

Discussion of
Futures Prices as Risk-Adjusted
Forecasts of Monetary Policy
Piazzesi and Swanson

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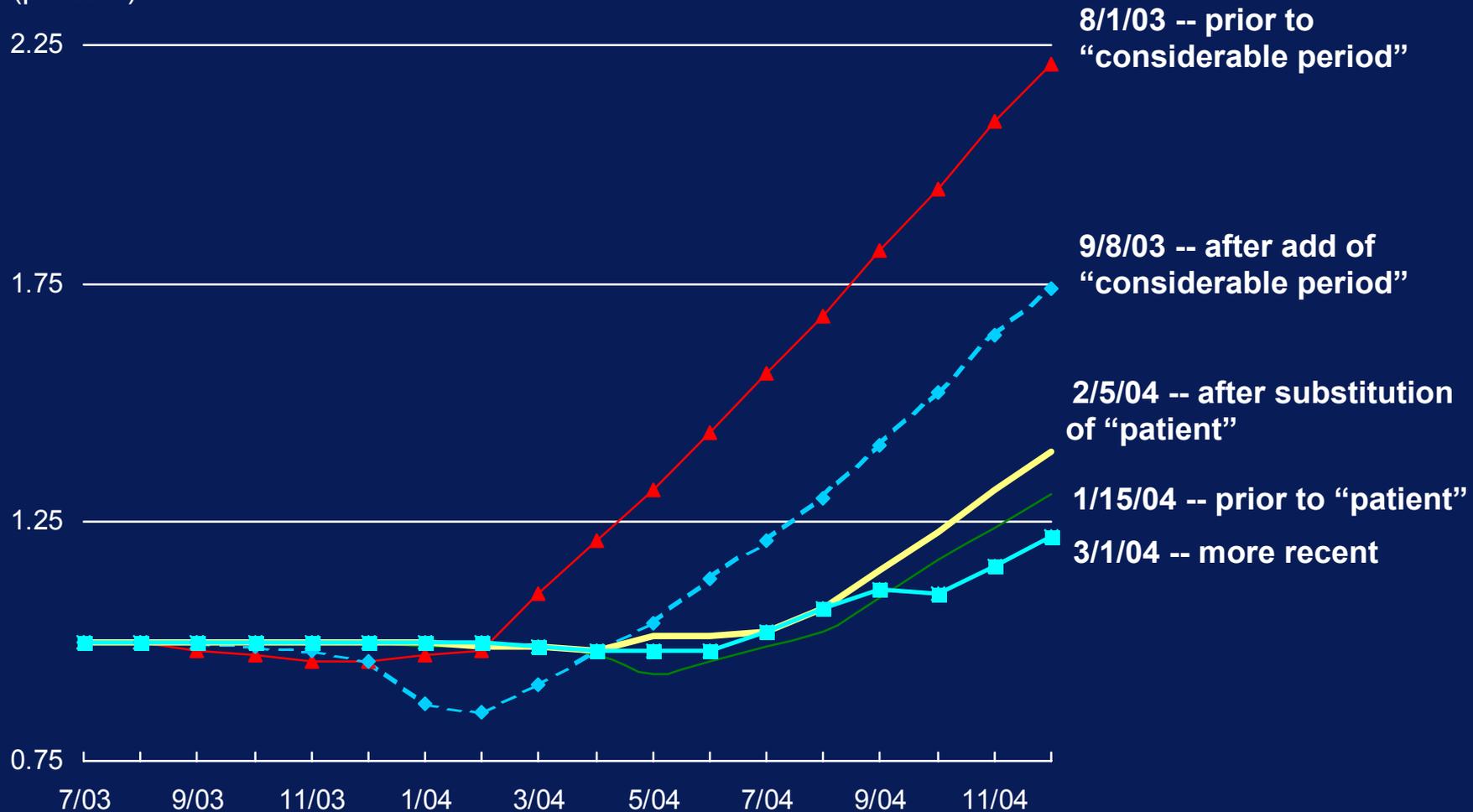
$$f_t^n = E[r_{t+n} | \Omega_t]$$

$$f_t^n - r_{t+n} = \alpha + \gamma' X_t + w_{t+n}$$

Markets Expect Accommodation to Continue

Expected federal funds rates from futures markets

(percent)



What is $E[r_{t+4}|\Omega_t] - r_{t+4}$?

