we should see an increase of NT\$332 billion minus NT\$156 billion, or NT\$176 billion. And that is very close to the amount by which the company's retained earnings increased from the end of 2015 to the end of 2016 NT\$1,042 billion - NT\$867 billion, i.e., NT\$175 billion.

Note also that cash flows from operating, investing and financing activities (plus effect of foreign exchange rates on cash and cash equivalent in 2016, i.e., -NT\$8 billion) result in a net decrease in cash of NT\$21 billion, which is equal to the difference between the cash balance at the end of 2016 (NT\$541 billion) at the end of 2015 (NT\$562 billion).

Other Items in the Annual Report

As mentioned earlier, the balance sheet, income statement, and statement of cash flows are highly condensed. For this reason, firms are required to provide supplemental information in the form of supporting schedules and notes. An opinion on the accuracy of the financial statements from a firm of independent public accountants must also be furnished. Depending on its country of origin, a company may also include a “management discussion and analysis” of recent performance and future prospects.

The Statement of Changes in Shareholders’ Equity

There is, in fact, a fourth financial statement presented in many annual reports, although it functions more like a supporting schedule, and thus is not usually accorded the same status as the other three. This schedule, called the statement of changes in **shareholders’ equity** (although it sometimes goes under different names), explains changes to all accounts in the shareholders’ equity section of the balance sheet.

The Notes

In addition to the principal financial statements, companies must also provide extensive supplemental disclosures known as “notes” or “footnotes.” You will see these at the back of any annual report. The importance of these notes can be seen from the statement at the bottom of each of TSMC’s financial statements: “The accompanying notes are an integral part of the consolidated financial statements.” This reminds us that the financial statements cannot be fully understood without reading the notes. In fact, the term “footnotes” is somewhat misleading, though widely used, because it may lead you to think that they serve the same function as footnotes in a book. This is not true because footnotes in the annual report are an indispensable part of the story. The story doesn’t really hold together without them.

Most notes fall into either of two categories:

- The first type describes the accounting policies used by the company to prepare its financial statements. For example, the first note in most annual reports is a summary of key accounting principles and policies.
- The second type of note presents additional, clarifying detail about one or more financial statement line items. Examples of this type include notes that elaborate on debt balances, investments, pensions, and taxes. Companies are also expected to provide financial details on major business segments either broken down by industry or geography. TSMC reports that it operates in a single industry segment that includes integrated circuits and semiconductors. However, in its segment note, TSMC breaks down its revenues by geographic region. In 2016, the United States accounted for 64% of its revenues, followed by Asia excluding Taiwan (15%), Taiwan (13%), and the rest of the world (8%). Interestingly, in the same segment note, TSMC reveals that its two largest customers account for 28% of its sales in 2016. However, for competitive reasons, it does not identify these customers by name.

The Auditor’s Opinion

Annual reports must include an opinion from an independent public accounting firm, attesting to whether or not the financial statements were correctly prepared and can therefore be relied on by investors and other parties in making decisions regarding the business. The opinion shown in Exhibit 1.4 follows a standard format, with occasional variations.