Soybean constitutes an important component of the maize-based smallholder cropping systems in southern Africa and holds considerable potential for arresting soil fertility decline, enhancing household food and nutrition security, and raising rural incomes. National and international research and extension efforts have focused on the development and dissemination of yield-enhancing improved varieties and agronomic practices, but evidence is lacking on the adoption and impacts of improved soybean production technologies in the region. This paper assesses the adoption and impacts of improved soybean varieties and agronomic practices on soybean yields and crop net incomes in Malawi using data collected from over 1465 plots that belong to over 1200 soybean growing households. About 34% of the plots adopted improved soybean varieties and agronomic practices on an average of 0.27 ha. We used stochastic dominance analysis applied on households matched based on propensity scores of adoption and endogenous switching regression models to estimate the impacts. The cumulative distribution functions for soybean yield and crop net income for the adopters of improved soybean varieties and agronomic practices significantly dominate those of the non-adopters. The adoption of improved soybean varieties and agronomic practices is causally associated with an average 60% yield gain and 53% net income gain for adopters. The above results point to the need for further scaling up of improved soybean varieties and complementary agronomic practices for greater adoption and impact on the livelihoods of smallholder farmers in Malawi. Furthermore, policies that help to increase smallholder farmers’ access to information on improved soybean varieties and agronomic practices and their resources—land and non-land can help to increase soybean yield and crop net income.