1. Structural VAR system

$$GZ_{t+4} = HZ_{t+3} + \varepsilon_{t+4}$$

2. Reduced form VAR system

$$Z_{t+4} = AZ_{t+3} + C\varepsilon_{t+4}$$

3. Fed Funds equation

$$\begin{aligned} r_{t+4} &= \delta' AZ_{t+3} + \delta' C\varepsilon_{t+4} \\ &= \delta' A^4 Z_t + \delta' A^3 C\varepsilon_{t+1} + \delta' A^2 C\varepsilon_{t+2} + \\ &\quad \delta' AC\varepsilon_{t+3} + \delta' C\varepsilon_{t+4} \end{aligned}$$

4. Excess Return

$$\begin{aligned} E[r_{t+4}|\Omega_t] - r_{t+4} &= -\delta' A^3 C\varepsilon_{t+1} - \delta' A^2 C\varepsilon_{t+2} - \\ &\quad \delta' AC\varepsilon_{t+3} - \delta' C\varepsilon_{t+4} \end{aligned}$$

5. Empirical estimates

$$f_t^4 - r_{t+4} = \alpha + \gamma' X_t + w_{t+4}$$

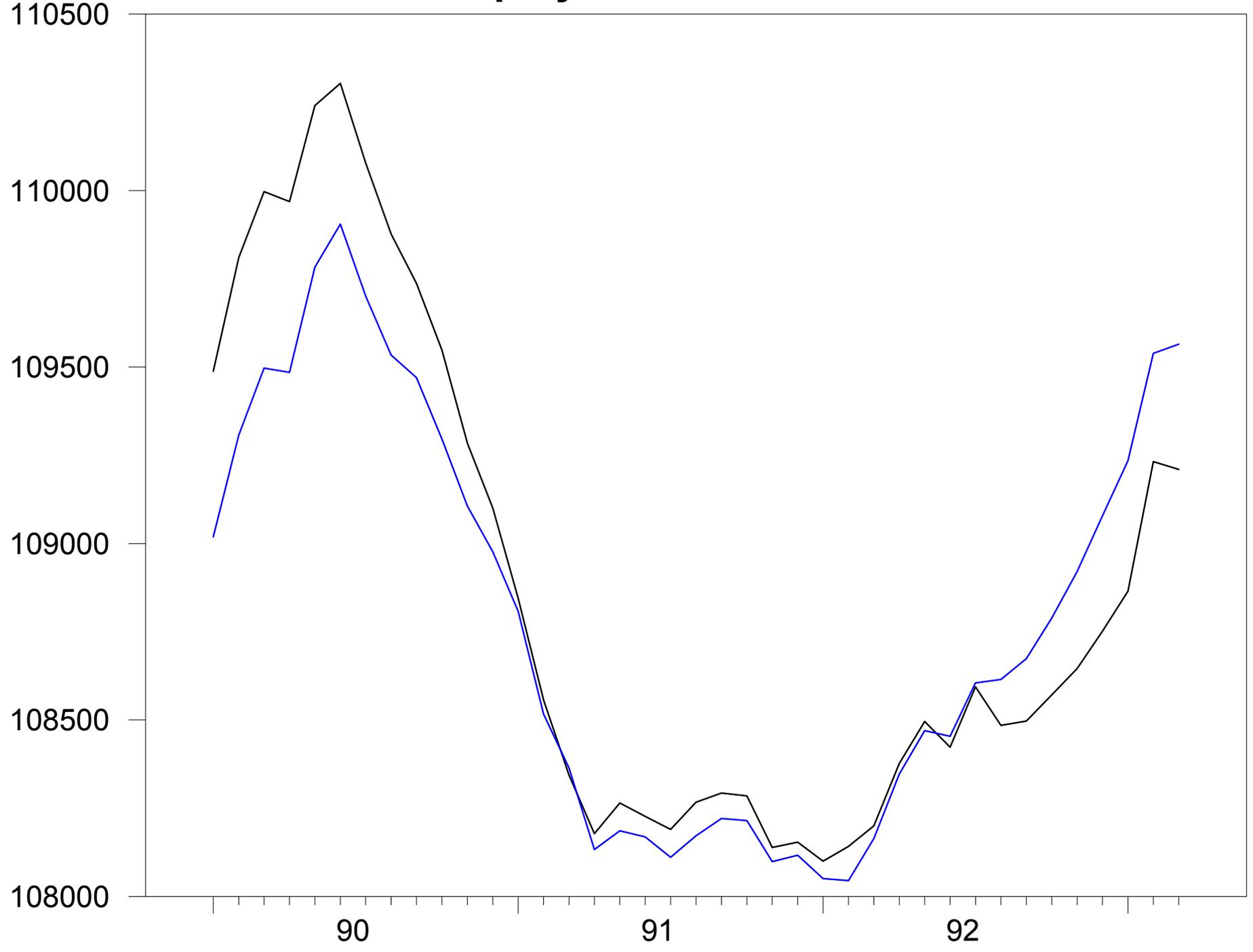
Empirical Results

$$f_t^4 - r_{t+4} = \alpha + \gamma' X_t + w_{t+4}$$

1. Average excess returns = 57.5 basis points at four months
2. Excess returns are countercyclical (greater risk during recessions?)
3. Predictable components of excess returns:
 - Drop in payroll employment growth associated with positive excess returns
 - Increase in level of futures rate associated with positive excess returns (jointly)

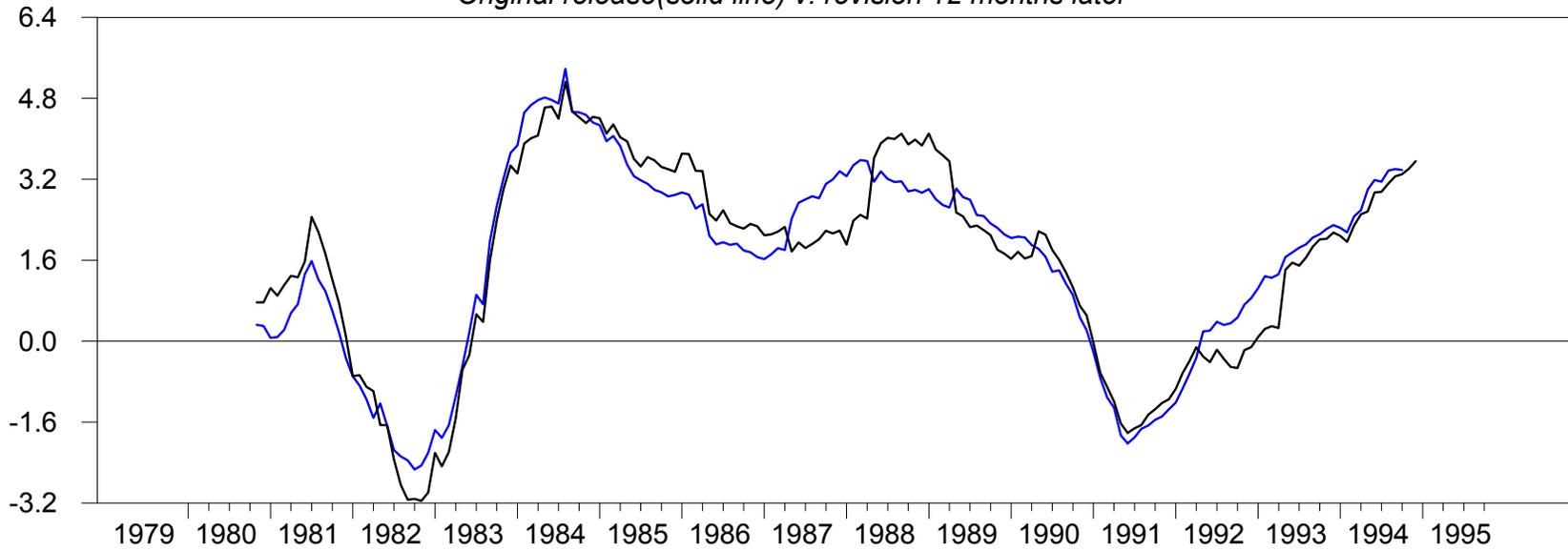
But... Payroll employment data has been revised!

