

```

In[1]:= NormalizeData[symbol_, start_, end_] := FinancialData[symbol, {start, end}] //
Transpose@{#[[All, 1]], #[[All, 2]] / First@#[[All, 2]]} &
WeightedMean[data_, weightList_] := Total[weightList / Total@weightList * data]
RobustChart[symbols_, start_, end_, weightList_: Nothing] :=
Module[{lists, allDates, associationLists,
  listsWithMissing, mean, weighted, data, table, ts, headings},
  lists = NormalizeData[#, start, end] & /@ symbols;
  allDates = Table[#, {i, {stock, lists}}, {i, stock}] // Fold[Union, #] &;
  associationLists = Table[#, {i, {stock, lists}}, {i, stock}];
  listsWithMissing = Table[Module[{association},
    association = Association@#;
    Table[k -> association[k], {k, allDates}], {a, associationLists}];
  mean = Normal@Merge[listsWithMissing, Mean];
  weighted = If[TrueQ[weightList == Nothing], Nothing,
    Normal@Merge[listsWithMissing, WeightedMean[#, weightList] &]];
  data = listsWithMissing ~Join~ {mean, weighted};
  table = Table[Select[Values@d, NumberQ] // {Last@#, StandardDeviation@#} & //
    {#1, #2, #1 / #2} & @ # &, {d, data}];
  ts = Transpose@{Keys@#, Values@#} & /@ data;
  headings =
    symbols ~Join~ {"Mean", If[TrueQ[weightList == Nothing], Nothing, "Weighted Mean"]};
  TableForm@{DateListPlot[ts, PlotLegends -> headings,
    PlotTheme -> "Detailed", ImageSize -> Large, BaseStyle -> {FontSize -> 20},
    PlotRange -> All, PlotLabel -> DateString@end], TableForm[table,
    TableHeadings -> {headings, {"Return", "Standard Deviation", "Return/SD"}}]}
]

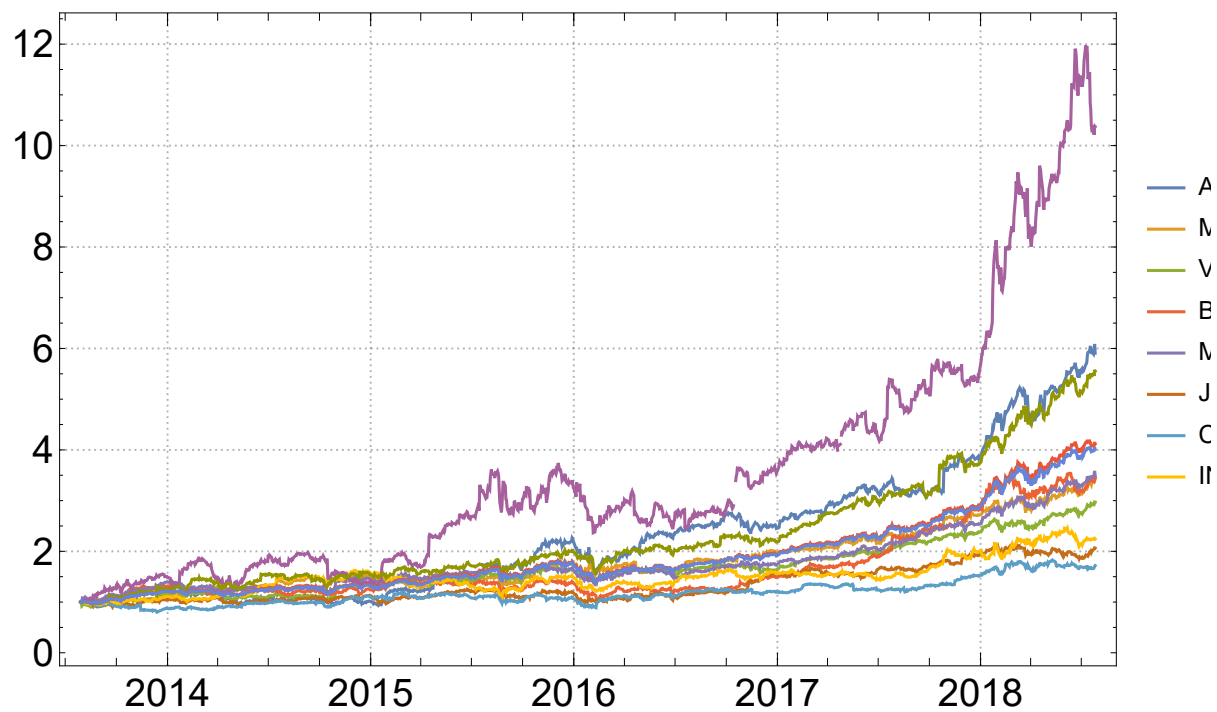
In[4]:= weights = {5.5, 5.42, 4.96, 4.77, 4.55, 4.38, 3.69, 3.49, 3.37, 2.99};
symbols = {"AMZN", "MSFT", "V", "BA", "MA", "JPM", "CSCO", "INTC", "NFLX", "ADBE"};
symbols2 = {"AMZN", "MSFT", "V", "MA", "NFLX", "ADBE"};
start = DatePlus[Today, -Quantity[5, "Years"]];
end = Today;

In[9]:= RobustChart[symbols, start, end, weights]
RobustChart[symbols2, start, end]

