What determines the maximum
switching frequency for a CMOS inverter?

The maximum switching frequency of the models presented in this chapter is determined from the R-C
time constant of the equivalent circuit during charging or discharging (i.e. we model a switching transistor
as a resistor and a capacitor, which exhibits a decaying exponential time transient when charging or
discharging that has a time constant, $\tau = 1/RC$).