Create Conditional Forecast Scenarios

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Clear Workspace

```
close all
clear
```

Load Model and Databank

```
load mat/estimate_params.mat mest
load mat/filter_hist_data.mat f
```

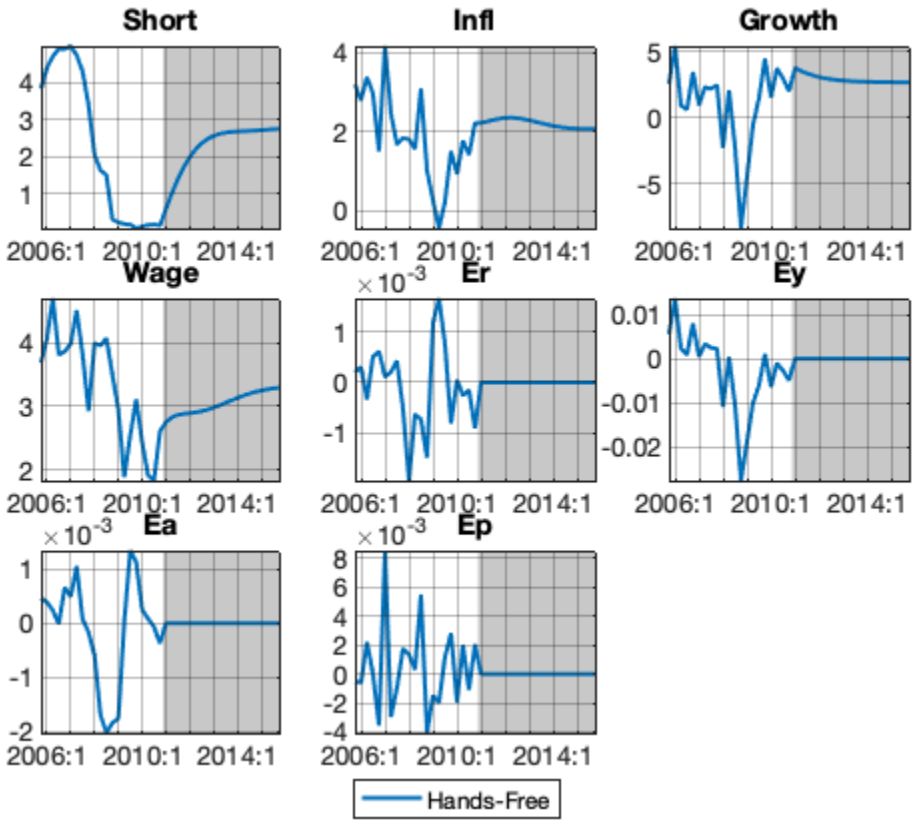
Define Dates and Clip Databank

```
endHist = qq(2010,4);
startFcast = endHist + 1;
endFcast = endHist + 40;
startPlot = endHist - 20;
plotRange = startPlot : endHist+20;

d = databank.clip(f.mean, -Inf, endHist);

listToPlot = {
    'Short'; 'Infl'; 'Growth'; 'Wage'
    'Er'; 'Ey'; 'Ea'; 'Ep'
};
```

Hands-Free Scenario

```
g0 = simulate( ...
    mest, d, startFcast:endFcast, ...
    'PrependInput=', true ...
);

dbplot( ...
```

