TECHNICAL APPENDIX TO THE CONTRIBUTION OF STRUCTURAL BREAK MODELS TO FORECASTING MACROECONOMIC SERIES

Luc Bauwens[1], Gary Koop[2], Dimitris Korobilis[3], and Jeroen V.K. Rombouts[4]

December 10, 2013

This document contains four appendices to the paper of Bauwens et al. (2014). The first three appendices contain details about the implementation of the estimation and forecasting of the structural break models named PPT and KP in the paper. These models and information about the forecasting implementation of these models is presented in Section 2 of the paper. The fourth appendix contains tables that show detailed results that are summarized and discussed in Section 4 of the paper.

[1]Université catholique de Louvain, CORE, Louvain-La-Neuve, Belgium, and University of Johannesburg, Department of Economics, Johannesburg, South Africa.

[2]University of Strathclyde, Department of Economics, Glasgow, Scotland.

[3]University of Glasgow, Department of Economics, Glasgow, Scotland.

[4]ESSEC Business School, Information Systems, Decision Sciences and Statistics Department, Cergy-Pontoise, France

This research was supported by the ESRC under grant RES-062-23-2646, and by the contracts "Projet d'Actions de Recherche Concertées" 07/12-002 and 12/17-045 of the "Communauté française de Belgique", granted by the "Académie universitaire Louvain".

Appendix A: Technical Details for PPT Approach

In this appendix, we provide information about our implementation of the PPT approach. Bauwens and Rombouts (2012) provide more details for posterior simulation and computing the marginal likelihood, which is used for choosing the number of breaks. Information about predictive aspects are in Appendix C.

The model is defined by $y_t = Z_t\beta_{s_t} + \sigma_{s_t}\varepsilon_t$ and by the break process which involves $S^T = (s_1, .., s_T)'$ where $s_t \in \{1, 2, .., K\}$ is a state variable and K is the number of in sample regimes (see Section 2 of the paper). Notice that the last regime is an absorbing state over the sample period, but PPT relax this in the forecast period.

Priors

We use priors of the form:

$$\begin{aligned}
\beta_j|\beta_0, B_0 &\sim N_m(\beta_0, B_0), \\
\beta_0 &\sim N_m(\underline{\mu}_\beta, \underline{V}_\beta), \\
B_0^{-1} &\sim Wishart\left(\underline{\xi}, \underline{B}\right), \\
\sigma_j^{-2}|\upsilon_0, d_0 &\sim Gamma(\upsilon_0, d_0), \\
\upsilon_0 &\sim Gamma(\underline{\lambda}, \underline{\rho}), \\
d_0 &\sim Gamma(\underline{c}, \underline{d}) \\
p_i &\sim Beta\left(\underline{a}, \underline{b}\right).
\end{aligned}$$

In particular, in the forecasting exercise we set $\underline{\mu}_\beta = 0$, $\underline{V}_\beta = I_m$, $\underline{B} = 10I_m$, $\underline{\xi} = m + 1$ (where m is the dimension of Z_t), $\underline{\lambda} = 1$, $\underline{\rho} = 0.1$, $\underline{c} = 1$, $\underline{d} = 0.1$, and $\underline{a} = \underline{b} = 1$. This implies that all priors are proper but little informative.

Posterior simulator

The posterior simulation algorithm is a Gibbs sampler. Given initial conditions, the data, and in each block the other parameters, the sampling is done as follows:

1. Draw S^T using Chib's (1998) algorithm.
2. Draw p_i from $Beta\left(\underline{a} + T_i, \underline{b} + 1\right)$ for $i = 1, ..., K$, where T_i is the number of observations in regime i.
3. Draw $\beta_i|\sigma_i^2$ from Normal and σ_i^2 $|\beta_i$ from Gamma, for $i = 1, 2, \ldots, K$.
4. Draw $\beta_0|B_0$ from Normal and $B_0^{-1}|\beta_0$ from Wishart.
5. Draw $d_0|\upsilon_0$ from Gamma and $\upsilon_0|d_0$ by numerical evaluation and inversion of its cdf.

Choice of the number of breaks

To choose the number of breaks, we choose a maximum number of regimes, $K^{\max}$, evaluate the marginal likelihood for $K = 1, .., K^{\max}$ and select the optimal number of regimes as the one which maximizes the marginal likelihood. However, in the context of a recursive forecasting

exercise, we want $K^{\max}$ to vary over time as the number of regimes can increase as time goes by. Accordingly, we adopt the following strategy.

Using the initial sample of observations, we calculate the optimal number of regimes as described in the preceding paragraph. Then we begin our recursive forecasting exercise. Let K_t be the number of regimes in a model using data through time t. We compute marginal likelihoods for $K_t = \{1, \ldots, K_{t-1}^* + 1\}$ where K_{t-1}^* is the optimal number of regimes at $t-1$ and select K_t^* as the value that maximizes the marginal likelihood. We do this for $t = T_0 + 1, \ldots, T - h$ where $T_0 = \alpha T$. Marginal likelihoods are calculated as described in Bauwens and Rombouts (2012), based on output from the posterior simulator.

When using AR(1) models, we allow for at most two breaks in the forecast period. This model label is PPT12. When using AR(4) models, we allow for at most one break, and the model label is PPT41. We also tried two breaks in the forecast period (PPT42), but the estimation algorithm failed for a few series, hence we chose to report the results of PPT41 for all series.

Appendix B: Technical Details for KP Approach

In this appendix, we provide information about our implementation of the KP approach. Information about predictive aspects are in Appendix C.

It is convenient to write the model equation as $y_t = Z_t\beta_{s_t} + \exp(\omega_{s_t}/2)\,\varepsilon_t$. The transition probabilities between the states are defined in equation (5) of the paper so that the last diagonal element of the transition matrix is equal to p_K rather than one as in the PPT approach.

Priors

We use priors of the form:

$$\begin{aligned}
\beta_j &\sim N_m(\beta_{j-1}, B_0) \\
\omega_j &\sim N(\omega_{j-1}, \delta) \\
\beta_0 &\sim N_m\left(0, \underline{V}_\beta\right) \\
\omega_0 &\sim N(0, \underline{V}_\omega) \\
B_0^{-1} &\sim Wishart\left(\underline{\xi}, \underline{B}\right) \\
\delta^{-1} &\sim Gamma\left(\underline{\kappa_1}, \underline{\kappa_2}\right) \\
p_i &\sim Beta\left(\underline{a}, \underline{b}\right).
\end{aligned}$$

In particular, in the forecasting exercise we set $\underline{V}_\beta = I_m$, $\underline{V}_\omega = 1$, $\underline{B} = 10I_m$, $\underline{\xi} = m+1$, $\underline{\kappa_1} = \underline{\kappa_2} = 0.5$, and $\underline{a} = \underline{b} = 1$. This implies that all priors are proper but very little informative.

Posterior simulator

The posterior simulation algorithm is a Gibbs sampler. Given initial conditions, the data, and in each block the other parameters, the sampling is done as follows:

1. Draw S^T using Chib's (1998) algorithm.
2. Draw p_i from $Beta\left(\underline{a} + T_i, \underline{b} + 1\right)$ for $i = 1, ..., K$, where T_i is the number of observations in regime i.
3. Draw $[\beta_{s_t}]_{t=1}^T$ using the modified Kalman filter algorithm (see below).
4. Draw $[\omega_{s_t}]_{t=1}^T$ using the modified Kalman filter algorithm, after writing the model in appropriate linear state space form using the Kim, Shephard and Chib (1998) algorithm.
5. Draw B_0^{-1} and δ^{-1}, conditional on the draws of β_t and ω_t, using standard expressions.

Modified Kalman filter algorithm

Consider a state-space model of the following form:

$$y_t = z_t a_{s_t} + \varepsilon_t \tag{1a}$$

$$a_j = a_{j-1} + \eta_{s_t} \tag{1b}$$

$$\varepsilon_t \sim N\left(0, \gamma_1^2\right),\ \eta_j \sim N\left(0, \gamma_2^2\right)$$

conditional on knowing s_t, where (1a) is the measurement equation and (1b) is the state equation, with observed data y_t and unobserved state a_{s_t}. If the errors ϵ_t, η_t are *iid* and uncorrelated with each other, we can use the Kalman filter to estimate the state a.

Let $a_{t|s}$ denote the expected value of a_t and $P_{t|s}$ its corresponding variance, using data up to time s. Given starting values $a_{0|0}$ and $P_{0|0}$, the Kalman filter recursions provide us with initial filtered estimates:

$$\begin{aligned} a_{t|t-1} &= a_{t-1|t-1} \\ P_{t|t-1} &= \begin{cases} P_{t-1|t-1} + \gamma_2^2 & , \text{ if } s_{t-1} \neq s_t \\ P_{t-1|t-1} & , \text{ otherwise} \end{cases} \qquad (2) \\ K_t &= P_{t|t-1} z_t' \left(z_t P_{t|t-1} z_t + \gamma_1^2 \right)^{-1} \qquad (3) \\ a_{t|t} &= a_{t|t-1} + K_t \left(y_t - z_t a_{t|t-1} \right) \\ P_{t|t} &= P_{t|t-1} - K_t z_t P_{t|t-1}. \end{aligned}$$

Once we reach the last period ($t = T$) we take the standard draw $a_{s_T} \sim N\left(a_{T|T}, P_{T|T}\right)$. If $s_T = T$ then a break occurs in each observation and we have a full tvp model, so that the Carter and Kohn smoother applies to all observations t. However with structural breaks models it will be the case that $s_T << T$ (i.e. the number of breaks is smaller than the number of observations, i.e. we do not have a full tvp model), we can only simulate a_j for $j = s_T + 1, ..., T$ (i.e. the "out-of-sample breaks" in a) using equation (1b). For $j = 1, ..., s_T$ we can use a standard smoother to get smoothed estimates. To do that, we run the backward recursions for $t = T - 1, ..., 1$:

$$\begin{aligned} a_{t|t+1} &= a_{t|t} + P_{t|t} P_{t+1|t}' \left(a_{t+1} - a_{t|t} \right), \text{ iff } s_{t+1} \neq s_t \\ P_{t|t+1} &= P_{t|t} - P_{t|t} P_{t+1|t}' P_{t|t}, \text{ iff } s_{t+1} \neq s_t \end{aligned}$$

and draw $a_{s_t} \sim N\left(a_{t|t+1}, P_{t|t+1}\right)$ iff $s_{t+1} \neq s_t$.

Choice of the number of breaks

With the KP approach, dealing with out-of-sample structural breaks is straightforward. Suppose regime j holds at the end of the estimation sample (called t) and, thus, $s_t = j$. The posterior simulation algorithm produces $\Pr\left(s_{t+1} = j | Y_t\right)$ and $\Pr\left(s_{t+1} = j + 1 | Y_t\right)$, where $Y_t = (y_1, .., y_t)'$. Furthermore, the posterior simulation algorithm provides us with draws from $p\left(\beta_j, \sigma_j | Y_t\right)$ and $p\left(\beta_{j+1}, \sigma_{j+1} | Y_t\right)$. These are the components needed to do forecasting with structural breaks.

Defining the optimal number of regimes for each sample in our recursive forecasting exercise is done in a way similar to the PPT model described previously, but without the need to compute marginal likelihoods. Using output from the posterior simulator using data through time t, we calculate the optimal number of breaks as $K_t^* = median(\Pr(s_t | data))$, i.e. the median of the posterior of the state variable of the last observation.

In particular, we run the model for $t = T_0$ (where $T_0 = 0.4T$) using a large number of breaks. Then instead of using marginal likelihoods to estimate the optimal number of breaks at time T_0, we just use the estimate $K_{T_0}^* = median(\Pr(s_{T_0} | data))$. In the next period ($t = T_0 + 1$) we estimate the KP model with K_{T_0+1} breaks and forecast, where we define $K_{T_0+1} = K_{T_0}^* + 1$. From the Gibbs sampler output we estimate $K_{T_0+1}^* = median(\Pr(s_{T_0+1} | data))$. Then we increase the observations by one ($t = T_0 + 2$) and set $K_{T_0+2} = K_{T_0+1}^* + 1$ and so on.

