Positivity of mass in light of negative Casimir energies

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The Casimir energy is a quintessential quantum effect: a confined field in the vacuum state usually has a residual quantum energy. And sometimes this energy is negative. Since the Casimir contribution to the energy is ever present, how is it that it never manages to make the **total** energy of the system negative (after all, we never see a body with negative mass)? I show that by virtue of the subdominant trace energy condition which is applicable to classical matter, in a system in equilibrium the mass-energy of the classical parts overpowers the Casimir field energy making the total system mass positive. I also discuss the support in quantum field theory for the energy condition.