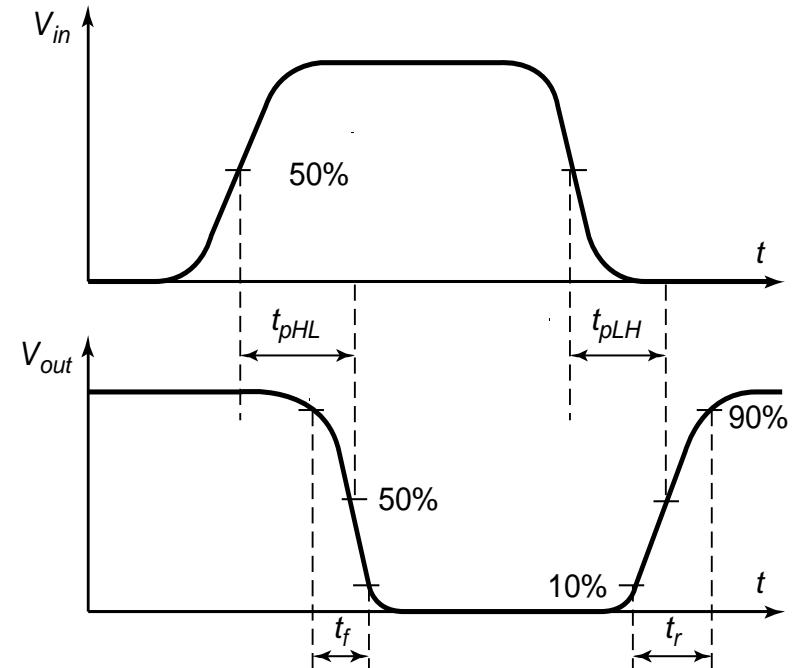
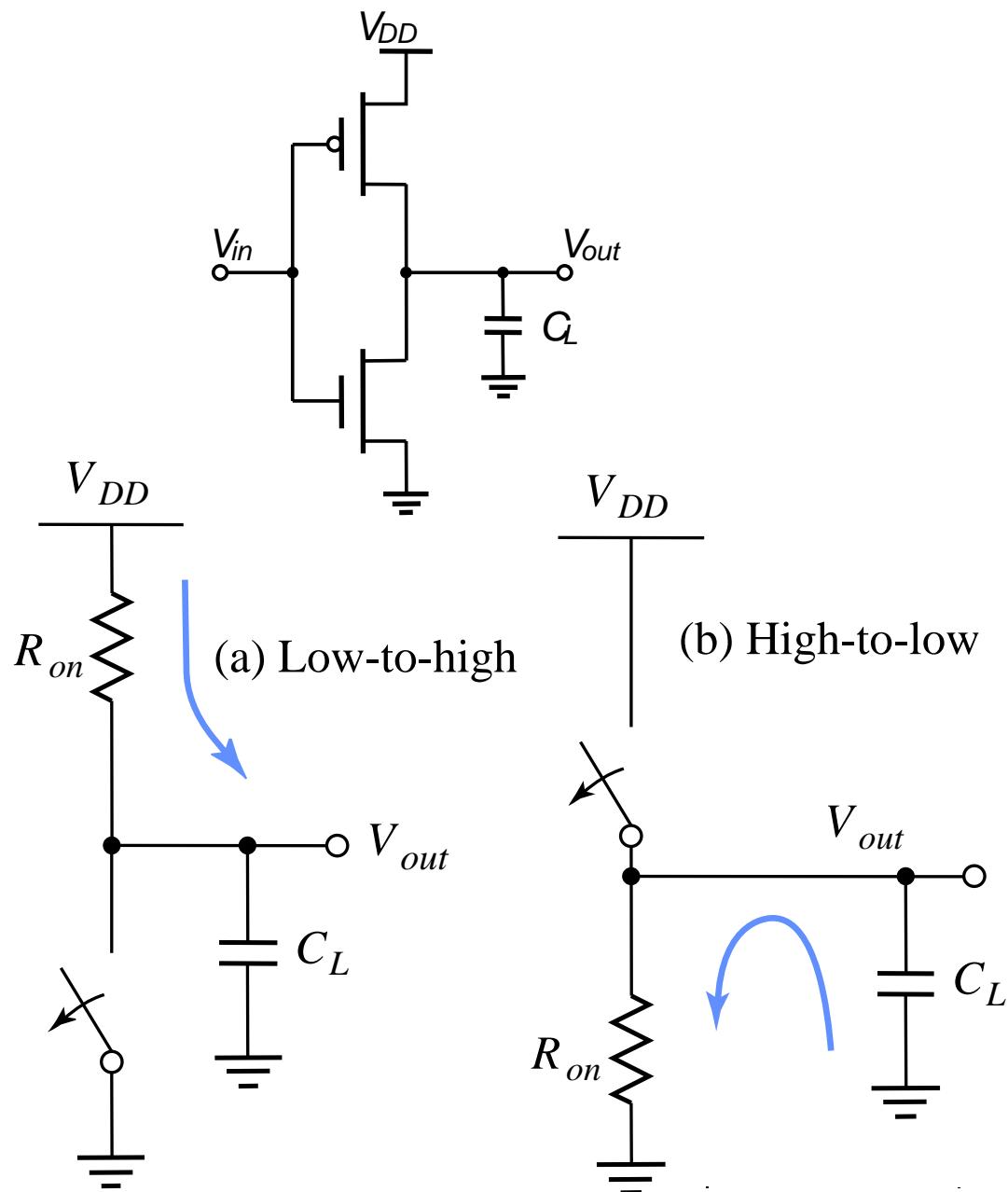


