Several recent finance articles employ the Omega measure, proposed by Keating and Shadwick (2002) – defined as a ratio of potential gains out of possible losses – for gauging the performance of funds or active strategies (e.g. Eling and Schuhmacher, 2007; Bertrand and Prigent, 2011), in substitution of the traditional Sharpe ratio (1966), with the arguments that return distributions are not Gaussian and volatility is not, always, the relevant risk metric. Other authors also use the same criterion for optimizing (non-linear) portfolios with important downside risk. However, we wonder in this article about the relevance of such approaches. First, we show through a basic illustration that the Omega ratio is inconsistent with the Strict Second-order Stochastic Dominance (SSSD). Furthermore, we observe that the trade-off between return and risk, corresponding to the Omega measure, may be essentially influenced by the mean return. Next, we illustrate in static and dynamic frameworks that Omega optimal portfolios can be associated with traditional optimization paradigms depending on the chosen threshold used in the computation of Omega. Finally, we present some robustness checks on long-only asset and hedge fund datasets.