Problem set 1

October 2016

Each student picks 1 of the following problems. Each student must hand in

- A 2-page document describing the economic question, methodology and results. I expect *economic comments*. Only typed up documents will be accepted.
- A Matlab file and all necessary files (data) to replicate the results. I must be able to run the code on my computer

You should email the solutions to me. I expect students to pick different problem sets. I let the coordination up to you. If you have other ideas for problem sets, feel free to tell me about it. I am open to discussion.
In all problem sets, use quarterly time series, seasonally adjusted (only for macro aggregates, not for financial time series). If they are available on a monthly basis, transform them into quarterly frequency using quarterly averages (example : mean of observations for January, February and March = observation for 1rst quarter, this can be done automatically on FRED database). If availablr, the period shall span 1973:Q1 - latest observation. All problem sets deal with business cycle facts (i.e. all time-series must be logged and detrended using HP filter).

1 US labor market

On US data, use the FRED database (https://research.stlouisfed.org/fred2/) to compute stylized facts on the following time-series

- Labor force participation
- Unemployment rate
- Average (Mean) Duration of Unemployment

What lessons do we learn from your computations, compared to the stylized facts seen in class for the US?

2 US Financial cycle

On US data, use the FRED database (https://research.stlouisfed.org/fred2/) to compute stylized facts on the following time-series

- SP500 stock price index
- The difference in yields between Moody's Baa and Aaa Corporate bonds

- The difference in yields between 10-year and 3-month US Treasury securities

What lessons do we learn from your computations, compared to the stylized facts seen in class for the US?

3 Recessions / expansions, investigating asymmetries on US macro data

On US data, use the FRED database (https://research.stlouisfed.org/fred2/) to compute stylized facts over the whole sample (1973:Q1 - latest observation).
Look at the NBER business cycle dates (http://www.nber.org/cycles.html) and compare business cycle behavior of output, hours per worker and employment in expansions and recessions. I let you imagine which statistics you can compute to illustrate the asymmetries. Are there any asymmetry between expansion and recessions ?

4 International comparisons

Use the OCDE Quarterly National Accounts (http://stats.oecd.org/). Pick 1 country. Compute the business cycle facts. What are the business cycle episodes? What lessons do we learn from your computations, compared to the stylized facts seen in class for the US? Is there any difference in business cycle characteristics compared with the US?

5 International comovements

Use the OCDE Quarterly National Accounts (http://stats.oecd.org/). Pick 5 countries. Compute the correlation between fluctuations in the US and each foreign country. What lessons do we learn from your computations? Are the US leading all the business cycles? Is there any break in your results after/before 2008?

6 External Wealth of Nations

Go to Philip lane's website (http://www.philiplane.org/EWN.html) and look at his annual dataset on foreign assets and foreign liabilities for a large sample of countries for the period 1970-2011. Pick wisely some countries, compute cyclical component (HP with $\lambda = 6.25$. Compute moments (which ones? This is up to you). What do we learn from this exercise?