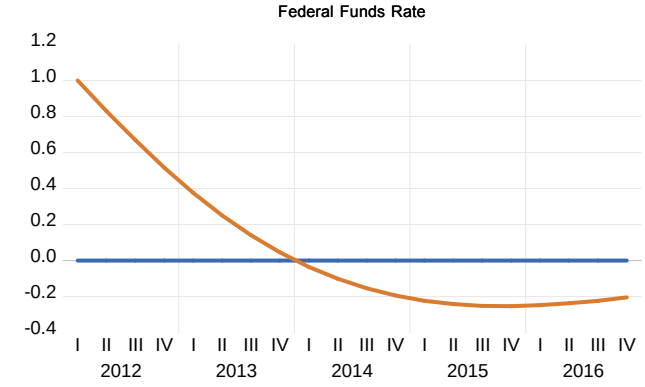
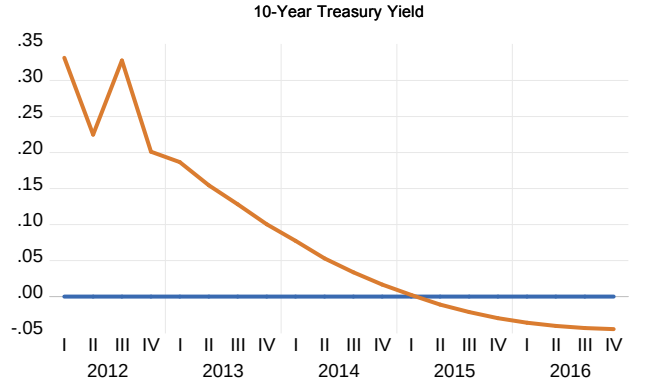
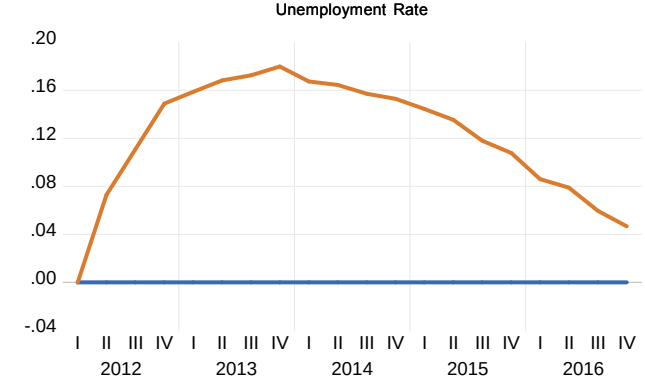
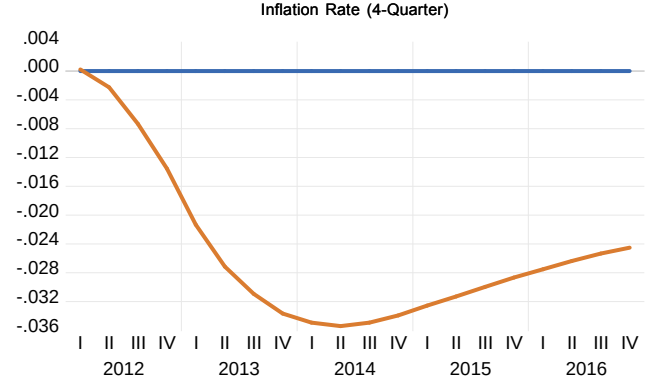
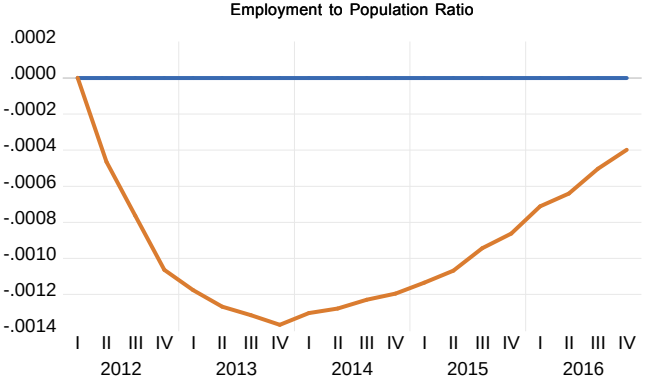
1. .Macroeconomic Effects of Funds Rate Perturbation
(VAR Expectations)

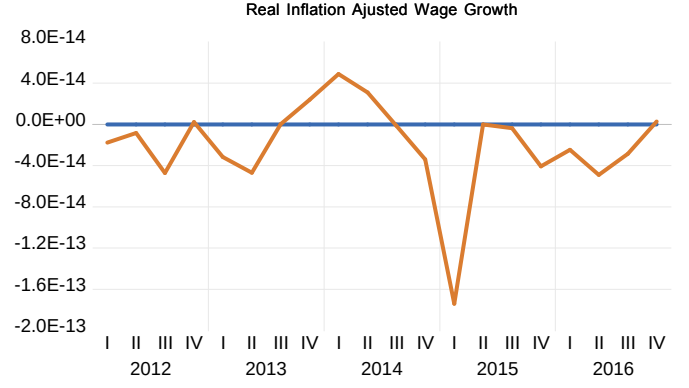






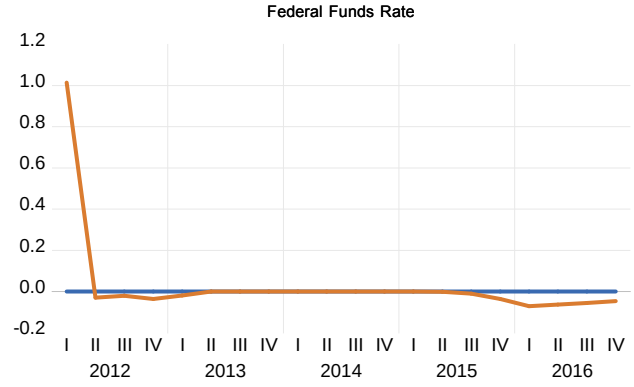


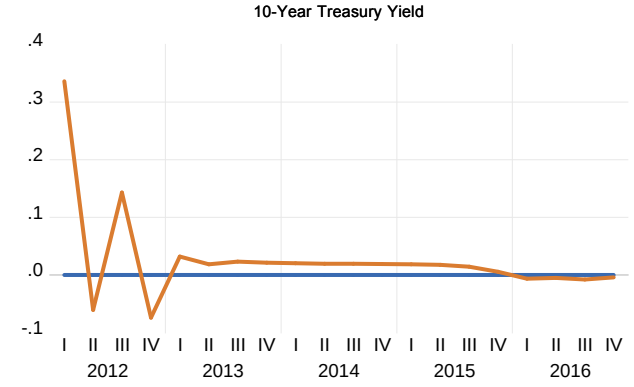


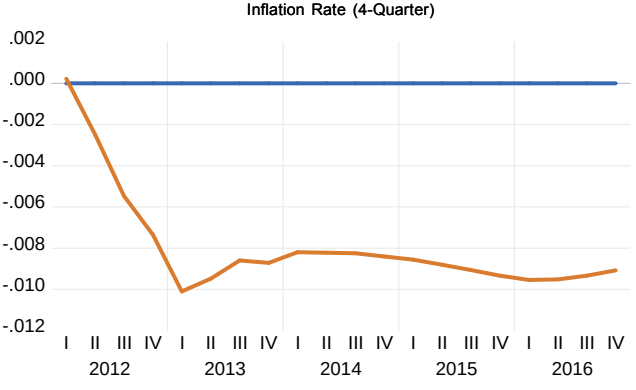


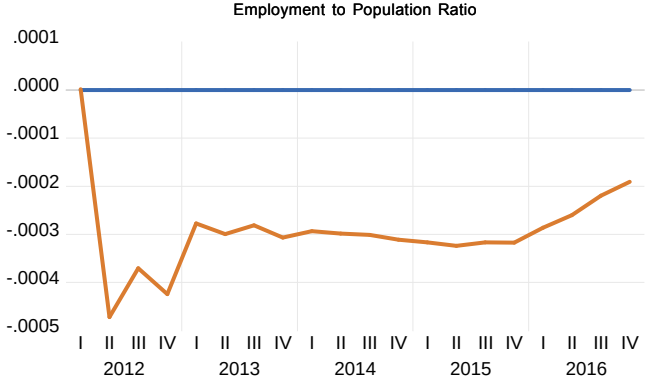
2.