In words, with number of observations t we always allow for one more break than the optimal number of breaks estimated in the previous sample $t-1$. However, when we set the number of breaks using the formula $K_t = K_{t-1}^* + 1$, this doesn't necessarily mean that we forecast with exactly $K_{t-1}^* + 1$ breaks at time t. This is the maximum number of breaks. This implies that it might be the case $K_t^* = K_{t-1}^*$ so that the number of regimes we use to forecast hasn't changed. Therefore, as we progress at time $t+1$ we set $K_{t+1} = K_t^* + 1 = K_{t-1}^* + 1$. Nevertheless, if the optimal number of estimated regimes at time t has actually changed to $K_t^* = K_{t-1}^* + 1$ (we discovered an additional break), then we ought to set at time $t+1$ a maximum number of regimes $K_{t+1} = K_t^* + 1 = K_{t-1}^* + 2$.

In the recursive forecasting setting, we repeat this procedure for $t = T_0 + 1, \ldots, T - h$.

Appendix C: Predictive Simulator for PPT and KP models

Forecasting with no breaks out-of-sample (PPT model)

Since the PPT model implies that observations following T (the last sample date) are generated from $y_{T+h}|Y_{T+h-1}, \theta_K$ where $\theta_K = (\beta_K, \sigma_K^2)$, i.e. under the last operating regime, we can compute predictive densities as follows:

$$\begin{array}{l} p(y_{T+h}|s_{T+h} = K, s_T = K, Y_T) = \int \ldots \int \prod_{j=0}^{h-1} p(y_{T+h-j}|Y_{T+h-1-j}, \theta_K) \\ p(\theta_K|\theta_0, S_T, Y_T)\, p(\theta_0|S_T, Y_T, \underline{A})\, p(S_T|Y_T)\, dy_{T+h-1} \ldots dy_{T+1} d\theta_K d\theta_0 dS_{T-1}, \end{array} \tag{4}$$

where the integration is done with respect to S_{T-1} rather than S_T since $s_T = K$. This is implemented by simulation within the Gibbs sampler for the posterior density: for each Gibbs draw of θ_K, θ_0 and S_{T-1}, we generate sequentially future values $y_{T+1}, \ldots, y_{T+h}$, each from $y_{T+h-j} \sim p(y_{T+h-j}|Y_{T+h-1-j}, \theta_K)$, and we keep y_{T+h} as a draw of the corresponding predictive density $p(y_{T+h}|s_{T+h} = K, s_T = K, Y_T)$. Doing this for e.g. $h = 4$ provides also the draws of the predictive densities for $h \leq 4$.

Forecasting with breaks out-of-sample (PPT & KP models)

The previous discussion does not allow for a break to occur in the forecast period. In order to allow in the PPT for the possibility of occurrence of one new regime after T, we lift the restriction $p_K = 1$ (something already done in the KP model) and extend the transition matrix to

$$\begin{pmatrix} p_1 & 1-p_1 & 0 & \ldots & 0 & 0 & 0 \\ 0 & p_2 & 1-p_2 & \ldots & 0 & 0 & 0 \\ \vdots & \vdots & \vdots & \vdots & \vdots & \vdots & \vdots \\ 0 & 0 & 0 & \ldots & p_{K-1} & 1-p_{K-1} & 0 \\ 0 & 0 & 0 & \ldots & 0 & p_K & 1-p_K \\ 0 & 0 & 0 & \ldots & 0 & 0 & 1 \end{pmatrix}.$$

Additional regimes can be added by extending further the transition matrix, but here we consider the predictive density subject to one break occurring after date T. Assume that the break occurs at date $T + d$ where d can take any value in the set $\{1, 2, \ldots, h\}$. For the predictive simulation of y_{T+h} with $h < d$ (the no-post-sample break case), we proceed as above. For $h \geq d$, the break occurrence implies that $y_{T+h} \sim p(y_{T+h}|Y_{T+h-1}, \theta_{K+1})$ where θ_{K+1} is the parameter characterizing the new regime, and is drawn from its hierarchical prior density $p(\theta_{K+1}|\theta_0)$. The observed sample does not provide information about θ_{K+1} and thus does not directly update this prior, but it does so indirectly by updating the prior information about θ_0 since this is drawn from its posterior distribution in the Gibbs sampler.

Assume first that $h = d = 1$. Then, given θ_0 (drawn in the Gibbs sampler), θ_{K+1} is drawn from $p(\theta_{K+1}|\theta_0)$ and given this draw, y_{T+1} is drawn from $p(y_{T+1}|Y_T, \theta_{K+1})$. This procedure is repeated at each iteration of the Gibbs sampler and delivers a sample of draws from the predictive density $p(y_{T+1}|s_{T+1} = K + 1, s_T = K, Y_T)$.

Next assume that $h = 2$ and $d = 1$: y_{T+1} is simulated as explained just above, and y_{T+2} is drawn from $p(y_{T+2}|y_{T+1}, Y_T, \theta_{K+1})$ where y_{T+1} is set at its simulated value and θ_{K+1} is maintained to be the value used for drawing this y_{T+1}. For h larger than 2, one proceeds sequentially in the same way, i.e. freezing θ_{K+1} and using the simulated lagged values y_{T+h-j} $(j = 1, 2, \ldots, h-1)$ in the conditioning of $p(y_{T+h}|Y_{T+h-1}, \theta_{K+1})$.

Finally if $h \geq d \geq 1$, the values y_{T+j} for $j = 1, 2, \ldots, d-1$ are sequentially simulated as in the no-post-sample break case. Then for $j = d$, θ_{K+1} is drawn from $p(\theta_{K+1}|\theta_0)$ and given this draw, y_{T+j} for $j = d, d+1, \ldots, h$ are drawn sequentially. The next formula validates this simulation procedure for known break date $|\tau_K$ equal to $T + d$:

$$\begin{array}{l} p(y_{T+h}|\tau_K = T+d, s_{T+h} = K+1, s_T = K, Y_T) = \\ \int \ldots \int \prod_{j=0}^{h-1} p(y_{T+h-j}|Y_{T+h-1-j}, \theta_{K+1} 1_{\{h \geq d\}} + \theta_K 1_{\{h<d\}}) \\ p(\theta_{K+1}|\theta_0, S_T, Y_T)\, p(\theta_K|\theta_0, S_T, Y_T)\, p(\theta_0|S_T, Y_T, \underline{A})\, p(S_T|Y_T) \\ dy_{T+h-1} \ldots dy_{T+1} d\theta_{K+1} d\theta_K d\theta_0 dS_{T-1} \end{array} \tag{5}$$

where $1_{\{h \geq d\}}$ is equal to 1 if $h \geq d$ and 0 otherwise, and $1_{\{h<d\}} = 1 - 1_{\{h \geq d\}}$. To marginalize this density with respect to the break date d, we sum over all values of d as follows: $p(y_{T+h}|s_{T+h} = K+1, s_T = K, Y_T) =$

$$\begin{array}{l} \sum_{d=1}^{h} p(y_{T+h}|\tau_K = T+d, s_{T+h} = K+1, s_T = K, Y_T) \\ \qquad \times \Pr[\tau_K = T+d|s_{T+h} = K+1, s_T = K, Y_T] \end{array} \tag{6}$$

with $\Pr[\tau_K = T+d|s_{T+h} = K+1, s_T = K, Y_T] = p_K^{d-1}(1-p_K)/(1-p_K^h)$. Finally, we can integrate $p(y_{T+h}|s_{T+h}, s_T = K, Y_T)$ with respect to the number of post-sample breaks (0 or 1): $p(y_{T+h}|s_T = K, Y_T) =$

$$\begin{array}{l} p(y_{T+h}|s_{T+h} = K, s_T = K, Y_T) p(s_{T+h} = K|s_T = K, Y_T) \\ p(y_{T+h}|s_{T+h} = K+1, s_T = K, Y_T)[1 - p(s_{T+h} = K|s_T = K, Y_T)] \end{array} \tag{7}$$

where $p(s_{T+h} = K|s_T = K, Y_T) = p_{KK}^h$. This is simulated by drawing s_{T+h} from its discrete distribution, and then y_{T+h} from (4) if $s_{T+h} = K$ and from (6) if $s_{T+h} = K+1$. To sample the discrete distribution, we need a value of p_K. This is simulated in the Gibbs sampler from its full conditional posterior density, which is Beta$(\underline{a} + T_K, \underline{b} + 1)$, where T_K is the number of observations in regime K according to the sampled S_T vector.

As an example, to implement the simulation of y_{T+1}, we substitute (4), (6) and (5) in (7) and obtain $p(y_{T+1}|s_T = K, Y_T) =$

$$\begin{array}{l} p_K \int \ldots \int p(y_{T+1}|Y_T, \theta_K)\, p(\theta_K|\theta_0, S_T, Y_T)\, p(\theta_0|S_T, Y_T, \underline{A})\, p(S_T|Y_T) \\ \qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad d\theta_K d\theta_0 dS_{T-1} \\ +(1-p_K) \int \ldots \int p(y_{T+1}|Y_T, \theta_{K+1})\, p(\theta_{K+1}|\theta_0, S_T, Y_T)\, p(\theta_K|\theta_0, S_T, Y_T) \\ \qquad\qquad\qquad\qquad p(\theta_0|S_T, Y_T, \underline{A}) p(S_T|Y_T)\, d\theta_{K+1} d\theta_K d\theta_0 dS_{T-1}. \end{array}$$

This formula shows that the simulation for one predictive draw in the KP model, and the PPT model with the possibility of breaks occurring out-of-sample, is performed as follows:

1. Draw S_T, θ_0 and θ_K from the posterior (i.e. use a draw of the Gibbs sampler once it has converged).
2. Draw $p_K \sim Beta(\underline{a} + T_K, \underline{b} + 1)$.
3. Draw $s_{T+1} = K$ or $K+1$ with respective probabilities $(p_K, 1-p_K)$.
4. If $s_{T+1} = K$, draw $y_{T+1} \sim p(y_{T+1}|Y_T, \theta_K)$. If $s_{T+1} = K+1$, draw $\theta_{K+1} \sim p(\theta_{K+1}|\theta_0, S_T, Y_T)$ and $y_{T+1} \sim p(y_{T+1}|Y_T, \theta_{K+1})$.

If this is repeated as many times as one iterates in the Gibbs sampler, one obtains as many draws of the predictive of y_{T+1}. Generalizing this algorithm to $h \geq 2$ is not difficult but requires lengthy formulas.

Appendix D: Additional Tables

These tables are providing detailed results on which tables and comments in the paper are based. For each series in Table 1 of the paper, we provide in the following tables the RMSE (Tables 1-4) and APL (Tables 17-20) values obtained from the recursive forecasting exercise described in Section 4 of the paper.

Tables 5-12 (respectively 21-28) provide the detailed results about Question 2 for RMSE (respectively APL) results. Tables 13-16 (respectively 29-32) provide the detailed results about Question 3.