```

Out[9]/TableForm=

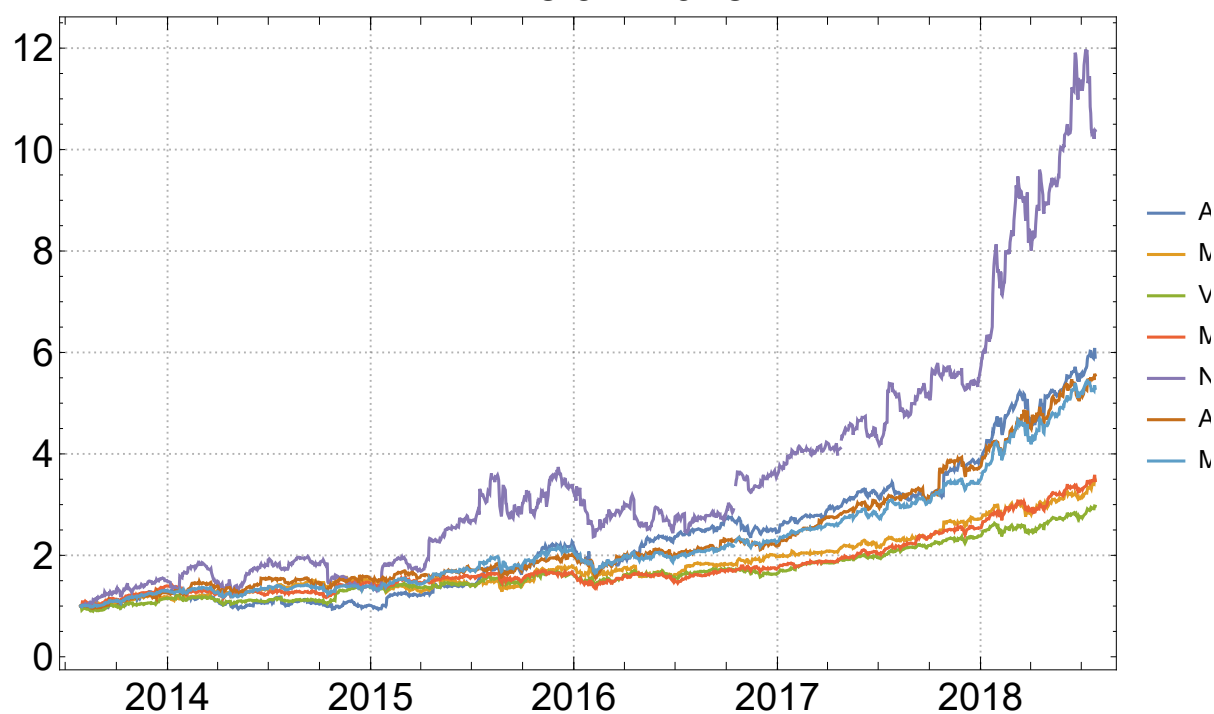
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	Return	Standard Deviation	Return/SD
AMZN	5.90657	1.27972	4.61552
MSFT	3.47559	0.587792	5.91295
V	2.96921	0.497378	5.96973
BA	3.4283	0.683877	5.01303
MA	3.47342	0.575742	6.03295
JPM	2.06231	0.343349	6.00645
CSCO	1.71852	0.238078	7.21829
INTC	2.24441	0.325475	6.89578
NFLX	10.3757	2.37844	4.3624
ADBE	5.55289	1.1123	4.99226
Mean	4.12069	0.787244	5.23432
Weighted Mean	4.0117	0.760756	5.27331

