FRE-GY-6971, Homework #1, Due 4/6, 10am, 30 pts

1. Download ‘Daily Treasury Yield Curve Rates’ from the site: <https://www.treasury.gov/resource-center/data-chart-center/Pages/index.aspx>
   1. Explain (briefly) how these CMT rates are constructed (the website has the info)
2. Build a Jupyter Notebook to do the following:
   1. Download the dataset into pandas dataframe
   2. Remove ‘1M’ column and use the date from 1998-2016 (we will leave 2017-2018 data out for now)
   3. Construct series of daily differences
   4. Compute correlations and volatilities among the series (using level data)
   5. Compute correlations and volatilities among the series (using daily differences)
   6. Plot the volatility curves computed in 2d & 2e
3. Read Pitebarg’s paper: Funding Beyond Discounting…
   1. Prove that collateralized LIBOR forward contracts are different from Eurodollar futures, despite the conclusion reached by Johannes & Sundaresan (2007)
   2. What was the reason for the mistaken conclusion in the Johannes & Sundaresan (2007) paper? Explain your reasoning