Table 1: Root mean squared errors at horizon 1 on last sixty percent of sample (quarterly data)

	Series	PPT12	PPT41	KP1	KP4	GK1P	GK4P	GK1B	GK4B	TVP1	TVP4	RO140	RO120	RO440	RO420	RE1	RE4	UCSV
1	GDPC96	0.719	0.725	0.733	0.724	0.722	0.722	0.726	0.727	0.778	0.775	0.744	0.785	0.761	0.947	0.730	0.726	0.782
2	PINCOME	0.886	0.918	0.888	0.971	0.873	0.871	0.853	0.870	0.923	0.906	0.903	0.904	0.871	1.120	0.890	0.885	0.918
3	PCECC96	0.609	0.586	0.601	0.655	0.604	0.590	0.603	0.592	0.601	0.594	0.602	0.655	0.625	0.807	0.609	0.595	0.634
4	PCECTPI	0.382	0.383	0.376	0.382	0.361	0.365	0.445	0.490	0.364	0.356	0.372	0.398	0.365	0.489	0.385	0.373	0.478
5	GPDIC96	1.050	1.060	1.040	1.050	1.060	1.070	1.060	1.070	1.060	1.350	1.050	1.110	1.110	1.210	1.060	1.070	1.080
6	OPHPBS	0.716	0.702	0.719	0.710	0.714	0.713	0.715	0.705	0.728	0.722	0.745	0.741	0.778	0.831	0.717	0.706	0.716
7	IMPGSC96	0.644	0.660	0.635	0.658	0.669	0.665	0.689	0.696	0.677	0.741	0.641	0.708	0.698	0.848	0.693	0.700	0.677
8	EXPGSC96	0.586	0.590	0.576	0.595	0.633	0.606	0.673	0.677	0.583	0.612	0.548	0.585	0.552	0.715	0.696	0.700	0.562
9	CBIC96	0.879	0.900	0.926	0.962	0.948	0.960	0.921	0.918	0.886	0.896	0.897	0.954	0.917	1.100	0.876	0.881	0.910
10	GCEC96	0.863	0.839	0.861	0.842	0.858	0.842	0.859	0.836	0.985	0.919	0.891	0.894	0.896	0.978	0.861	0.841	0.850
11	WASCUR	0.722	0.717	0.726	0.730	0.721	0.707	0.703	0.702	0.717	0.736	0.740	0.818	0.773	0.964	0.725	0.721	0.848
12	DIVIDEND	0.972	1.150	0.983	1.460	0.919	0.948	0.942	0.967	1.130	1.360	1.070	1.130	2.260	2.750	0.949	1.000	0.937
13	PSAVE	0.516	0.573	0.541	0.573	0.501	0.497	0.499	0.500	0.510	0.539	0.529	0.542	0.566	0.686	0.511	0.521	0.516
14	DPIC96	0.883	0.886	0.900	0.931	0.872	0.861	0.864	0.878	0.880	0.916	0.907	0.918	0.965	1.090	0.883	0.891	0.862
15	GDPDEF	0.229	0.222	0.229	0.221	0.237	0.228	0.426	0.427	0.231	0.219	0.248	0.251	0.238	0.291	0.235	0.223	0.414
16	ULCNFB	0.991	0.938	0.942	0.944	0.931	0.903	0.980	0.918	0.990	0.983	0.963	0.984	0.955	1.100	1.020	0.946	0.962
17	PRFI	0.926	0.966	0.919	0.960	0.932	0.942	0.943	0.966	1.100	1.180	0.958	1.020	1.030	1.380	0.934	0.959	1.170
18	GSAVE	0.992	0.983	0.996	0.983	0.990	0.977	0.989	0.979	1.030	0.995	1.010	1.070	0.985	1.080	0.990	0.985	1.010
19	CPIAUCSL	0.579	0.582	0.542	0.591	0.564	0.571	0.581	0.636	0.550	0.542	0.566	0.620	0.564	0.724	0.585	0.562	0.535
20	FEDFUNDS	0.243	0.304	0.244	0.285	0.258	0.294	0.280	0.246	0.248	0.284	0.248	0.273	0.306	0.435	0.245	0.293	0.333
21	BOGNONBR	0.501	0.551	0.514	1.070	0.537	0.633	0.533	0.634	1.030	1.020	0.579	0.638	1.340	1.430	0.568	1.290	0.518
22	M2SL	0.760	0.815	0.745	0.744	0.740	0.745	0.773	0.738	0.742	0.748	0.763	0.742	0.757	0.857	0.745	0.748	0.733
23	INDPRO	0.281	0.272	0.296	0.282	0.299	0.293	0.301	0.286	0.283	0.275	0.286	0.306	0.291	0.376	0.292	0.276	0.317
24	UTL11	0.081	0.060	0.077	0.061	0.074	0.090	0.068	0.088	0.071	0.059	0.079	0.090	0.061	0.085	0.076	0.061	0.150
25	UNRATE	0.092	0.064	0.088	0.065	0.073	0.084	0.103	0.122	0.082	0.066	0.087	0.101	0.071	0.093	0.085	0.065	0.183
26	HOUST	0.084	0.081	0.084	0.082	0.091	0.102	0.081	0.094	0.081	0.082	0.086	0.090	0.085	0.108	0.084	0.082	0.148
27	PPIFCG	1.340	1.340	1.350	1.530	1.310	1.330	1.300	1.300	1.610	1.560	1.330	1.400	1.340	1.660	1.330	1.340	1.460
28	AHEMAN	0.492	0.426	0.475	0.419	0.470	0.411	0.469	0.424	0.452	0.417	0.464	0.458	0.437	0.496	0.527	0.427	0.444
29	M1SL	1.200	1.250	1.210	1.220	1.210	1.250	1.250	1.250	1.220	1.350	1.240	1.380	1.320	1.620	1.200	1.210	1.240
30	PMCP	0.089	0.085	0.088	0.081	0.096	0.107	0.460	0.463	0.087	0.079	0.088	0.092	0.083	0.106	0.088	0.081	0.114
31	SP500	0.160	0.163	0.160	0.168	0.164	0.163	0.163	0.163	0.160	0.165	0.161	0.173	0.176	0.256	0.159	0.163	0.166
32	GS10	0.157	0.156	0.145	0.145	0.166	0.170	0.172	0.153	0.139	0.140	0.149	0.158	0.157	0.190	0.143	0.147	0.209
33	EXUSUK	1.170	1.180	1.170	1.180	1.170	1.180	1.170	1.170	1.170	1.490	1.200	1.280	1.230	1.590	1.170	1.180	1.300
34	PAYEMS	0.271	0.261	0.275	0.264	0.290	0.288	0.324	0.308	0.270	0.262	0.273	0.310	0.277	0.372	0.275	0.266	0.370
35	NAPMNOI	0.054	0.053	0.054	0.053	0.055	0.089	0.427	0.433	0.054	0.053	0.056	0.065	0.059	0.092	0.054	0.054	0.064
36	TB3MS	0.216	0.220	0.211	0.213	0.231	0.223	0.255	0.221	0.214	0.207	0.219	0.236	0.223	0.293	0.213	0.216	0.292
37	BUSLOANS	0.355	0.373	0.362	0.387	0.368	0.396	0.397	0.395	0.349	0.368	0.358	0.402	0.391	0.528	0.349	0.368	0.425
38	TOTALSL	0.168	0.171	0.167	0.169	0.166	0.184	0.320	0.315	0.167	0.169	0.173	0.186	0.182	0.211	0.168	0.170	0.219
39	AAA	0.115	0.129	0.112	0.117	0.122	0.139	0.108	0.125	0.108	0.114	0.117	0.128	0.127	0.167	0.111	0.120	0.177

See Table 1 of the paper for model definitions.

Table 2: Root mean squared errors at horizon 4 on last sixty percent of sample (quarterly data)

	Series	PPT12	PPT41	KP1	KP4	GK1P	GK4P	GK1B	GK4B	TVP1	TVP4	RO140	RO120	RO440	RO420	RE1	RE4	UCSV
1	GDPC96	0.754	0.766	0.757	0.754	0.741	0.740	0.741	0.739	0.831	0.780	0.773	0.865	0.836	1.740	0.761	0.755	0.743
2	PINCOME	0.997	1.010	0.946	1.120	0.933	0.946	0.909	0.940	1.110	0.957	0.951	1.090	0.956	1.780	1.010	1.000	0.877
3	PCECC96	0.599	0.578	0.603	0.622	0.590	0.589	0.585	0.582	0.594	0.590	0.615	0.659	0.638	1.200	0.603	0.588	0.584
4	PCECTPI	0.445	0.453	0.418	0.438	0.407	0.419	0.598	0.611	0.404	0.411	0.446	0.429	0.429	0.522	0.450	0.444	0.414
5	GPDIC96	1.040	1.040	1.050	1.070	1.040	1.030	1.040	1.030	1.210	2.420	1.090	1.410	1.270	2.000	1.040	1.040	1.040
6	OPHPBS	0.698	0.701	0.698	0.702	0.703	0.710	0.702	0.704	0.712	0.715	0.716	0.737	0.721	0.767	0.701	0.700	0.705
7	IMPGSC96	0.634	0.653	0.637	0.650	0.622	0.623	0.626	0.628	0.957	2.530	0.705	1.120	0.762	2.200	0.621	0.625	0.622
8	EXPGSC96	0.583	0.582	0.591	0.595	0.576	0.580	0.578	0.596	0.623	0.905	0.616	0.687	0.620	1.420	0.581	0.589	0.761
9	CBIC96	1.290	1.560	1.420	1.390	1.270	1.300	1.280	1.300	1.400	1.540	1.440	2.020	1.520	3.060	1.290	1.320	1.630
10	GCEC96	0.843	0.842	0.849	0.841	0.849	0.836	0.844	0.831	0.924	0.889	0.892	0.870	0.871	0.918	0.848	0.838	0.850
11	WASCUR	0.911	0.876	0.893	0.957	0.852	0.843	0.830	0.835	0.859	0.862	0.863	0.973	0.893	2.000	0.927	0.885	0.835
12	DIVIDEND	0.951	1.110	0.971	1.170	0.986	0.971	0.961	0.953	1.350	1.020	1.010	1.140	12.90	13.90	0.944	0.947	0.948
13	PSAVE	0.532	0.863	0.534	0.882	0.525	0.527	0.524	0.526	0.528	0.630	0.554	0.575	0.770	1.440	0.529	0.551	0.523
14	DPIC96	0.858	0.857	0.872	0.891	0.841	0.848	0.840	0.839	0.855	0.883	0.854	0.860	0.905	1.450	0.864	0.864	0.841
15	GDPDEF	0.300	0.307	0.286	0.304	0.319	0.311	0.598	0.477	0.290	0.302	0.366	0.338	0.330	0.404	0.315	0.312	0.334
16	ULCNFB	0.952	0.969	0.980	1.010	0.951	0.908	0.942	0.919	1.040	1.080	0.997	0.994	1.020	1.280	1.000	0.971	0.936
17	PRFI	1.030	1.080	1.070	1.120	1.060	1.090	1.060	1.090	1.290	2.890	1.080	1.150	1.170	1.710	1.070	1.110	1.090
18	GSAVE	1.010	1.020	1.010	1.020	1.000	1.000	1.000	1.010	1.060	1.060	1.020	1.100	1.090	1.220	1.010	1.020	1.000
19	CPIAUCSL	0.597	0.657	0.601	0.645	0.620	0.674	0.684	0.754	0.586	0.618	0.629	0.659	0.630	0.782	0.634	0.635	0.632
20	FEDFUNDS	0.508	0.612	0.493	0.545	0.560	0.642	0.558	0.587	0.531	0.558	0.527	0.641	0.607	0.849	0.523	0.569	0.578
21	BOGNONBR	0.640	0.700	0.651	2.080	0.632	0.700	0.631	0.695	84.10	2.130	3.930	72.80	4.730	233.0	1.380	2.960	0.618
22	M2SL	0.893	1.210	0.887	0.901	0.846	0.840	0.967	0.928	0.843	0.858	0.895	0.842	0.868	0.935	0.891	0.905	0.845
23	INDPRO	0.356	0.349	0.394	0.348	0.336	0.336	0.334	0.332	0.359	0.357	0.413	0.590	0.377	0.967	0.344	0.341	0.417
24	UTL11	0.250	0.245	0.218	0.210	0.317	0.344	0.240	0.261	0.219	0.197	0.246	0.415	0.224	0.688	0.219	0.211	0.253
25	UNRATE	0.311	0.232	0.284	0.232	0.250	0.317	0.300	0.316	0.280	0.248	0.314	0.518	0.284	0.644	0.276	0.231	0.338
26	HOUST	0.209	0.220	0.210	0.228	0.393	0.319	0.232	0.225	0.208	0.214	0.273	0.292	0.269	0.357	0.210	0.229	0.254
27	PPIFCG	1.430	1.490	1.460	1.510	1.390	1.410	1.330	1.380	1.700	1.740	1.450	1.450	1.450	1.630	1.380	1.460	1.770
28	AHEMAN	0.575	0.432	0.543	0.429	0.495	0.433	0.433	0.393	0.473	0.436	0.541	0.482	0.440	0.476	0.636	0.438	0.426
29	M1SL	1.550	1.610	1.550	1.560	1.610	1.670	1.600	1.590	1.670	2.240	1.530	4.020	1.630	6.370	1.530	1.550	1.670
30	PMCP	0.170	0.159	0.166	0.159	0.211	0.214	0.577	0.570	0.172	0.159	0.167	0.187	0.163	0.211	0.164	0.159	0.167
31	SP500	0.173	0.172	0.168	0.169	0.170	0.168	0.171	0.169	0.169	0.173	0.172	0.190	0.183	0.481	0.168	0.169	0.180
32	GS10	0.372	0.419	0.359	0.380	0.349	0.851	0.359	0.344	0.355	0.371	0.383	0.449	0.453	0.521	0.366	0.391	0.359
33	EXUSUK	1.220	1.230	1.220	1.240	1.210	1.230	1.220	1.220	1.230	1.430	1.230	1.310	1.280	2.140	1.220	1.240	1.430
34	PAYEMS	0.520	0.516	0.538	0.518	0.505	0.516	0.514	0.525	0.520	0.527	0.584	0.900	0.572	1.550	0.509	0.529	0.597
35	NAPMNOI	0.079	0.077	0.079	0.077	0.116	0.136	0.519	0.512	0.088	0.082	0.087	0.149	0.087	0.229	0.079	0.077	0.090
36	TB3MS	0.460	0.507	0.443	0.480	0.480	0.514	0.544	0.501	0.465	0.489	0.475	0.562	0.527	0.733	0.466	0.489	0.514
37	BUSLOANS	0.584	0.601	0.612	0.607	0.586	0.586	0.574	0.571	0.569	0.582	0.603	0.682	0.632	1.060	0.571	0.575	0.675
38	TOTALSL	0.277	0.286	0.272	0.281	0.279	0.322	0.460	0.474	0.271	0.274	0.293	0.337	0.301	0.409	0.276	0.288	0.319
39	AAA	0.307	0.360	0.290	0.313	0.282	0.503	0.272	0.267	0.292	0.314	0.333	0.457	0.383	0.482	0.301	0.322	0.307