Establishment Employment: March and June 1993



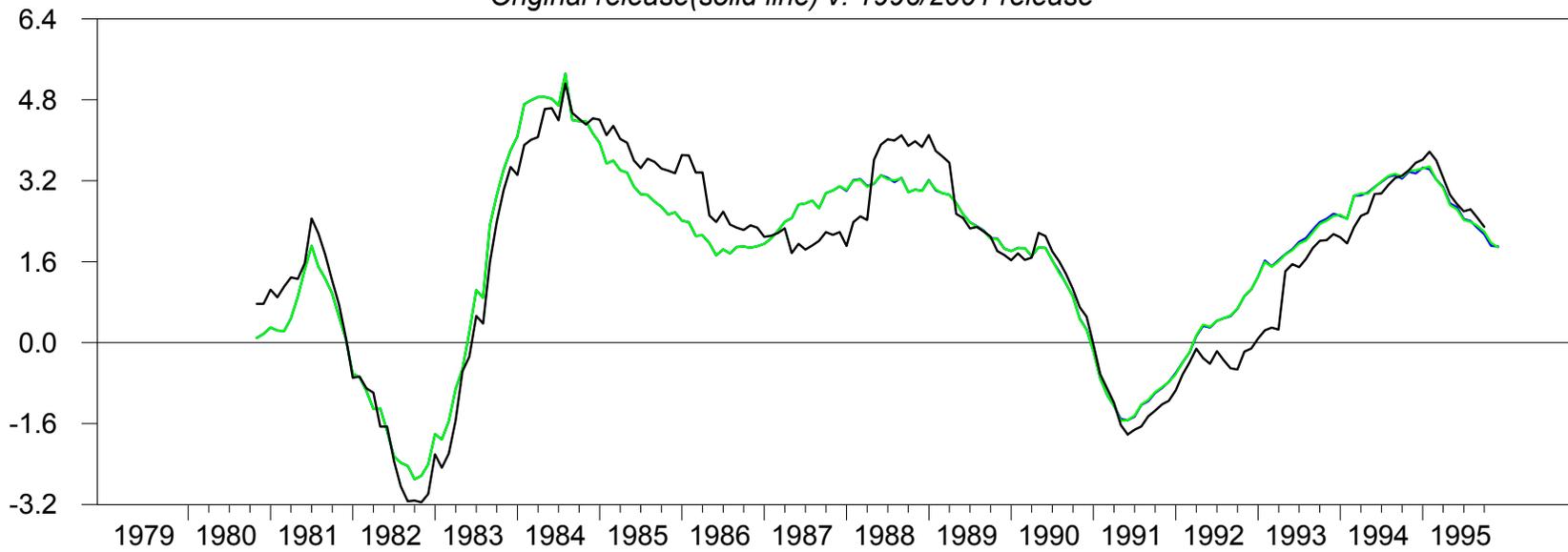
Revisions to Payroll Employment Growth

Original release(solid line) v. revision 12 months later



Revisions to Payroll Employment Growth

Original release(solid line) v. 1996/2001 release



More Empirical Results

$$f_t^4 - r_{t+4} = \alpha + \gamma' X_t + w_{t+4}$$

1. Real-time employment data also predictive
2. Future data are somewhat more predictive
3. Lots of other real data are predictive:
 - Nondurable consumption — Yes
 - Services consumption — No
 - Durables consumption — Yes
 - * Lagged 6 months!
 - * Nominal, too!
 - Manufacturing Capacity Utilization — Yes
 - Chicago Fed National Activity Index — Yes!
 - Inflation — No!
4. What about economic fundamentals? Structural shocks?

Candidate Economic Shocks

Evans and Marshall (2003)

1. Solow-based measures of *technology shock*:
(e.g., **Basu-Fernald-Shapiro** (2001))

2. *Marginal-rate-of-substitution shocks*: **Hall**
(1997), Baxter and King (1991), Shapiro and
Watson (1988).

