MR3448640 30C10 30C15
Gardner, Robert [**Gardner, Robert Bentley**] (1-ETNS-SS);
Shields, Brett (1-ETNS-SS)
The number of zeros of a polynomial in a disk as a consequence of restrictions on the coefficients. (English summary)
Acta Comment. Univ. Tartu. Math. **19** (2015), *no. 2,* 109–120.

It is well known that if

$$P(z)=\sum_{j=0}^{n} a_j z^j$$

is a polynomial of degree n with the coefficients satisfying

$$0<a_0\le a_1\le a_2\le\cdots\le a_{n-1}\le a_n,$$

then the number of zeros of $P(z)$ in $|z|\le 1/2$ does not exceed

$$1+\frac{1}{\log 2}\log\left(\frac{a_n}{a_0}\right).$$

The above-mentioned result has been extended for polynomials with real coefficients to the polynomials with complex coefficients by imposing a monotonicity condition on the moduli or on the real part or imaginary part of the coefficients.

In this paper the authors prove several results for polynomials with complex coefficients where the restrictions on coefficients involve a monotonicity-type condition on the moduli, the real and imaginary parts of the coefficients of the even powers of the variable and on the coefficients of the odd powers of the variable (treated separately), and some related results. *N. K. Govil*