

Cash Cycle

The cash conversion cycle is the length of time between the firm's payment for its raw materials and the collection of payment from its customers. We calculate the cash cycle by combining three periods that are represented by three ratios: days sales in inventory, days payable outstanding, and days sales outstanding.

Days sales in inventory is the average number of days that it takes for raw materials to be converted to finished goods and then sold. **Days payable outstanding** is the average number of days that it takes the firm to pay suppliers its accounts payable. And **days sales outstanding** is the average number of days that it takes the firm to collect accounts receivable from its customers.

Let's illustrate these three periods in a timeline to see how they fit together. There are four key dates: when raw materials are purchased, when cash is paid out to retire accounts payable, when finished goods are sold on credit, and finally, when cash is received on accounts receivable.

Let's step through the cash cycle. When the firm buys on credit, as is typically the case, no cash changes hands. Cash changes hands when the firm pays off its accounts payable. This period between the purchase of raw materials and the payment of accounts payable is the days payable outstanding. For Astrobucks in 2004, the days payable outstanding was 36.6 days. This means that Astrobucks paid out cash 36.6 days after purchasing its raw materials.

When did Astrobucks collect money? The firm first has to make a sale to customers. The period between the purchase of raw materials and the sale of finished goods is the days sales in inventory. For Astrobucks, the days sales in inventory was 74.3 days. But, if the firm sells goods on credit, as is often the case, it does not collect any cash. The firm only collects cash after accounts receivable are collected. This period between the sale of finished goods and the collection of accounts receivable is the days sales outstanding. For Astrobucks, days sales outstanding was 10.3 days.

Combining Astrobucks' days sales in inventory of 74.3 days and days sales outstanding of 10.3 days tells us that Astrobucks, on average, collected cash 84.6 days after purchasing raw materials. From this 84.6 days we subtract off the 36.6 days payable outstanding, which gives us a cash cycle of 48 days. This means that there were 48 days between cash being paid out by Astrobucks and cash being collected.

This positive cash cycle of 48 days tells us that Astrobucks has positive net working capital. That is, inventory and accounts receivable are larger than accounts payable. Recognize that the

shorter the cash cycle, the smaller is the net working capital, hence the smaller is the need for debt and equity financing.

A firm can shorten its cash cycle by doing a combination of any of the following three:

- shortening the days sales in inventory, which is the same as decreasing inventory;
- shortening the days sales outstanding, which is the same as decreasing accounts receivable; or
- lengthening the days payable outstanding, which is the same as increasing accounts payable.

Let's compare the cash cycle of White Mountain to Astrobucks. As we just calculated, Astrobucks' cash cycle is 48 days. White Mountain in comparison has a cash cycle of 45.7 days. We see that Astrobucks and White Mountain's cash cycle are only 2.3 days apart, but if we look at the components that make up the cash cycle we see some important differences.

Let's begin with the days sales in inventory. Astrobucks' days sales in inventory is 74.3 days. White Mountain in comparison, has a days sales in inventory of 40.2 days: 34.1 days less. This means that White Mountain sells its inventory much more quickly than Astrobucks. This advantage, however, is offset by days sales outstanding. Astrobucks days sales outstanding is 10.3 days. White Mountain on the other hand, has days sales outstanding of 39.7 days: 29.4 days more. This means that White Mountain takes 29.4 days longer to collect on its accounts receivable from its customers. So, what we see here is that the advantage of selling its inventory much more quickly is offset by longer days sales outstanding.

The third component of the cash cycle is days payable outstanding. Astrobucks has a days payable outstanding of 36.6 days and White Mountain has a days payable outstanding of 34.2 days. The two days payable outstanding figures are very close; not surprising given that both Astrobucks and White Mountain buy coffee from the same suppliers and hence have the same trade credit terms.