

Synsedimentary Tectonic Control of the Permo-Triassic Central Basin Sedimentation

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The sediments in the Central basin can be divided into 2 depositional sequences. The first depositional sequence (Permian-Early Triassic) consists of continental sediments at its base that grade into shallow marine and then to deeper marine at the top. The sequence marks the opening of the basin. The second sequence (Middle Triassic

to Late Triassic) begins with deep marine turbidites and volcanoclastics that grade into shallow marine sediments to the top. These sequences mark the rifting of the basin and then followed by the initiation of the gradual closure of the basin. Numerous direct evidences for syn-sedimentary tectonism are found within the strata of the Central Basins. These include slumps, syn-sedimentary normal and strike-slip faults, syn-sedimentary folds, and shale injection structures. The evidence that comes from these syndepositional structures is that sedimentation has been continuous with transcurrent fault movements. From the sedimentological and syndepositional structural characteristics, the Permo-Triassic Central Basin can be considered to have a graben-like configuration. The graben had a roughly N-S trend and is defined as follows: (1) The graben has its western and eastern margins as the Bentong-Raub Zone and the Lebir Fault Zone, respectively. (2) It has a shallow rapidly subsiding platform along the margins and the northern part. (3) It has a deep basinal area in the central and axial areas represented by the Semantan formation. (4) The transitional zone is defined as the area inboard of the basin characterized by intimate relations between volcanism, tectonism and sedimentation. The nature of the margin fault zones with steeply dipping faults that have the downthrown side into the basin and exhibiting dextral transpressive and transtensive character suggest that the basin is a strike-slip control basin.