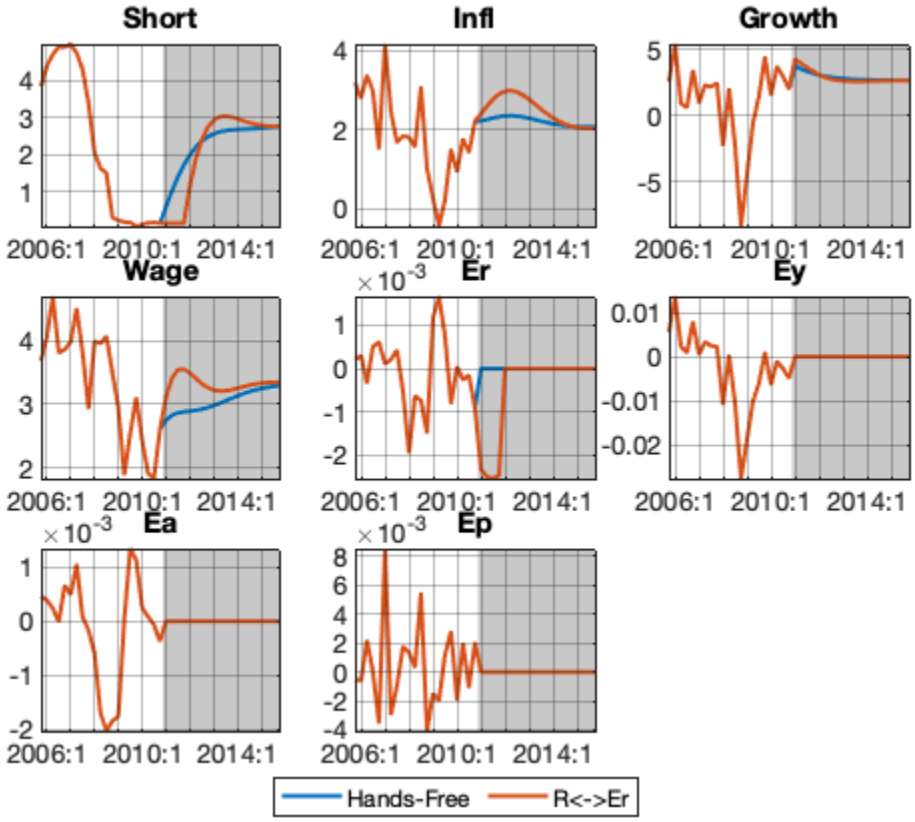
```
    g0, plotRange, listToPlot ...
    , 'Tight=', true ...
    , 'Highlight=', startFcast:endFcast ...
);

visual.hlegend( ...
    'Bottom' ...
    , 'Hands-Free' ...
);
```



Exogenize Policy Rate, Endogenize Policy Shocks

```
p1 = Plan(mest, startFcast:endFcast);
p1 = exogenize(p1, startFcast+(0:3), 'R');
p1 = endogenize(p1, startFcast+(0:3), 'Er');

d.R(startFcast+(0:3)) = d.R(endHist);

g1 = simulate( ...
    mest, d, startFcast:endFcast, ...
    'Plan=', p1, ...
    'PrependInput=', true ...
);
```

