THE IMPACT OF THE SHORT-TERM OPERATING ACTIVITIES ON CASH AND NET WORKING CAPITAL

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Abstract:
In this article we trace the components of cash and net working capital as they change from one year to the next. Our goal is to describe the short-term operating activities of the firm and their impact on cash and working capital.

Key words: *cash, net working capital, assets, debts, liabilities*

JEL classification*:* M41

1. Tracing Cash and Net Working Capital

Current assets are cash and other assets that are expected to be converted to cash within the year. Current assets are presented in the balance sheet in order of their accounting liquidity-the ease with which they can be converted to cash at a fair price and the time it takes to do so.

Table 1 gives the balance sheet and income statements of the Tradewinds Manufacturing Corporation for 2006 and 2007. The four major items found in the current asset section of the Tradewinds balance sheet are cash, marketable securities, accounts receivable and inventories.

Analogous to their investment in current assets, firms use several kinds of short-term debt, called current liabilities. Current liabilities are obligations that are expected to require cash payment within one year or within the operating cycle, whichever is shorter (the operating cycle begins when inventory is received and ends when cash is collected from the sale of inventory).

The three major items found as current liabilities are accounts payable; accrued wages, taxes and other expenses payable; and notes payable.

2. Defining Cash in Terms of Other Elements

Next we will define cash in terms of the other elements of the balance sheet. The balance sheet equation is:

Net working capital + Fixed assets = Long-term debt + Equity (1)

Tradewinds Manufacturing Corporation
December 31,2007, and December 31,2006
Balance Sheet and Income Statement

	2007	2006
Assets		
Current assets:		
Cash	$ 500.000	$500.000
Marketable securities(at cost)	500.000	500.000
Accounts receivable less allowance for bad debts	2.000.000	1.600.000
Inventories	3.000.000	2.000.000
Total current assets	$6.000.000	$4.550.000
Fixed assets(property, plant and equipment):		
Land	450.000	450.000
Building	4.000.000	4.000.000
Machinery	1.500.000	800.000
Office equipment	50.000	50.000
Less: Accumulated depreciation	2.000.000	1.700.000
Net fixed assets	4.000.000	3.600.000
Prepayments and deferred charges	400.000	300.000
Intangibles	100.000	100.000
Total assets	$10.500.000	$8.550.000
Liabilities		
Current liabilities:		
Accounts payable	$ 1.000.000	$ 750.000
Notes payable	1.500.000	500.000
Accrued expenses payable	250.000	225.000
Taxes payable	250.000	225.000
Total current liabilities	$ 3.000.000	$ 1.700.000
Long-term liabilities:		
First mortgage bonds, 5% interest, due 2025	3.000.000	3.000.000
	600.000	600.000
Deferred taxes	$6.600.000	$5.300.000
Total liabilities		
Stockholders' Equity		
Common stock, $5 par value each; authorized, issued, and outstanding 300.000 shares	$ 1.500.000	$ 1.500.000
Capital surplus	500.000	500.000
Accumulated retained earnings	1.900.000	1.250.000
Total stockholders' equity	3.900.000	3.250.000
Total liabilities and stockholders' equity	$10.500.000	$8.550.000
Consolidated Income Statement		
Net sales	$11.500.000	$10.700.000
Cost of sales and operating expenses:		

Cost of goods sold	8.200.000	7.684.000
Depreciation	300.000	275.000
Selling and administration expenses	1.400.000	1.325.000
Operating profit	1.600.000	1.416.000
Other income:		
Dividends and interest	50.000	50.000
Total income from operations	1.650.000	1.466.000
Less: Interest on bonds and other liabilities	300.000	150.000
Income before provision for income tax	1.350.000	1.316.000
Provision for income tax	610.000	600.000
Net profit	$740.000	$716.000
Dividends paid out	$90.000	$132.000
Retained earnings	$650.000	$584.000

Table 1 Financial Statements

Net working capital is cash plus the other elements of net working capital:

Net working capital = Cash + Other current assets – Current liabilities (2)

Substituting equation (1) into (2) yields:

Cash +Other current assets–Current liabilities=Long-term debt +Equity–Fixed assets (3)

and rearranging, we find that:

Cash=Long term debt + Equity –Net working capital –Fixed assets (4)
(excluding cash)

The natural interpretation of Equation (4) is that increasing long term debt and equity and decreasing fixed assets and net working capital (excluding cash) will increase cash to firm.

3. The sources and Uses of Cash

The statement of cash flows is the accounting statement that describes the sources and uses of cash. In this work paper we look at where cash comes from and how it is used. From the right side of the Equation (4) we can see that an increase in long-term debt or equity leads to an increase in cash. Moreover, a decrease in net working capital or fixed assets leads to an increase in cash. In addition, the sum of net income and depreciation increases cash, whereas dividends payments decrease cash. This reasoning allows an accountant to create a statement of cash flows, which shows all the transactions that affect a firm's position.

Let us trace the changes in cash for Tradewinds during the year. Notice that Tradewinds' cash balance remained constant during 2007, even though cash flow from operations was $1.04 million (net income plus depreciation). Why did cash remain the same? The answer is simply that the sources of cash were equal to the uses of cash. From the firm's statement of cash flows (table 2) , we find that Tradewinds generated cash as follows:

1. It generated cash flow from operations of $1.04 million.
2. It increased its accounts payable by $250.000. This is the same as increasing borrowing from suppliers.
3. It increased its borrowing from banks by $ 1 million. This shows up an increase in notes payable.
4. It increased accrued expenses by $25.000.
5. It increased taxes payable by $25.000, in effect borrowing from the IRS.

Tradewinds used cash for the following reasons:

1. It invested $700.000 in fixed assets.
2. It increased prepayments by $100.000.
3. It paid a $90.000 dividend.
4. It invested in inventory worth $1 million.
5. It lent its customers additional money. Hence, accounts receivable increased by $400.000.
6. It purchased $50.000 worth of marketable securities.

Tradewinds Manufacturing Corporation
Sources and Uses of Cash
(in thousands)

Sources of Cash	
Cash flow from operations:	
Net income	$740
Depreciation	300
Total cash flow from operation	$1.040
Decrease in net working capital:	
Increase in accounts payable	250
Increase in notes payable	1.000
Increase in accrued expenses	25
Increase in taxes payable	25
Total sources of cash	$2.340
Uses of cash	
Increase in fixed assets	$700
Increase in prepayments	100
Dividends	90
Increase in net working capital:	
Investment in inventory	1.000
Increase in accounts receivable	400
Increase in marketable securities	50
Total uses of cash	$2.340
Change in cash balance	0

Table 2 Sources and Uses of Cash

This example illustrates the difference between a firm's cash position on the balance sheet and its cash flows from operation.

4. Conclusions

Short-term finance involves short-lived assets and liabilities. We traced and examined the short-term sources and uses of cash as they appear on the firm's financial statements. We saw how current assets and currant liabilities arise in the short-term operating activities and the cash cycle of the firm. From an accounting perspective, short-term finance involves net working capital.

Managing cash flows short-term cash-flows involves the minimization of costs. The two major casts are carrying costs (the interest and related casts incurred by overinvesting in short-term assets such as cash) and shortage casts (the cast of running out of short-term assets). The objective of managing short-term finance and short-term financial planning is to find the optimal trade-off between these casts.

In an ideal economy, a firm could perfectly predict its short-term uses and sources of cash, and net working capital could be kept at zero. In a real world, net working capital provides a buffer that lets the firm meet its ongoing obligation.

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