

002-Pivot_Tables_Visualization

December 4, 2017

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In [17]: # author: René Kopeinig
         # script: Pivot table visualization of cryptocurrency data
         # description: Data aggregation and pivot table visualization of cryptocurrency data fr

In [18]: # Add IPython-specific directive to display plots directly below the notebook cell
         %matplotlib inline

In [19]: # Import dependencies
         import os, quandl, pickle
         import numpy as np
         import pandas as pd
         import matplotlib.pyplot as plt
         import statsmodels.api as sm

In [20]: # Firstly: Get data from Quandl
         # What is Quandl? It is a marketplace for financial, economic and alternative data
         # delivered in modern formats for today's analysts, including Python.

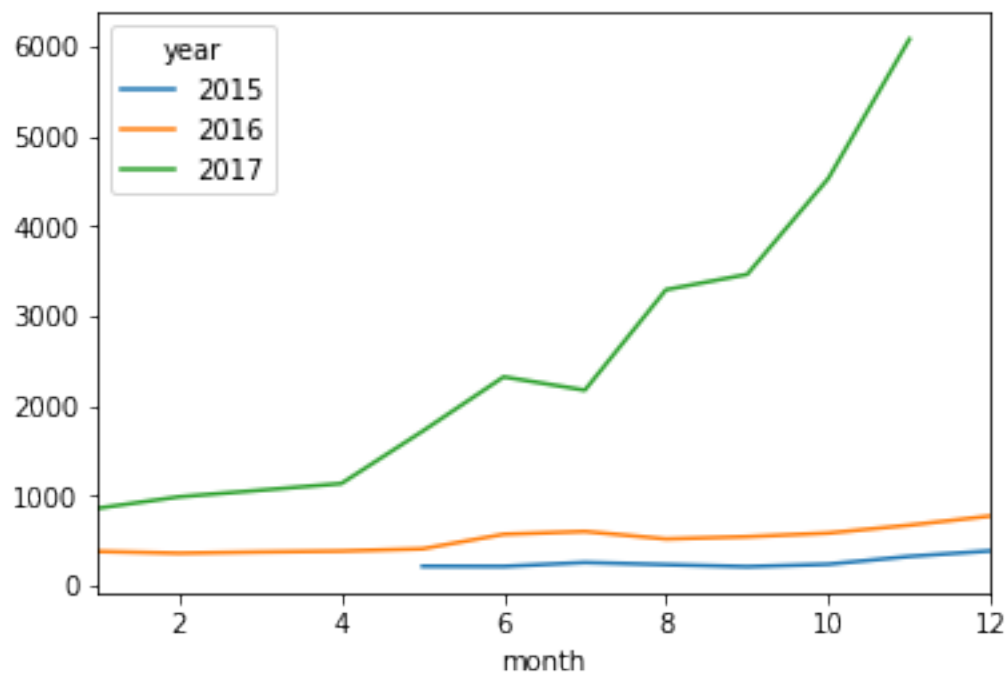
         def get_data(quandl_id):
             '''Download and cache Quandl dataserries'''
             cache_path = '{}.pkl'.format(quandl_id).replace('/', '-')
             print cache_path
             try:
                 f = open(cache_path, 'rb')
                 df = pickle.load(f)
                 print('Loaded {} from cache'.format(quandl_id))
             except (OSError, IOError) as e:
                 print('Downloading {} from Quandl'.format(quandl_id))
                 df = quandl.get(quandl_id, returns="pandas")
                 df.to_pickle(cache_path)
                 print('Cached {} at {}'.format(quandl_id, cache_path))
             return df

In [21]: # Get Bitcoin Data
         btc = get_data('GDAX/EUR')
         btc['Mean'] = (btc['High'] + btc['Low']) / 2
         #eth = get_data('GDAX/ETH-EUR')
```

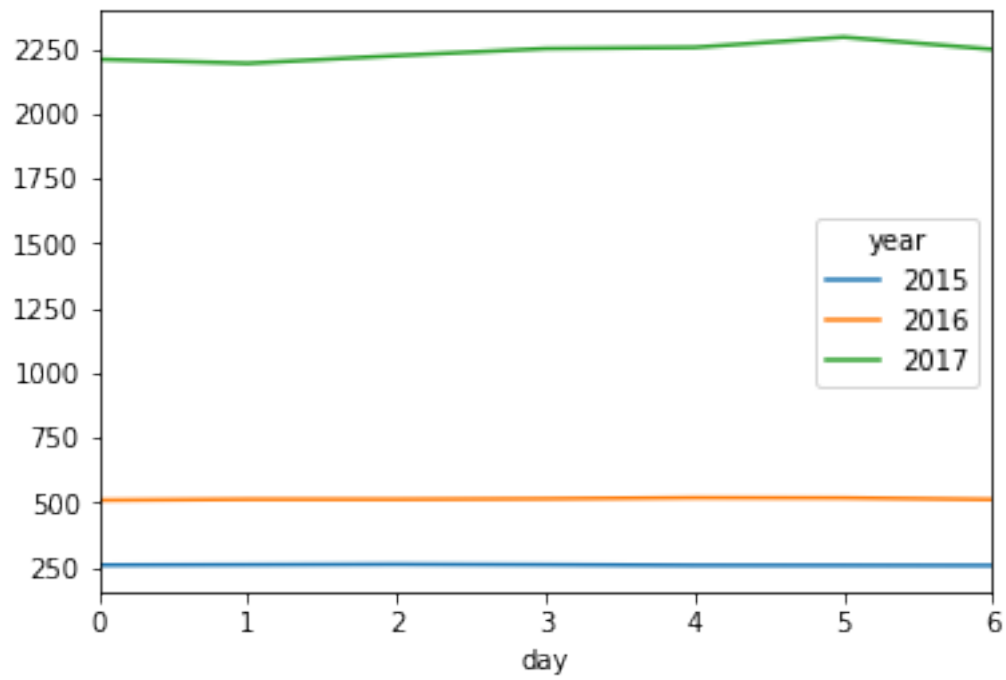
GDAX-EUR.pkl
Loaded GDAX/EUR from cache

