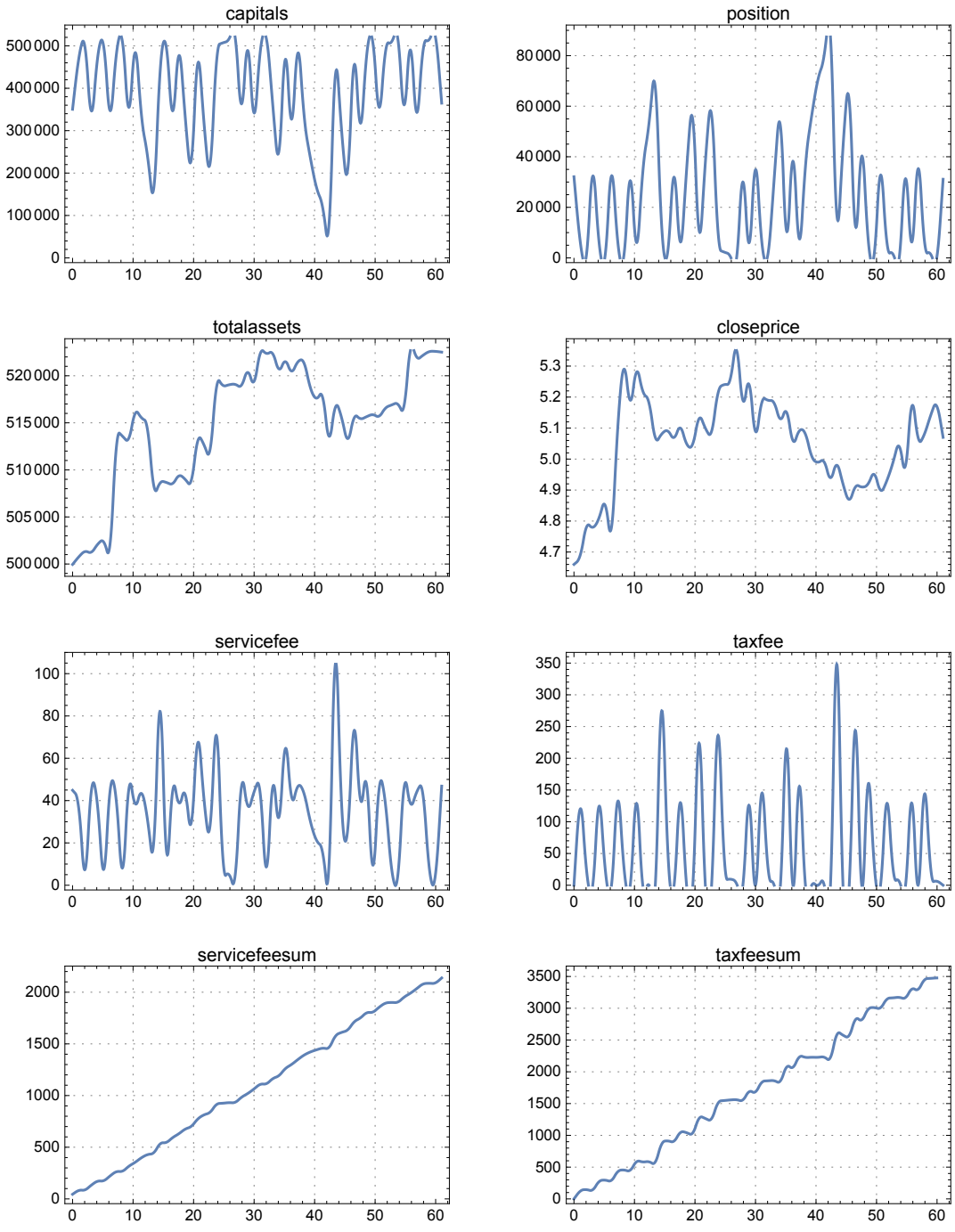
The following code adds up cost when do backtesting by Liu Hua – shan

