Controlled by absolute gravity datum, mobile gravity datum of western Yunnan network from 1985 to 2010 are adjustment processed, with average precision of $12 \times 10^{-9} \text{ms}^{-2}$. The characteristics of single point gravity variation curve are seasonal fluctuation and up or down trend movement in long-term. Some points of gravity dynamic variation are consistent with pre-process of Lijiang Ms7.0 earthquake. The annual changing rate of gravity based on long-term observation can reflect the trend variation of gravity field in a period time. The annual changing rate of gravity in 1985–1995 and 1996–2003 may reflect the energy accumulation and release before and after the Lijiang Ms7.0 earthquake. Since 2003, the rising velocity of gravity is over $10 \times 10^{-9} \text{ms}^{-2} \text{a}^{-1}$ along the Jianchuan fault, Heqing-Eryuan fault and red river fault zone. Based on initial fault movement model which is obtained by the way of geology and geophysics, the forward simulant annual changing rate of gravity is similar with the measured rate. It indicates that fault movement has great contribution to the gravity field change. Fault’s annual movements inversed by annual changing rate of gravity are consistent with the geological results, and basically reflect its active characteristics.