Readme file for data and codes accompanying:
"**From Micro to Macro via Production Networks**"
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1. Data folder

The data folder contains the following three MATLAB files:

IO2002_data.mat
IO1987_data_nber_manufacturing_match.mat
Nber_manufacturing_database.mat

The first two data files contain Commodity-by-Commodity Direct Requirements Input-Output Tables for the years 2002 and 1987 respectively. The last data file contains industry-level annual data from the NBER-CES Manufacturing Industry Database.

The 2002 input output data is made available by Acemoglu, Carvalho, Ozdaglar and Tahbaz-Salehi (2012) who, in turn, source it from the Bureau of Economic Analysis' Benchmark Input-Output Data. See Acemoglu, Carvalho, Ozdaglar and Tahbaz-Salehi (2012) for further details.

The 1987 input output data refers only to manufacturing industries as classified by the NBER-CES Manufacturing Industry Database. The match between the 1987 benchmark input-output industries and the NBER-CES manufacturing industries is made available Holly and Petrella (2012). See Holly and Petrella (2012) for further details.

The NBER-CES Manufacturing Industry Database is sourced from Barterlsman and Gray (1996) and is available at http://www.nber.org/data/nbprod2005.html

2. Section 3 codes

Section_3_JEP_Micro_Macro_Nets.m : this MATLAB function reads the 2002 input-output data, computes network statistics and outputs Figures 3 and 4 in the Section 'Mapping Production Networks to Data' of the paper. Specifically it computes the density of the network, the average distance, the diameter, the weighted outdegree distribution and the centrality distribution. For the latter two it also gives the power law estimates quoted in the paper. Finally it outputs Figures 3 and 4 in the paper as well as two csv datafiles containing the data underlying these figures.

This function calls the sub-functions charpath.m, distance_bin.m, plfit.m and plplot.m, which are also included in the folder. The first two of these are used for the distance and diameter calculations and are sourced from Rubinov and Sporns (2010). The latter two functions are used for the power law estimation and empirical distribution plots and are sourced from Clauset, Shalizi and Newman (2009).

2. Section 4 codes

Section_4_JEP_Micro_Macro_Nets.m : this MATLAB function reads the NBER manufacturing data and the 1987 input-output data and outputs Figures 5 and 6 in the Section 'Production Networks, Comovement and Aggregate Fluctuations' of the paper.

This function calls the sub-functions distance_bin.m which is also included in the folder. This function is used for the distance calculations and is sourced from Rubinov and Sporns (2010).

4. References

Acemoglu, D., V.M. Carvalho, A. Ozdaglar and A. Tahbaz-Salehi (2012), "The network origins of aggregate fluctuations." Econometrica, Vol 80(5), 1977-2016.

Barterlsman, E.J. and W. Gray (1996), "The NBER manufacturing productivity database." NBER Technical Working Paper 205.

Clauset, A., C. R. Shalizi, and M. E. J. Newman (2009), "Power-law distributions in empirical data." SIAM Review, 51, 661–703.

Holly, S. and I. Petrella (2012), "Factor demand linkages, technology shocks, and the business cycle." Review of Economics and Statistics, Vol. 94, 4, 948-963

Rubinov M. and O. Sporns (2010), "Complex network measures of brain connectivity: uses and interpretations." NeuroImage, 52, 1059-1069.