See Table 1 of the paper for model definitions.

Table 3: Root mean squared errors at horizon 1 on last sixty percent of sample (monthly data)

Series	PPT12	PPT41	KP1	KP4	GK1P	GK4P	GK1B	GK4B	TVP1	TVP4	RO110Y	RO15Y	RO13Y	RO410Y	RO45Y	RO43Y	RE1	RE4	UCSV
CPIAUCSL	0.252	0.264	0.251	0.277	0.249	0.261	0.277	0.289	0.249	0.251	0.253	0.252	0.257	0.256	0.262	0.275	0.252	0.264	0.259
FEDFUNDS	0.063	0.064	0.066	0.060	0.063	0.076	0.110	0.144	0.062	0.059	0.063	0.065	0.066	0.062	0.075	0.083	0.063	0.060	0.094
BOGNONBR	0.307	0.338	0.337	0.325	0.337	0.323	0.334	0.325	0.500	0.615	0.403	0.410	0.417	0.750	0.854	0.865	0.400	0.735	0.312
M2SL	0.346	0.373	0.341	0.352	0.341	0.350	0.417	0.416	0.338	0.337	0.344	0.340	0.341	0.336	0.346	0.356	0.349	0.345	0.342
INDPRO	0.681	0.658	0.693	0.690	0.677	0.654	0.678	0.669	0.700	0.703	0.690	0.709	0.736	0.671	0.697	0.755	0.684	0.675	0.685
UTL11	0.061	0.053	0.059	0.054	0.057	0.066	0.055	0.065	0.055	0.054	0.059	0.063	0.064	0.053	0.057	0.062	0.059	0.055	0.119
UNRATE	0.018	0.017	0.018	0.017	0.020	0.026	0.065	0.041	0.017	0.017	0.018	0.019	0.019	0.017	0.018	0.018	0.018	0.017	0.039
HOUST	0.079	0.075	0.079	0.075	0.086	0.094	0.088	0.085	0.081	0.076	0.079	0.082	0.082	0.077	0.081	0.083	0.079	0.075	0.093
PPIFCG	0.720	0.749	0.729	0.752	0.712	0.716	0.711	0.722	0.725	0.746	0.729	0.727	0.738	0.751	0.761	0.796	0.715	0.729	0.753
AHEMAN	0.450	0.437	0.448	0.441	0.450	0.440	0.448	0.438	0.439	0.427	0.463	0.452	0.451	0.437	0.440	0.452	0.476	0.453	0.456
M1SL	0.808	0.850	0.816	0.889	0.798	0.782	0.816	0.798	0.819	0.887	0.838	0.839	0.853	0.839	0.939	1.010	0.814	0.792	0.836
PMCP	0.050	0.048	0.051	0.048	0.053	0.059	0.070	0.066	0.050	0.048	0.050	0.051	0.052	0.048	0.050	0.052	0.050	0.048	0.403
SP500	0.370	0.373	0.371	0.378	0.370	0.370	0.369	0.368	0.370	0.373	0.370	0.376	0.379	0.376	0.388	0.399	0.367	0.368	0.381
GS10	0.036	0.036	0.036	0.032	0.046	0.053	0.068	0.063	0.034	0.032	0.035	0.035	0.036	0.033	0.035	0.036	0.034	0.032	0.056
EXUSUK	0.240	0.240	0.241	0.245	0.243	0.243	0.242	0.241	0.242	0.244	0.242	0.244	0.249	0.244	0.256	0.270	0.240	0.240	0.255
PAYEMS	0.150	0.132	0.148	0.132	0.158	0.143	0.169	0.155	0.148	0.132	0.150	0.154	0.154	0.136	0.142	0.152	0.158	0.134	0.138
NAPMNOI	0.038	0.038	0.038	0.038	0.042	0.049	0.172	0.159	0.039	0.039	0.038	0.039	0.040	0.039	0.042	0.043	0.038	0.038	0.050
TB3MS	0.054	0.053	0.657	0.049	0.055	0.066	0.147	0.147	0.052	0.050	0.053	0.054	0.054	0.051	0.057	0.061	0.052	0.050	0.081
BUSLOANS	0.681	0.709	0.671	0.645	0.676	0.648	0.680	0.655	0.670	0.650	0.675	0.699	0.695	0.662	0.704	0.735	0.670	0.643	0.637
TOTALSL	0.367	0.328	0.678	0.355	0.367	0.332	0.409	0.391	0.362	0.330	0.371	0.379	0.382	0.334	0.356	0.367	0.373	0.327	0.329
AAA	0.029	0.028	0.446	0.026	0.039	0.047	0.064	0.051	0.027	0.026	0.028	0.029	0.029	0.027	0.028	0.029	0.028	0.026	0.045

See Table 1 of the paper for model definitions.

Table 4: Root mean squared errors at horizon 12 on last sixty percent of sample (monthly data)

Series	PPT12	PPT41	KP1	KP4	GK1P	GK4P	GK1B	GK4B	TVP1	TVP4	RO110Y	RO15Y	RO13Y	RO410Y	RO45Y	RO43Y	RE1	RE4	UCSV
CPIAUCSL	0.292	0.293	0.306	0.310	0.298	0.291	0.314	0.331	0.299	0.296	0.305	0.305	0.307	0.300	0.306	0.317	0.298	0.298	0.310
FEDFUNDS	0.216	0.424	0.221	0.218	0.322	0.326	0.305	0.300	0.220	0.239	0.235	0.304	0.303	0.231	0.295	0.470	0.229	0.235	0.227
BOGNONBR	0.336	0.340	0.352	0.380	0.336	0.333	0.333	0.333	29.90	382.0	4.100	7.690	9.710	66.00	180.0	3400.	3.980	64.10	0.355
M2SL	0.409	1.910	0.416	0.448	0.382	0.383	0.526	0.537	0.383	0.380	0.404	0.388	0.381	0.401	0.386	0.375	0.407	0.403	0.395
INDPRO	0.686	0.696	0.718	1.000	0.681	0.677	0.678	0.676	0.784	0.779	0.690	0.715	0.744	0.716	0.812	6.200	0.686	0.685	0.855
UTL11	0.432	0.414	0.359	0.342	0.815	0.617	0.602	0.442	0.376	0.358	0.408	0.654	1.370	0.360	0.548	1.360	0.359	0.344	0.394
UNRATE	0.116	0.102	0.115	0.102	0.288	4.930	0.162	0.138	0.114	0.114	0.131	0.200	0.226	0.107	0.167	0.233	0.112	0.102	0.127
HOUST	0.243	0.225	0.245	0.223	0.506	0.498	0.341	0.288	0.231	0.228	0.275	0.298	0.281	0.296	0.316	0.412	0.247	0.223	0.239
PPIFCG	0.756	0.767	0.756	0.806	0.738	0.737	0.735	0.734	0.757	0.756	0.764	0.767	0.768	0.763	0.760	0.791	0.741	0.742	0.881
AHEMAN	0.460	0.459	0.459	0.463	0.442	0.444	0.452	0.451	0.448	0.449	0.469	0.458	0.451	0.464	0.454	0.449	0.475	0.474	0.447
M1SL	0.831	1.180	0.825	2.800	0.853	0.848	0.843	0.846	0.838	1.870	0.831	0.844	0.849	0.827	2.750	8.000	0.828	0.827	0.839
PMCP	0.173	0.162	0.179	0.162	0.389	0.252	0.163	0.185	0.191	0.183	0.176	0.196	0.239	0.163	0.175	0.232	0.169	0.161	0.401
SP500	0.379	0.385	0.381	0.398	0.378	0.379	0.380	0.381	0.381	0.382	0.380	0.387	0.388	0.380	0.393	0.423	0.378	0.379	0.378
GS10	0.143	0.231	0.150	0.152	0.147	0.661	0.177	0.174	0.144	0.150	0.158	0.190	0.202	0.164	0.190	0.188	0.150	0.152	0.142
EXUSUK	0.256	0.257	0.258	0.287	0.255	0.255	0.256	0.255	0.258	0.260	0.256	0.262	0.263	0.256	0.268	0.897	0.256	0.255	0.281
PAYEMS	0.209	0.204	0.225	0.214	0.202	0.202	0.196	0.202	0.206	0.226	0.201	0.229	0.282	0.214	0.333	0.385	0.212	0.202	0.231
NAPMNOI	0.081	0.080	0.080	0.079	1.160	1.400	0.233	0.214	0.097	0.102	0.087	0.110	0.160	0.084	0.136	0.204	0.081	0.079	0.105
TB3MS	0.200	0.275	0.547	0.187	0.220	0.307	0.306	0.286	0.188	0.204	0.202	0.248	0.252	0.197	0.241	1.450	0.196	0.195	0.201
BUSLOANS	0.955	2.420	0.994	0.967	0.959	0.916	0.895	0.891	0.991	0.953	0.932	1.020	1.040	0.941	1.040	1.080	0.947	0.922	1.030
TOTALSL	0.489	0.465	0.588	0.465	0.483	0.473	0.537	0.599	0.491	0.465	0.508	0.520	0.549	0.473	0.528	0.727	0.523	0.460	0.484
AAA	0.123	0.329	0.320	0.126	0.169	36.400	0.153	0.138	0.126	0.131	0.142	0.225	0.225	0.146	0.212	0.204	0.125	0.126	0.117

See Table 1 of the paper for model definitions.