Out[10]//TableForm=

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	Return	Standard Deviation	Return/SD
AMZN	5.90657	1.27972	4.61552
MSFT	3.47559	0.587792	5.91295
V	2.96921	0.497378	5.96973
MA	3.47342	0.575742	6.03295
NFLX	10.3757	2.37844	4.3624
ADBE	5.55289	1.1123	4.99226
Mean	5.29223	1.06112	4.98742

```

In[11]:= PortfolioChart[stocks_, start_, end_] := Module[{s, mean, data, symbols, std, return},
  s = NormalizeData[#, start, end] & /@ stocks;
  mean = Transpose@{s[[1]][[All, 1]], Mean /@ Transpose@{#[[All, 2]] & /@ s}};
  data = s ~Join~ {mean};
  symbols = stocks ~Join~ {"mean"};
  std = StandardDeviation@mean[[All, 2]];
  return = Last@mean[[All, 2]];
  TableForm@{DateListPlot[data, PlotLegends -> symbols,
    PlotTheme -> "Detailed", ImageSize -> Large, BaseStyle -> {FontSize -> 20},
    PlotRange -> All, PlotLabel -> DateString@end], {return, std, return/std} //
    TableForm[#, TableHeadings -> {"Return", "SD", "Return/SD"}, Automatic]} &
]

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In[12]:= PortfolioChart[{"VTI", "EDV"}, start, end]
```