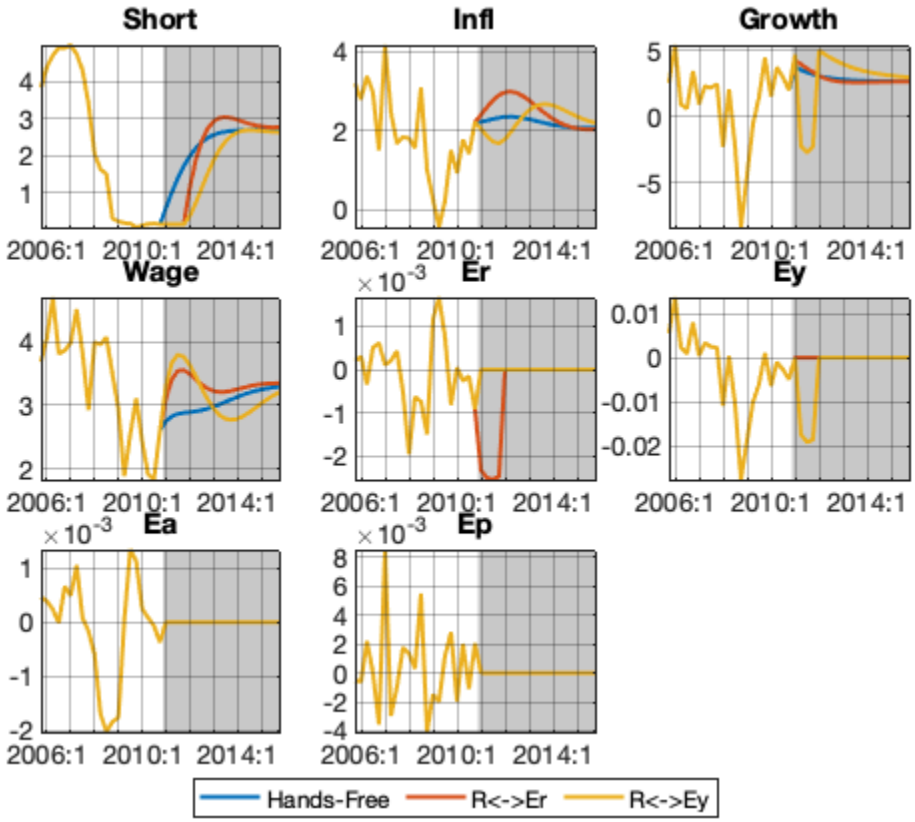
```
dbplot( ...
    g0 & g1, plotRange, listToPlot ...
    , 'Tight=', true ...
    , 'Highlight=', startFcast:endFcast ...
);

visual.hlegend( ...
    'Bottom' ...
    , 'Hands-Free' ...
    , 'R<->Er' ...
);
```



Exogenize Policy Rate, Endogenize Demand Shocks

```
p2 = Plan(mest, startFcast:endFcast);
p2 = exogenize(p2, startFcast+(0:3), 'R');
p2 = endogenize(p2, startFcast+(0:3), 'Ey');

g2 = simulate( ...
    mest, d, startFcast:endFcast, ...
    'Plan=', p2, ...
    'PrependInput=', true ...
);
```

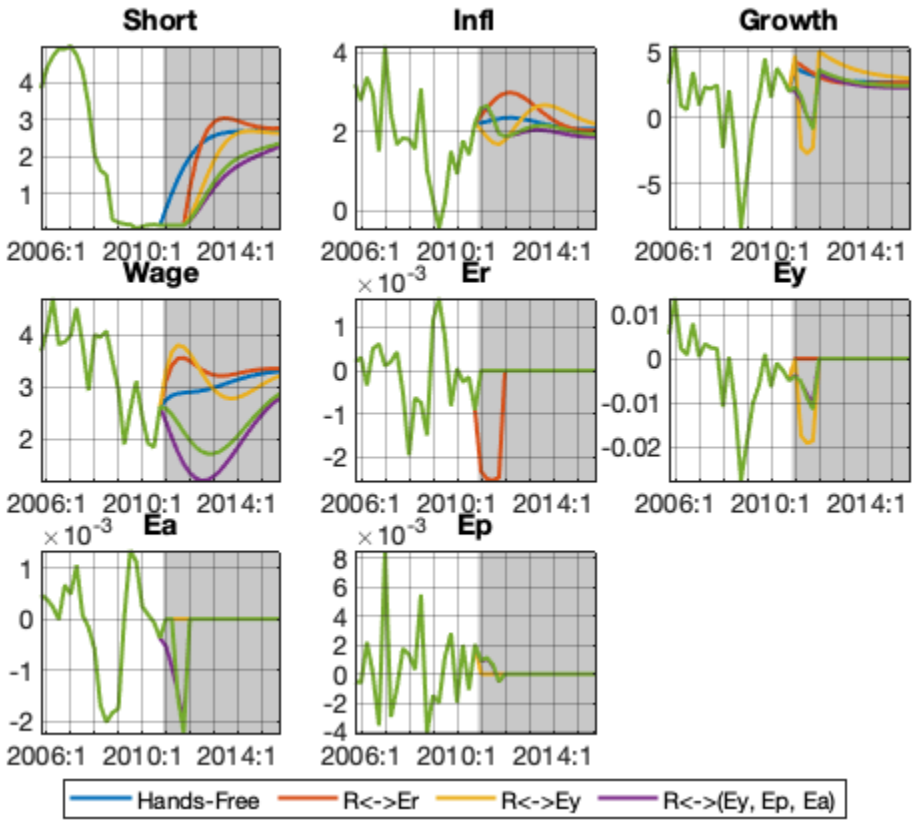
```
dbplot( ...
    g0 & g1 & g2, plotRange, listToPlot ...
    , 'Tight=', true ...
    , 'Highlight=', startFcast:endFcast ...
);

visual.hlegend( ...
    'Bottom' ...
    , 'Hands-Free' ...
    , 'R<->Er' ...
    , 'R<->Ey' ...
);
```