```
In [22]: def create_pivot(df,value):  
         df['year']= df.index.year  
         df['month']= df.index.month  
         return pd.pivot_table(df, values = value, columns = "year", index = "month")
```

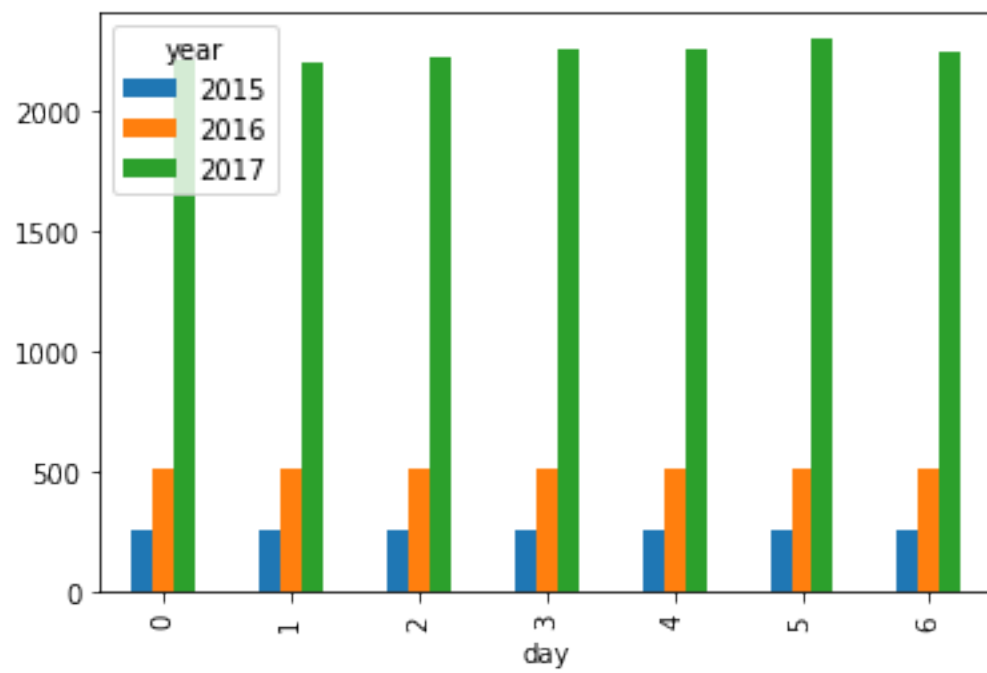
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In [23]: piv_btc=create_pivot(btc, 'Mean')  
         piv_btc.plot()  
         plt.show()
```



