

**A.**

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.221161	0.244995	-0.902717	0.3670
COMMPRI	-0.005521	0.002974	-1.856563	0.0638
HOUST	-0.019411	0.004672	-4.155230	0.0000
INFL	0.696059	0.062229	11.18548	0.0000
PCE	0.344380	0.069455	4.958306	0.0000
PERSINC	0.246999	0.060590	4.076586	0.0001
PROD	-0.057743	0.039900	-1.447182	0.1483
UNEMPL	<b>0.102481</b>	<b>0.096757</b>	<b>1.059160</b>	<b>0.2899</b>

**I removed the Unemployment variable.**

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.290851	0.236016	-1.232339	0.2183
COMMPRI	-0.006514	0.002822	-2.307855	0.0213
HOUST	-0.021023	0.004417	-4.759605	0.0000
INFL	0.693309	0.062180	11.14996	0.0000
PCE	0.368561	0.065602	5.618132	0.0000
PERSINC	0.251581	0.060441	4.162446	0.0000
PROD	<b>-0.025460</b>	<b>0.025752</b>	<b>-0.988680</b>	<b>0.3232</b>

**I removed the Production variable.**

**Final model:**

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	<b>-0.240119</b>	<b>0.230366</b>	<b>-1.042336</b>	<b>0.2976</b>
COMMPRI	<b>-0.007501</b>	<b>0.002640</b>	<b>-2.841100</b>	<b>0.0046</b>
HOUST	<b>-0.020530</b>	<b>0.004389</b>	<b>-4.677900</b>	<b>0.0000</b>
INFL	<b>0.717527</b>	<b>0.057152</b>	<b>12.55477</b>	<b>0.0000</b>
PCE	<b>0.340525</b>	<b>0.059156</b>	<b>5.756400</b>	<b>0.0000</b>
PERSINC	<b>0.240242</b>	<b>0.059342</b>	<b>4.048463</b>	<b>0.0001</b>

**B.**

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
C	1.642087	0.158630	10.35167	0.0000
INFL	0.945338	0.032683	28.92451	0.0000

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
C	0.447200	0.195099	2.292167	0.0222
INFL	1.012245	0.031479	32.15583	0.0000
PERSINC	0.435970	0.045998	9.478074	0.0000

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
C	0.021219	0.230312	0.092131	0.9266
INFL	0.875420	0.050825	17.22412	0.0000
PERSINC	0.305409	0.059550	5.128578	0.0000
PCE	0.181177	0.053099	3.412051	0.0007

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
C	-0.213571	0.231416	-0.922891	0.3564
INFL	0.744809	0.056643	13.14928	0.0000
PERSINC	0.256885	0.059370	4.326886	0.0000
PCE	0.310975	0.058548	5.311461	0.0000
HOUST	-0.021522	0.004398	-4.893253	0.0000

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
C	-0.240119	0.230366	-1.042336	0.2976
INFL	0.717527	0.057152	12.55477	0.0000
PERSINC	0.240242	0.059342	4.048463	0.0001
PCE	0.340525	0.059156	5.756400	0.0000
HOUST	-0.020530	0.004389	-4.677900	0.0000
COMMPRI	-0.007501	0.002640	-2.841100	0.0046

In the last model beneath value P is above 5 percent.

So we only consider the above.

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
C	-0.290851	0.236016	-1.232339	0.2183
INFL	0.693309	0.062180	11.14996	0.0000
PERSINC	0.251581	0.060441	4.162446	0.0000
PCE	0.368561	0.065602	5.618132	0.0000
HOUST	-0.021023	0.004417	-4.759605	0.0000
COMMPRI	-0.006514	0.002822	-2.307855	0.0213
PROD	-0.025460	0.025752	-0.988680	0.3232

We can conclude that this model is indeed the same as in A.

C.

This is our model from A:

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.240119	0.230366	-1.042336	<b>0.2976</b>
COMMPRI	-0.007501	0.002640	-2.841100	<b>0.0046</b>
HOUST	-0.020530	0.004389	-4.677900	<b>0.0000</b>
INFL	0.717527	0.057152	12.55477	<b>0.0000</b>
PCE	0.340525	0.059156	5.756400	<b>0.0000</b>
PERSINC	0.240242	0.059342	4.048463	<b>0.0001</b>
<b>R-squared</b>	<b>0.637361</b>	Mean dependent var		<b>5.347636</b>
<b>Adjusted R-squared</b>	<b>0.634588</b>	S.D. dependent var		<b>3.619311</b>
S.E. of regression	2.187847	<b>Akaike info criterion</b>		<b>4.412762</b>
Sum squared resid	3130.486	<b>Schwarz criterion</b>		<b>4.453601</b>
Log likelihood	-1450.212	Hannan-Quinn criter.		<b>4.428592</b>
F-statistic	229.8892	Durbin-Watson stat		<b>0.099933</b>
Prob(F-statistic)	0.000000			

The Taylor Rule of equation gives us this model:

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.248900	0.176189	7.088419	0.0000
INFL	0.974976	0.032734	29.78458	0.0000
PROD	0.094720	0.019713	4.804897	0.0000
<b>R-squared</b>	<b>0.574701</b>	Mean dependent var		5.347636
<b>Adjusted R-squared</b>	<b>0.573407</b>	S.D. dependent var		3.619311
S.E. of regression	2.363920	<b>Akaike info criterion</b>		<b>4.563055</b>
Sum squared resid	3671.395	<b>Schwarz criterion</b>		<b>4.583474</b>
Log likelihood	-1502.808	Hannan-Quinn criter.		4.570970
F-statistic	443.8986	Durbin-Watson stat		0.064533
Prob(F-statistic)	0.000000			
Taylor R^2 = 0.5747				
BIC = 4.5630				
AIC = 4.4834				

Model A is preferred.