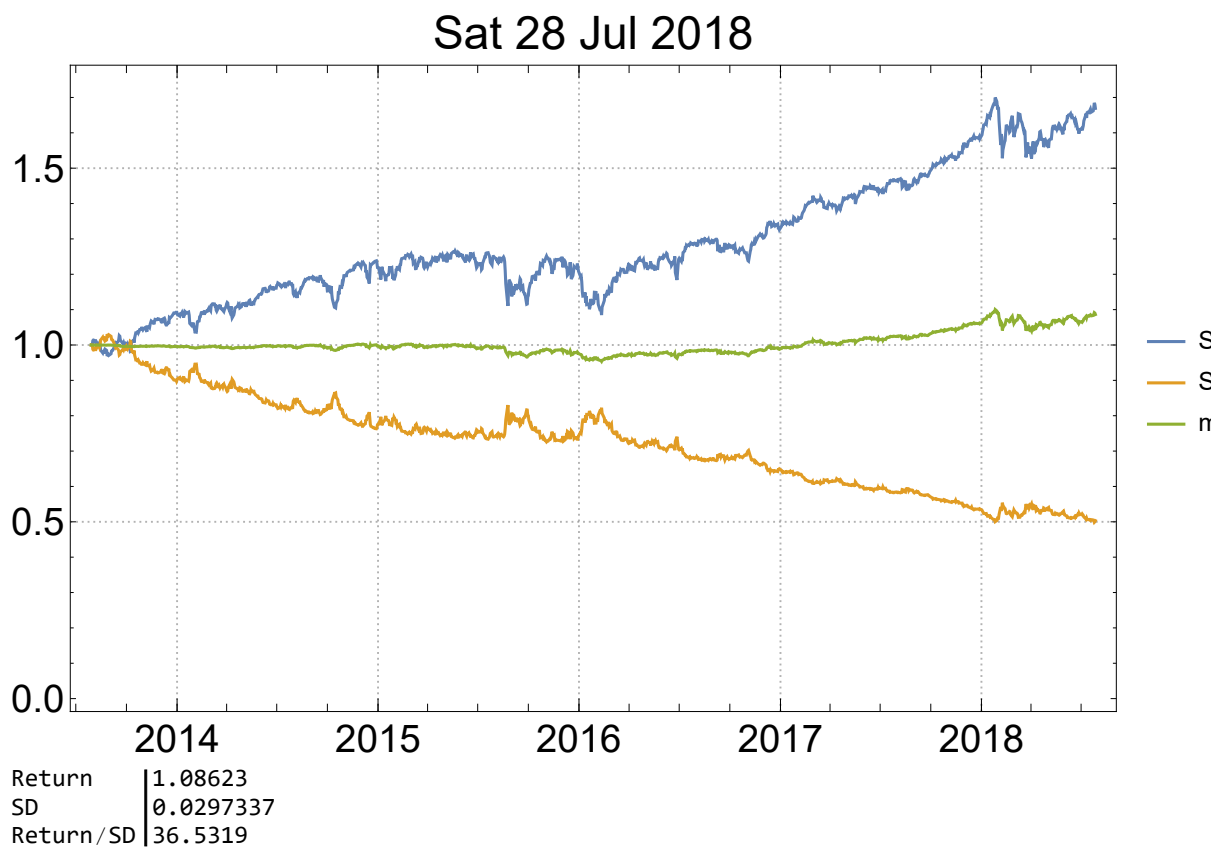
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Out[12]//TableForm=
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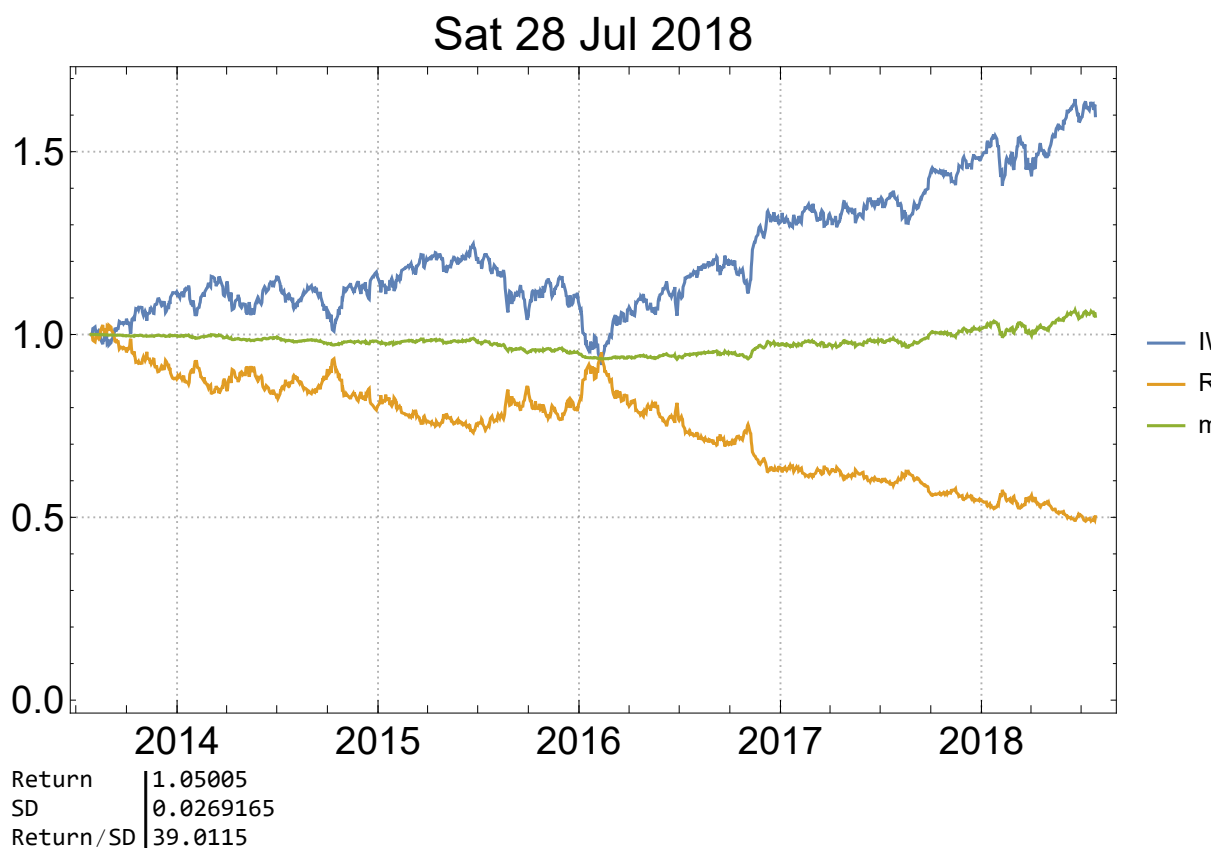


