Why ΔNOWC is subtracted from FFCF

Think of ΔNOWC as CapEx on short term assets rather than long term assets.

A positive ΔNOWC occurs when NOWC **in**creases, due to an:

- **In**crease in inventory;
- **In**crease in accounts receivable so we're lending more to our customers (investing in their debt); or
- **De**crease in accounts payable so we're borrowing less from our suppliers (reducing our debt liabilities which is equivalent to investing in our own debt).

These ΔNOWC are not expensed by accountants in net income (NI), but they all require more cash from investors.

Because NOWC requires funding, it has an **opportunity cost** (the WACC) that needs to be included.

Therefore ΔNOWC needs to be subtracted since it is a cash flow not included in Net Income (NI).

The Delta or Increase in Net Operating Working Capital (ΔNOWC)

The Change or **Increase** in Net Operating Working Capital ($\Delta NOWC$) is:

$$\Delta NOWC = \quad NOWC_{now} \quad - \quad NOWC_{before}$$

$$\Delta NOWC = \Delta CA - \Delta \text{ExcessCash} - (\Delta CL - \Delta InterestBearingCL)$$

Net **Operating** Working Capital (N**O**WC) is defined slightly differently to normal accounting NWC:

$$NWC = CA - CL$$

$$N\boldsymbol{O}WC = (CA - \text{ExcessCash}) - (CL - InterestBearingCL)$$

Remember to focus on the increase (Δ, Delta), not the level!

Why Subtract Excess Cash from CA?

$\Delta NOWC = \Delta CA - \mathbf{\Delta ExcessCash} - (\Delta CL - \Delta InterestBearingCL)$

Excess cash and marketable securities are excluded from Current Assets since their value is already known.

There's no need to present value their future income and capital gains by their required return to find their worth. We know it already.

This is related to the idea of finding enterprise value (EV):

$\mathrm{EV} = \mathrm{Assets} - (\mathrm{ExcessCash} + \mathrm{MarketableSecurities})$

Also, excess cash is usually (or should be) invested in money market debt such as treasury bills which earns a market interest rate and is therefore fairly priced.

How to Estimate Excess Cash?

Excess cash is the part of cash on the balance sheet that a firm does not need, it's in excess of requirements.

Some cash is needed to pay employees and suppliers on time and have notes and coins in the cash register. But some firms have more cash than necessary (perhaps tax reasons) and this is excess cash.

$$\textbf{CashOnBalanceSheet} = \textbf{NecessaryCash} + \textbf{ExcessCash}$$

Accountants don't break cash into the necessary and excess components on the balance sheet.

But excess cash is often estimated based on past levels and industry averages. For example, necessary cash is often estimated to be a set proportion (say 4%) of sales or total assets, and any extra cash is deemed to be excess cash.

Why Subtract Interest-Bearing Debt from CL?

$$\Delta NOWC = \Delta CA - \Delta\text{ExcessCash} - (\Delta CL - \boldsymbol{\Delta InterestBearingCL})$$

Interest-bearing debt is excluded from current liabilities (CL) since its financing cost will be included in the weighted average cost of capital (WACC) required return.

Including interest bearing debt in both the $\Delta NOWC$ and WACC will double-count its cost which is incorrect.

After ignoring changes in interest-bearing current liabilities, excess cash and marketable securities, $\Delta NOWC$ should include investment into the short term assets needed to run the business, similarly to how CapEx includes investment into the long term assets needed to run the business.