## D.

### Ramsey RESET Test

Equation: EQ03\_TAYLORS\_RULE

Specification: INTRATE C INFL PROD

Omitted Variables: Squares of fitted values

	Value	df	Probability
t-statistic	1.592834	656	<b>0.1117</b>
F-statistic	2.537120	(1, 656)	<b>0.1117</b>
Likelihood ratio	2.547666	1	<b>0.1105</b>

F-test summary:

	Sum of Sq.	df	Mean Squares
Test SSR	14.14464	1	14.14464
Restricted SSR	3671.395	657	5.588120
Unrestricted SSR	3657.250	656	5.575076

LR test summary:

	Value	df
Restricted LogL	-1502.808	657
Unrestricted LogL	-1501.534	656

Unrestricted Test Equation:

Dependent Variable: INTRATE

Method: Least Squares

Sample: 1960M01 2014M12

Included observations: 660

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.984106	0.242087	4.065096	0.0001
INFL	1.165011	0.123706	9.417608	0.0000
PROD	0.099869	0.019954	5.005027	0.0000
<b>FITTED^2</b>	<b>-0.013711</b>	<b>0.008608</b>	<b>-1.592834</b>	<b>0.1117</b>
R-squared	0.576340	Mean dependent var		5.347636
Adjusted R-squared	0.574402	S.D. dependent var		3.619311
S.E. of regression	2.361160	Akaike info criterion		4.562225
Sum squared resid	3657.250	Schwarz criterion		4.589451
Log likelihood	-1501.534	Hannan-Quinn criter.		4.572778
F-statistic	297.4704	Durbin-Watson stat		0.068386
Prob(F-statistic)	0.000000			

We see a probability that is larger then 5 percent .

The Fitted^2 is insignificant. There is no correlation here.

With regard to January 1985 we see that the Chow break point test shows a break point.  
Chow forecast test shows mixed results.

#### Chow Breakpoint Test: 1985M01

Null Hypothesis: No breaks at specified breakpoints

Varying regressors: C INFL PROD

Equation Sample: 1960M01 2014M12

F-statistic	6.046995	<b>Prob. F(3,653)</b>	<b>0.0005</b>
Log likelihood ratio	18.08538	<b>Prob. Chi-Square(3)</b>	<b>0.0004</b>
Wald Statistic	18.14098	<b>Prob. Chi-Square(3)</b>	<b>0.0004</b>

#### Chow Forecast Test

Equation: EQ03\_TAYLORS\_RULE

Specification: INTRATE C INFL PROD

Test predictions for observations from 1985M01 to 2014M12

	Value	df	Probability
F-statistic	0.896926	(360, 297)	<b>0.8378</b>
Likelihood ratio	485.6380	360	<b>0.0000</b>

F-test summary:

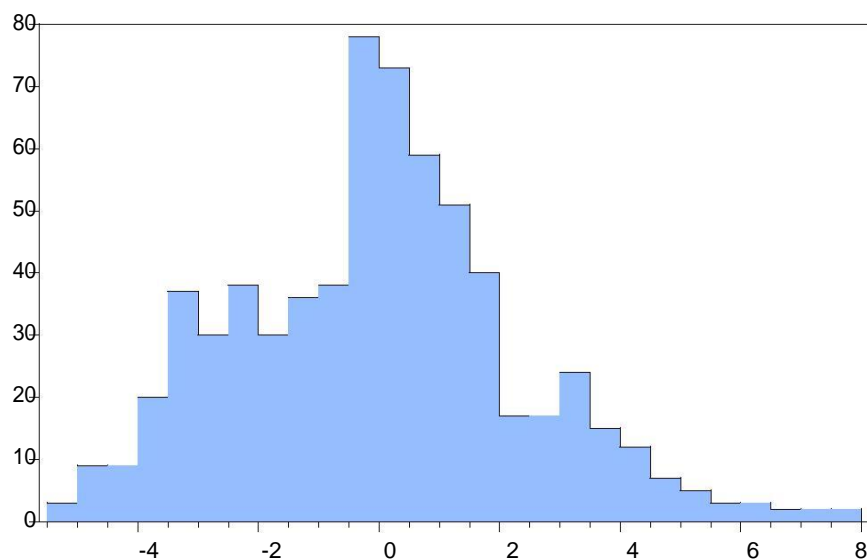
	Sum of Sq.	df	Mean Squares
Test SSR	1912.375	360	5.312154
Restricted SSR	3671.395	657	5.588120
Unrestricted SSR	1759.019	297	5.922624

LR test summary:

	Value	df
Restricted LogL	-1502.808	657
Unrestricted LogL	-1259.989	297

Unrestricted log likelihood adjusts test equation results to account for observations in forecast sample

Jarque-Bera test shows a p-value less than 5 percent.



Series: Residuals  
Sample 1960M01 2014M12  
Observations 660

Mean 5.95e-15  
Median 0.014060  
Maximum 7.920304  
Minimum -5.159173  
Std. Dev. 2.360331  
Skewness 0.325718  
Kurtosis 3.167754

Jarque-Bera 12.44404  
Probability 0.001985