
Burn, baby, burn!
Start with cash flow

A Working Definition of Free Cash Flow to the Firm

Operating Income after taxes

Minus

Reinvestment in short term assets (\(\Delta\) Working Capital)
Reinvestment in long term assets (Net Cap Ex)

Equals

Free Cash Flow to Firm

Debt Service (Interest & Principal Repaid)
Cash to Equity (Dividends & Buybacks)
The basis for cash burn

The Root of Negative Free Cash Flow to the Firm

- Operating Loss
- Minus
- Reinvestment for future growth
- Equals
- Existing Cash Balance
- New Equity
- New Debt
- Negative FCFF
Cash Burn Measures

- **Cash Burn**: This is a measure of cash that a company burns through, stated as a function of time. Thus, a company that starts the year with a cash balance of $1 billion and ends with a cash balance of $400 million, has a cash burn of $50 million a month (assuming that it raised no new capital during the period).

- **Cash Runway**: This is the amount of time that a company has before it runs out of cash, given its current cash balance and its cash burn.
Cash Burn: The Why?

<table>
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<tr>
<th>Growth stage</th>
<th>Stage 1: Start-up</th>
<th>Stage 2: Young Growth</th>
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<td>Operating Profits</td>
<td>Large operating losses</td>
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<td>Reinvestment</td>
<td>Very high</td>
<td>High</td>
<td>Remain large, but scale down as percent of firm</td>
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<td>Scale down further</td>
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<td>Free Cash Flow to Firm</td>
<td>Negative</td>
<td>Negative</td>
<td>Cross over to positive territory</td>
<td>Positive &amp; growing</td>
<td>Positive &amp; stable</td>
<td>Positive &amp; dropping</td>
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Cash Burn: What next?

- If cash burn is a feature of young companies, not a bug, you may be tempted to not just ignore it but wear it as a badge of honor.
- That would be dangerous, since cash burn can be benign in some young companies and malignant in others.
The Benign Scenario

**Revenue Growth**: Revenues grow from $2.2 billion in base year to $29 billion in year 10.

**Reinvestment Easing**: Reinvestment increases in absolute terms, but decreases as a percent of revenues & operating income, causing FCFF to turn positive.

**Margin Improvement**: Economies of scale cause operating margins to improve and operating losses become profits.

**The Cash Burn Zone**: Losses + Reinvestment make cash flows negative for first 6 years.
The Malignant Scenario

**Cash Burn: The Road to Ruin**

**Expensive Revenue Growth:** Reinvestment stays high and grows, as revenues grow.

**Margin Malaise:** Operating margins stay negative for longer and end up lower in steady state. Operating losses are bigger and for more years.

**Cash Burn Persistence:** FCFF stay negative over entire period and become more negative over time, at least for the first few years.
Cash Burn: So what?

- **Dilution Effect**: A company has to raise cash to burn through it and if that cash is raised from fresh equity, as it inevitably has to be for young growth companies, the existing owners of the business will have to give up some of their ownership of the company.

- **The Capital Markets Effect**: A company that is burning through cash is far more dependent on capital markets staying open and accessible. If capital dries up, two effects can unfold:
  - **Growth Effect**: The best case scenario for the firm is that it is able to rein in discretionary spending until capital becomes available again. In the meantime, though, the company will have to scale back its growth plans.
  - **Distress Effect**: The more dangerous consequence of capital drying up for a young firm with negative free cash flows is that the firm’s survival is put at risk.
The Intrinsic Value Response

- The dilution effect manifests itself as negative cash flows in the early years and a drop in the present value of cash flows.

- To capture the capital market effect, you can adjust the valuation in two ways.
  - The first is by putting a cap on how much new capital the firm can raise each year, which will also operate as a constraint on future growth.
  - The other is by allowing for a probability that the firm will fail, either because capital markets shut down or cash flows are more negative than expected.
The Cash Burn Effect at Uber

DCF Value of only positive cash flows & terminal value

Minus

Value of negative CF

Equals

$25.4 billion

$21 billion

PV of negative CF

$4.4 billion

Value of Uber's operating assets today
The Pricing Response

Cash Burn: The Pricing Effect?

For companies with more significant cash burn, you could "haircut" these numbers.

Forward Earnings, Cash flow or Revenues

Estimated Multiple of this Metric

Cash flows during time horizon left unspecified.

Exit Price (in IPO or sale)

Value today

Discounted back at a "target" rate of return

For companies with higher cash burn, you could use a higher target rate of return.
Investor Checklist

- Understand why the company is burning through cash: The most benign scenario is one where a *money making company reports negative cash flows because of large reinvestment*. The most dangerous combination is a *money losing company that reinvests very little*, since there is little potential for a growth payoff and management will be helpless if capital freezes up.

- Diagnose the operating business: The most benign scenario is one where the company has significant pricing power and a cost structure that benefits from scale.

- Gauge management skills: The best case scenario for investors is that the company is run by a management team that works within the cash flow constraints of today while mapping out pathways to profitability over time. The worst case scenario is that the company is managed by those who view negative cash flows as a badge of honor and a sign of growth rather than a temporary problem to overcome.

- Growth/Reinvestment trade off: In its most value-creating form, reinvestment will generate high growth coupled with high returns and its most value-destructive form, reinvestment will drain cash flows while generating low growth and poor profits.

- Capital Market: A firm with a cash burn problem is more depending upon capital markets for its survival, since a closing of these markets may be sufficient to put the firm into receivership.
The Bottom Line

- To value investors who view cash burn as an automatic sign of a death spiral. Chill! It is more an indication of where a company is in its life cycle than a sign of company quality.

- To VCs and founders who present cash burn as not just a natural phenomenon but a sign of good things to come. Stop! A company that is run to maximize cash burn will accomplish that objective just before it runs into the ground.