Conditioning with Multiple Shocks

```
p3 = Plan(mest, startFcast:endFcast, 'Anticipate=',
 true, 'Method=', 'Condition');
p3 = exogenize(p3, startFcast+(0:3), 'R');
p3 = endogenize(p3, startFcast+(0:3), {'Ey', 'Ep', 'Ea'});

g3 = simulate( ...
    mest, d, startFcast:endFcast, ...
    'Plan=', p3, ...
    'PrependInput=', true ...
);
```

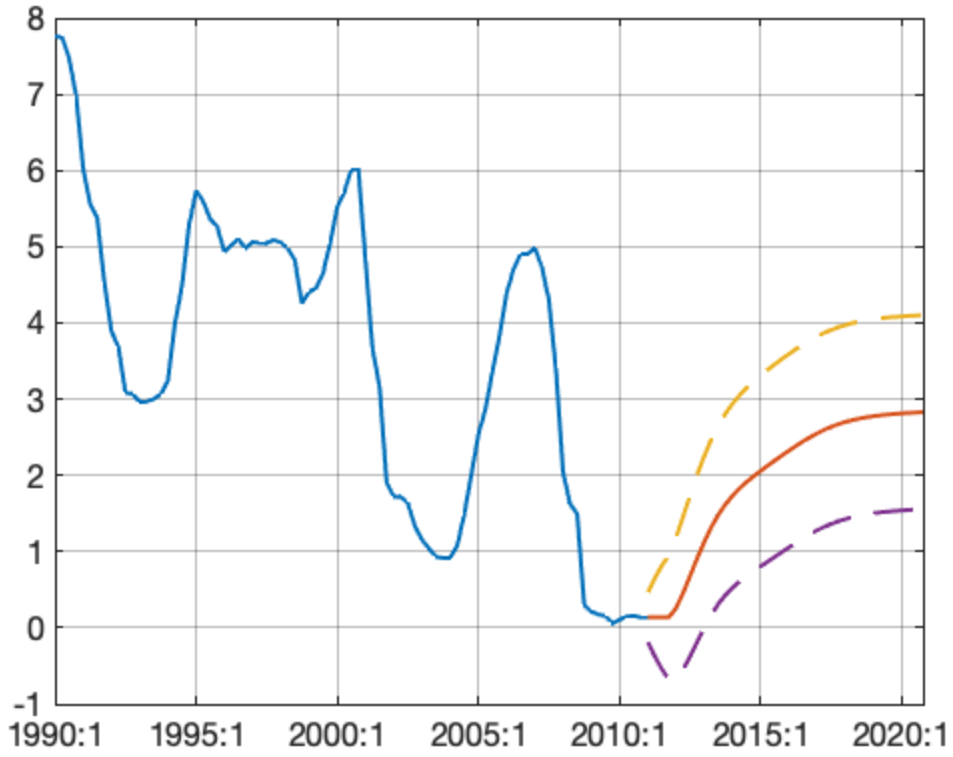
```
% Switch of Ea shock in the first two periods
p4 = p3;
p4 = assignSigma(p4, startFcast+(0:1), 'Ea', 0);
g4 = simulate( ...
    mest, d, startFcast:endFcast, ...
    'Plan=', p4, ...
    'PrependInput=', true ...
);

dbplot( ...
    g0 & g1 & g2 & g3 & g4, plotRange, listToPlot ...
    , 'Tight=', true ...
    , 'Highlight=', startFcast:endFcast ...
);

visual.hlegend( ...
    'Bottom' ...
    , 'Hands-Free' ...
    , 'R<->Er' ...
    , 'R<->Ey' ...
    , 'R<->(Ey, Ep, Ea)' ...
);
```