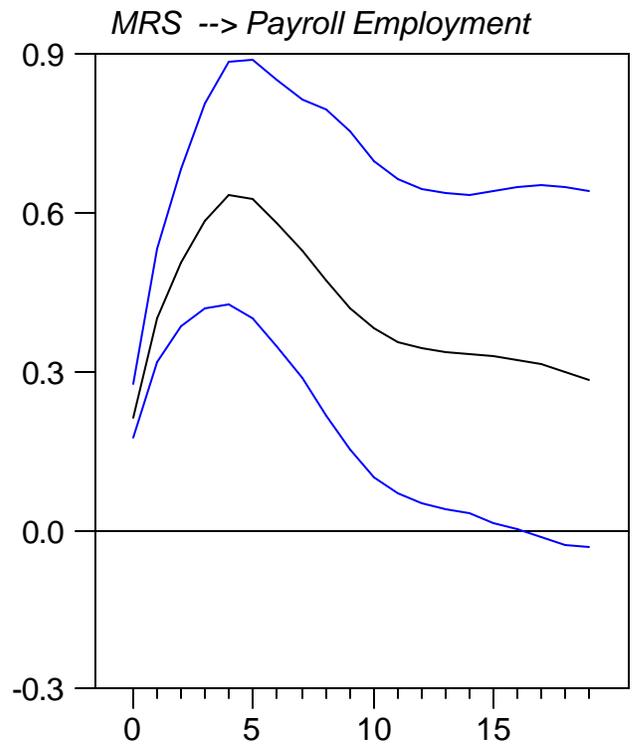
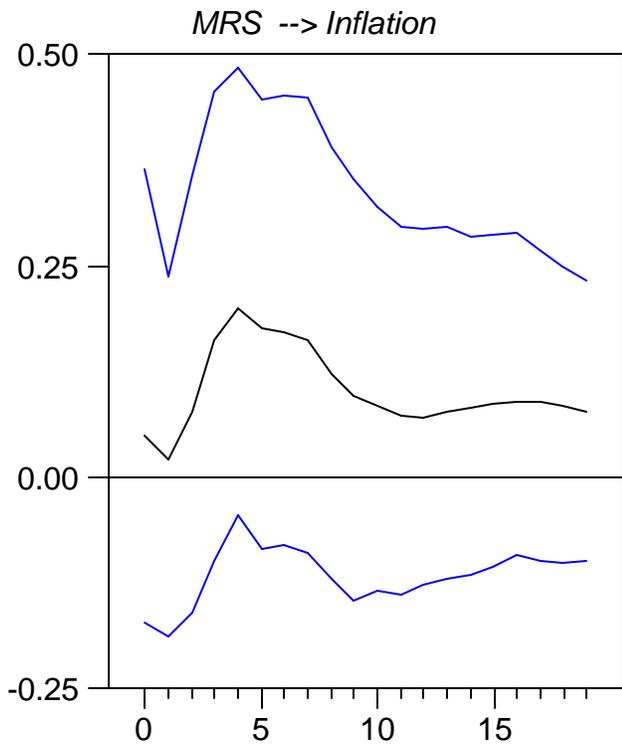
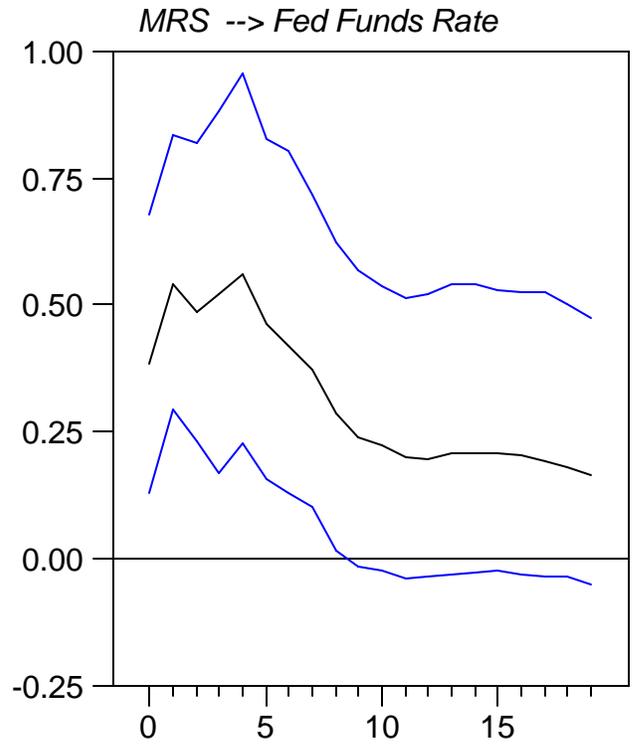
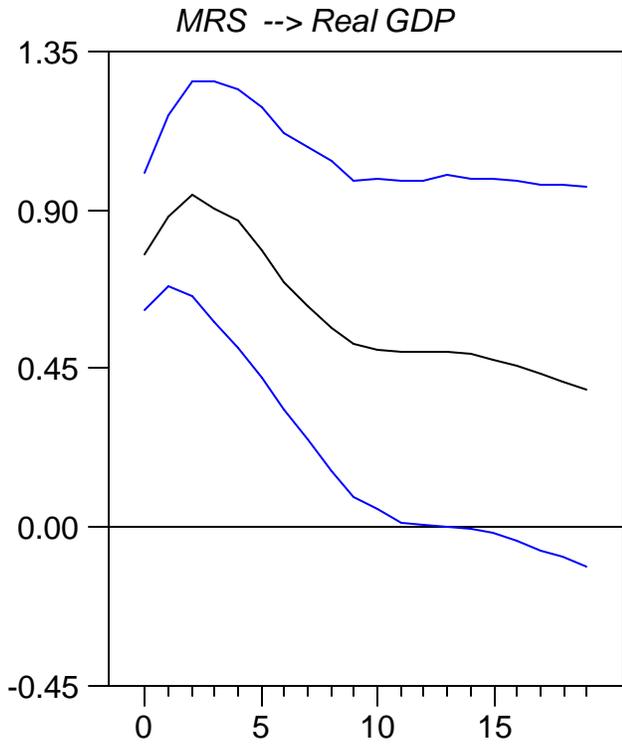
$$U(C_t, N_t) = \xi_t \frac{(C_t - b\bar{C}_{t-1})^{1-\gamma}}{1-\gamma} - \frac{N_t^{1+\phi}}{1+\phi}$$

