Foreign direct investment is fundamental to the economic development of all nations. Countries strive to ensure that a conducive environment for foreign investors is created. The foreign direct inflows in Kenya have been fluctuating owing to the macroeconomic variables which have been posing challenges to its growth. The Government of Kenya has worked to improve the country's ease of business and hence encourage FDI flows by introducing reforms such as attractive tax systems for corporations and a welcoming regulatory environment. The main objective of this study was to investigate how macro-economic variables affect foreign direct investment (FDI) in Kenya .The specific objectives of this study were to establish the effect of real interest rates on foreign direct investment (FDI) in Kenya, to determine the effect of inflation rates on FDI in Kenya, to assess the effect of economic growth on FDI in Kenya to determine the effect of exchange rate on foreign direct investment in Kenya and to examine the moderating effect of trade openness on the relationship between economic growth and FDI in Kenya. Both a causal and time series research design were used in the study. A checklist was used to gather time series data from the KNBS data base from 1966 to 2019. The researcher used the Vector Error Correlation Model (VECM) in the study. The Eclectic Paradigm theory, Neoclassical Trade theory, Internalization theory, Interest Rate Parity theory, and International Fishers theory served as the foundation for this thesis. Model 1 was statistically significant with a p-value of $0.0000<0.05$ and an F-statistic of 21.4318. When all other variables are held constant, R2=0.8374 showed that the chosen macroeconomic variables produced a statistically significant positive forecast of 83.74 percent of foreign direct investment. Based on Model 2's findings, trade openness influences FDI and economic growth in a moderating manner as indicated by the coefficient estimate of the interaction term between trade openness and economic growth on FDI, which was 0.0427 with a p-value of $0.00000<0.05$. The data demonstrated the statistical significance of the model used with an F-statistic of 20.3464; p-value = $0.00005<0.05$. Selected macroeconomic variables contributed to 75.59 percent of all investment which is shown by R2 = 0.7559. The inference made was that the examined macroeconomic factors influence net FDI inflows to Kenya. The study suggests that the government launch initiatives that can encourage long-term economic growth, guarantee that inflation rates are stable, and concentrate on export promotion incentives that will aid in fostering greater trade openness with other nations in order to raise FDI levels.