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In[13]:= PortfolioChart[{"SPY", "SH"}, start, end]
PortfolioChart[{"IWM", "RWM"}, start, end]
```

Out[13]//TableForm=



Out[14]//TableForm=



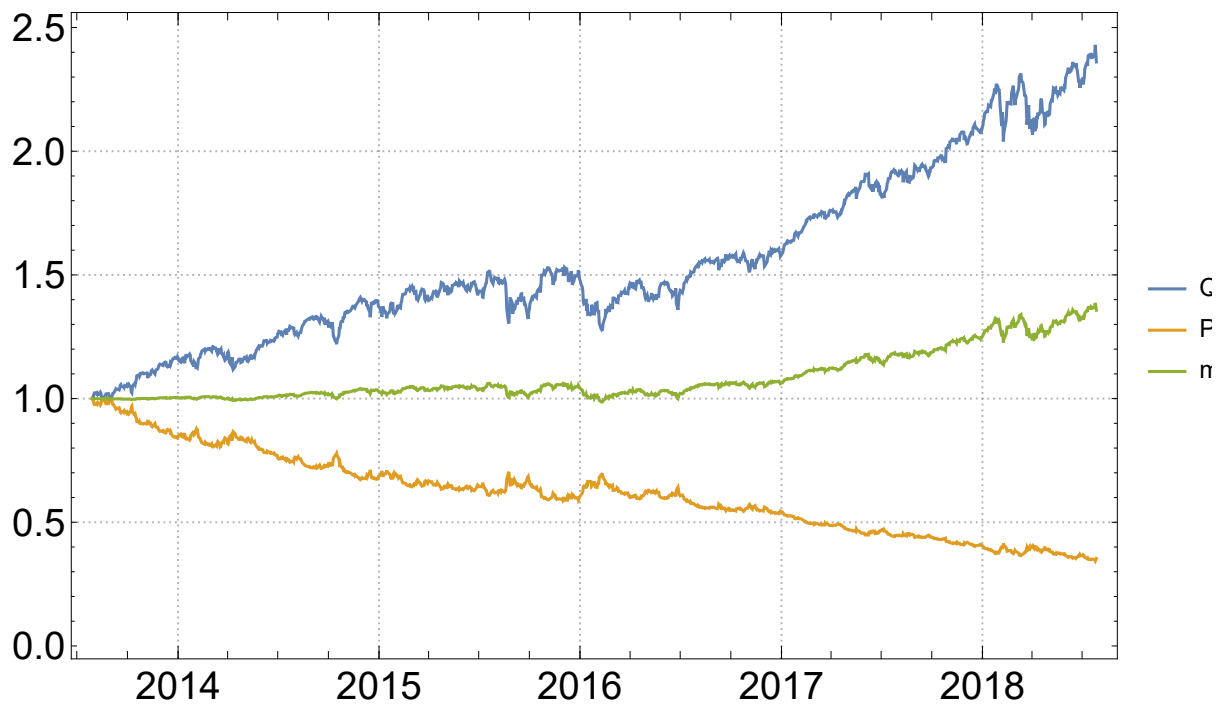
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In[15]:= PortfolioChart[{"QQQ", "PSQ"}, start, end]
PortfolioChart[{"EEM", "EUM"}, start, end]
PortfolioChart[{"EFA", "EFZ"}, start, end]

