Chen, Faudree, Gould, Jacobson, and Lesniak determined a minimum degree threshold for which a balanced $k$-partite graph has a Hamiltonian cycle, extending a result of Moon and Moser about Hamiltonian cycles in balanced bipartite graphs. However, when $k \geq 3$ a $k$-partite graph is not necessarily balanced. We determine some minimum degree thresholds for Hamiltonian cycles in ‘not-too-unbalanced’ $k$-partite graphs which are asymptotically tight. We use stability techniques to show that a graph obeying the degree conditions is either a robust expander, or else has a Hamiltonian cycle directly. (Received February 03, 2017)