In[1020]:=
```
JLHold[stkPrice_] :=
 Module[{capitals, position, ttassets, trdprice, svramout, taxamout, capitals2,
   position2, ttassets2, trdprice2, svramout2, taxamout2, buyHands, result},
  capitals = Last[tradeList][[1]];
  position = Last[tradeList][[2]];
  ttassets = Last[tradeList][[3]];
  trdprice = Last[tradeList][[4]];
  svramout = Last[tradeList][[5]];
  taxamout = Last[tradeList][[6]];
  (*not buy*)
  capitals2 = capitals;
  position2 = position;
  ttassets2 = capitals + position * stkPrice;
  trdprice2 = stkPrice;
  svramout2 = 0;
  taxamout2 = 0;
  tradeList = AppendTo[tradeList, Round[#, 0.01] &@
     {capitals2, position2, ttassets2, trdprice2, svramout2, taxamout2}];
  (*return result*)
  Return[Flatten@{"Hold:", Last@tradeList}];
 ]

JLBuy[buyRate_, buyPrice_, svrRate_, taxRate_] :=
 Module[{capitals, position, ttassets, trdprice, svramout, taxamout, capitals2,
   position2, ttassets2, trdprice2, svramout2, taxamout2, buyHands, result},
  capitals = Last[tradeList][[1]];
  position = Last[tradeList][[2]];
  ttassets = Last[tradeList][[3]];
  trdprice = Last[tradeList][[4]];
  svramout = Last[tradeList][[5]];
  taxamout = Last[tradeList][[6]];

  (*do buy*)
  buyHands = Floor[capitals * buyRate / (buyPrice * 100 (1 + svrRate + taxRate))];
  If[buyHands > 0,
   (*do buy*)
   capitals2 = capitals - buyHands * buyPrice * 100 (1 + taxRate) -
     Max[buyHands * buyPrice * 100 * svrRate, 5];
   position2 = position + buyHands * 100;
   ttassets2 = capitals2 + position2 * buyPrice;
   trdprice2 = buyPrice;
   svramout2 = Max[buyHands * buyPrice * 100 * svrRate, 5.00];
   taxamout2 = buyHands * buyPrice * 100 * taxRate;
   tradeList = AppendTo[tradeList, Round[#, 0.01] &@
      {capitals2, position2, ttassets2, trdprice2, svramout2, taxamout2}],
   (*not buy*)
   JLHold[buyPrice];
  ];
  (*return result*)
  Return[Flatten@{"Buy:", Last@tradeList}];
 ]

JLSell[sellRate_, sellPrice_, svrRate_, taxRate_] := Module[
```

```
  {capitals, position, ttassets, trdprice, svramout, taxamout, capitals2, position2,
   ttassets2, trdprice2, svramout2, taxamout2, sellHands, sellQuans, result},
  capitals = Last[tradeList][[1]];
  position = Last[tradeList][[2]];
  ttassets = Last[tradeList][[3]];
  trdprice = Last[tradeList][[4]];
  svramout = Last[tradeList][[5]];
  taxamout = Last[tradeList][[6]];

  (*check availabe*)
  sellHands = Floor[position * sellRate / 100];
  sellQuans  = If[sellHands > 1, sellHands * 100, position];

  If[position > 0,
   (*do sell*)
   capitals2 = capitals +
     sellQuans * sellPrice (1 - taxRate) - Max[sellQuans * sellPrice * svrRate, 5];
   position2 = position - sellQuans;
   ttassets2 = capitals2 + position2 * sellPrice;
   trdprice2 = sellPrice;
   svramout2 = Max[sellQuans * sellPrice * svrRate, 5];
   taxamout2 = sellQuans * sellPrice * taxRate;
   tradeList = AppendTo[tradeList, Round[#, 0.01] &@
      {capitals2, position2, ttassets2, trdprice2, svramout2, taxamout2}],
   (*not sell*)
   JLHold[sellPrice]];
  (*return result*)
  Return[Flatten@{"Sell:", Last@tradeList}];
 ]

BacktestDo[list_List, buyRate_, sellRate_, svrRate_, taxRate_] :=
 If[Last@list <= 0,
  JLBuy[buyRate, First[list], svrRate, 0],
  JLSell[sellRate, First[list], svrRate, taxRate]]

In[1024]:= lstPrice = {{4.66, -0.05}, {4.69, 0.03}, {4.78, 0.09}, {4.78, 0.}, {4.81, 0.03},
   {4.85, 0.04}, {4.78, -0.07}, {5.1, 0.32}, {5.29, 0.19}, {5.19, -0.1}, {5.28, 0.09},
   {5.22, -0.06}, {5.18, -0.04}, {5.07, -0.11}, {5.08, 0.01}, {5.09, 0.01},
   {5.07, -0.02}, {5.1, 0.03}, {5.05, -0.05}, {5.05, 0.}, {5.13, 0.08}, {5.1, -0.03},
   {5.09, -0.01}, {5.21, 0.12}, {5.24, 0.03}, {5.26, 0.02}, {5.35, 0.09},
   {5.19, -0.16}, {5.24, 0.05}, {5.09, -0.15}, {5.18, 0.09}, {5.19, 0.01},
   {5.18, -0.01}, {5.13, -0.05}, {5.15, 0.02}, {5.06, -0.09}, {5.09, 0.03},
   {5.08, -0.01}, {5.01, -0.07}, {4.99, -0.02}, {4.99, 0.}, {4.94, -0.05},
   {4.98, 0.04}, {4.92, -0.06}, {4.87, -0.05}, {4.91, 0.04}, {4.91, 0.}, {4.92, 0.01},
   {4.95, 0.03}, {4.9, -0.05}, {4.93, 0.03}, {4.99, 0.06}, {5.04, 0.05}, {4.98, -0.06},
   {5.17, 0.19}, {5.07, -0.1}, {5.08, 0.01}, {5.14, 0.06}, {5.17, 0.03}, {5.07, -0.1}};
```

In[1025]:=
```
tradeList = {{500000, 0, 500000, 0, 0, 0}};
buyRate = 0.3;
sellRate = 0.8;
svrRate = 0.0003;
taxRate = 0.001;
BacktestDo[#, buyRate, sellRate, svrRate, taxRate] & /@ lstPrice;
tradeList = Rest@tradeList;
{capitals, position, totalassets, closeprice, servicefee, taxfee} =
  Table[tradeList[[All, i]], {i, 1, 6}];
servicefeesum = Accumulate[servicefee];
taxfeesum = Accumulate[taxfee];

GraphicsGrid[
 Partition[#, 2] &@Map[ListLinePlot[ToExpression[#], DataRange → Length[lstPrice] + 1,
     PlotLabel → #, ImagePadding → {{40, 10}, {Automatic, Automatic}},
     PlotRange → All, InterpolationOrder → 2,
     Frame → True, GridLines → Automatic, GridLinesStyle → Directive[Gray, Dotted]] &,
   {"capitals", "position", "totalassets", "closeprice",
    "servicefee", "taxfee", "servicefeesum", "taxfeesum"}], ImageSize → Large]
```

Out[1035]=


capitals
position
totalassets
closeprice
servicefee
taxfee
servicefeesum
taxfeesum