```

Out[15]//TableForm=

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Return	1.35735
SD	0.100294
Return/SD	13.5336

Out[16]//TableForm=

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Out[17]//TableForm=

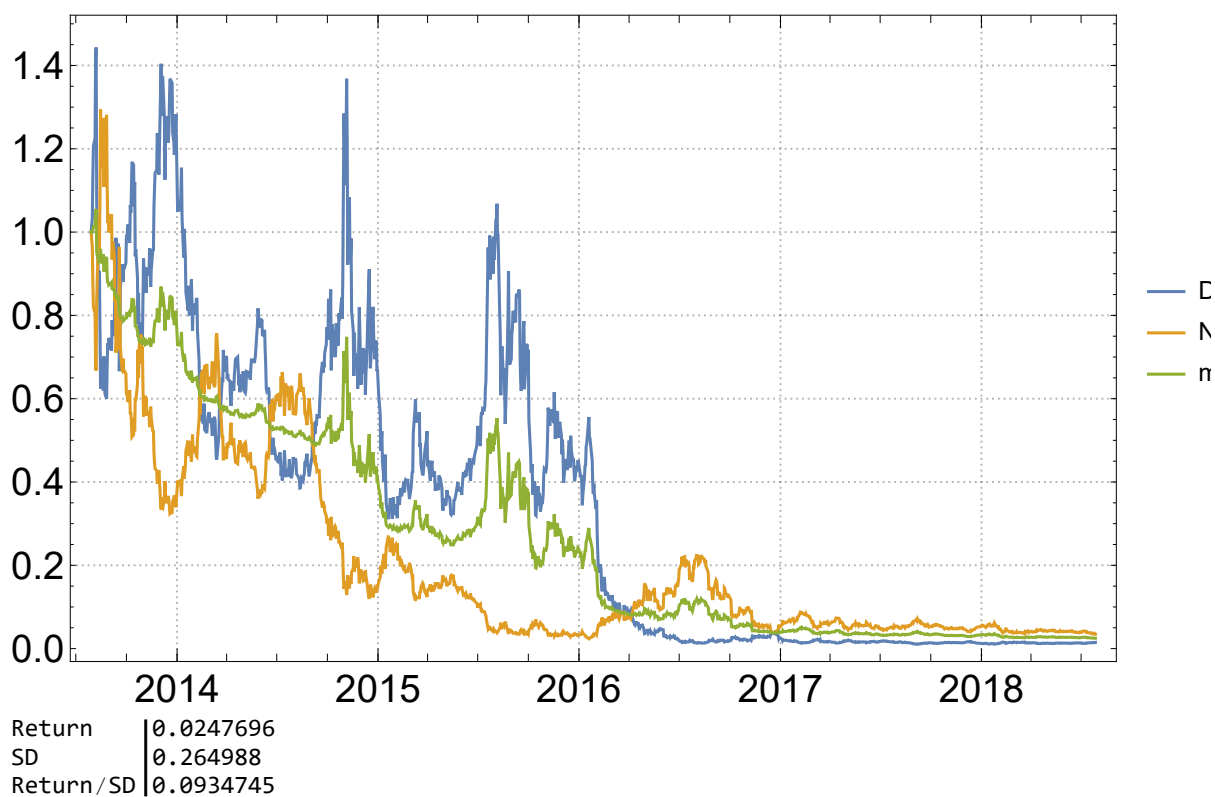
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In[18]:= PortfolioChart[{"DUST", "NUGT"}, start, end]
PortfolioChart[{"JDST", "JNUG"}, start, end]
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Out[18]//TableForm=

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Out[19]//TableForm=

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