$$P_n(x) - D(x) = \log 2 \cdot F_{\omega_0}(n) + \frac{1}{2} \sum_{2 \leq q \leq X} \mu(\omega_q) F_{\omega_q}(n) + \frac{1}{4} \sum_{2 \leq q \leq X} F_{\omega_q}(n)^2.$$