Growth of Fibonacci numbers

Let's calculate some values

$f(1) = 1$
$f(2) = 1$
$f(3) = f(2) + f(1) = 2$
$f(4) = f(3) + f(2) = 2 + 1 = 3$
$f(5) = f(4) + f(3) = 3 + 2 = 5$
$f(6) = f(5) + f(4) = 8$
$f(7) = f(6) + f(5) = 13$
$f(8) = f(7) + f(6) = 21$
$f(9) = f(8) + f(7) = 34$
$f(10) = f(9) + f(8) = 55$

Question: Is $f(n) \geq 2n$ for all $n \geq 8$?