Forecast Bands - Case 1

Interest rate forecast is tuned in expectations but has uncertainty around

```
%{
[~, f4] = filter( ...
    mest, d, startFcast:endFcast, ...
    'Init=', d, ...
    'Anticipate=', true ...
);

figure( );
h = plot([g0.Short, f4.mean.Short+[0, f4.std.Short, -f4.std.Short] ]);
return
%}

expectedMeans = struct( );
expectedMeans.Ey = g3.Ey;
expectedMeans.Ep = g3.Ep;
expectedMeans.Ea = g3.Ea;

[~, f4] = filter( ...
    mest, d, startFcast:endFcast, ...
    'Init=', d, ...
    'Override=', expectedMeans, ...
    'Anticipate=', true ...
);

figure( );
h = plot([g3.Short, f4.mean.Short+[0, f4.std.Short, -f4.std.Short] ]);
set(h(3), 'LineStyle', '--');
set(h(4), 'LineStyle', '--');
```

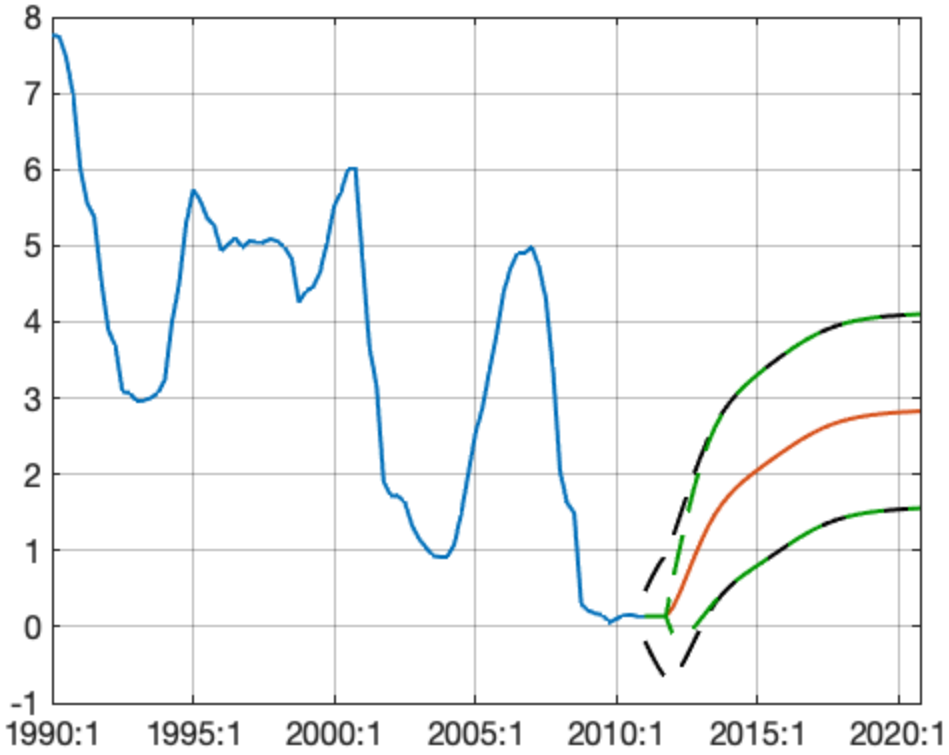


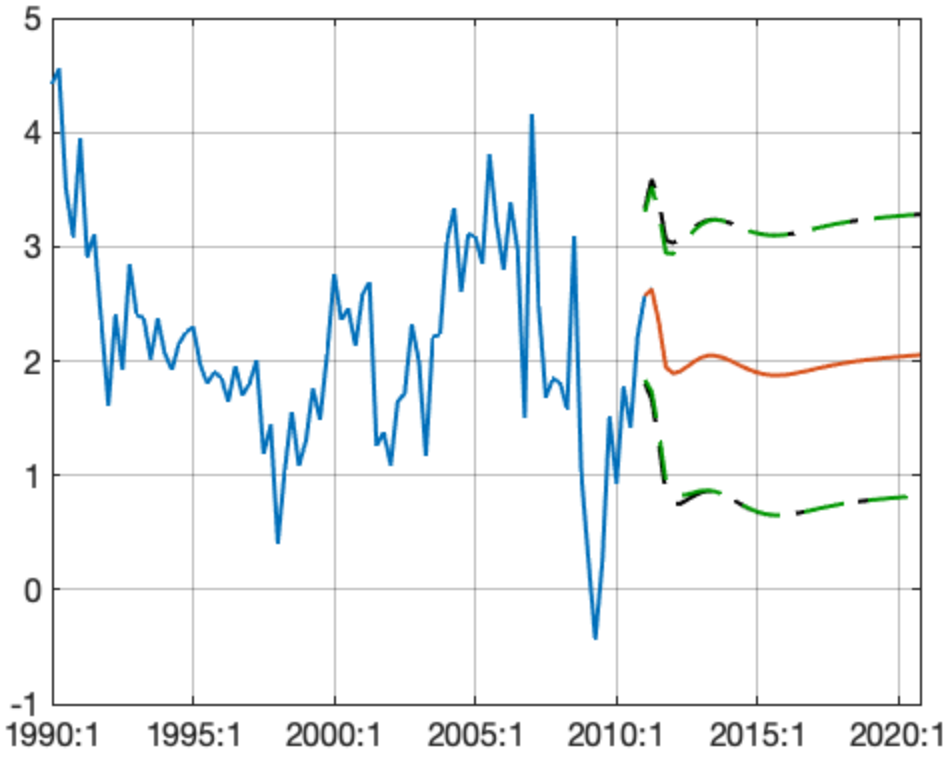
Forecast Bands - Case 2

Interest rate forecast is tuned to a single point without uncertainty

```