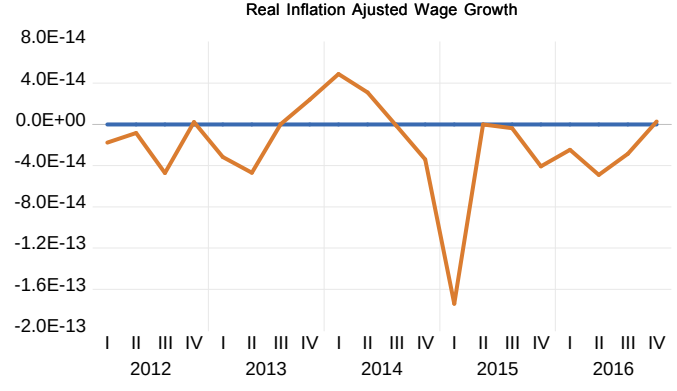
Macroeconomic Effects of Funds Rate Perturbation
(VAR Expectations)





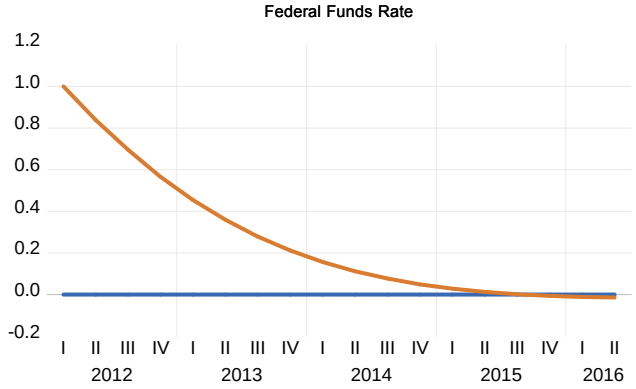


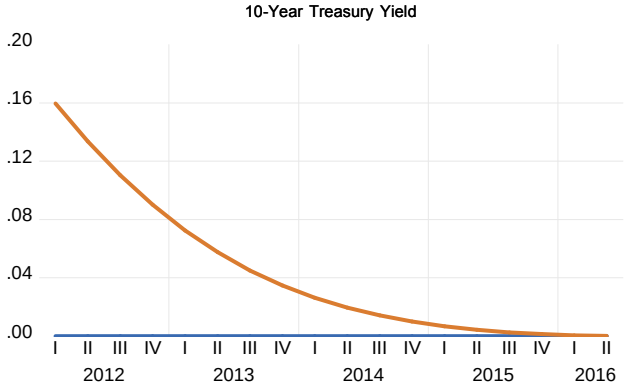


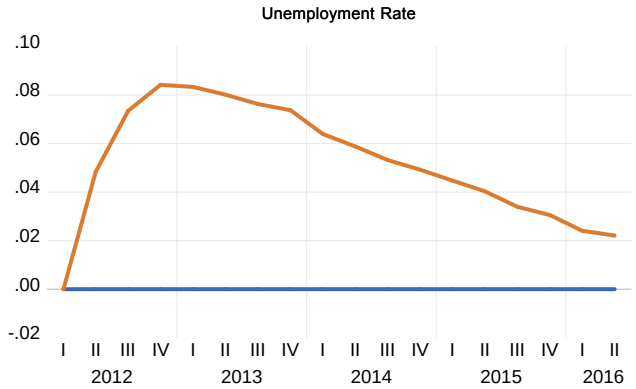


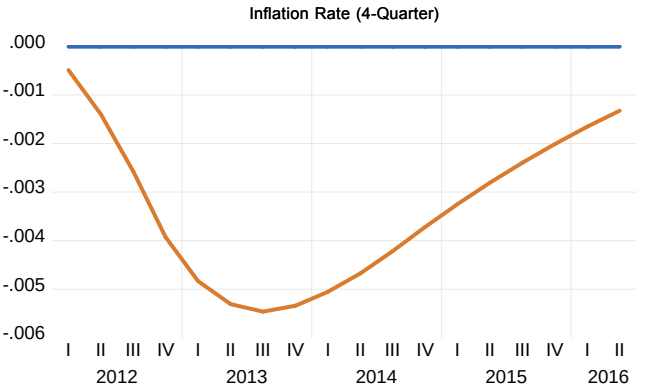
3.

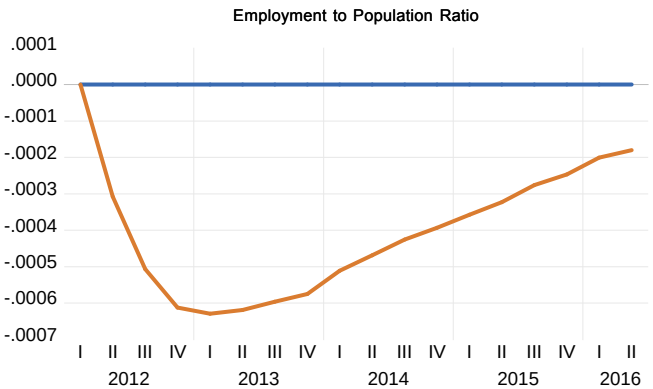
Macroeconomic Effects of Funds Rate Shock

