Supplementary Information

In order to make the conclusion more convincing, we did simulations on the other two no-feedback interdependent models. We choose Barabási-Albert (BA) model of scale-free network and Watts-Strogatz (WS) model of small-world network as subnetworks. According to the method in the text of the paper, we construct two no-feedback interdependent networks models. The parameters of subnetworks are as follows.

- Select BA scale-free model as subnetworks, construct a no-feedback BA-BA interdependent networks model with $N_A = N_B = 5000$ and $< k_A > = < k_B > = 4$.
- Select WS small-world model as subnetworks, construct a no-feedback WS-WS interdependent networks model with $N_A = N_B = 5000$, $< k_A > = < k_B > = 4$ and rewiring probability $\rho_A = \rho_B = 0.2$.

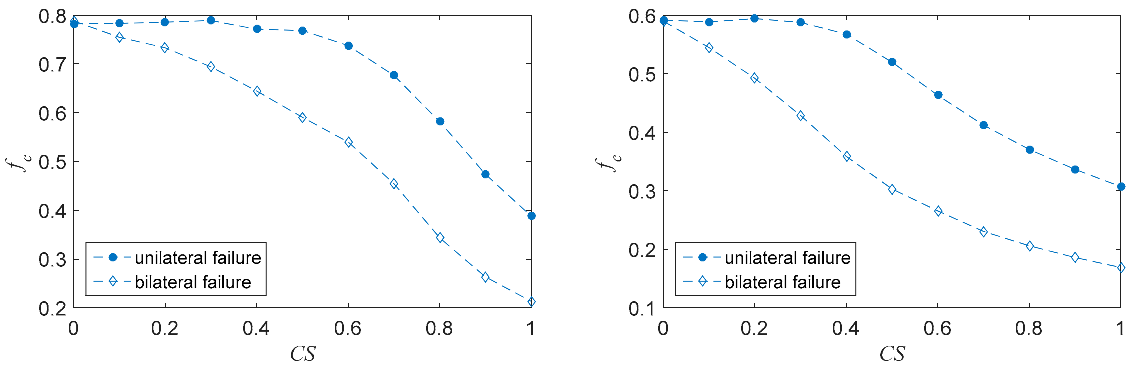
Based on the above two models, the influence of parameters *CS* and *DS* on robustness under unilateral and bilateral failure was analyzed based on the simulation method in the text. Figures S1-S4 are the results of the collapse threshold of BA-BA and WS-WS interdependent networks with different parameter combinations. From the results of Figures S1-S4, we know that the trend of collapse threshold with parameters is in line with the conclusion of the article, overlooking the difference of specific values. And these results are consistent with the following conclusions of the text.

1) The robustness of no-feedback interdependent networks is inversely proportional to coupling strength and dependency strength.

2) The collapse threshold under bilateral failure decreases more intense than that under unilateral failure. That's to say, the robustness of interdependent networks under bilateral failure is worse than that under unilateral failure.

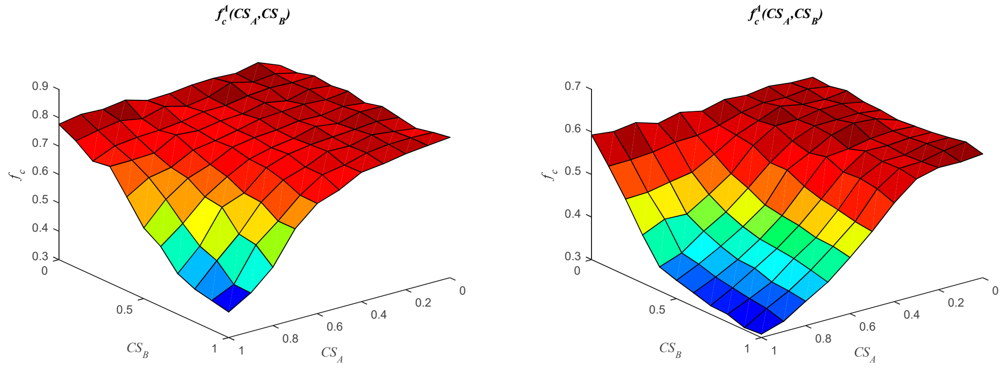
3) The collapse threshold f_c changes slightly under unilateral failure when coupling strength or dependency strength is small.