Table 5: RMSE ($h = 1$) relative performance of AR(1) break models on last sixty percent of sample (quarterly data)

	Series	$\frac{PPT12}{KP1}$	$\frac{PPT12}{GK1P}$	$\frac{PPT12}{GK1B}$	$\frac{PPT12}{TVP1}$	$\frac{KP1}{GK1P}$	$\frac{KP1}{GK1B}$	$\frac{KP1}{TVP1}$	$\frac{GK1P}{GK1B}$	$\frac{GK1P}{TVP1}$	$\frac{GK1B}{TVP1}$
1	GDPC96	-1.93	-0.436	-1	-7.64	1.52	0.944	-5.83	-0.567	-7.24	-6.71
2	PINCOME	-0.249	1.49	3.84	-4.03	1.74	4.1	-3.79	2.32	-5.44	-7.58
3	PCECC96	1.33	0.802	1.08	1.46	-0.516	-0.244	0.132	0.274	0.652	0.377
4	PCECTPI	1.61	5.88	-14.1	4.97	4.2	-15.4	3.31	-18.8	-0.858	22.1
5	GPDIC96	0.447	-0.809	-0.633	-0.925	-1.25	-1.08	-1.37	0.178	-0.117	-0.294
6	OPHPBS	-0.3	0.366	0.261	-1.64	0.668	0.563	-1.35	-0.104	-2	-1.9
7	IMPGSC96	1.51	-3.74	-6.53	-4.88	-5.17	-7.92	-6.29	-2.9	-1.18	1.76
8	EXPGSC96	1.71	-7.46	-12.9	0.526	-9.01	-14.4	-1.17	-5.92	8.63	15.5
9	CBIC96	-5.04	-7.22	-4.5	-0.788	-2.3	0.564	4.48	2.93	6.93	3.89
10	GCEC96	0.16	0.551	0.483	-12.4	0.391	0.323	-12.5	-0.0678	-12.9	-12.8
11	WASCUR	-0.552	0.183	2.67	0.636	0.739	3.24	1.19	2.48	0.453	-1.98
12	DIVIDEND	-1.09	5.77	3.22	-14.3	6.93	4.36	-13.4	-2.41	-19	-17
13	PSAVE	-4.62	3.02	3.46	1.21	8.01	8.47	6.11	0.43	-1.76	-2.18
14	DPIC96	-1.85	1.31	2.19	0.367	3.22	4.11	2.26	0.865	-0.936	-1.78
15	GDPDEF	0.134	-3.07	-46.1	-0.565	-3.2	-46.2	-0.698	-44.4	2.59	84.6
16	ULCNFB	5.17	6.48	1.06	0.0494	1.24	-3.91	-4.87	-5.09	-6.04	-0.997
17	PRFI	0.827	-0.632	-1.77	-16	-1.45	-2.58	-16.7	-1.15	-15.5	-14.5
18	GSAVE	-0.345	0.213	0.351	-3.72	0.561	0.699	-3.39	0.138	-3.93	-4.06
19	CPIAUCSL	6.86	2.72	-0.337	5.3	-3.88	-6.73	-1.46	-2.97	2.51	5.65
20	FEDFUNDS	-0.334	-5.91	-13.4	-2.18	-5.6	-13.1	-1.85	-7.92	3.97	12.9
21	BOGNONBR	-2.42	-6.59	-5.97	-51.5	-4.27	-3.64	-50.3	0.655	-48.1	-48.4
22	M2SL	2.08	2.77	-1.57	2.54	0.683	-3.57	0.451	-4.22	-0.23	4.17
23	INDPRO	-4.98	-6.05	-6.68	-0.803	-1.12	-1.79	4.4	-0.675	5.58	6.3
24	UTL11	5.95	10.2	19.9	13.9	3.99	13.1	7.47	8.8	3.35	-5.01
25	UNRATE	5.06	27.4	-10.5	12.7	21.3	-14.8	7.26	-29.7	-11.6	25.9
26	HOUST	-0.208	-7.73	3.19	3.4	-7.54	3.41	3.61	11.8	12.1	0.2
27	PPIFCG	-1.19	2.3	3.24	-17	3.53	4.48	-16	0.922	-18.9	-19.6
28	AHEMAN	3.65	4.7	4.93	8.87	1.01	1.24	5.03	0.22	3.98	3.75
29	M1SL	-0.706	-1.09	-4.2	-1.81	-0.386	-3.52	-1.11	-3.15	-0.729	2.49
30	PMCP	0.626	-7.3	-80.7	1.57	-7.88	-80.8	0.939	-79.2	9.57	<u>426</u>
31	SP500	0.437	-2.31	-1.88	-0.152	-2.74	-2.31	-0.586	0.438	2.21	1.77
32	GS10	8.36	-5.48	-8.63	12.8	-12.8	-15.7	4.07	-3.33	19.3	23.4
33	EXUSUK	0.178	0.491	0.465	-0.0445	0.312	0.286	-0.222	-0.0261	-0.533	-0.507
34	PAYEMS	-1.51	-6.83	-16.5	0.24	-5.4	-15.3	1.78	-10.4	7.59	20.1
35	NAPMNOI	0.443	-0.695	-87.3	1.02	-1.13	-87.4	0.576	-87.2	1.73	<u>697</u>
36	TB3MS	2.48	-6.63	-15.2	0.951	-8.89	-17.2	-1.49	-9.13	8.12	19
37	BUSLOANS	-1.77	-3.35	-10.4	1.86	-1.6	-8.77	3.7	-7.28	5.39	13.7
38	TOTALSL	0.515	1.62	-47.4	0.978	1.1	-47.6	0.461	-48.2	-0.631	91.9
39	AAA	2.76	-5.26	6.74	6.81	-7.8	3.88	3.95	12.7	12.7	0.0615
	Mean	0.595	-0.265	-8.747	-1.493	-0.841	-9.236	-2.133	-8.453	-1.033	<u>3.398</u>
	t-stat.	0.203	-0.041	-0.407	-0.140	-0.146	-0.431	-0.218	-0.394	-0.092	<u>0.173</u>

See Table 1 of the paper for model definitions. Trimmed means and t-stats are underlined, as the corresponding trimmed observations. Results computed from Table 1.

Table 6: RMSE ($h = 1$) relative performance of AR(4) break models on last sixty percent of sample (quarterly data)

	Series	$\frac{PPT41}{KP4}$	$\frac{PPT41}{TVP4}$	$\frac{PPT41}{GK4B}$	$\frac{PPT41}{GK4P}$	$\frac{KP4}{TVP4}$	$\frac{KP4}{GK4B}$	$\frac{KP4}{GK4P}$	$\frac{GK4B}{TVP4}$	$\frac{GK4P}{TVP4}$	$\frac{GK4B}{GK4P}$
1	GDPC96	0.139	-6.45	-0.315	0.429	-6.58	-0.453	0.289	-6.16	-6.85	0.746
2	PINCOME	-5.51	1.25	5.47	5.38	7.15	11.6	11.5	-4.01	-3.92	-0.0918
3	PCECC96	-10.6	-1.43	-1	-0.682	10.2	10.7	11.1	-0.433	-0.755	0.324
4	PCECTPI	0.205	7.38	-21.9	4.78	7.16	-22.1	4.56	37.5	2.48	34.2
5	GPDIC96	1.06	-21.4	-0.507	-0.513	-22.2	-1.55	-1.56	-21	-21	-0.00665
6	OPHPBS	-1.07	-2.7	-0.349	-1.49	-1.65	0.726	-0.423	-2.36	-1.23	-1.14
7	IMPGSC96	0.394	-10.9	-5.04	-0.706	-11.2	-5.42	-1.1	-6.15	-10.2	4.57
8	EXPGSC96	-0.737	-3.51	-12.8	-2.58	-2.8	-12.2	-1.85	10.7	-0.962	11.7
9	CBIC96	-6.47	0.411	-2.02	-6.31	7.35	4.76	0.165	2.48	7.18	-4.38
10	GCEC96	-0.336	-8.66	0.344	-0.329	-8.35	0.682	0.00703	-8.98	-8.36	-0.671
11	WASCUR	-1.77	-2.57	2.12	1.5	-0.817	3.96	3.33	-4.6	-4.02	-0.605
12	DIVIDEND	-21.4	-15.7	18.7	21	7.3	51	54	-28.9	-30.3	2
13	PSAVE	0.0159	6.38	14.5	15.4	6.36	14.5	15.4	-7.12	-7.8	0.734
14	DPIC96	-4.86	-3.26	0.862	2.87	1.68	6.02	8.13	-4.09	-5.96	1.99
15	GDPDEF	0.555	1.71	-47.9	-2.45	1.15	-48.2	-2.99	95.4	4.27	87.4
16	ULCNFB	-0.599	-4.56	2.12	3.83	-3.98	2.74	4.45	-6.54	-8.08	1.67
17	PRFI	0.592	-18.4	0.0285	2.55	-18.9	-0.561	1.94	-18.5	-20.5	2.52
18	GSAVE	-0.00192	-1.2	0.426	0.651	-1.2	0.428	0.653	-1.62	-1.84	0.224
19	CPIAUCSL	-1.42	7.34	-8.42	1.98	8.89	-7.1	3.45	17.2	5.26	11.4
20	FEDFUNDS	6.5	7.08	23.7	3.4	0.544	16.2	-2.92	-13.4	3.56	-16.4
21	BOGNONBR	-48.3	-46.1	-13.1	-12.9	4.15	68	68.4	-38	-38.1	0.223
22	M2SL	9.51	8.97	10.5	9.39	-0.495	0.906	-0.11	-1.39	-0.385	-1.01
23	INDPRO	-3.75	-1.24	-5.16	-7.27	2.6	-1.47	-3.66	4.13	6.5	-2.23
24	UTL11	-2.9	1.41	-32	-33.4	4.44	-30	-31.4	49.2	52.3	-1.99
25	UNRATE	-0.595	-2.76	-47.2	-23.2	-2.18	-46.9	-22.7	84.3	26.6	45.6
26	HOUST	-1.39	-0.58	-13.9	-20.7	0.822	-12.7	-19.6	15.4	25.4	-7.9
27	PPIFCG	-11.9	-13.8	3.24	1.3	-2.23	17.1	14.9	-16.5	-14.9	-1.88
28	AHEMAN	1.59	2.01	0.524	3.59	0.411	-1.05	1.97	1.47	-1.53	3.05
29	M1SL	2.56	-7.29	0.106	-0.482	-9.6	-2.39	-2.96	-7.39	-6.84	-0.588
30	PMCP	4.86	6.4	-81.8	-21.3	1.47	-82.6	-25	484	35.2	332
31	SP500	-2.61	-0.789	0.0883	-0.137	1.87	2.77	2.54	-0.876	-0.653	-0.225
32	GS10	7.59	11.1	2.05	-8.15	3.29	-5.15	-14.6	8.9	21	-10
33	EXUSUK	-0.46	-21	0.87	0.0298	-20.7	1.34	0.492	-21.7	-21.1	-0.833
34	PAYEMS	-0.964	-0.296	-15.2	-9.31	0.675	-14.3	-8.42	17.5	9.93	6.89
35	NAPMNOI	0.456	0.72	-87.7	-40.4	0.262	-87.8	-40.7	720	69	385
36	TB3MS	2.94	6.25	-0.731	-1.39	3.21	-3.57	-4.21	7.03	7.75	-0.665
37	BUSLOANS	-3.71	1.27	-5.61	-5.67	5.17	-1.98	-2.04	7.29	7.35	-0.0637
38	TOTALSL	1.12	0.836	-45.8	-7.29	-0.285	-46.4	-8.32	86.1	8.77	71.1
39	AAA	10.1	12.5	2.73	-7.62	2.17	-6.69	-16.1	9.49	21.7	-10.1
	Mean	-2.081	-2.861	-9.233	-3.492	-0.637	-5.824	-0.087	4.119	2.538	4.291
	t-stat.	-0.221	-0.263	-0.389	-0.300	-0.084	-0.206	-0.005	0.154	0.125	0.240

See Table 1 of the paper for model definitions. Trimmed means and t-stats are underlined, as the corresponding trimmed observations. Results computed from Table 1.

Table 7: RMSE ($h = 4$) relative performance of AR(1) break models on last sixty percent of sample (quarterly data)

	Series	$\frac{PPT12}{KP1}$	$\frac{PPT12}{GK1P}$	$\frac{PPT12}{GK1B}$	$\frac{PPT12}{TVP1}$	$\frac{KP1}{GK1P}$	$\frac{KP1}{GK1B}$	$\frac{KP1}{TVP1}$	$\frac{GK1P}{GK1B}$	$\frac{GK1P}{TVP1}$	$\frac{GK1B}{TVP1}$
1	GDPC96	-0.442	1.68	1.77	-9.28	2.14	2.22	-8.88	0.0794	-10.8	-10.9
2	PINCOME	5.4	6.82	9.65	-10.3	1.35	4.03	-14.9	2.65	-16	-18.2
3	PCECC96	-0.755	1.57	2.37	0.879	2.34	3.15	1.65	0.793	-0.68	-1.46
4	PCECTPI	6.48	9.5	-25.6	10.3	2.84	-30.1	3.61	-32	0.743	48.2
5	GPDIC96	-1.3	-0.0047	0.182	-13.8	1.31	1.5	-12.7	0.186	-13.8	-13.9
6	OPHPBS	0.0433	-0.608	-0.54	-1.95	-0.651	-0.583	-2	0.0687	-1.35	-1.42
7	IMPGSC96	-0.502	1.98	1.36	-33.7	2.5	1.87	-33.4	-0.612	-35	-34.6
8	EXPGSC96	-1.4	1.15	0.863	-6.44	2.59	2.3	-5.11	-0.283	-7.5	-7.24
9	CBIC96	-9.25	1.94	0.933	-8.05	12.3	11.2	1.32	-0.988	-9.8	-8.9
10	GCEC96	-0.734	-0.668	-0.142	-8.78	0.0661	0.597	-8.11	0.53	-8.17	-8.65
11	WASCUR	1.91	6.83	9.73	6.03	4.83	7.67	4.04	2.72	-0.751	-3.37
12	DIVIDEND	-2.05	-3.52	-0.985	-29.8	-1.5	1.08	-28.3	2.62	-27.2	-29.1
13	PSAVE	-0.499	1.28	1.42	0.641	1.79	1.93	1.15	0.137	-0.631	-0.767
14	DPIC96	-1.59	2.06	2.15	0.294	3.7	3.8	1.91	0.0897	-1.73	-1.81
15	GDPDEF	4.78	-5.97	-49.8	3.4	-10.3	-52.1	-1.32	-46.7	9.96	106
16	ULCNFB	-2.85	0.0528	1.02	-8.72	2.99	3.98	-6.04	0.962	-8.77	-9.64
17	PRFI	-3.07	-2.81	-2.02	-19.7	0.264	1.08	-17.1	0.813	-17.3	-18
18	GSAVE	-0.143	0.755	0.728	-4.77	0.899	0.872	-4.63	-0.0269	-5.48	-5.45
19	CPIAUCSL	-0.654	-3.67	-12.7	1.89	-3.04	-12.1	2.56	-9.36	5.77	16.7
20	FEDFUNDS	3.22	-9.27	-8.87	-4.16	-12.1	-11.7	-7.15	0.443	5.63	5.16
21	BOGNONBR	-1.62	1.24	1.4	-99.2	2.92	3.07	-99.2	0.151	-99.2	-99.2
22	M2SL	0.665	5.54	-7.73	5.82	4.84	-8.34	5.12	-12.6	0.265	14.7
23	INDPRO	-9.81	5.95	6.39	-0.883	17.5	18	9.9	0.419	-6.45	-6.84
24	UTL11	14.6	-21.3	4.13	13.8	-31.3	-9.13	-0.716	32.3	44.6	9.26
25	UNRATE	9.71	24.6	3.69	11.2	13.5	-5.48	1.39	-16.8	-10.7	7.27
26	HOUST	-0.549	-46.8	-9.92	0.674	-46.5	-9.43	1.23	69.3	89.2	11.8
27	PPIFCG	-1.61	3.17	7.75	-15.5	4.86	9.52	-14.2	4.44	-18.1	-21.6
28	AHEMAN	5.9	16.2	32.9	21.6	9.71	25.5	14.9	14.4	4.7	-8.46
29	M1SL	0.0875	-3.54	-2.85	-6.96	-3.62	-2.94	-7.04	0.709	-3.55	-4.23
30	PMCP	2.23	-19.5	-70.6	-1.05	-21.2	-71.2	-3.2	-63.4	22.9	236
31	SP500	2.73	1.66	1.3	2.28	-1.04	-1.39	-0.444	-0.354	0.604	0.961
32	GS10	3.8	6.53	3.61	4.86	2.64	-0.179	1.03	-2.75	-1.57	1.21
33	EXUSUK	-0.269	0.453	0.236	-0.614	0.725	0.507	-0.346	-0.216	-1.06	-0.848
34	PAYEMS	-3.34	2.87	1.18	0.013	6.43	4.68	3.47	-1.64	-2.78	-1.15
35	NAPMNOI	0.19	-31.7	-84.8	-9.87	-31.9	-84.8	-10	-77.7	32.1	493
36	TB3MS	4.01	-4.09	-15.4	-0.928	-7.79	-18.6	-4.75	-11.8	3.3	17.1
37	BUSLOANS	-4.45	-0.309	1.78	2.67	4.34	6.52	7.46	2.09	2.99	0.88
38	TOTALSL	1.56	-0.795	-39.8	2.05	-2.32	-40.8	0.48	-39.3	2.87	69.6
39	AAA	6.04	9.06	13.1	5.28	2.85	6.62	-0.72	3.67	-3.47	-6.88
	Mean	0.679	-1.068	-5.695	-2.673	-1.565	-6.081	-3.417	-4.537	0.342	-2.652
	t-stat.	0.151	-0.089	-0.262	-0.249	-0.127	-0.276	-0.363	-0.194	0.017	-0.180

See Table 1 of the paper for model definitions. Trimmed means and t-stats are underlined, as the corresponding trimmed observations. Results computed from Table 2.

Table 8: RMSE ($h = 4$) relative performance of AR(4) break models on last sixty percent of sample (quarterly data)

	Series	$\frac{PPT41}{KP4}$	$\frac{PPT41}{TVP4}$	$\frac{PPT41}{GK4B}$	$\frac{PPT41}{GK4P}$	$\frac{KP4}{TVP4}$	$\frac{KP4}{GK4B}$	$\frac{KP4}{GK4P}$	$\frac{GK4B}{TVP4}$	$\frac{GK4P}{TVP4}$	$\frac{GK4B}{GK4P}$
1	GDPC96	1.53	-1.87	3.71	3.53	-3.35	2.14	1.97	-5.37	-5.21	-0.172
2	PINCOME	-9.6	5.37	7.29	6.63	16.6	18.7	18	-1.79	-1.18	-0.613
3	PCECC96	-7.08	-2.04	-0.802	-1.85	5.42	6.75	5.62	-1.25	-0.191	-1.06
4	PCECTPI	3.28	10.2	-25.9	8.1	6.73	-28.2	4.67	48.7	1.97	45.8
5	GPDIC96	-2.43	-56.9	0.812	1.56	-55.8	3.32	4.08	-57.2	-57.6	0.74
6	OPHPBS	-0.0193	-1.9	-0.393	-1.14	-1.88	-0.374	-1.12	-1.51	-0.765	-0.753
7	IMPGSC96	0.444	-74.2	3.99	4.73	-74.3	3.53	4.27	-75.2	-75.3	0.709
8	EXPGSC96	-2.15	-35.7	-2.34	0.36	-34.3	-0.193	2.56	-34.1	-35.9	2.76
9	CBIC96	12.1	1.25	20.4	20.2	-9.71	7.4	7.21	-15.9	-15.8	-0.177
10	GCEC96	0.201	-5.3	1.3	0.73	-5.49	1.1	0.529	-6.51	-5.98	-0.561
11	WASCUR	-8.5	1.59	4.91	3.86	11	14.7	13.5	-3.17	-2.19	-1
12	DIVIDEND	-5.25	8.84	16.2	14.1	14.9	22.7	20.4	-6.36	-4.59	-1.85
13	PSAVE	-2.23	36.9	64	63.6	40	67.7	67.3	-16.5	-16.3	-0.245
14	DPIC96	-3.8	-3	2.11	1.02	0.837	6.15	5.01	-5	-3.98	-1.07
15	GDPDEF	0.938	1.81	-35.6	-1.29	0.867	-36.2	-2.21	58.1	3.15	53.2
16	ULCNFB	-4.14	-10.6	5.38	6.64	-6.76	9.93	11.3	-15.2	-16.2	1.2
17	PRFI	-3.56	-62.5	-0.592	-0.783	-61.1	3.08	2.88	-62.3	-62.2	-0.192
18	GSAVE	-0.313	-4.12	1.34	1.84	-3.81	1.66	2.16	-5.38	-5.85	0.496
19	CPIAUCSL	1.98	6.36	-12.8	-2.4	4.3	-14.5	-4.29	22	8.97	12
20	FEDFUNDS	12.4	9.6	4.18	-4.68	-2.46	-7.28	-15.2	5.2	15	-8.51
21	BOGNONBR	-66.4	-67.2	0.673	0.0408	-2.26	200	198	-67.4	-67.2	-0.628
22	M2SL	34.5	41.3	30.5	44.3	5.04	-2.98	7.27	8.26	-2.08	10.6
23	INDPRO	0.344	-2.05	5.21	4.11	-2.39	4.85	3.75	-6.9	-5.91	-1.05
24	UTL11	16.5	24.1	-6.23	-28.9	6.55	-19.5	-38.9	32.3	74.4	-24.1
25	UNRATE	0.131	-6.16	-26.5	-26.8	-6.28	-26.6	-26.9	27.7	28.2	-0.381
26	HOUST	-3.54	2.65	-2.3	-31.1	6.41	1.29	-28.6	5.06	48.9	-29.5
27	PPIFCG	-1.26	-14.3	8.62	5.93	-13.2	10	7.28	-21.1	-19.1	-2.48
28	AHEMAN	0.511	-1.03	9.93	-0.375	-1.54	9.37	-0.881	-9.97	-0.661	-9.38
29	M1SL	3.29	-28	1.48	-3.65	-30.3	-1.75	-6.72	-29.1	-25.3	-5.06
30	PMCP	0.229	0.113	-72	-25.5	-0.116	-72.1	-25.7	258	34.4	166
31	SP500	1.84	-0.672	1.71	2.03	-2.47	-0.136	0.182	-2.34	-2.65	0.319
32	GS10	10.2	12.9	22	-50.8	2.52	10.7	-55.3	-7.43	129	-59.6
33	EXUSUK	-0.208	-13.9	0.909	0.444	-13.8	1.12	0.654	-14.7	-14.3	-0.461
34	PAYEMS	-0.345	-2.11	-1.79	0.0723	-1.77	-1.45	0.419	-0.331	-2.18	1.89
35	NAPMNOI	-0.55	-6.81	-85	-43.5	-6.3	-84.9	-43.2	523	65	277
36	TB3MS	5.52	3.7	1.21	-1.48	-1.72	-4.08	-6.64	2.46	5.26	-2.66
37	BUSLOANS	-1.06	3.26	5.17	2.49	4.37	6.3	3.6	-1.82	0.747	-2.55
38	TOTALSL	1.76	4.36	-39.6	-11.1	2.56	-40.6	-12.6	72.7	17.4	47.2
39	AAA	15	14.7	35	-28.4	-0.316	17.4	-37.8	-15.1	60.2	-47
	Mean	0.007	-5.419	-1.380	-1.729	-5.470	-2.920	-2.933	-5.580	-2.237	0.985
	t-stat.	0.001	-0.219	-0.054	-0.086	-0.263	-0.115	-0.140	-0.182	-0.069	0.055

See Table 1 of the paper for model definitions. Trimmed means and t-stats are underlined, as the corresponding trimmed observations. Results computed from Table 2.

Table 9: RMSE ($h = 1$) relative performance of AR(1) break models on last sixty percent of sample (monthly data)

	Series	$\frac{PPT12}{KP1}$	$\frac{PPT12}{GK1P}$	$\frac{PPT12}{GK1B}$	$\frac{PPT12}{TVP1}$	$\frac{KP1}{GK1P}$	$\frac{KP1}{GK1B}$	$\frac{KP1}{TVP1}$	$\frac{GK1P}{GK1B}$	$\frac{GK1P}{TVP1}$	$\frac{GK1B}{TVP1}$
19	CPIAUCSL	0.437	0.949	-9.3	1.14	0.509	-9.7	0.699	-10.2	0.189	11.5
20	FEDFUNDS	-4.35	-0.0516	-42.5	2.5	4.49	-39.9	7.16	-42.5	2.55	78.4
21	BOGNONBR	-8.96	-8.84	-8.14	-38.6	0.13	0.895	-32.5	0.764	-32.6	-33.1
22	M2SL	1.53	1.57	-17	2.2	0.0401	-18.2	0.666	-18.3	0.625	23.1
23	INDPRO	-1.79	0.52	0.422	-2.7	2.35	2.25	-0.924	-0.098	-3.2	-3.11
24	UTL11	3.65	6.23	9.75	9.91	2.49	5.89	6.04	3.32	3.47	0.143
25	UNRATE	1.86	-9.4	-72.6	3.44	-11.1	-73.1	1.55	-69.7	14.2	277
26	HOUST	-0.0325	-8.55	-10.6	-2.75	-8.52	-10.6	-2.72	-2.23	6.35	8.78
27	PPIFCG	-1.21	1.15	1.26	-0.665	2.39	2.51	0.556	0.113	-1.79	-1.9
28	AHEMAN	0.458	-0.00926	0.403	2.58	-0.465	-0.0548	2.12	0.412	2.59	2.17
29	M1SL	-1.02	1.32	-1.01	-1.29	2.36	0.0115	-0.278	-2.3	-2.58	-0.29
30	PMCP	-1.05	-5.79	-27.7	0.8	-4.78	-27	1.87	-23.3	6.99	39.5
31	SP500	-0.223	0.152	0.34	0.0136	0.375	0.564	0.237	0.188	-0.138	-0.325
32	GS10	-0.218	-23	-47.7	5.22	-22.9	-47.6	5.45	-32	36.7	101
33	EXUSUK	-0.304	-1.17	-0.683	-0.891	-0.871	-0.38	-0.589	0.496	0.285	-0.21
34	PAYEMS	1.6	-4.89	-11.3	1.41	-6.38	-12.6	-0.191	-6.69	6.61	14.3
35	NAPMNOI	-0.27	-8.76	-77.9	-1.63	-8.51	-77.8	-1.37	-75.8	7.81	345
36	TB3MS	-91.8	-1.93	-63.2	5.01	1.09E+03	347	1.18E+03	-62.5	7.09	186
37	BUSLOANS	1.47	0.774	0.219	1.6	-0.689	-1.24	0.129	-0.551	0.824	1.38
38	TOTALSL	-45.9	0.0419	-10.4	1.24	84.9	65.7	87.1	-10.4	1.2	12.9
39	AAA	-93.5	-26.2	-54.5	6.67	1.04E+03	601	1.54E+03	-38.3	44.6	134
	Mean	-11.411	-4.090	-21.054	-0.228	1.885	-12.650	3.948	-18.551	4.846	9.577
	t-stat.	-0.395	-0.509	-0.776	-0.024	0.089	-0.400	0.182	-0.735	0.327	0.403

See Table 1 of the paper for model definitions. Trimmed means and t-stats are underlined, as the corresponding trimmed observations. Results computed from Table 3.

Table 10: RMSE ($h = 1$) relative performance of AR(4) break models on last sixty percent of sample (monthly data)

	Series	$\frac{PPT41}{KP4}$	$\frac{PPT41}{TVP4}$	$\frac{PPT41}{GK4B}$	$\frac{PPT41}{GK4P}$	$\frac{KP4}{TVP4}$	$\frac{KP4}{GK4B}$	$\frac{KP4}{GK4P}$	$\frac{GK4B}{TVP4}$	$\frac{GK4P}{TVP4}$	$\frac{GK4B}{GK4P}$
19	CPIAUCSL	-4.38	5.46	-8.36	1.2	10.3	-4.17	5.83	15.1	4.21	10.4
20	FEDFUNDS	6.82	8.22	-55.5	-16.1	1.31	-58.3	-21.5	143	29	88.6
21	BOGNONBR	4.08	-45.1	4.04	4.59	-47.2	-0.032	0.491	-47.2	-47.5	0.524
22	M2SL	6.21	10.9	-10.2	6.67	4.45	-15.4	0.428	23.5	4	18.8
23	INDPRO	-4.65	-6.45	-1.67	0.579	-1.89	3.12	5.48	-4.86	-6.99	2.29
24	UTL11	-3	-2.56	-19.1	-20	0.461	-16.6	-17.5	20.4	21.7	-1.11
25	UNRATE	-0.206	-1.75	-59.1	-36.5	-1.54	-59.1	-36.4	140	54.8	55.3
26	HOUST	0.102	-0.22	-10.9	-19.5	-0.322	-11	-19.5	12	23.9	-9.61
27	PPIFCG	-0.456	0.399	3.8	4.56	0.858	4.28	5.04	-3.28	-3.98	0.732
28	AHEMAN	-0.928	2.5	-0.244	-0.693	3.47	0.69	0.237	2.76	3.22	-0.45
29	M1SL	-4.44	-4.2	6.47	8.61	0.251	11.4	13.7	-10	-11.8	2.01
30	PMCP	0.113	1.01	-26.5	-17.7	0.897	-26.6	-17.8	37.4	22.8	11.9
31	SP500	-1.27	-0.00883	1.38	0.846	1.28	2.69	2.15	-1.37	-0.848	-0.529
32	GS10	9.72	11.5	-43.2	-33.2	1.61	-48.3	-39.1	96.4	66.8	17.8
33	EXUSUK	-1.73	-1.45	-0.274	-0.867	0.286	1.49	0.883	-1.18	-0.592	-0.595
34	PAYEMS	-0.276	-0.341	-14.7	-7.87	-0.0655	-14.5	-7.61	16.9	8.17	8.04
35	NAPMNOI	0.0893	-1.84	-76	-23	-1.92	-76.1	-23.1	310	27.5	221
36	TB3MS	7.06	5.8	-64.2	-20.3	-1.17	-66.6	-25.5	196	32.7	123
37	BUSLOANS	9.93	9.01	8.29	9.37	-0.842	-1.49	-0.508	0.66	-0.336	1
38	TOTALSL	-7.6	-0.72	-16.1	-1.14	7.45	-9.18	7	18.3	0.422	17.8
39	AAA	6.14	4.79	-45.7	-40.8	-1.27	-48.9	-44.2	93.1	76.9	9.16
	Mean	1.016	-0.241	-20.370	-9.583	-1.124	-20.600	-10.070	15.802	14.480	12.214
	t-stat.	0.204	-0.021	-0.778	-0.620	-0.102	-0.758	-0.596	0.453	0.516	0.530

See Table 1 of the paper for model definitions. Trimmed means and t-stats are underlined, as the corresponding trimmed observations. Results computed from Table 3.

Table 11: RMSE ($h = 12$) relative performance of AR(1) break models on last sixty percent of sample (monthly data)

	Series	$\frac{PPT12}{KP1}$	$\frac{PPT12}{GK1P}$	$\frac{PPT12}{GK1B}$	$\frac{PPT12}{TVP1}$	$\frac{KP1}{GK1P}$	$\frac{KP1}{GK1B}$	$\frac{KP1}{TVP1}$	$\frac{GK1P}{GK1B}$	$\frac{GK1P}{TVP1}$	$\frac{GK1B}{TVP1}$
19	CPIAUCSL	-4.55	-1.81	-6.93	-2.3	2.87	-2.49	2.36	-5.21	-0.498	4.97
20	FEDFUNDS	-2.41	-33.1	-29.2	-1.93	-31.4	-27.5	0.491	5.72	46.5	38.6
21	BOGNONBR	-4.71	-0.126	0.726	-98.9	4.81	5.71	-98.8	0.853	-98.9	-98.9
22	M2SL	-1.53	7.2	-22.1	6.94	8.87	-20.9	8.59	-27.4	-0.251	37.3
23	INDPRO	-4.49	0.699	1.08	-12.5	5.44	5.84	-8.41	0.383	-13.1	-13.5
24	UTL11	20.3	-47	-28.3	14.9	-56	-40.4	-4.5	35.4	117	60.2
25	UNRATE	0.673	-59.7	-28.3	1.89	-59.9	-28.7	1.2	77.8	153	42
26	HOUST	-0.934	-52	-28.8	5.19	-51.6	-28.1	6.19	48.4	119	47.7
27	PPIFCG	-0.116	2.38	2.8	-0.162	2.5	2.92	-0.0458	0.409	-2.48	-2.88
28	AHEMAN	0.13	4.1	1.71	2.66	3.96	1.58	2.52	-2.3	-1.39	0.933
29	M1SL	0.752	-2.65	-1.42	-0.815	-3.38	-2.15	-1.55	1.27	1.89	0.61
30	PMCP	-3.35	-55.6	5.61	-9.82	-54	9.27	-6.69	138	103	-14.6
31	SP500	-0.571	0.317	-0.256	-0.343	0.893	0.316	0.229	-0.571	-0.657	-0.0868
32	GS10	-4.41	-2.42	-18.9	-0.353	2.08	-15.2	4.24	-16.9	2.12	22.9
33	EXUSUK	-0.832	0.365	-0.33	-0.94	1.21	0.506	-0.109	-0.692	-1.3	-0.612
34	PAYEMS	-7.09	3.83	6.6	1.53	11.8	14.7	9.29	2.66	-2.21	-4.75
35	NAPMNOI	0.502	-93.1	-65.5	-17	-93.1	-65.7	-17.4	397	1.10E+03	141
36	TB3MS	-63.5	-9.13	-34.8	6.17	149	78.6	191	-28.2	16.8	62.8
37	BUSLOANS	-3.91	-0.437	6.64	-3.68	3.62	11	0.239	7.11	-3.26	-9.68
38	TOTALSL	-16.8	1.23	-8.87	-0.447	21.6	9.5	19.6	-9.97	-1.65	9.24
39	AAA	-61.5	-27.2	-19.4	-2.35	88.9	109	153	10.6	34.1	21.2
	Mean	-7.540	-17.341	-12.759	-0.668	-1.992	-4.560	0.902	1.198	4.974	22.167
	t-stat.	-0.390	-0.614	-0.689	-0.096	-0.039	-0.160	0.115	0.065	0.317	0.598

See Table 1 of the paper for model definitions. Trimmed means and t-stats are underlined, as the corresponding trimmed observations. Results computed from Table 4.

Table 12: RMSE ($h = 12$) relative performance of AR(4) break models on last sixty percent of sample (monthly data)

	Series	$\frac{PPT41}{KP4}$	$\frac{PPT41}{TVP4}$	$\frac{PPT41}{GK4B}$	$\frac{PPT41}{GK4P}$	$\frac{KP4}{TVP4}$	$\frac{KP4}{GK4B}$	$\frac{KP4}{GK4P}$	$\frac{GK4B}{TVP4}$	$\frac{GK4P}{TVP4}$	$\frac{GK4B}{GK4P}$
19	CPIAUCSL	-5.57	-1.05	-11.5	0.428	4.79	-6.31	6.35	11.8	-1.47	13.5
20	FEDFUNDS	94.8	77.6	41.5	30.3	-8.87	-27.4	-33.1	25.5	36.2	-7.92
21	BOGNONBR	-10.6	-99.9	2.17	2.03	-99.9	14.3	14.1	-99.9	-99.9	-0.14
22	M2SL	327	403	256	399	17.7	-16.6	16.8	41.1	0.791	40
23	INDPRO	-30.4	-10.6	2.97	2.73	28.4	47.9	47.6	-13.2	-13	-0.234
24	UTL11	20.9	15.7	-6.47	-33	-4.3	-22.6	-44.6	23.7	72.7	-28.4
25	UNRATE	0.168	-10.8	-26.5	-97.9	-11	-26.6	-97.9	21.4	4.22E+03	-97.2
26	HOUST	0.94	-1.17	-22	-54.9	-2.09	-22.7	-55.3	26.7	119	-42.1
27	PPIFCG	-4.81	1.48	4.42	4.06	6.61	9.69	9.31	-2.82	-2.48	-0.346
28	AHEMAN	-0.709	2.2	1.96	3.52	2.93	2.68	4.26	0.235	-1.28	1.53
29	M1SL	-58	-37	39	38.5	50.1	231	230	-54.7	-54.5	-0.315
30	PMCP	-0.147	-11.3	-12.7	-35.8	-11.2	-12.6	-35.7	1.56	38	-26.4
31	SP500	-3.24	0.852	1.06	1.51	4.23	4.44	4.91	-0.204	-0.645	0.445
32	GS10	52	53.6	32.5	-65.1	1.04	-12.8	-77	15.9	340	-73.7
33	EXUSUK	-10.4	-1.2	0.759	0.659	10.3	12.5	12.4	-1.94	-1.85	-0.0989
34	PAYEMS	-4.72	-9.82	1.19	1.19	-5.36	6.2	6.2	-10.9	-10.9	0.00234
35	NAPMNOI	0.877	-22.2	-62.8	-94.3	-22.9	-63.2	-94.3	109	1.26E+03	-84.7
36	TB3MS	46.9	35	-3.92	-10.3	-8.14	-34.6	-39	40.5	50.5	-6.67
37	BUSLOANS	151	154	172	164	1.49	8.55	5.55	-6.51	-3.85	-2.77
38	TOTALSL	0.0115	-0.119	-22.4	-1.75	-0.131	-22.4	-1.76	28.6	1.66	26.5
39	AAA	160	152	138	-99.1	-3.25	-8.46	-99.7	5.68	2.78E+04	-99.6
	Mean	-0.400	4.775	-2.265	-7.245	2.517	-8.501	-9.352	8.021	7.325	-10.096
	t-stat.	-0.016	0.172	-0.092	-0.264	0.160	-0.365	-0.291	0.357	0.240	-0.333

See Table 1 of the paper for model definitions. Trimmed means and t-stats are underlined, as the corresponding trimmed observations. Results computed from Table 4.