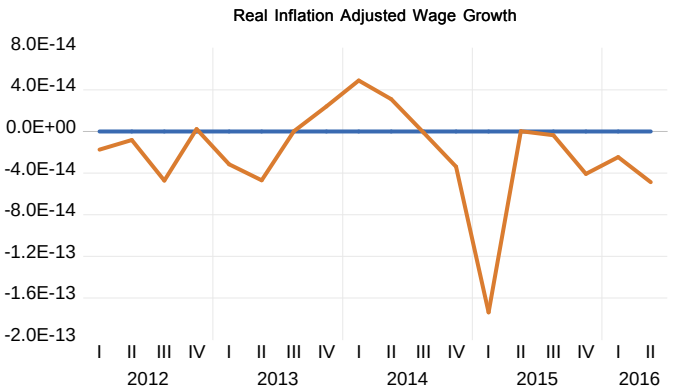








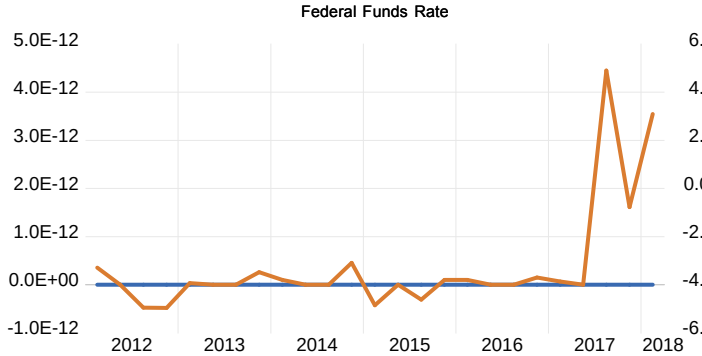


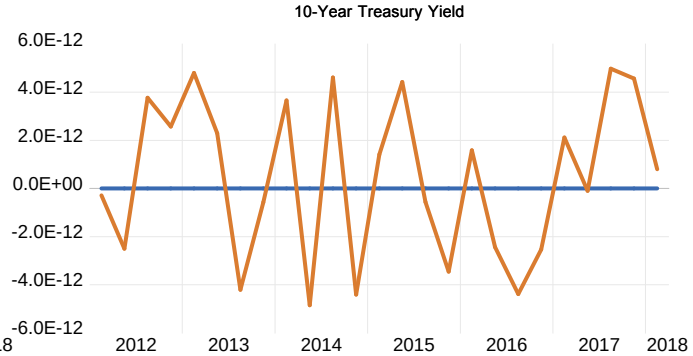


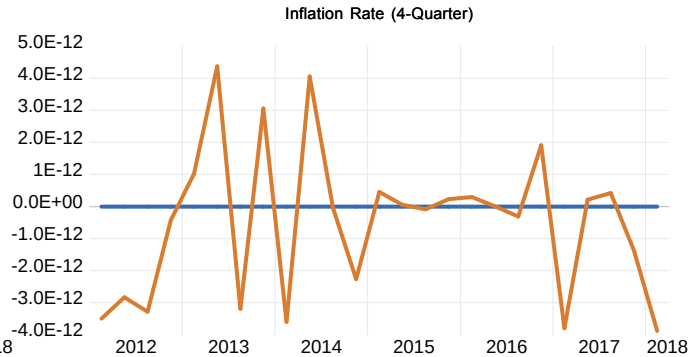
iter	converge stat	SSR stat	step length	step iters	Newton MCE deriv's?
0	0.346269	1.517015			
1	0.145797	0.454926	1.000000	1	
2	0.161630	0.411550	1.000000	1	
3	0.123393	0.222776	1.000000	1	
4	0.011729	0.002376	1.000000	1	
5	0.004536	0.000179	1.000000	1	
6	0.001145	2.35E-05	1.000000	1	
7	0.000445	1.22E-06	1.000000	1	
8	0.000147	1.36E-07	1.000000	1	
9	1.00E-05	1.32E-09	1.000000	1	
10	3.64E-06	9.75E-11	1.000000	1	

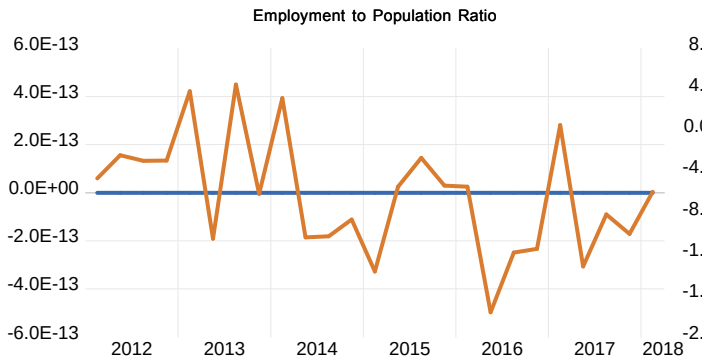
Simulation start = 2012Q1
Simulation end = 2016Q4
MCE method = "qnewton"
-- Initial Jacobian approximation = "bd"
---- QNewton iteration switch = 600
Linesearch method = lmr
-- Linesearch trigger = 0.9
-- Maximum linesearch iterations = 10
Convergence criteria = 1e-05
Maximum number of MCE iterations = 200
MCE instrument perturbation factor = 0.001
Intermediate output level factor = 1
MCE instrument variables = ZDIVGR_A ZGAP05_A ZGAP10_A ZGAP30_A ZPI10_A ZPI10F_A ZPIB5_A ZPIC30_A ZPIC58_A ZPICXFE_A ZPIECI_A ZRFF10_A ZRFF30_A ZRFF5_A
MCE error variables = EZDIVGR EZGAP05 EZGAP10 EZGAP30 EZPI10 EZPI10F EZPIB5 EZPIC30 EZPIC58 EZPICXFE EZPIECI EZRFF10 EZRFF30 EZRFF5
There are 280 instrument and 280 error observations
At iteration 11, convergence

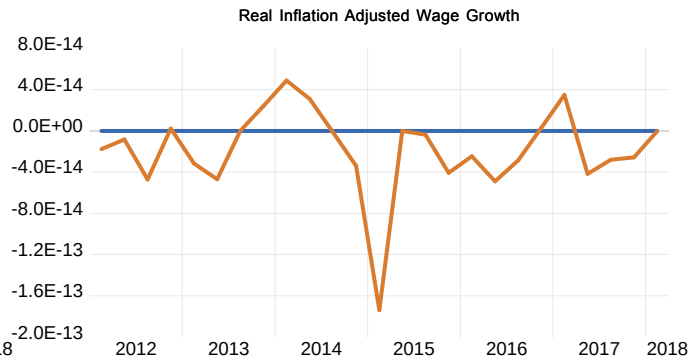
4. Macroeconomic Effects of Funds Rate Shock







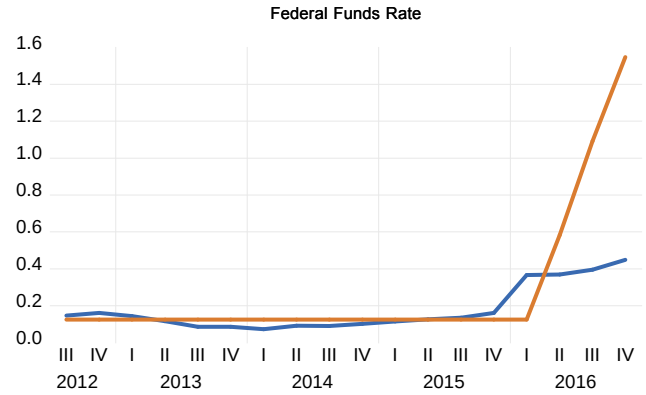


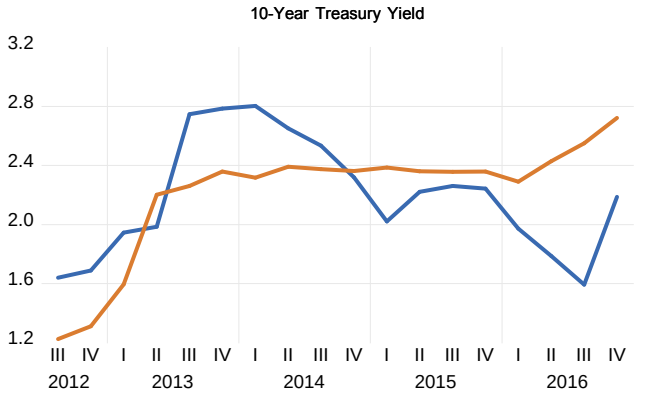


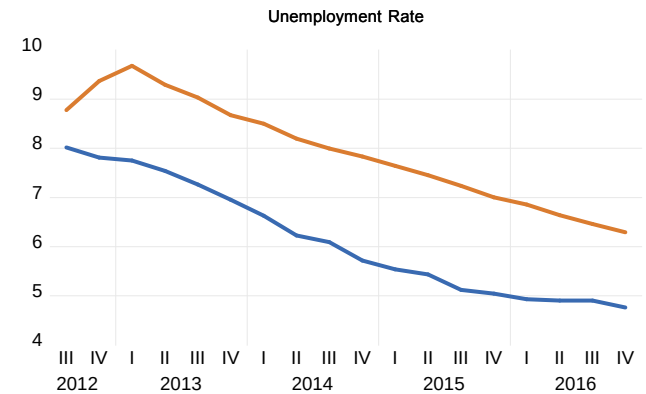
iter	converge stat	SSR stat	step length	step iters	Newton MCE deriv's?
0	9.22E-12	2.99E-21			