4) The effect of coupling strength and dependency strength on the robustness is equivalent, which can be seen from the consistent of results of Figures S1 and S4.



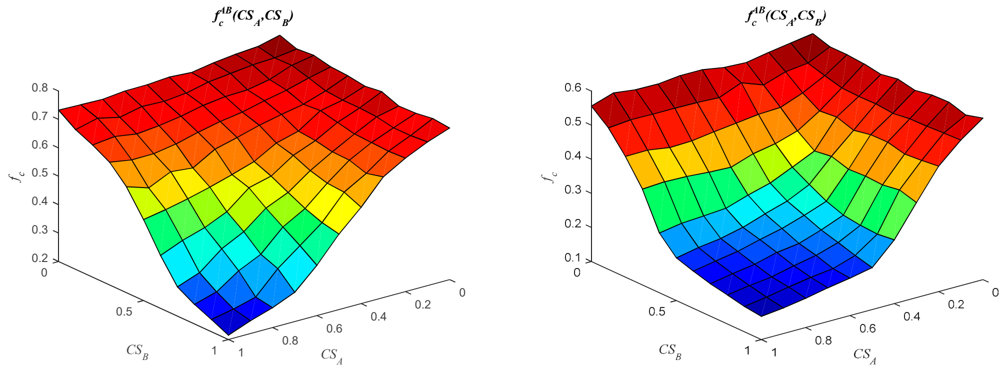
(a) BA-BA (b) WS-WS

Figure S1. Relationship between collapse threshold f_c and *coupling strength* (*CS*) under both unilateral and bilateral failure modes, each point is obtained by averaging over simulation on 20 independent realizations.



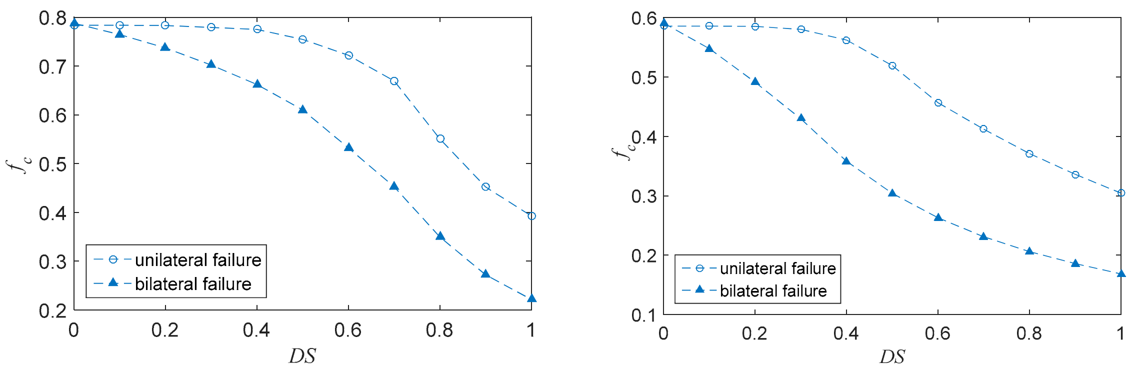
(a) BA-BA (b) WS-WS

Figure S2. The three-dimension curved surface shows *collapse threshold* f_c as a function of *coupling strength(CS)* under unilateral failure, each point is averaged over 20 different network realizations.



(a) BA-BA (b) WS-WS

Figure S3. The three-dimension curved surface of *collapse threshold* f_c as a function of *coupling strength* under bilateral failure, each point is averaged over 20 different network realizations.



(a) BA-BA (b) WS-WS

Figure S4. Collapse threshold f_c as a function of *dependency strength(DS)*, each point is obtained by averaging over simulation on 20 independent realizations.