MIT Delay Estimation : Simple RC Networks MIT

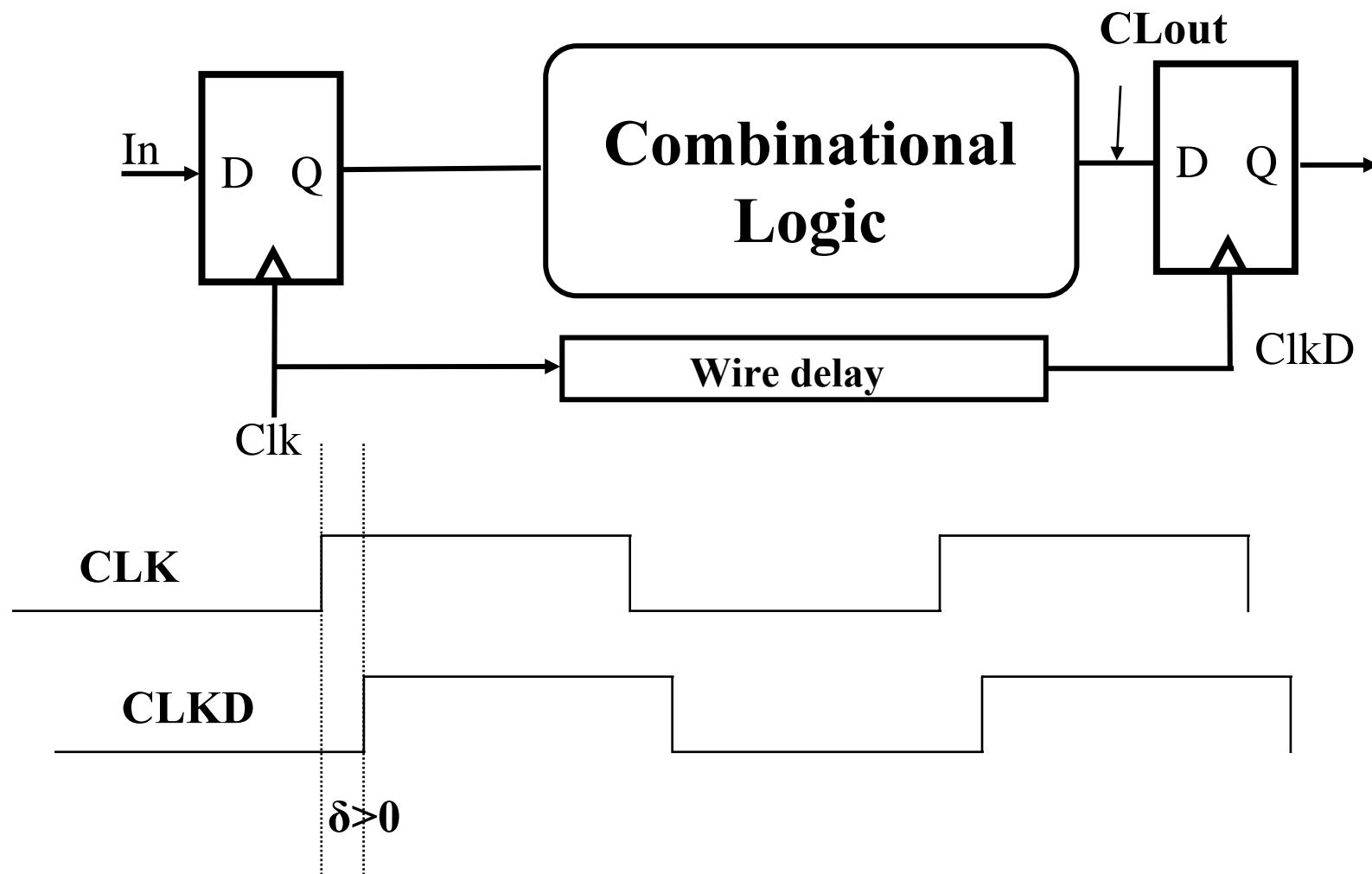


review

A circuit diagram showing an inductor symbol (L) connected in series with a resistor R and a capacitor C . The input voltage is V_{in} and the output voltage is V_{out} .