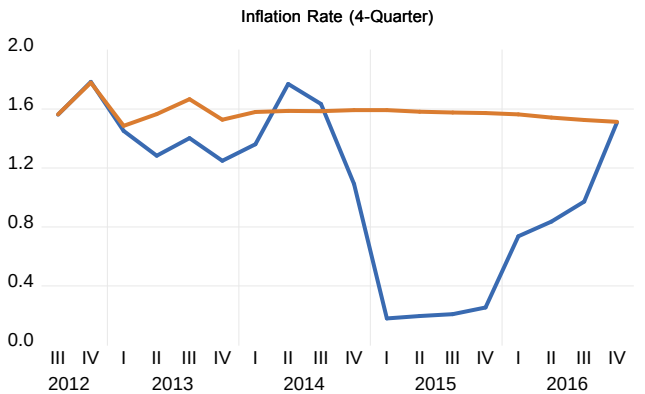
Simulation start = 2012Q1
Simulation end = 2018Q4
MCE method = "qnewton"
-- Initial Jacobian approximation = "bd"
---- QNewton iteration switch = 600
Linesearch method = lmr
-- Linesearch trigger = 0.9
-- Maximum linesearch iterations = 10
Convergence criteria = 1e-05
Maximum number of MCE iterations = 200
MCE instrument perturbation factor = 0.001
Intermediate output level factor = 1
MCE instrument variables = ZDIVGR_A ZGAP05_A ZGAP10_A ZGAP30_A ZPI10_A ZPI10F_A ZPIB5_A ZPIC30_A ZPIC58_A ZPICXFE_A ZPIECI_A ZRFF10_A ZRFF30_A ZRFF5_A
MCE error variables = EZDIVGR EZGAP05 EZGAP10 EZGAP30 EZPI10 EZPI10F EZPIB5 EZPIC30 EZPIC58 EZPICXFE EZPIECI EZRFF10 EZRFF30 EZRFF5
There are 392 instrument and 392 error observations
At iteration 1, convergence

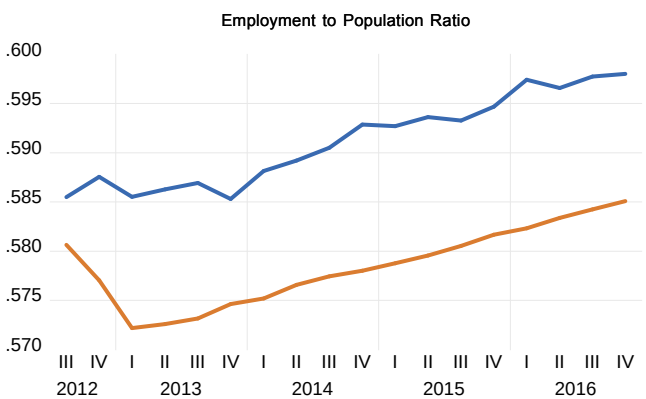
5. Macroeconomic Effects of Negative AD Shock
(VAR Expectations; Policy = rfftay)
(ZLB and Thresholds Imposed)

