We consider finite dimensional algebras over an algebraically closed field.

Recently, Adachi, Iyama and Reiten introduced a generalization of the classical tilting theory, called $\tau$-tilting theory. It is known that mutation of tilting modules is not always possible to do. It depends on the choice of the indecomposable direct summands. Support $\tau$-tilting modules can be regarded as a completion of the class of tilting modules from the point of view of mutation. The above mentioned authors showed that mutation of support $\tau$-tilting modules is always possible. In addition, $\tau$-tilting modules satisfy nice properties of tilting modules.

Given an algebra $A$ of finite global dimension and $B$ the endomorphism algebra of a tilting $A$-module, it is well-known that there exists a deep connection between the global dimension of $A$ and the global dimension of $B$. Moreover, the global dimension of $B$ is always finite.

Now, let $A$ be an algebra of finite global dimension and $B$ the endomorphism algebra of a $\tau$-tilting $A$-module. A natural question is if there exists a relation between the global dimension of $A$ and the global dimension of $B$. In order to give an answer to such a question we find some results that relate the global dimension of $A$ with the global dimension of $B$. We show that the global dimension of $B$ is not always finite. Moreover, in case we deal with a monomial algebra of global dimension $2$, we prove that the global dimension of $B$ is finite.