Figure 3.2

graph formating

In[1]:=
```
thinn = AbsoluteThickness[.5];
medum = AbsoluteThickness[1.];
thick = AbsoluteThickness[1.5];
black = GrayLevel[0];
BGray = GrayLevel[0.3];
WGray = GrayLevel[0.6];
SetOptions[Plot, PlotStyle → {{thinn, Black}, {thinn, Black}, {thinn, Black}},
  PlotPoints → 40, ImageSize → 360,
  FrameStyle -> medum, AxesStyle -> medum,
  BaseStyle -> {FontFamily -> "Helvetica", FontSlant → Plain, FontSize → 12}];
SetOptions[ListPlot, AxesStyle -> medum, PlotStyle → medum, ImageSize → 360,
  BaseStyle -> {FontFamily -> "Helvetica", FontSlant -> "Plain", FontSize → 12}];
SetOptions[Histogram, AxesStyle -> medum, ImageSize → 360,
  BaseStyle -> {FontFamily -> "Helvetica", FontSlant -> "Plain", FontSize → 12}];
SetOptions[ParametricPlot, PlotStyle →
   {{thinn, Black}, {thinn, Black}, {thinn, Black}}, PlotPoints → 40,
  FrameStyle -> medum, AxesStyle -> medum, PlotStyle → medum,
  BaseStyle -> {FontFamily -> "Helvetica", FontSlant -> "Plain", FontSize → 12}];
SetOptions[Graphics, BaseStyle ->
   {FontFamily -> "Helvetica", FontSlant -> "Plain", FontSize → 12}];
```

Initial Data *(unopened)*

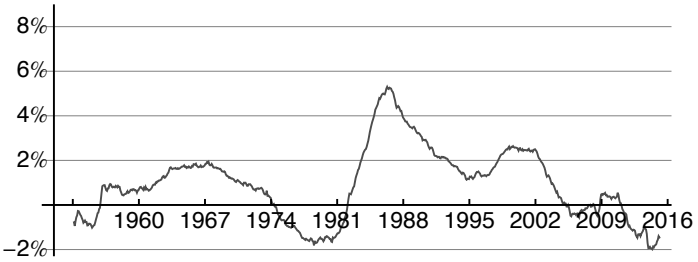
Rework Data

In[13]:=
```
halfmonth = 1 / 24.;
fullmonth = 100 / 12;
Do[discdata[[i, 1]] = Quotient[discdata[[i, 1]], 1] + fullmonth *
      (Mod[discdata[[i, 1]], 1] - 0.01) + halfmonth, {i, 1, Length[discdata]}];
data2 = Drop[discdata, {}, {1}];
tbill = Drop[discdata, {}, {3, 4}];
discdata2 = Drop[discdata, {}, {2}];
tbond = Drop[discdata2, {}, {3}]; waterrate = Drop[discdata2, {}, {2}];
```

Plotting

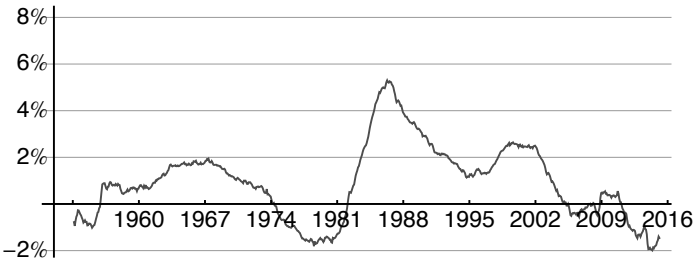
In[20]:=
```
ListPlot[tbill,
 AxesOrigin → {1951, 0},
 PlotRange → {-0.023, 0.09},
 Ticks → {Range[1953, 2016, 7],
   {{-0.02, "-2%", 0.}, {0, "0%", 0.}, {0.02, "2%", 0.},
    {0.04, "4%", 0.}, {0.06, "6%", 0.}, {0.08, "8%", 0.}}},
 GridLines → {{}, Range[-0.02, 0.08, .02]},
 PlotStyle → {{BGray, medum}},
 AspectRatio → 0.4,
 Joined → True]
```