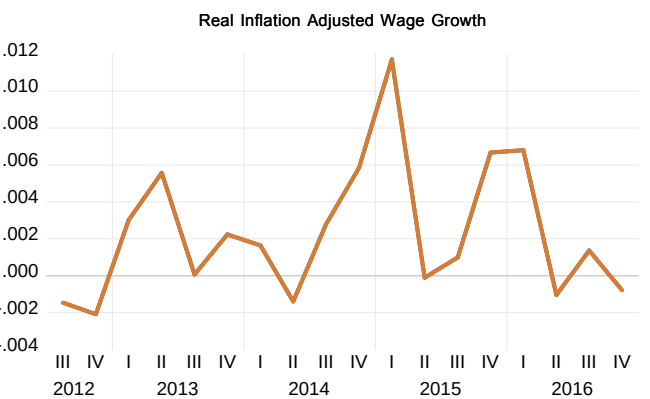








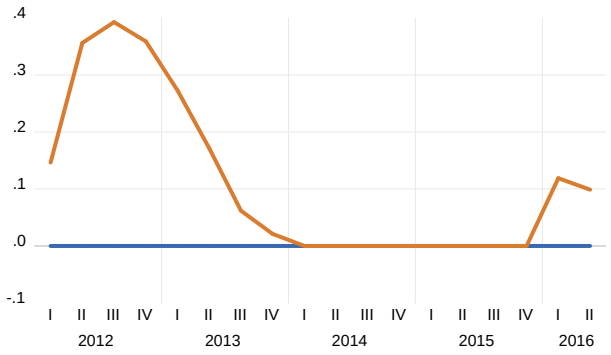




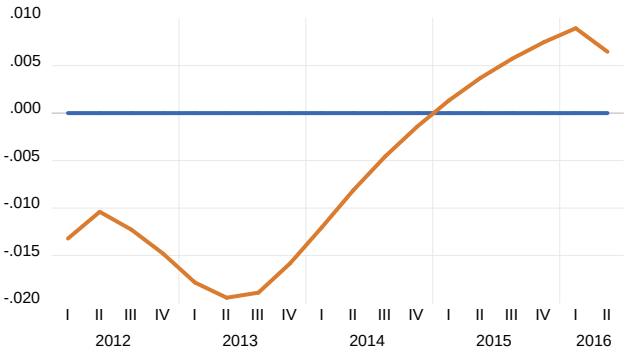
Blue: Actual; Red: Simulated

6. Macroeconomic Effects of a Shock to Consumption

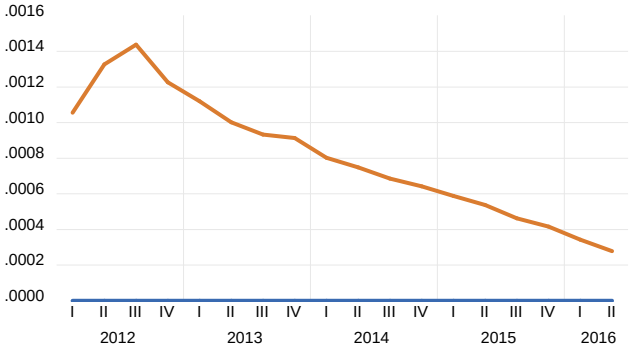
Federal Funds Rate



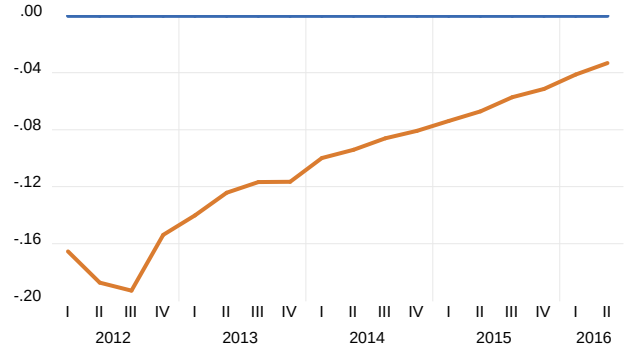
10-Year Treasury Yield



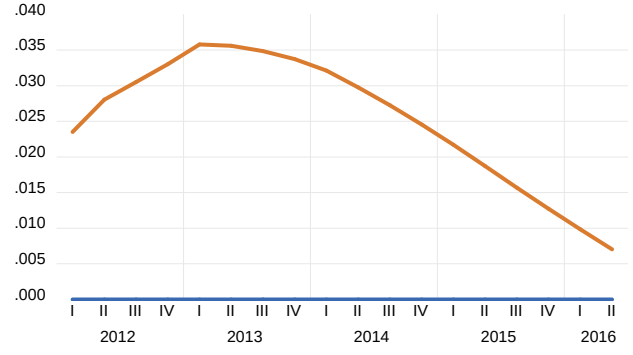
Employment to Population Ratio



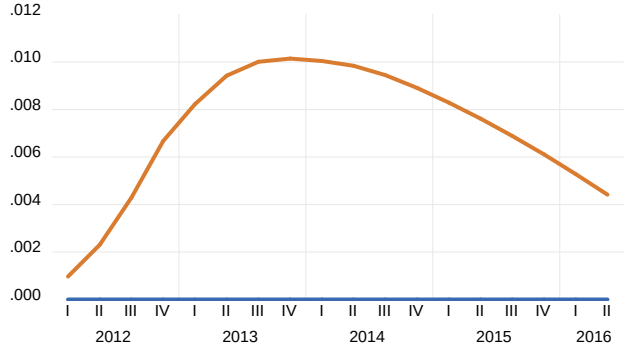
Unemployment Rate



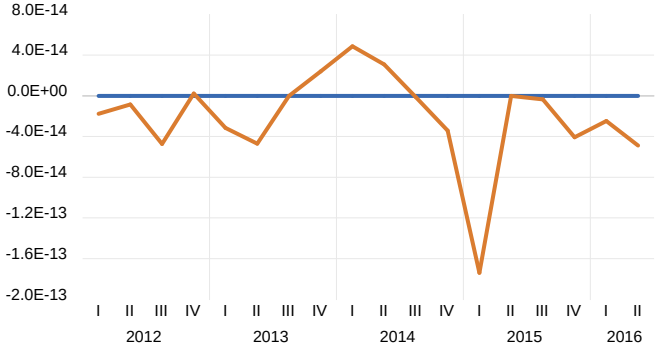
Growth rate of EI hourly compensation



Inflation Rate (4-Quarter)



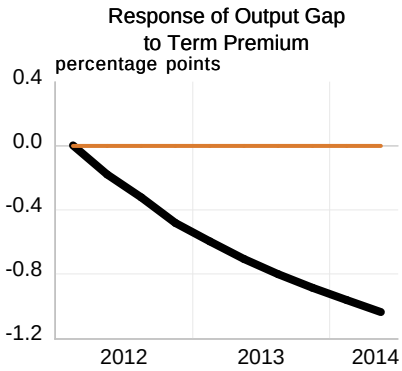
Real Inflation Adjusted Wage Growth

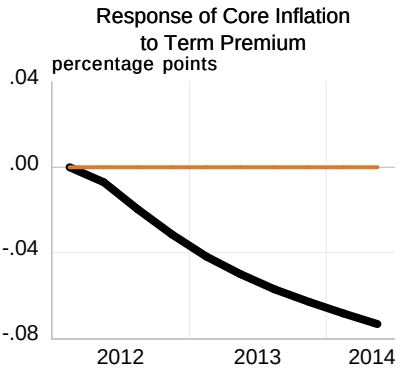


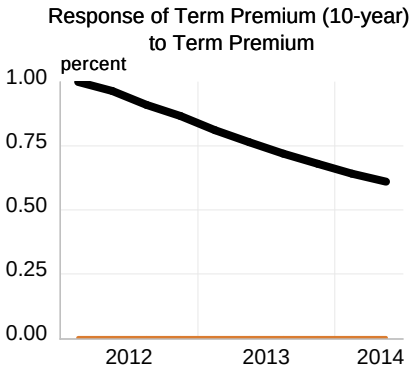
iter	converge stat	SSR stat	step length	step iters	Newton MCE deriv's?
0	0.379208	0.637643			
1	0.080090	0.083945	1.000000	1	
2	0.077680	0.147392	1.000000	1	
3	0.038179	0.031319	1.000000	1	
4	0.003610	0.000389	1.000000	1	
5	0.001156	1.88E-05	1.000000	1	
6	0.001247	2.60E-05	1.000000	1	
7	0.000182	8.09E-07	1.000000	1	
8	5.72E-05	3.94E-08	1.000000	1	
9	1.77E-05	3.81E-09	1.000000	1	
10	6.63E-07	6.59E-12	1.000000	1	

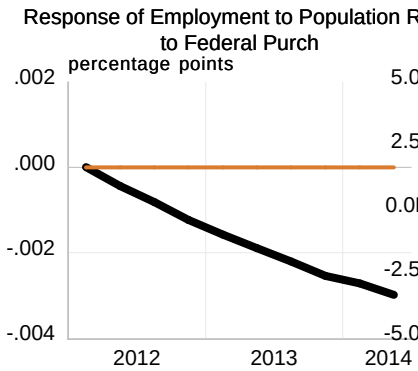
Simulation start = 2012Q1
Simulation end = 2016Q4
MCE method = "qnewton"
-- Initial Jacobian approximation = "bd"
---- QNewton iteration switch = 600
Linesearch method = lmr
-- Linesearch trigger = 0.9
-- Maximum linesearch iterations = 10
Convergence criteria = 1e-05
Maximum number of MCE iterations = 200
MCE instrument perturbation factor = 0.001
Intermediate output level factor = 1
MCE instrument variables = ZDIVGR_A ZGAP05_A ZGAP10_A ZGAP30_A ZPI10_A ZPI10F_A ZPIB5_A ZPIC30_A ZPIC58_A ZPICXFE_A ZPIECI_A ZRFF10_A ZRFF30_A ZRFF5_A ZGAP3_A ZPIC43_A
MCE error variables = EZDIVGR EZGAP05 EZGAP10 EZGAP30 EZPI10 EZPI10F EZPIB5 EZPIC30 EZPIC58 EZPICXFE EZPIECI EZRFF10 EZRFF30 EZRFF5 EZGAP3 EZPIC43
There are 320 instrument and 320 error observations
At iteration 11, convergence

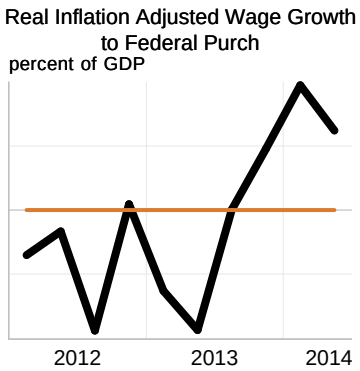
7. FRB/US Ping Simulations: VAR Expectations -- III

