Running time of recursive algorithm

The running time $t_1(n)$ of this algorithm satisfies:

- $t_1(1) = C$
- $t_1(2) = C$
- $t_1(n) = t_1(n-1) + t_1(n-2) + C'$

for some positive integers C, C'.

It's immediately obvious that $t_1(n) \geq F(n)$ for all $n \in \mathbb{Z}^+$ (compare the recurrence relations).

This is a problem, because $F(n)$ grows exponentially (look at http://mathworld.wolfram.com/FibonacciNumber.html), and so $t_1(n)$ grows at least exponentially!