This study assesses the impact of the Basel III regulatory framework on interbank contagion. It focuses on the direct interbank contagion that spreads via interbank foreign claims among national banking sectors. A balance sheet-based network model employs the quarterly consolidated banking statistics, collected by the Bank for International Settlements, to simulate the consequences of credit and funding shock under stressed market conditions. Compared to the Basel II, the Basel III regulatory framework reduces the probability of interbank contagion (following a simulated default of one banking sector) from 31% to 14% and lowers the impact of contagion by 63% in terms of average loss for a banking sector. The simulations under both regulatory frameworks show that relatively smaller banking sectors can trigger severe interbank contagion comparable to large banking sectors. Throughout the 2005-2009 period, the Basel III regulatory framework stabilizes the fluctuations of the scope of interbank contagion.