$$\ln \xi_t = \rho(L) \ln \xi_{t-1} + \eta_{mrs,t}$$

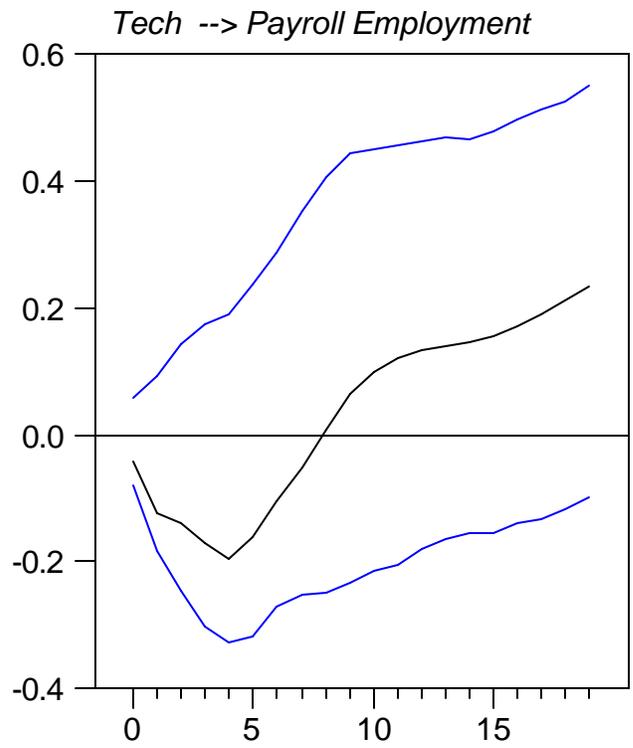
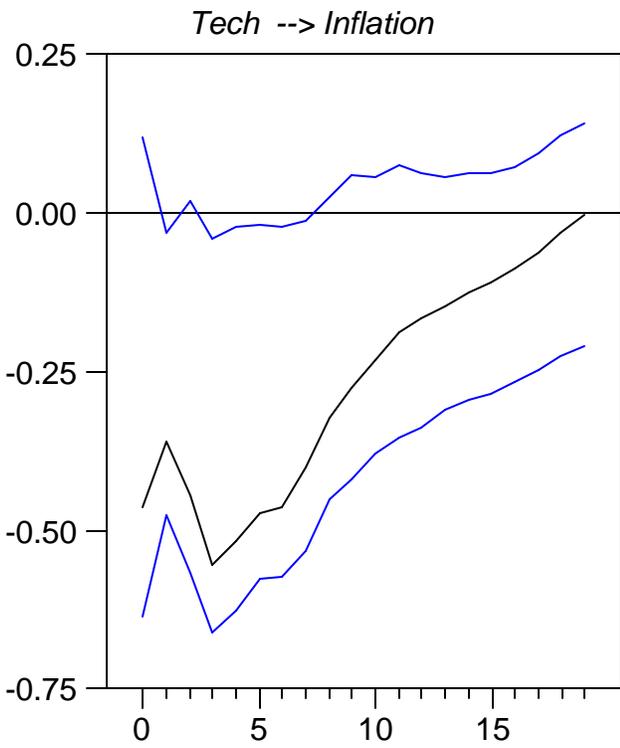
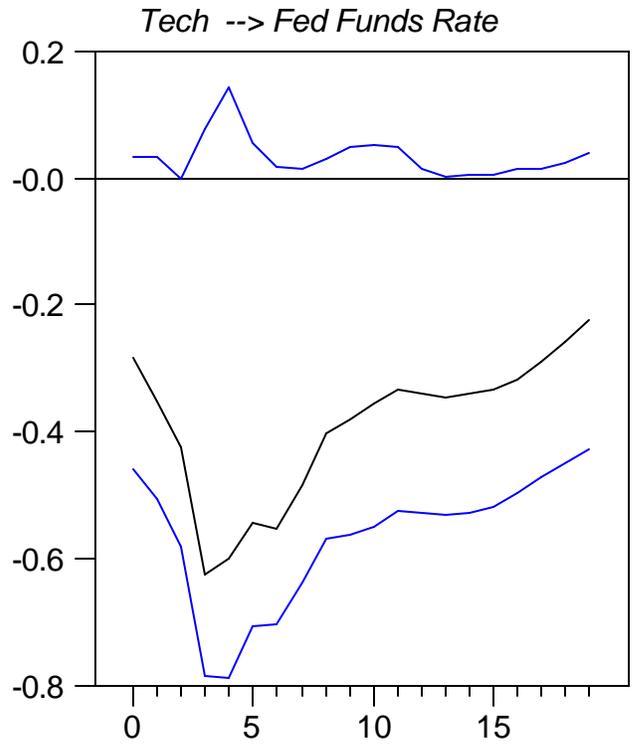
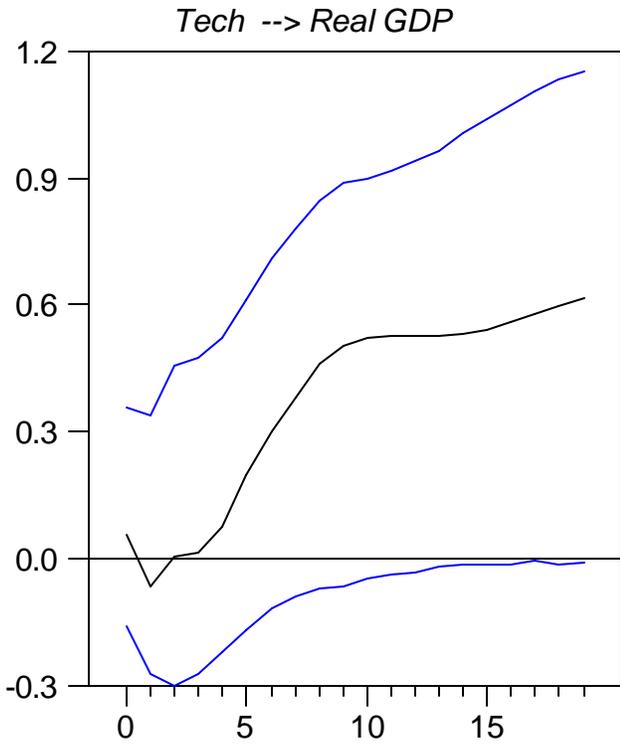
$$\frac{\xi_t (C_t - b\bar{C}_{t-1})^{-\gamma}}{N_t^\phi} = 1/W_t$$

$$\ln \xi_t = \phi \ln N_t - \ln W_t + \gamma \ln [C_t - b\bar{C}_{t-1}].$$

MRS Shock



Technology Shock



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4. Structural Shocks (Evans-Marshall (2003):
 - MRS shocks — Yes
 - Technology shocks — No

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