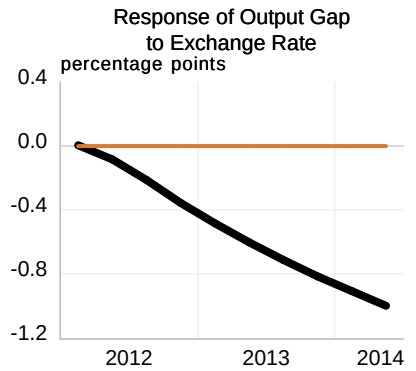


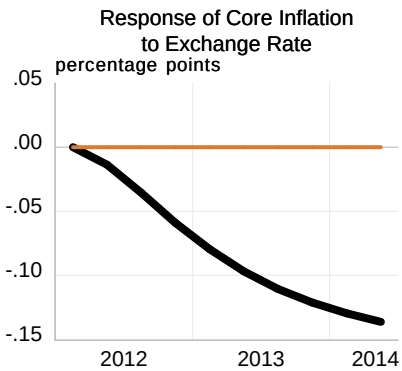


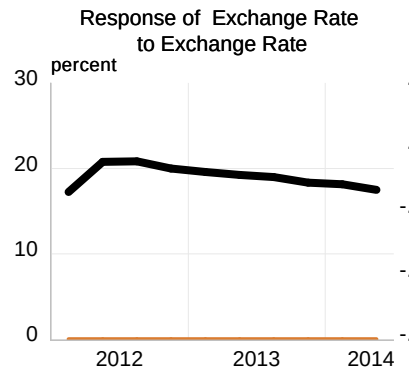


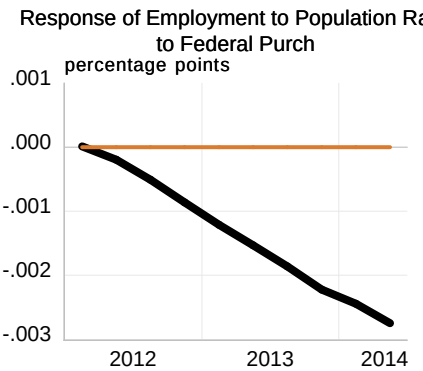


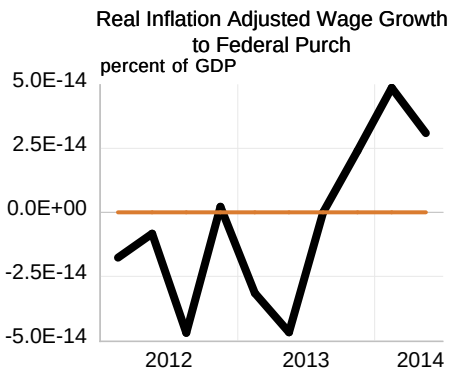




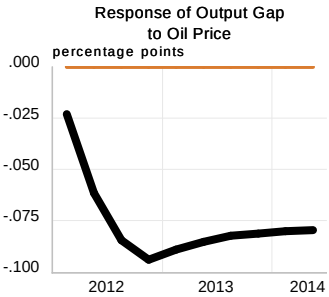


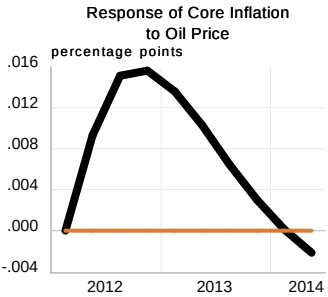


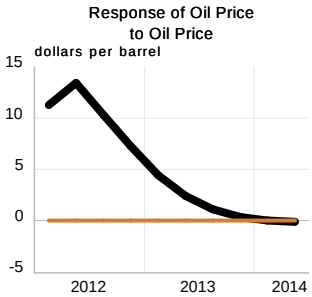


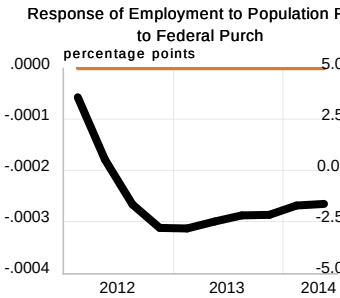


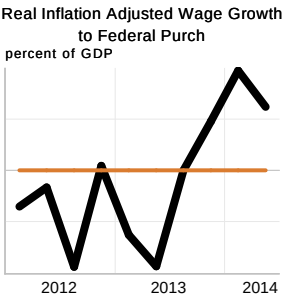
FRB/US Ping Simulations: VAR Expectations -- II

