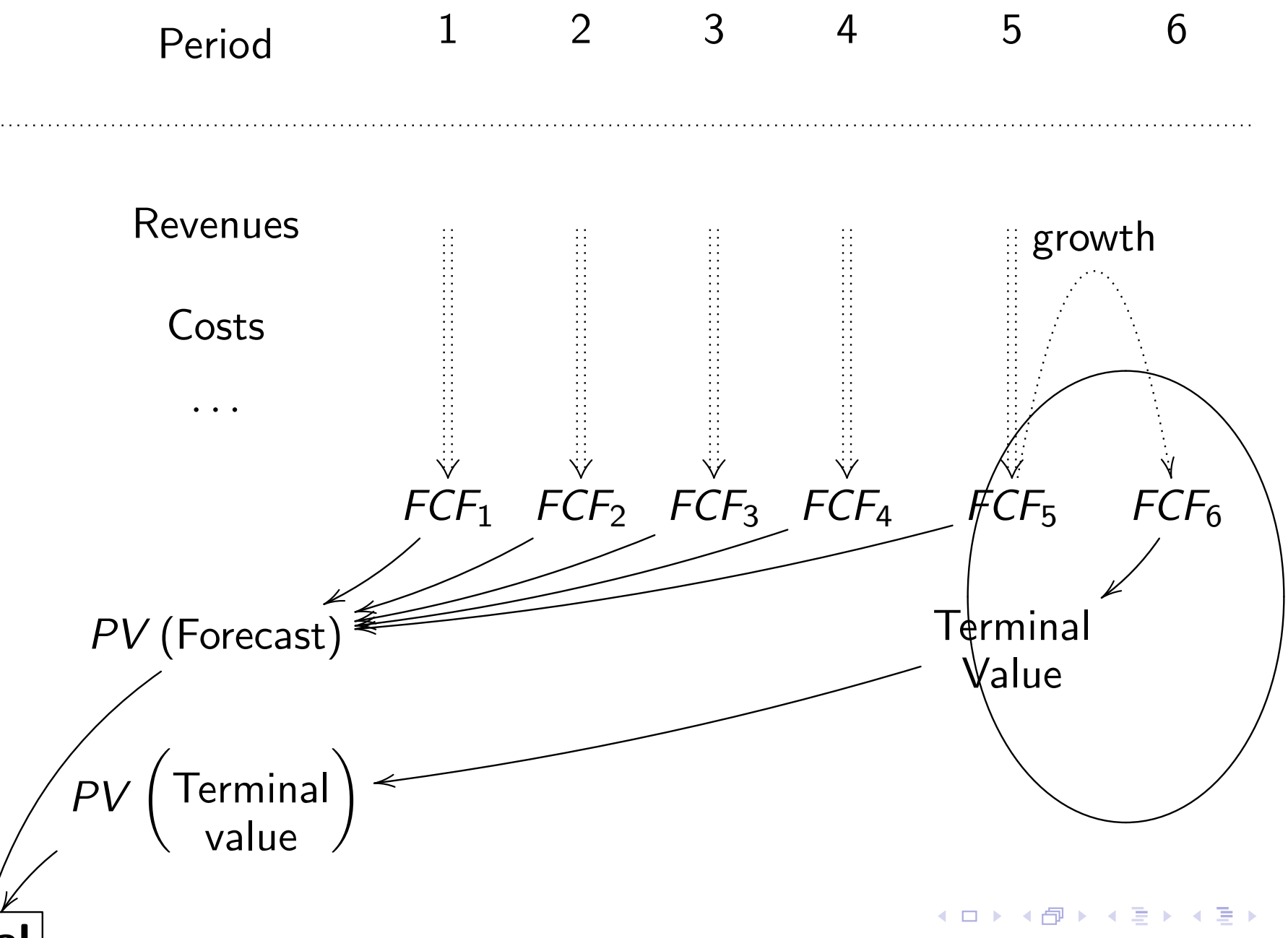
Terminal Value

DCF Input: terminal value


Period
1
2
3
4
5
6
Revenues
Costs
...
growth
FCF_1
FCF_2
FCF_3
FCF_4
FCF_5
FCF_6
PV (Forecast)
Terminal Value
PV (Terminal value)

Terminal value (continuing value)

- Our forecast only extends a limited number of years into the future.
- This does not mean that the company cease to exist after the last year of the forecast.
- To account for the free cash flows beyond the last year in our forecast, we add a terminal value to the last element of our free cash flow forecast.

Estimating Terminal value

Three methods

- Estimate liquidiation value, what is the price you can sell the asset for?
- Going concern value
  - *Gordon growth model*
  - *Value multiple (exit multiple)*

Estimating liquidation value

- one possibility: use (inflation adjusted) book value. (accounting book value = cost of replacement = price you can sell it for)
- Alternative, look at actual assets. E.g. office building – trends in prices of real estate

Value multiple (exit multiple)

Set the terminal value using a value multiple of EBIT, EBITDA, or some other key value driver (See section on multiples.)

Gordon growth model

(Stable growth model)
Assume that the last period Free Cash Flow grow at rate g, the stable growth rate.

$$TV_T = \frac{FCF_T(1+g)}{r_{WACC} - g} = \frac{FCF_{T+1}}{r_{WACC} - g}$$

where FCF_T is the free cash flow we expect the firm to generate in the last period of our forecast, g is the growth rate of free cash flow, and r_{WACC} is the risk-adjusted discount rate.

- cash flows after the terminal year grows at a constant rate forever.
- growth rate typically lower than short term growth forecast

Gordon growth model ctd

Stable growth model – how large can long term growth be?
Upper bound: growth rate of economy

- within country, or internationally?
- but can many firms achieve that, will they not at some point slow down?

Stable growth firms – by assumption mature – lower risk, more debt, lower reinvestment, lower (or zero) excess returns, etc
Transition to stable growth – when? (five years?)

Survival issue

- Always a possibility that firms fail, go bankrupt.
  Should we model that possibility?
  Usual argument: this is part of the risk which is reflected in the cost of capital – not necessary to moedl separately.
  (expected cash flow, built in possibility of failure.)