What is the effect on compute time associated with solving for \( p \) bands instead of \( N \) total bands?

A. Increase compute time by a factor of \( p/N \)

B. Decrease compute time by a factor of \( p/N \)

C. Increase compute time by a factor of \((p/N)^2\)

D. Decrease compute time by a factor of \((p/N)^2\)

E. None