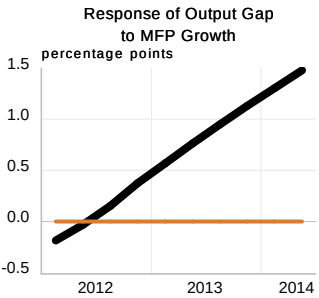


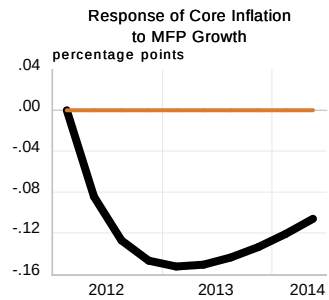


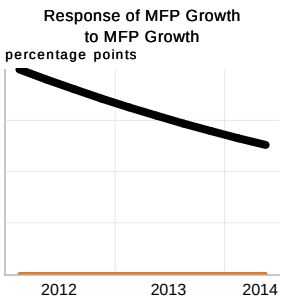


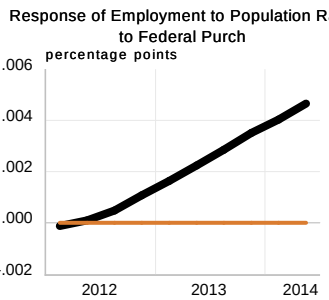


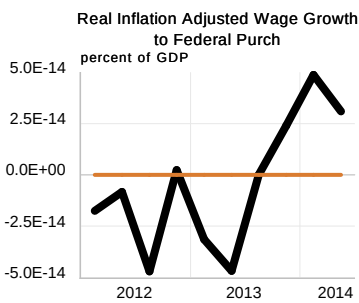


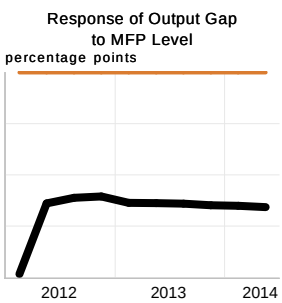


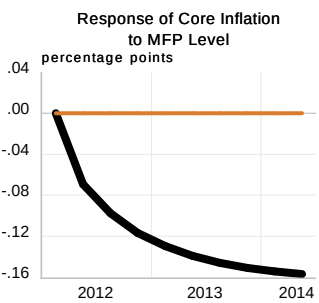


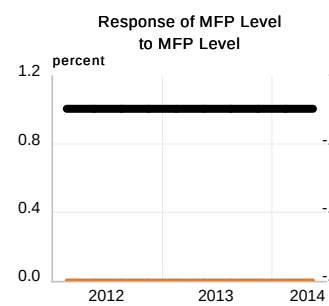


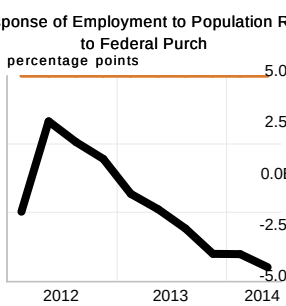


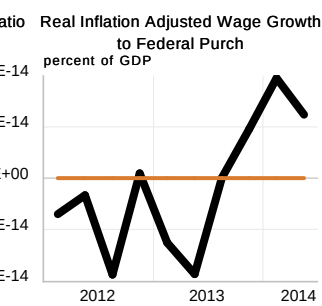




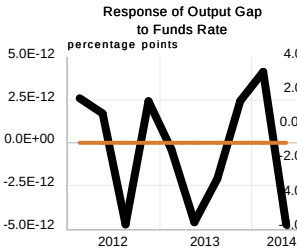


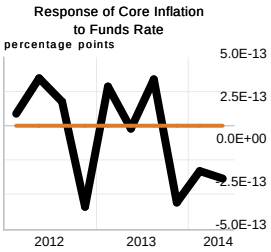


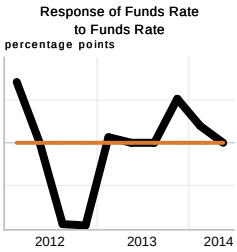


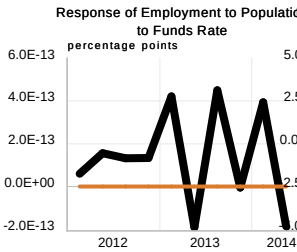


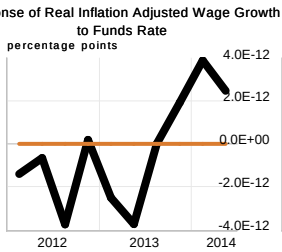
FRB/US Ping Simulations: VAR Expectations -- I

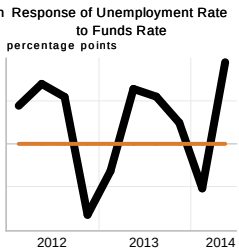


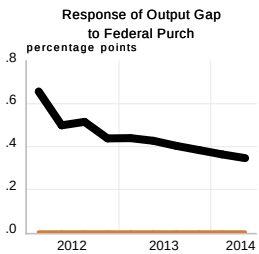


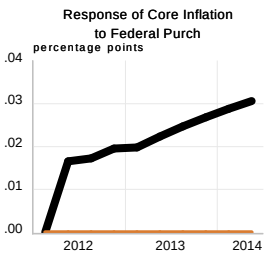


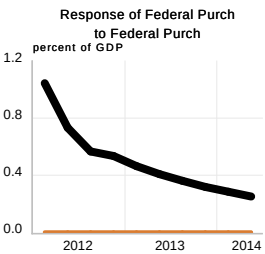


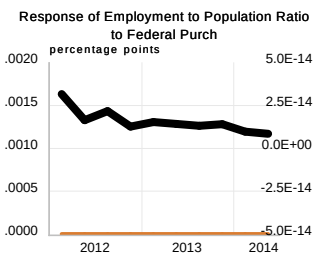


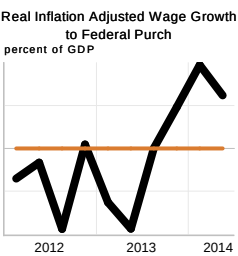


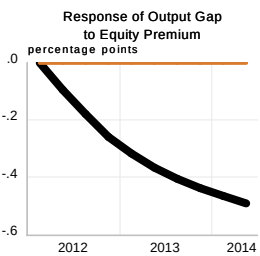


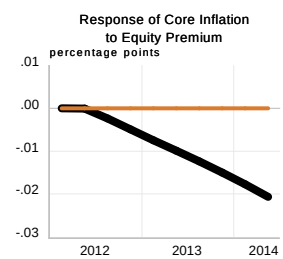


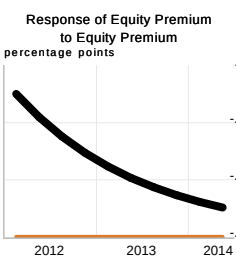


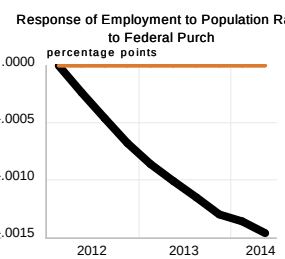


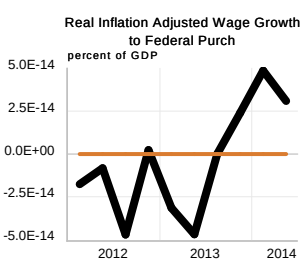










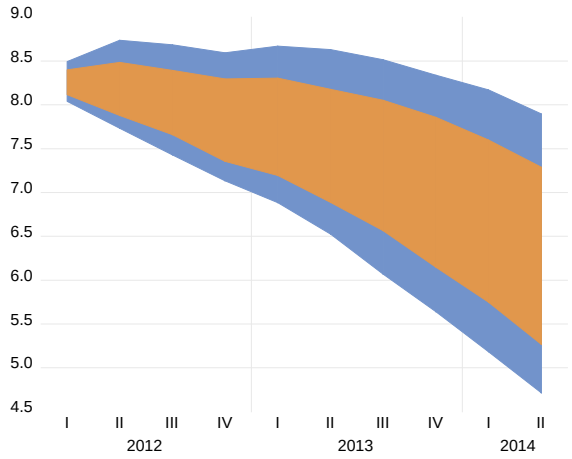


8.

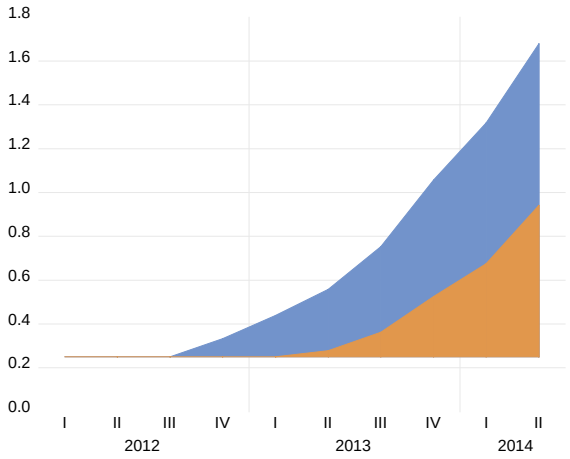
qtr	baseline	mean	median	stdev	90%-low	90%-hi	70%-low	70%-hi
RFF								
2012Q4	0.161	0.261	0.250	0.042	0.250	0.332	0.250	0.250
2013Q4	0.085	0.373	0.250	0.291	0.250	1.058	0.250	0.526
LUR								
2012Q4	7.812	7.814	7.778	0.467	7.134	8.595	7.355	8.296
2013Q4	6.956	6.987	6.981	0.836	5.639	8.338	6.148	7.856
PICXFE								
2012Q4	1.762	1.793	1.782	0.945	0.254	3.309	0.828	2.711
2013Q4	1.900	1.867	1.880	1.075	0.193	3.558	0.798	2.920
PICNIA								
2012Q4	2.240	2.266	2.253	1.178	0.491	4.005	1.190	3.432
2013Q4	1.629	1.633	1.624	1.379	-0.433	3.656	0.432	2.931
PICX4								
2012Q4	1.808	1.832	1.831	0.593	0.897	2.791	1.244	2.422
2013Q4	1.578	1.588	1.612	0.827	0.216	2.953	0.718	2.396
XGAP2								
2012Q4	-3.119	-3.133	-3.089	1.087	-4.986	-1.493	-4.234	-2.098
2013Q4	-1.949	-2.058	-2.033	1.991	-5.381	1.222	-4.140	-0.096
HGGDP								
2012Q4	0.455	0.406	0.522	2.716	-4.136	4.448	-2.263	3.098
2013Q4	3.180	2.971	3.130	2.965	-1.703	7.446	0.081	5.769
ANNGR								
2012Q4	1.469	1.458	1.522	1.184	-0.606	3.314	0.308	2.580
2013Q4	2.614	2.528	2.555	1.669	-0.282	5.074	0.858	4.257
EPOP								
2012Q4	0.588	0.587	0.588	0.003	0.582	0.592	0.584	0.590
2013Q4	0.585	0.585	0.585	0.006	0.575	0.595	0.579	0.591
RWAG								
2012Q4	-0.002	-0.002	-0.002	0.000	-0.002	-0.002	-0.002	-0.002
2013Q4	0.002	0.002	0.002	0.000	0.002	0.002	0.002	0.002