$$v_{out}(t) = (1 - e^{-t/\tau}) V$$

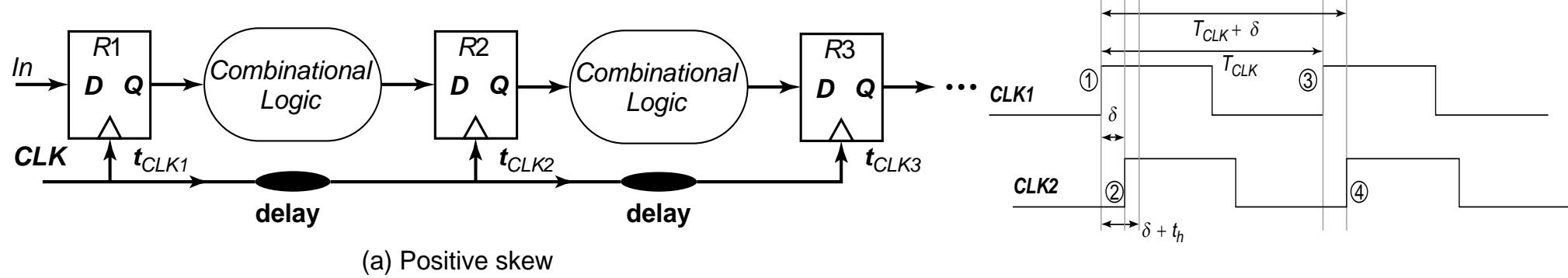
$$t_p = \ln(2) \tau = 0.69 RC$$



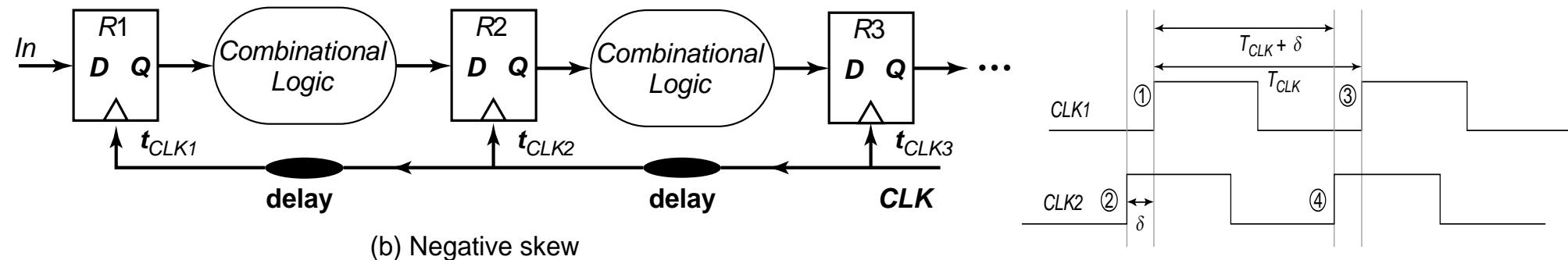
$$T > T_{cq} + T_{logic} + T_{su} - \delta$$

