

Tectonic evolution of the Tabas-Ravar basin, eastern Central Iran

SAIDI, A. Research Institute of the Geological survey of Iran
P.O. Box 13185-1494, Tehran, Iran

The collision of the Iranian Early Cimmerian block with Turan block (southern part of the Eurasian supercontinent) in Middle Triassic and consequent accretion of Iranian block to Eurasia resulted in development of the Iranian internal basins.

Thinning of continental crust in Early Jurassic was accompanied by an unstable period, characterized by fragmentation of the Iranian block during the Cretaceous time, and creation of internal Sabzevar-Nain and Nain-Baft basins, which were floored with oceanic crust. These events were followed with subduction of northern margin of the Arabian plate under the southern margin of the Iranian block, and subduction of northern margin of the Central Iran under the southern margin of the Alborz Range.

The Tabas-Ravar basin was formed after Early Cimmerian collision due to an extensional tectonic regime in Nayband region during the Upper Triassic. The Tabas-Ravar basin is bounded by two major dextral strike-slip faults to the east and west. Vertical and horizontal movements along these faults controlled the geometry and sedimentation regime of the basin. Study of the nature and chronology of tectonic events on the basis of subsidence curves of Tabas-Ravar basin during the Triassic to Cretaceous time resulted in interesting facts on the history of the basin, and the nature of hydrocarbon immigration within the Triassic and Jurassic rocks.