Online Appendix for
Effective Monetary Policy Strategies in New Keynesian Models: A Re-examination

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A Data for Estimation of Model.

The data covers 1966:Q1 to 2007:Q4. The construction follows that of Smets and Wouters (2007). Output data come from the NIPA; other sources are noted in the exposition.

1. **Per Capita Real Output Growth.** Take the level of real gross domestic product, (FRED mnemonic "GDPC1"), call it GDP_t. Take the quarterly average of the Civilian Non-institutional Population (FRED mnemonic "CNP16OV" / BLS series "LNS10000000"), normalized so that it's 1992Q3 value is one, call it POP_t. Then,

$$\text{Per Capita Real Output Growth} = 100 \left[\log \left(\frac{GDP_t}{POP_t} \right) - \log \left(\frac{GDP_{t-1}}{POP_{t-1}} \right) \right].$$

2. **Per Capita Real Consumption Growth.** Take the level of personal consumption expenditures (FRED mnemonic "PCEC"), call it $CONS_t$. Take the level of the GDP price deflator (FRED mnemonic "GDPDEF"), call it $GDPP_t$. Then

$$\text{Per Capita Real Consumption Growth} = 100 \left[\log \left(\frac{CONS_t}{GDPP_t POP_t} \right) - \log \left(\frac{CONS_{t-1}}{GDPP_{t-1} POP_{t-1}} \right) \right].$$

3. **Per Capita Real Investment Growth.** Take the level of fixed private investment (FRED mnemonic "FPI"), call it INV_t. Then,

$$\text{Per Capita Real Investment Growth} = 100 \left[\log \left(\frac{INV_t}{GDPP_t POP_t} \right) - \log \left(\frac{INV_{t-1}}{GDPP_{t-1} POP_{t-1}} \right) \right].$$

4. **Per Capita Real Wage Growth.** Take the BLS measure of compensation per hour for the nonfarm business sector (FRED mnemonic "COMPNFB" / BLS series "PRS85006103"), call it W_t. Then

$$\text{Per Capita Real Wage Growth} = 100 \left[\log \left(\frac{W_t}{GDPP_t} \right) - \log \left(\frac{W_{t-1}}{GDPP_{t-1}} \right) \right].$$

5. **Per Capita Hours Index.** Take the index of average weekly nonfarm business hours (FRED mnemonic / BLS series "PRS85006023"), call it $HOURS_t$. Take the number

of employed civilians (FRED mnemonic "CE16OV"), normalized so that its 1992Q3 value is 1, call it EMP_t. Then,

$$\text{Per Capita Hours} = 100 \log \left(\frac{HOURS_t EMP_t}{POP_t} \right).$$

The series is then demeaned.

6. **Inflation.** Take the GDP price deflator, then

$$\text{Inflation} = 100 \log \left(\frac{GDPP_t}{GDPP_{t-1}} \right).$$

7. **Federal Funds Rate.** Take the effective federal funds rate (FRED mnemonic "FEDFUNDS"), call it FFR_t. Then,

$$\text{Federal Funds Rate} = FFR_t/4.$$

8. **Inflation Expectations.** Take the SPF's measure of 10-year average inflation expectations, call it LRP_t. Since this is a CPI-based expectation, we subtract 0.5 percentage points from the annualized number to convert into a number comparable with the GDP deflator. Then,

$$\text{Inflation Expectations} = (LRP_t - 0.5)/4.$$

9. **Spread.** As a measure of financial spreads we use the difference between the S&P BBB rate (call it $RBBB_t$) and the 10-year Treasury rate, call it $RG10_t$. Then,

$$\text{Spread} = (RBBB_t - RG10_t)/4.$$

B Additional Tables

Table A-1: Prior Distribution for SW Model

Parameter	Type	Para (1)	Para (2)	Parameter	Type	Para (1)	Para (2)
$\bar{\beta}$	Gamma	0.25	0.10	ρ_a	Beta	0.50	0.20
$\bar{\pi}$	Gamma	0.62	0.10	ρ_b	Beta	0.50	0.20
$\bar{l}$	Normal	0.00	2.00	ρ_g	Beta	0.50	0.20
α	Normal	0.30	0.05	ρ_q	Beta	0.50	0.20
σ_c	Normal	1.50	0.38	ρ_m	Beta	0.50	0.20
Φ	Normal	1.25	0.12	ρ_p	Beta	0.50	0.20
φ	Normal	4.00	1.50	ρ_w	Beta	0.50	0.20
h	Beta	0.70	0.10	ρ_{π^*}	Beta	0.95	0.05
λ_w	Beta	0.50	0.10	g_y	Beta	0.50	0.20
σ_l	Normal	2.00	0.75	μ_p	Beta	0.50	0.20
λ_p	Beta	0.50	0.10	μ_w	Beta	0.50	0.20
ι_w	Beta	0.50	0.15	σ_a	Inv. Gamma	0.10	2.00
ι_p	Beta	0.50	0.15	σ_b	Inv. Gamma	0.10	2.00
ψ	Beta	0.50	0.15	σ_g	Inv. Gamma	0.10	2.00
r_π	Normal	1.50	0.25	σ_q	Inv. Gamma	0.10	2.00
ρ	Beta	0.75	0.10	σ_m	Inv. Gamma	0.10	2.00
r_y	Normal	0.12	0.05	σ_p	Inv. Gamma	0.10	2.00
$r_{\Delta y}$	Normal	0.12	0.05	σ_w	Inv. Gamma	0.10	2.00
ρ_a	Beta	0.50	0.20	σ_{π^*}	Inv. Gamma	0.10	2.00