8. Stochastic Simulations
(70 and 90 percent bands)

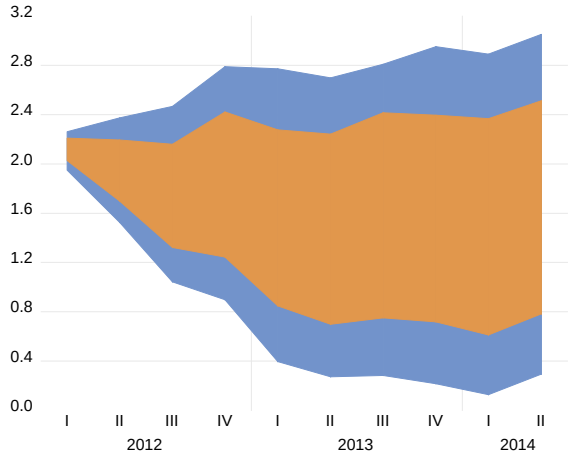
Unemployment Rate



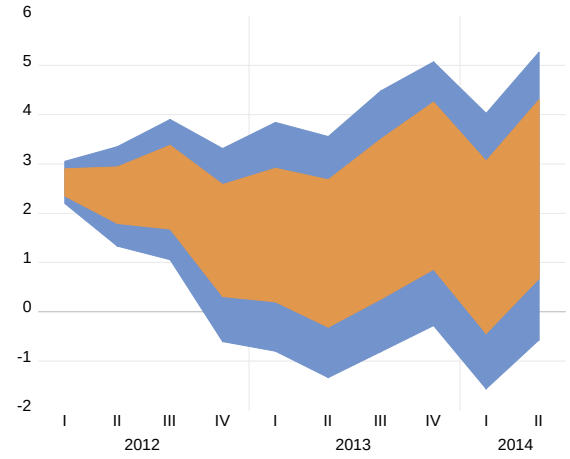
Federal Funds Rate



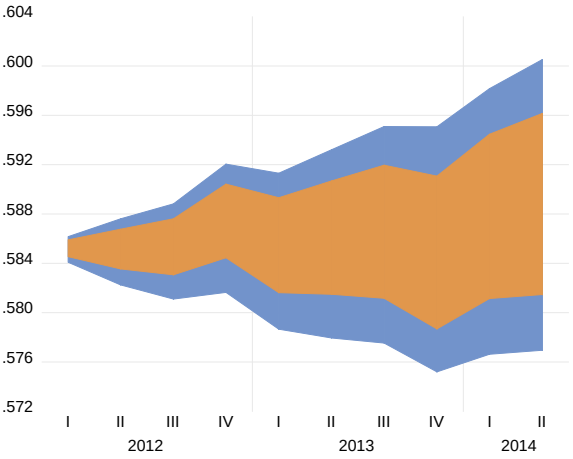
4-qtr Core Inflation Rate



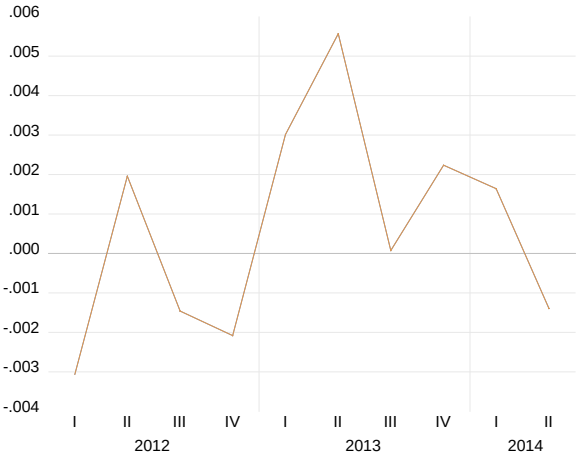
4-qtr Real GDP Growth Rate



4-qtr Employment to Population Ratio



4-qtr Real Inflation Adjusted Wage Growth



error	mean	std-dev
EBFI_ERR	-1.33E-19	0.016080
ECD_ERR	1.77E-19	0.026028
ECH_ERR	-2.42E-21	0.000196
ECO_ERR	-4.97E-20	0.003977
EGFE_ERR	4.20E-19	0.018092
EGFL_ERR	4.42E-20	0.007015
EGSE_ERR	-1.66E-19	0.015560
EGSL_ERR	-4.42E-20	0.002875
EH_ERR	5.75E-19	0.032328
EMO_ERR	-8.84E-20	0.017316
EMP_ERR	7.78E-18	0.182535
EX_ERR	7.29E-19	0.021175
FPXRR_ERR	-1.33E-19	0.028269
FXGAP_ERR	-1.97E-17	0.902008
GTRD_ERR	0.000000	0.002755
HMFPT_ERR	-1.99E-18	0.044292
HQLFPR_ERR	-5.27E-21	7.41E-05
HQLWW_ERR	1.59E-18	0.011991
KI_ERR	7.73E-20	0.004964
LFPR_ERR	-5.80E-20	0.001206
LHP_ERR	-1.55E-19	0.003213
LURNAT_ERR	1.77E-19	0.098512
LWW_ERR	-1.02E-19	0.001799
MFPT_ERR	1.10E-20	0.000731
PBFIR_ERR	1.66E-20	0.005263
PCER_ERR	8.15E-19	0.024621
PCFR_ERR	5.52E-20	0.006170
PEGFR_ERR	1.10E-20	0.004478
PEGSR_ERR	-3.89E-19	0.006554
PHOUSE_ERR	-3.20E-19	0.006915
PHR_ERR	-1.05E-19	0.006688
PICXFE_ERR	1.27E-17	0.769652
PIECI_ERR	3.68E-17	1.074947
PMO_ERR	2.76E-21	0.001814
POILR_ERR	-8.84E-19	0.114590
PXR_ERR	2.02E-19	0.006402
RBBBP_ERR	7.96E-19	0.028156
RCAR_ERR	-9.90E-18	0.322087
RCGAIN_ERR	2.83E-17	4.158527
REQP_ERR	3.04E-17	0.804353
RFYNIC_ERR	-5.70E-18	0.283535
RFYNIL_ERR	-7.07E-19	0.212916
RG10P_ERR	8.49E-18	0.432058
RG30P_ERR	2.83E-18	0.402154
RG5P_ERR	2.69E-17	0.496511
RGFINT_ERR	-3.59E-20	0.002341
RME_ERR	5.75E-19	0.292603
TRCI_ERR	-4.42E-20	0.014228
TRP_ERR	-9.53E-20	0.005199
YNIDN_ERR	-1.19E-18	0.043512
YNIRN_ERR	-4.14E-20	0.002173