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In [24]: btc['day']= btc.index.dayofweek  
         btc['week']= btc.index.week  
         piv_btc_weekday = pd.pivot_table(btc, values = 'Mean', columns = "year", index = "day")  
         piv_btc_weekday.plot()  
         plt.show()
```

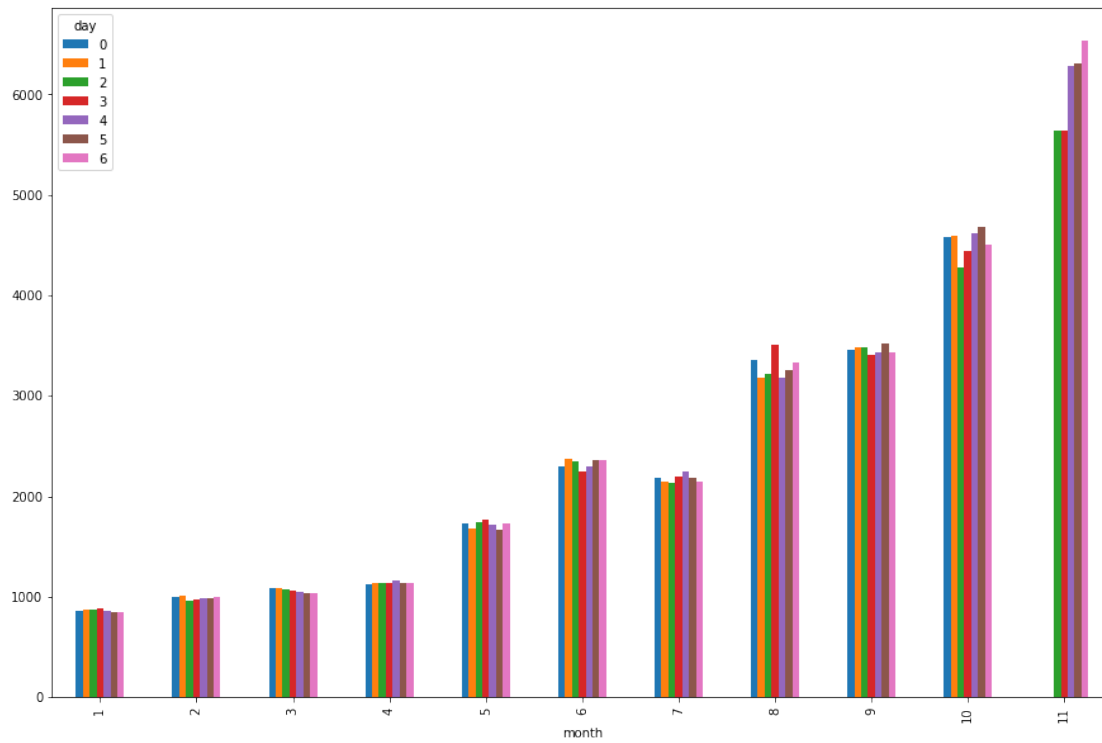


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In [25]: piv_btc_weekday.plot.bar();
```



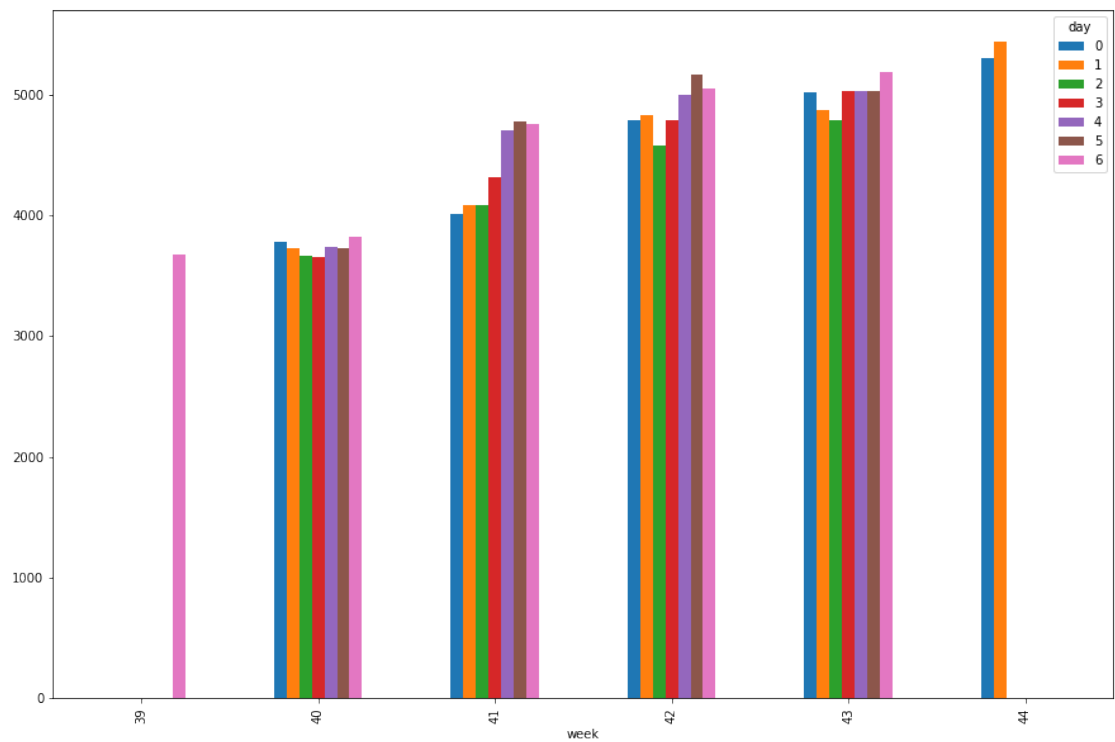
In [26]: *# Showing mean value of BTC for each month and each day of the week.*

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piv_btc_year = pd.pivot_table(btc['2017'], values = 'Mean', columns = "day", index = "month")
piv_btc_year.plot.bar(figsize=(15,10));
```



In [30]: *# Showing mean value of BTC for each day of each week in October 2017.*

```
piv_btc_month = pd.pivot_table(btc['2017-10'], values = 'Mean', columns = "day", index = "month")
piv_btc_month.plot.bar(figsize=(15,10));
```



In []: