TABLE 1
RMSE for CPI

	1960:Q2 1969:Q4	1970:Q1 1979:Q4	1980:Q1 1989:Q4	1990:Q1 1999:Q4	2000:Q1 2012:Q3
Naïve forecast with CPI inflation[1]	0.85	2.57	2.28	0.93	1.93
Regression with CPI Inflation[2]	0.98	2.21	2.31	0.96	2.39
Regression with oil prices[3]	1.50	4.64	3.71	1.65	2.23
Regression with CPI inflation and oil prices[4]	0.93	4.97	2.45	1.13	2.42
Regression with annualized growth rate of GDP[5]	0.93	2.11	2.15	0.88	2.30
Regression with annualized growth rate of GDP and oil prices[6]	1.09	5.06	2.13	0.93	2.29
Naïve forecast with core CPI inflation[1]	0.76	3.31	2.51	0.93	1.50
Regression with core CPI Inflation[7]		3.15	2.51	1.00	1.43
Regression with core CPI Inflation and oil prices[8]		3.16	2.51	1.12	1.53
Naïve forecast with 16% trimmed mean CPI Inflation[1]		2.87	2.07	0.77	1.59
Regression with 16% trimmed mean CPI Inflation[7]			2.34	1.11	1.61
Regression with 16% trimmed mean CPI Inflation and oil prices[8]			2.41	1.19	1.63
Naïve forecast with median CPI Inflation[1]		2.93	2.02	0.78	1.56
Regression with median CPI Inflation[7]			2.48	1.22	1.55
Regression with median CPI Inflation and oil prices[8]			2.41	1.31	1.57
Naïve forecast with UM inflation expectations[1]			1.51	0.88	1.67
Regression with UM inflation expectations[9]				0.92	1.76
Regression with UM inflation expectations and oil prices[10]				0.94	1.76
Naïve forecast with SPF inflation expectations[1]				0.81	1.33
Regression with SPF inflation expectations[9]					1.30
Regression with SPF inflation expectations and oil prices[10]					1.30
Best-without oil prices	0.76	2.11	1.51	0.77	1.30
Best-with oil prices	0.93	3.16	2.13	0.93	1.30
Best	0.76	2.11	1.51	0.77	1.30

	Best of a forecasting period
	Best when oil is used
	Oil makes better when added

TABLE 2
RMSE for Core CPI

	1960:Q2 1969:Q4	1970:Q1 1979:Q4	1980:Q1 1989:Q4	1990:Q1 1999:Q4	2000:Q1 2012:Q3
Naïve forecast with core CPI inflation[1]	0.87	2.47	1.94	0.56	0.60
Regression with core CPI Inflation[2]		2.43	2.22	0.55	0.58
Regression with oil prices[3]	1.66	4.45	3.12	1.79	2.42
Regression with core CPI inflation and oil prices[4]		4.44	2.41	0.80	0.99
Regression with annualized growth rate of GDP[5]		2.25	2.04	0.49	0.64
Regression with annualized growth rate of GDP and oil prices[6]		3.43	2.23	0.79	0.96
Naïve forecast with 16% trimmed mean CPI Inflation[1]		2.01	1.65	0.40	0.68
Regression with 16% trimmed mean CPI Inflation[7]			1.63	0.87	0.89
Regression with 16% trimmed mean CPI Inflation and oil prices[8]			1.82	0.93	0.93
Naïve forecast with median CPI Inflation[1]		2.11	1.53	0.48	0.85
Regression with median CPI Inflation[7]			1.72	0.95	0.93
Regression with median CPI Inflation and oil prices[8]			1.86	1.01	1.02
Best-without oil prices	0.87	2.01	1.53	0.40	0.58
Best-with oil prices	1.66	3.43	1.82	0.79	0.93
Best	0.87	2.01	1.53	0.40	0.58

	Best of a forecasting period
	Best when oil is used
	Oil makes better when added

TABLE 3
RMSE for CPI

	1960:Q2 1969:Q4	1970:Q1 1979:Q4	1980:Q1 1989:Q4	1990:Q1 1999:Q4	2000:Q1 2012:Q3
Naïve	**0.85**	**2.57**	**2.28**	**0.93**	**1.93**
Best of Table 1	**0.76**	**2.11**	**1.51**	**0.77**	**1.30**
Regression with CPI inflation and oil prices[1]					
No lead variable	0.93	4.97	2.45	1.13	2.42
Lead variable	0.95	2.34	1.93	0.82	1.64
Regression with annualized growth rate of GDP and oil prices[2]					
No lead variable	1.09	5.06	2.13	0.93	2.29
Lead variable	0.99	2.37	2.16	0.93	1.51
Regression with core CPI Inflation and oil prices[3]					
No lead variable		3.16	2.51	1.12	1.53
Lead variable		3.01	1.75	1.10	1.19
Regression with 16% trimmed mean CPI Inflation and oil prices[3]					
No lead variable			2.41	1.19	1.63
Lead variable			1.65	1.14	1.19
Regression with median CPI Inflation and oil prices[3]					
No lead variable			2.41	1.31	1.57
Lead variable			1.59	1.24	1.31
Regression with UM inflation expectations and oil prices[4]					
No lead variable				0.94	1.76
Lead variable				0.84	1.32
Regression with SPF inflation expectations and oil prices[4]					
No lead variable					1.30
Lead variable					0.81
Best-without oil prices	0.76	2.11	1.51	0.77	1.30
Best-with oil prices (no lead variable)	0.93	3.16	2.13	0.93	1.30
Best-with oil prices (lead variables)	0.95	2.34	1.59	0.82	0.81

When lead oil trumps the best of table 1

TABLE 4
RMSE for Core CPI

	1960:Q2 1969:Q4	1970:Q1 1979:Q4	1980:Q1 1989:Q4	1990:Q1 1999:Q4	2000:Q1 2012:Q3
Naïve	**0.87**	**2.47**	**1.94**	**0.56**	**0.60**
Best	**0.87**	**2.01**	**1.53**	**0.40**	**0.58**
Regression with CPI inflation and oil prices[1]					
No lead variable		4.44	2.41	0.80	0.99
Lead variable		4.10	2.25	0.65	0.72
Regression with annualized growth rate of GDP and oil prices[2]					
No lead variable		3.43	2.23	0.79	0.96
Lead variable		3.08	2.09	0.51	0.64
Regression with 16% trimmed mean CPI Inflation and oil prices[3]					
No lead variable			1.82	0.93	0.93
Lead variable			1.56	0.90	1.07
Regression with median CPI Inflation and oil prices[3]					
No lead variable			1.86	1.01	1.02
Lead variable			1.50	1.01	1.27
Best-without oil prices	0.87	2.01	1.53	0.40	0.58
Best-with oil prices (no lead variable)	1.66	3.43	1.82	0.79	0.93
Best-with oil prices (lead variables)		3.08	1.50	0.51	0.64

When lead oil trumps the best of table 1

1 Table 1

1. The specification is:

$$\pi^4_{t+4|t} = \pi^x_t$$

Here, $\pi^4_{t+4|t}$ is the four-quarter ahead annual CPI inflation, π^x_t is the annualized quarterly inflation. In the Naive (Atkeson-Ohanian) case the price level from which π^x_t is computed is CPI. For the other naive forecasts based on current inflation core CPI, trimmed mean CPI and median CPI are considered. For the naive forecasts based on current inflation expectations

$$\pi^x_t = \pi^{4,\mathrm{e}}_{t+4|t}$$

where $\pi^{4,\mathrm{e}}_{t+4|t}$ is either the median value of University of Michigan Survey of Consumer Attitudes and Behavior 1-year inflation expectation (UM inflation expectation) or the median value of Survey of Professional Forecasters 1-year CPI inflation expectation (SPF inflation expectation).

2. The specification is:

$$\pi^4_{t+4|t} - \pi_t = \alpha + \beta(L)(\pi_t - \pi_{t-1}) + \varepsilon_t.$$

Here, α is the constant and $\beta(L)$ is the lag polynomial operator, π_t is the annualized quarterly CPI inflation. We include the current value and the first four lags in this lag polynomial.

3.

$$\pi^4_{t+4|t} = \alpha + \gamma(L)\, p_t + \varepsilon_t$$

Here, p_t is the annualized quarterly change in the oil price. We include the current value and up to the first four lags in the lag polynomial and select the lag length according to Bayesian Information Criterion (BIC).

4. The specification is:

$$\pi^4_{t+4} - \pi_t = \alpha + \beta(L)(\pi_t - \pi_{t-1}) + \gamma(L)(p_t - p_{t-1}) + \varepsilon_t$$

We include the current value and the first four lags in this lag polynomial.

5. The specification is:

$$\pi^4_{t+4} - \pi_t = \alpha + \beta(L)(\pi_t - \pi_{t-1}) + \delta(L)\, x_t + \varepsilon_t$$

Here, x_t is the activity measure and we use the BIC with a maximum lag length of four quarters.

6. The specification is:

$$\pi_{t+4}^{4} - \pi_t = \alpha + \beta(L)(\pi_t - \pi_{t-1}) + \gamma(L)(p_t - p_{t-1}) + \delta(L)x_t + \varepsilon_t$$

We include the current value and up to the first four lags in the lag polynomials and select the lag length according to BIC.

7. Here we are using a slightly different regression than our first regression. The specification is:

$$\pi_{t+4}^{4} = \alpha + \lambda(L)\pi_t^* + \varepsilon_t$$

π_t^* is the different measure of inflation, i.e. core, trimmed mean and median CPI. We allow a maximum lag length of four quarters, with the optimal lag length chosen by the BIC.

8. The specification is:

$$\pi_{t+4}^{4} = \alpha + \lambda(L)\pi_t^* + \psi(L)p_t + \varepsilon_t$$

We allow a maximum lag length of four quarters, with the optimal lag length chosen by the BIC.

9. The regression that uses only the expectations as the explanatory variable is the following:

$$\pi_{t+4}^{4} = \alpha + \beta_0 \pi_{t+4|t}^{4,\mathrm{e}}$$

10. The specification is:

$$\pi_{t+4}^{4} = \alpha + \beta_0 \pi_{t+4|t}^{4,\mathrm{e}} + \psi(L)p_t$$

We allow a maximum lag length of four quarters, with the optimal lag length chosen by the BIC.

2 Table 2

1. The specification is:

$$\pi^4_{t+4|t} = \pi^x_t$$

Here, $\pi^4_{t+4|t}$ is the four-quarter ahead annual core CPI inflation, π^x_t is the annualized quarterly inflation. In the naive case the price level from which π^x_t is computed is core CPI. For the other naive forecasts based on current inflation, trimmed mean CPI and median CPI are considered.

2. The specification is:

$$\pi^4_{t+4|t} - \pi_t = \alpha + \beta(L)(\pi_t - \pi_{t-1}) + \varepsilon_t.$$

Here, α is the constant and $\beta(L)$ is the lag polynomial operator. We include the current value and the first four lags in this lag polynomial.

3.

$$\pi^4_{t+4|t} = \alpha + \gamma(L)\, p_t + \varepsilon_t$$

Here, p_t is the annualized quarterly change in the oil price. We include the current value and up to the first four lags in the lag polynomial and select the lag length according to BIC.

4. The specification is:

$$\pi^4_{t+4} - \pi_t = \alpha + \beta(L)(\pi_t - \pi_{t-1}) + \gamma(L)(p_t - p_{t-1}) + \varepsilon_t$$

5. The specification is:

$$\pi^4_{t+4} - \pi_t = \alpha + \beta(L)(\pi_t - \pi_{t-1}) + \delta(L)\, x_t + \varepsilon_t$$

Here, x_t is the activity measure. and we use the BIC with a maximum lag length of four quarters.

6. The specification is:

$$\pi^4_{t+4} - \pi_t = \alpha + \beta(L)(\pi_t - \pi_{t-1}) + \gamma(L)(p_t - p_{t-1}) + \delta(L)\, x_t + \varepsilon_t$$

We include the current value and up to the first four lags in this lag polynomial and select the lag length according to BIC.

7. Here we are using a slightly different regression. The specification is:

$$\pi_{t+4}^{4} = \alpha + \lambda(L)\,\pi_t^* + \varepsilon_t$$

π_t^* is the different measure of inflation, i.e. trimmed mean and median CPI. We allow a maximum lag length of four quarters, with the optimal lag length chosen by the BIC.

8. The specification is:

$$\pi_{t+4}^{4} = \alpha + \lambda(L)\,\pi_t^* + \psi(L)\,p_t + \varepsilon_t$$

We allow a maximum lag length of four quarters, with the optimal lag length chosen by the BIC.

3 Table 3

1. For the no lead variable forecast, we show the numbers from Table 1 for the specification at footnote 4. For the lead variable forecast we lead the oil variables by four periods, i.e. the specification is:

$$\pi_{t+4}^{4} - \pi_t = \alpha + \beta(L)(\pi_t - \pi_{t-1}) + \gamma(L)(p_{t+4} - p_{t+3}) + \varepsilon_t$$

   We include the current value and the first four lags of right-hand side variables in the lag polynomials.

2. For the no lead variable forecast, we show the numbers from Table 1 for the specification at footnote 6. For the lead variable forecast we lead the oil variables by four periods, i.e. the specification is:

$$\pi_{t+4}^{4} - \pi_t = \alpha + \beta(L)(\pi_t - \pi_{t-1}) + \gamma(L)(p_{t+4} - p_{t+3}) + \delta(L)x_t + \varepsilon_t$$

   We include the current value and up to the first four lags of the right-hand side variables in the lag polynomials and select the lag length according to BIC.

3. For the no lead variable forecast, we show the numbers from Table 1 for the specification at footnote 8. For the lead variable forecast we lead the oil variables by four periods, i.e. the specification is:

$$\pi_{t+4}^{4} = \alpha + \lambda(L)\pi_t^{*} + \psi(L)p_{t+4} + \varepsilon_t$$

   We allow a maximum lag length of four quarters of the right-hand side variables in the lag polynomials, with the optimal lag length chosen by the BIC.

For the no lead variable forecast, we show the numbers from Table 1 or the specification at footnote 10. For the lead variable forecast we lead the oil variables by four periods, i.e. the specification is:

$$\pi_{t+4}^{4} = \alpha + \beta_0 \pi_{t+4|t}^{4,e} + \psi(L)p_{t+4}$$

4 Table 4

1. For the no lead variable forecast, we show the numbers from Table 2 for the specification at footnote 4. For the lead variable forecast we lead the oil variables by four periods, i.e. the specification is:

$$\pi_{t+4}^{4} - \pi_t = \alpha + \beta(L)(\pi_t - \pi_{t-1}) + \gamma(L)(p_{t+4} - p_{t+3}) + \varepsilon_t$$

   We include the current value and the first four lags of right-hand side variables in the lag polynomials.

2. For the no lead variable forecast, we show the numbers from Table 2 for the specification at footnote 6. For the lead variable forecast we lead the oil variables by four periods, i.e. the specification is:

$$\pi_{t+4}^{4} - \pi_t = \alpha + \beta(L)(\pi_t - \pi_{t-1}) + \gamma(L)(p_{t+4} - p_{t+3}) + \delta(L)x_t + \varepsilon_t$$

   We include the current value and up to the first four lags of the right-hand side variables in the lag polynomials and select the lag length according to BIC.

3. For the no lead variable forecast, we show the numbers from Table 2 for the specification at footnote 8. For the lead variable forecast we lead the oil variables by four periods, i.e. the specification is:

$$\pi_{t+4}^{4} = \alpha + \lambda(L)\pi_t^* + \psi(L)p_{t+4} + \varepsilon_t$$

   We include the current value and up to the first four lags of the right-hand side variables in the lag polynomials and select the lag length according to BIC.