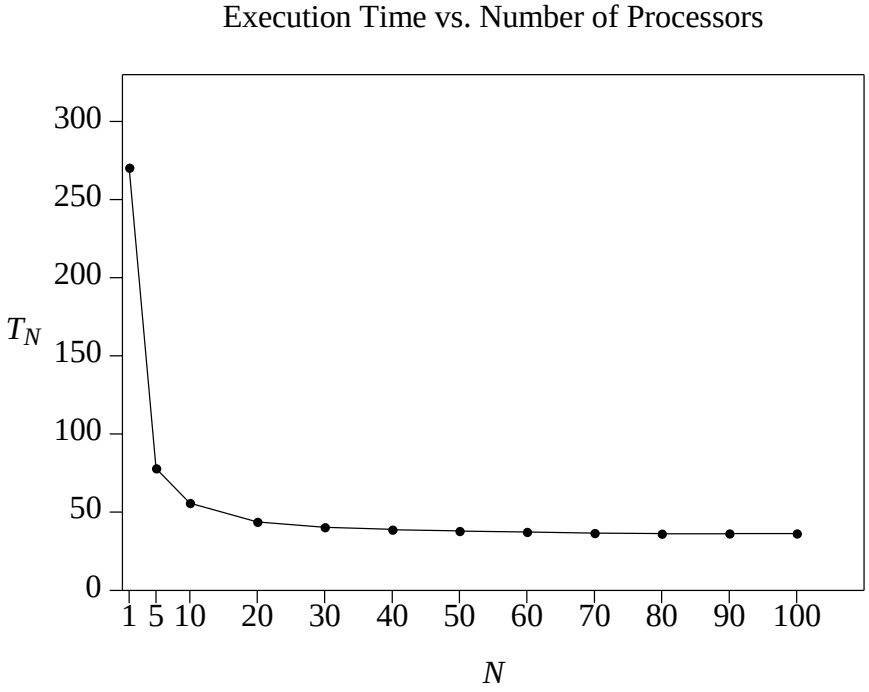
PERFORMANCE OF CONCURRENT PROGRAMS

EXECUTION TIME VS. NUMBER OF PROCESSORS



SPEEDUP

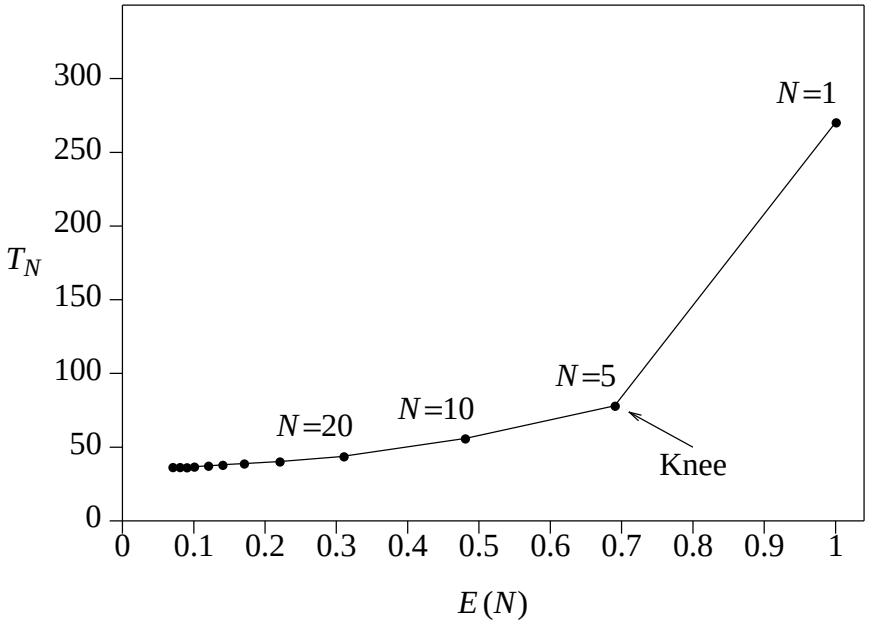
- Linear speedup often not possible due to:
  - Bus contention.
  - Communication overhead.
  - Locking of shared resources.
  - Synchronization costs.
  - Uneven distribution of computation.
  - Inherently sequential phases of the computation.

PERFORMANCE OF CONCURRENT PROGRAMS

SPEEDUP VS. EFFICIENCY:

- Speedup ⇒ Benefit.
- Efficiency ⇒ Cost.

Execution Time vs. Efficiency



[Eager, Zahorjan and Lazowska, 1989]