

I followed almost all the comments and recommendations.

I wrote some comments on my revision below.

Comments:

1. On the title: I want to change the title to “Network Structure of firms’ transactions: Analysis from 800,000 Japanese firms”. Please tell me if possible. The reason is as follows. The point of our paper consists in that we summarize the fundamental characteristics of network structure and supply information to the readers. Thus, this title makes it easier for the readers to see what kind of paper when they read title.
2. I found that preceding work [Saito et al. \(2007\)](#) studied only directed network in which the relations buy and sell are distinguished, while we investigated undirected network built due to whether there exists any transaction between two firms and found that undirected network as well has scale free structure. Hence, we wrote that we also found scale free distribution in undirected network. In our point of view, undirected network is important in that adjacency matrix¹ is symmetric, subsequently eigenvalues are real. Using undirected network is common and fundamental for studying complex network than directed one, for example defining clustering coefficient is usually based on undirected network. On the other hand, adjacency matrix of directed network is not symmetric, eigenvalues are not generally real.
3. I answer the question from the reviewer why there seem some structures in the lower part of the plots for clustering coefficient. The corresponding figure is Fig.4. I was peculiar this and got to know the answer, however, I thought that it was better for us not to mention it, since it is not so related to the main theme. The followings are the quotation from my paper.

In the figure, there seems to be some structures of dots for $\text{Log}(\text{Degree})$ of less than 4 aligning on lines with negative slope. We need to explain why is this. Remember that clus-

¹This is the matrix representing network structure. Adjacency matrix is very important and fundamental tool for investigating network.

tering coefficient is defined as

$$C(k) \equiv \frac{\text{The number of triangles}}{k(k-1)/2} \\ \sim \frac{\text{The number of triangles}}{k^2/2} \quad (1)$$

However, the number of triangles in eq.(1) is discrete such as 1, 2, 3 and so on. Hence, the bottom structure consists of the points the number of triangles of which is 1 then the clustering coefficient is $2 \times 1/k^2$. Similarly, the second bottom structure consists of the points the number of triangles of which is 2, subsequently the clustering coefficient is $2 \times 2/k^2$. The clustering coefficient of other structures are $2 \times 3/k^2$ and so on. Since we take logarithm of them, the slope of these structures are -2 , so that where the number of triangles is small they seem align.

4. Nature and the author of the paper allowed me to use the figure. I followed their instructions.
5. On the title. I want to change the title to “Network Structure of firms’ transaction: Analysis from 800,000 Japanese firms”. Thus, if possible, please tell me. The reason is as follows. The point of our paper consists in that we summarize the fundamental characteristics of network structure and supply information to the readers. Thus, this title makes it easier for the readers to see what kind of paper when they read title.

References

- Saito, Y. U., Watanabe, T., and Iwamura, M. 2007, Do larger firms have more interfirm relationships? *Physica A*, **383** (1), pp. 158–163.