$$T_{cq,cd} + T_{logic,cd} > T_{hold} + \delta$$

Positive and Negative Skew

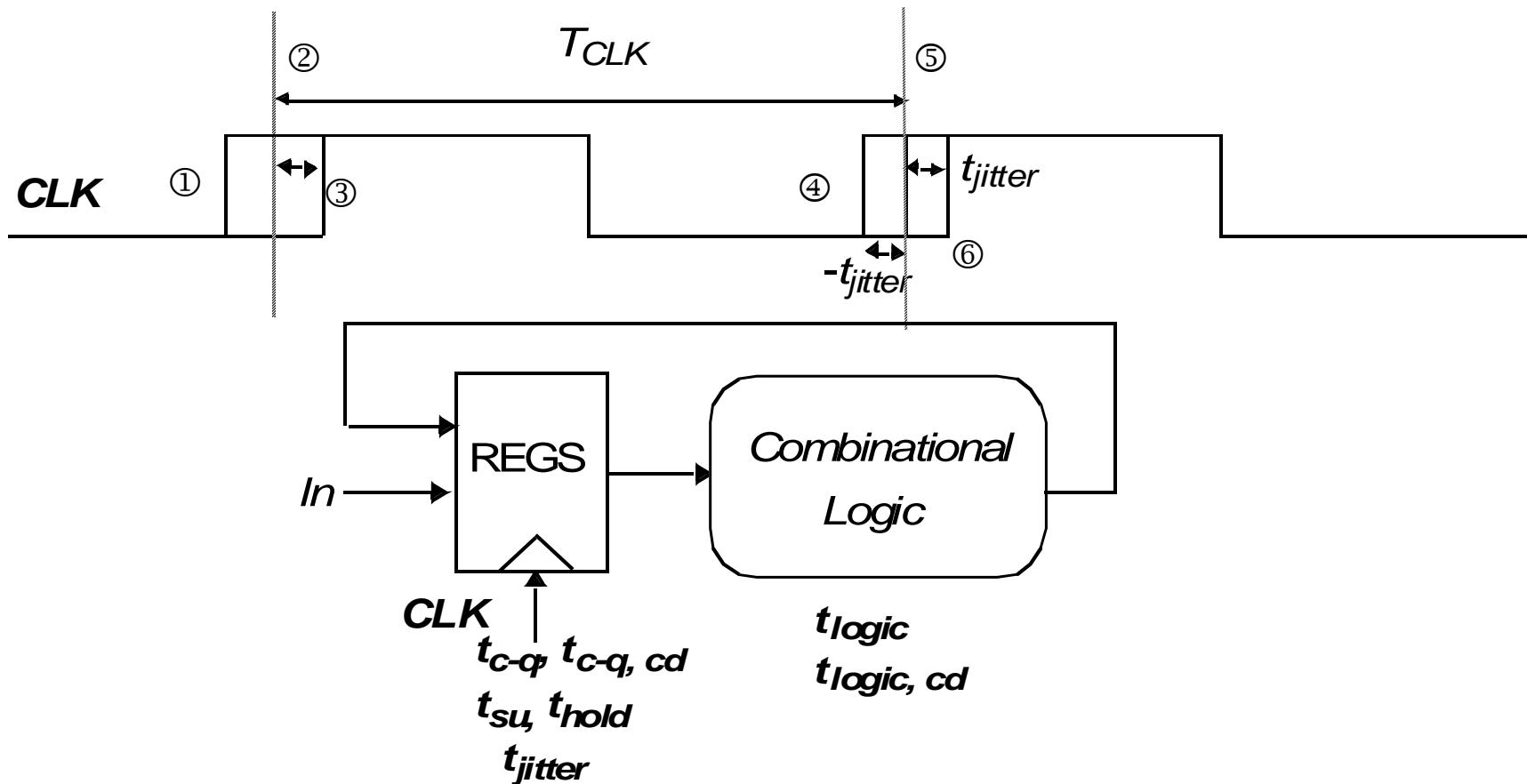


Launching edge arrives before the receiving edge



Receiving edge arrives before the launching edge

Clocks are Not Perfect: Clock Jitter



$$T_{CLK} - 2t_{jitter} > t_{c-q} + t_{logic} + t_{su}$$

or

$$T > t_{c-q} + t_{logic} + t_{su} + 2t_{jitter}$$