Notes: Para (1) and Para (2) correspond to the mean and standard deviation of the Beta, Gamma, and Normal distributions and to the upper and lower bounds of the support for the Uniform distribution. For the Inv. Gamma distribution, Para (1) and Para (2) refer to s and ν, where $p(\sigma|\nu, s) \propto \sigma^{-\nu-1}e^{-\nu s^2/2\sigma^2}$.

Table A-2: Posterior For Sticky-Information and Sticky-Price Models

	Sticky Information		Sticky Price	
Parameter	Mean	[0.05, 0.95]	Mean	[0.05, 0.95]
$\bar{\beta}$	0.16	[0.08, 0.26]	0.18	[0.08, 0.29]
$\bar{\pi}$	0.69	[0.54, 0.88]	0.71	[0.55, 0.89]
$\bar{l}$	-1.40	[-4.00, 0.95]	-0.77	[-3.08, 1.35]
α	0.20	[0.16, 0.23]	0.20	[0.17, 0.24]
σ_c	1.13	[0.94, 1.34]	1.10	[0.89, 1.31]
Φ	1.48	[1.35, 1.61]	1.53	[1.39, 1.68]
φ	6.31	[4.47, 8.31]	5.97	[4.24, 8.08]
h	0.63	[0.52, 0.73]	0.60	[0.50, 0.72]
λ_w	0.41	[0.23, 0.56]	0.49	[0.38, 0.62]
σ_l	2.58	[1.63, 3.51]	2.00	[1.18, 2.89]
λ_p	0.26	[0.16, 0.35]	0.64	[0.55, 0.73]
ι_w	0.50	[0.27, 0.74]	0.48	[0.31, 0.64]
ι_p	0.49	[0.25, 0.74]	0.43	[0.30, 0.58]
ψ	0.74	[0.60, 0.86]	0.75	[0.62, 0.88]
r_π	2.13	[1.84, 2.43]	2.19	[1.92, 2.47]
ρ	0.88	[0.85, 0.92]	0.85	[0.81, 0.88]
r_y	0.01	[-0.03, 0.06]	-0.02	[-0.04, 0.01]
$r_{\Delta y}$	0.20	[0.16, 0.25]	0.17	[0.12, 0.22]
ρ_a	0.89	[0.85, 0.93]	0.91	[0.86, 0.95]
ρ_b	0.59	[0.25, 0.83]	0.62	[0.27, 0.80]
ρ_g	0.96	[0.94, 0.98]	0.96	[0.94, 0.98]
ρ_q	0.72	[0.60, 0.83]	0.69	[0.56, 0.81]
ρ_m	0.25	[0.12, 0.39]	0.35	[0.21, 0.50]
ρ_p	0.89	[0.82, 0.94]	0.92	[0.84, 0.98]
ρ_w	0.92	[0.81, 0.97]	0.97	[0.93, 0.99]
ρ_{π^*}	1.00	[0.99, 1.00]	1.00	[0.99, 1.00]
g_y	0.39	[0.22, 0.57]	0.40	[0.22, 0.58]
μ_p	0.50	[0.36, 0.61]	0.67	[0.48, 0.80]
μ_w	0.40	[0.20, 0.62]	0.66	[0.48, 0.83]
σ_a	0.37	[0.33, 0.42]	0.37	[0.33, 0.42]
σ_b	0.11	[0.07, 0.17]	0.11	[0.07, 0.17]
σ_g	0.39	[0.35, 0.45]	0.40	[0.35, 0.45]
σ_q	0.33	[0.26, 0.41]	0.33	[0.25, 0.41]
σ_m	0.13	[0.11, 0.15]	0.13	[0.11, 0.15]
σ_p	0.18	[0.16, 0.21]	0.10	[0.09, 0.12]
σ_w	1.37	[0.96, 1.92]	0.38	[0.30, 0.47]
σ_{π^*}	0.03	[0.03, 0.04]	0.03	[0.03, 0.04]