Out[20]=



In[21]:=
```
d1 = ListPlot[tbill,
  AxesOrigin → {1951, 0},
  PlotRange → {-0.023, 0.085},
  Ticks → {{{1953, "1953", {0.00625, 0.}, {black, medum}},
      {1960, "1960", {0.00625, 0.}, {black, medum}},
      {1967, "1967", {0.00625, 0.}, {black, medum}},
      {1974, "1974", {0.00625, 0.}, {black, medum}},
      {1981, "1981", {0.00625, 0.}, {black, medum}},
      {1988, "1988", {0.00625, 0.}, {black, medum}},
      {1995, "1995", {0.00625, 0.}, {black, medum}},
      {2002, "2002", {0.00625, 0.}, {black, medum}},
      {2009, "2009", {0.00625, 0.}, {black, medum}},
      {2016, "2016", {0.00625, 0.}, {black, medum}}},
    {{-0.02, "-2%", 0.}, {0, "0%", 0.}, {0.02, "2%", 0.},
      {0.04, "4%", 0.}, {0.06, "6%", 0.}, {0.08, "8%", 0.}}},
  GridLines → {{}, {{-0.04, {WGray, thinn}}, {-0.02, {WGray, thinn}},
      {0.00, {WGray, thinn}}, {0.02, {WGray, thinn}}, {0.04, {WGray, thinn}},
      {0.06, {WGray, thinn}}, {0.08, {WGray, thinn}}}},
  Joined → True,
  AspectRatio → 0.4,
  PlotStyle → {BGray, medum}]
```

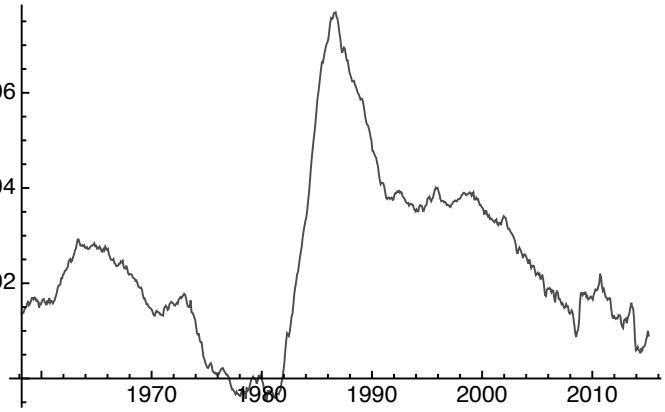
Out[21]=



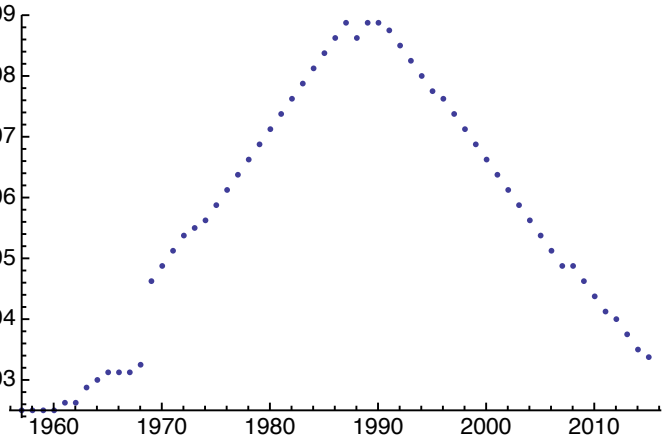
Second plot below is the federal water discount rate that I was considering including in Figure 3.2 too.

In[22]:=
```
d2 = ListPlot[tbond, Joined → True, PlotStyle → {BGray, medum}]
d3 = ListPlot[waterrate]
```

Out[22]=



Out[23]=



In[24]:=
```
d4 = Show[d1, d2,
  Graphics[Text["T-Bond (10 year)", {1977, .07}]],
  Graphics[Text["T-Bill (3 month)", {1972, .034}]],
  Graphics[Arrow[{{1982.1, .066}, {1984.1, .059}}]],
  Graphics[Arrow[{{1966.7, .032}, {1965.2, .019}}]], AspectRatio → 0.6]
```

Out[24]=