d.Short(startFcast+(0:3)) = d.Short(endHist);

[~, f5] = filter( ...
    mest, d, startFcast:endFcast, ...
    'Init=', d, ...
    'Override=', expectedMeans, ...
    'Relative=', false, ...
    'Anticipate=', true ...
);

figure( );
h = plot([g3.Short, f5.mean.Short+[0, f4.std.Short, -f4.std.Short,
 f5.std.Short, -f5.std.Short] ]);
set(h(3), 'LineStyle', '--', 'Color', [0, 0, 0]);
set(h(4), 'LineStyle', '--', 'Color', [0, 0, 0]);
set(h(5), 'LineStyle', '--', 'Color', [0, 0.6, 0]);
set(h(6), 'LineStyle', '--', 'Color', [0, 0.6, 0]);

figure( );
h = plot([g3.Infl, f5.mean.Infl+[0, f4.std.Infl, -f4.std.Infl,
 f5.std.Infl, -f5.std.Infl] ]);
set(h(3), 'LineStyle', '--', 'Color', [0, 0, 0]);
```

```
set(h(4), 'LineStyle', '--', 'Color', [0, 0, 0]);
set(h(5), 'LineStyle', '--', 'Color', [0, 0.6, 0]);
set(h(6), 'LineStyle', '--', 'Color', [0, 0.6, 0]);
```





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