



# *MATLAB for Finance*

## 5 Graphics



01/03/2017

# *Graphics in MATLAB*

✚ **Plot** one or more series (vectors)

✚ Window of **Figure**



01/03/2017

*Plot one or more series*



# *Plot*

```
t = 0:pi/100:2*pi;
```

```
y = sin(t);
```

```
plot(t, y)
```

✚ A new plot replace the previous one



# *More Series*

✚ Getting more series with just one plot:

```
y2 = sin(t - .25);
```

```
y3 = sin(t - .5);
```

```
plot(t, y, t, y2, t, y3)
```



# Plot With Style

```
plot(t, y, 'style')
```

```
plot(t, y, 'style', t, y2, 'style')
```

## Color:

- c(yan)
- m(agenta)
- y(ellow)
- r(ed)
- g(reen)
- b(lue)
- w(hite)
- (blac)k

## Line:

- (solid)
- (dashed)
- : (dotted)
- . (dash-dot)
- none (no line)

## Marker:

- |   |    |   |   |
|---|----|---|---|
| + | .  | d | > |
| o | -+ | v | p |
| * | *  | ^ | h |
| x | s  | < |   |



# Other Controls

✚ View / Property editor

or

✚ Edit / Properties



- Create a vector of 1000 of pseudo-random numbers and plot them in an histogram



01/03/2017



*Figure*





# Figure

- ✚ Open a new window and make it active (default):

`figure`

- ✚ Activate an existant figure:

`figure(n)`

✚ where *n* is the figure no. showed in the title

- ✚ `plot` draws the series in the active window. It creates a new window if it doesn't exist

- ✚ Subsequent plots delete previous series



01/03/2017

# *Hold*

✚ Adding more series:

hold on

✚ Close add graphic feature:

hold off



01/03/2017

# Subplot

✚ Split the figure window in more plots:

`subplot (rows, columns , no. of active graphic)`



# *Workspace screen-shot*

✚ To save the workspace:

```
save filename
```

✚ To reload the saved workspace:

```
load filename
```

# *In-classroom exercise*

- ✚ Download Bayerische Motoren Werke Aktiengesellschaft (BMW.DE) and Volkswagen AG (VOW.DE) from <http://finance.yahoo.com> the last year daily settlements
- ✚ Plot the series in two subplots
- ✚ Compute the daily returns
- ✚ Plot them too (in four subplots)
- ✚ Create two new subplots
- ✚ Plot the series on the left and the returns on the right



# Axis Control

## ✚ Change axis scales:

```
axis([xmin xmax ymin ymax])
```

## ✚ Other controls:

```
axis square
```

```
axis equal
```

```
axis auto
```

```
axis off
```

```
axis on
```

```
grid on
```

```
grid off
```

```
xlabel('label x')
```

```
ylabel('label y')
```

```
title('title')
```

```
text(row, col, 'text')
```