Table 13: RMSE ($h = 1$) relative performance of lag orders
on last sixty percent of sample (quarterly data)

	Series	$\frac{PPT12}{PPT41}$	$\frac{KP1}{KP4}$	$\frac{TVP1}{TVP4}$	$\frac{GK1P}{GK4P}$	$\frac{GK1B}{GK4B}$	$\frac{RO140}{RO440}$	$\frac{RO120}{RO420}$	$\frac{RE1}{RE4}$
1	GDPC96	-0.834	1.25	0.44	0.0273	-0.147	-2.27	-17.1	0.547
2	PINCOME	-3.5	-8.58	1.8	0.198	-1.98	3.76	-18.9	0.578
3	PCECC96	4.01	-8.21	1.05	2.48	1.87	-3.6	-18.8	2.42
4	PCECTPI	-0.0787	-1.46	2.21	-1.12	-9.21	1.74	-18.7	3.24
5	GPDIC96	-1.38	-0.776	-21.8	-1.09	-1.25	-4.9	-7.96	-0.762
6	OPHPBS	2	1.22	0.909	0.123	1.38	-4.25	-10.8	1.46
7	IMPGSC96	-2.46	-3.54	-8.62	0.607	-0.916	-8.17	-16.4	-1.04
8	EXPGSC96	-0.772	-3.16	-4.76	4.46	-0.626	-0.665	-18.2	-0.544
9	CBIC96	-2.28	-3.74	-1.1	-1.32	0.267	-2.23	-13.6	-0.599
10	GCEC96	2.82	2.31	7.21	1.92	2.68	-0.532	-8.68	2.38
11	WASCUR	0.665	-0.569	-2.55	1.99	0.129	-4.29	-15.2	0.561
12	DIVIDEND	-15.3	-32.7	-16.6	-3.04	-2.61	-52.8	-59	-5.1
13	PSAVE	-9.92	-5.55	-5.32	0.878	-0.286	-6.57	-21	-1.86
14	DPIC96	-0.306	-3.37	-3.91	1.22	-1.6	-6.04	-15.4	-0.894
15	GDPDEF	3.09	3.52	5.45	3.75	-0.384	4.27	-13.6	5.15
16	ULCNFB	5.64	-0.159	0.772	3.01	6.75	0.835	-10.3	7.48
17	PRFI	-4.1	-4.32	-6.87	-1.03	-2.34	-6.74	-26.6	-2.57
18	GSAVE	0.941	1.29	3.58	1.38	1.02	2.29	-0.888	0.524
19	CPIAUCSL	-0.477	-8.18	1.46	-1.19	-8.55	0.364	-14.4	4.1
20	FEDFUNDS	-20	-14.5	-12.5	-12.1	14.2	-19.2	-37.3	-16.4
21	BOGNONBR	-9.05	-51.8	0.987	-15.2	-15.9	-56.6	-55.2	-55.9
22	M2SL	-6.7	0.0888	-0.854	-0.7	4.73	0.881	-13.4	-0.396
23	INDPRO	3.44	4.78	2.98	2.09	5.13	-1.74	-18.7	6
24	UTL11	36.5	25.1	21.5	-17.5	-22.6	28.7	5.59	25
25	UNRATE	43.6	35.9	23.9	-13.4	-15.4	21.5	8.54	31.1
26	HOUST	2.92	1.7	-1.04	-11.5	-14.1	0.38	-16.1	2.14
27	PPIFCG	-0.455	-11.2	3.36	-1.43	-0.454	-0.692	-15.4	-1.07
28	AHEMAN	15.6	13.3	8.29	14.3	10.7	6.06	-7.62	23.3
29	M1SL	-3.82	-0.655	-9.18	-3.23	0.508	-6.15	-14.7	-1.44
30	PMCP	5.06	9.48	10.1	-10.8	-0.771	6.68	-12.8	8.84
31	SP500	-1.82	-4.8	-2.45	0.366	0.153	-8.09	-32.5	-2.49
32	GS10	0.43	-0.28	-1.03	-2.41	12.2	-5.29	-17.1	-2.62
33	EXUSUK	-0.29	-0.926	-21.2	-0.748	0.112	-2.65	-19.5	-0.885
34	PAYEMS	3.52	4.1	2.97	0.771	5.26	-1.27	-16.6	3.22
35	NAPMNOI	1.71	1.73	1.41	-38.9	-1.52	-4.5	-29.2	1.09
36	TB3MS	-1.63	-1.18	3.53	3.89	15.1	-1.97	-19.3	-1.07
37	BUSLOANS	-4.75	-6.62	-5.3	-7.03	0.332	-8.41	-23.9	-5.11
38	TOTALSL	-1.39	-0.791	-1.53	-10	1.53	-4.66	-11.9	-1.42
39	AAA	-10.3	-3.88	-5.53	-12.5	-13.7	-7.88	-23.8	-7.57
	Mean	0.778	-1.928	-0.724	-3.148	-0.777	-3.967	-17.857	0.497
	t-stat.	0.070	-0.146	-0.081	-0.363	-0.098	-0.278	-1.413	0.040

See Table 1 of paper for model definitions. Results computed from Table 1.

Table 14: RMSE ($h = 4$) relative performance of lag orders
on last sixty percent of sample (quarterly data)

	Series	$\frac{PPT12}{PPT41}$	$\frac{KP1}{KP4}$	$\frac{TVP1}{TVP4}$	$\frac{GK1P}{GK4P}$	$\frac{GK1B}{GK4B}$	$\frac{RO140}{RO440}$	$\frac{RO120}{RO420}$	$\frac{RE1}{RE4}$
1	GDPC96	-1.57	0.376	6.47	0.208	0.301	-7.47	-50.3	0.811
2	PINCOME	-1.17	-15.2	16.1	-1.34	-3.29	-0.539	-38.6	1.17
3	PCECC96	3.67	-2.94	0.665	0.171	0.45	-3.51	-45.1	2.53
4	PCECTPI	-1.65	-4.61	-1.73	-2.91	-2.04	3.9	-17.9	1.37
5	GPDIC96	-0.107	-1.25	-50.1	1.45	0.521	-14.3	-29.2	0.256
6	OPHPBS	-0.45	-0.512	-0.395	-0.986	-0.303	-0.753	-3.98	0.134
7	IMPGSC96	-2.87	-1.95	-62.2	-0.257	-0.35	-7.5	-49.1	-0.686
8	EXPGSC96	0.161	-0.595	-31.1	-0.62	-3.02	-0.767	-51.7	-1.36
9	CBIC96	-17.3	2.23	-8.9	-2.43	-1.28	-5.04	-34.1	-2.1
10	GCEC96	0.112	1.05	3.94	1.52	1.56	2.41	-5.2	1.22
11	WASCUR	3.98	-6.65	-0.374	1.09	-0.587	-3.32	-51.5	4.8
12	DIVIDEND	-14.1	-16.9	33.1	1.58	0.855	-92.2	-91.8	-0.254
13	PSAVE	-38.4	-39.4	-16.2	-0.471	-0.363	-28.1	-60	-3.96
14	DPIC96	0.118	-2.14	-3.17	-0.898	0.0833	-5.61	-40.7	0.0248
15	GDPDEF	-2.25	-5.83	-3.75	2.62	25.5	10.7	-16.4	1.01
16	ULCNFB	-1.73	-3.04	-3.78	4.74	2.52	-2.37	-22.3	3.47
17	PRFI	-4.5	-4.99	-55.4	-2.51	-3.11	-8.18	-32.8	-3.9
18	GSAVE	-1.14	-1.3	-0.459	-0.0705	-0.537	-6.04	-10.2	-0.898
19	CPIAUCSL	-9.17	-6.76	-5.18	-7.97	-9.33	-0.12	-15.7	-0.202
20	FEDFUNDS	-16.9	-9.55	-4.98	-12.7	-5.01	-13.1	-24.5	-8.13
21	BOGNONBR	-8.5	-68.8	3.84E+03	-9.59	-9.16	-16.9	-68.7	-53.2
22	M2SL	-26.3	-1.57	-1.65	0.7	4.19	3.15	-9.95	-1.54
23	INDPRO	1.83	13.3	0.626	0.0566	0.695	9.61	-38.9	0.968
24	UTL11	1.93	3.58	11.2	-7.85	-8.21	10	-39.8	3.52
25	UNRATE	34.1	22.4	13.1	-21.2	-5.02	10.6	-19.6	19.3
26	HOUST	-4.84	-7.7	-2.97	23.2	3.22	1.67	-18.2	-7.99
27	PPIFCG	-4.1	-3.76	-2.71	-1.54	-3.33	-0.0154	-11.6	-5.44
28	AHEMAN	33.2	26.4	8.38	14.2	10.2	23	1.12	45.3
29	M1SL	-3.6	-0.515	-25.4	-3.71	0.704	-6.59	-36.9	-0.918
30	PMCP	6.66	4.57	7.91	-1.35	1.27	2.92	-11.1	3.53
31	SP500	0.651	-0.22	-2.25	1.01	1.05	-6.13	-60.6	-0.677
32	GS10	-11.2	-5.77	-4.38	-59	4.55	-15.4	-13.7	-6.33
33	EXUSUK	-1.19	-1.13	-14.4	-1.2	-0.527	-4.37	-38.7	-1.55
34	PAYEMS	0.701	3.82	-1.44	-2.04	-2.25	2.12	-41.9	-3.86
35	NAPMNOI	2.92	2.16	6.42	-14.8	1.31	-0.645	-35.1	2.86
36	TB3MS	-9.13	-7.81	-4.88	-6.65	8.68	-9.92	-23.3	-4.76
37	BUSLOANS	-2.7	0.756	-2.14	0.0371	0.546	-4.65	-35.6	-0.689
38	TOTALSL	-3.36	-3.17	-1.17	-13.4	-2.97	-2.51	-17.7	-4
39	AAA	-14.6	-7.39	-7.01	-44	1.96	-13.1	-5.16	-6.38
	Mean	-2.892	-3.867	-5.532	-4.280	0.243	-5.104	-31.192	-0.681
	t-stat.	-0.237	-0.264	-0.300	-0.320	0.042	-0.302	-1.547	-0.056

See Table 1 of paper for model definitions. Trimmed means and t-stats are underlined, as the corresponding trimmed observations. Results computed from Table 2.

Table 15: RMSE ($h = 1$) relative performance of lag orders on last sixty percent of sample (monthly data)

	Series	$\frac{PPT12}{PPT41}$	$\frac{KP1}{KP4}$	$\frac{TVP1}{TVP4}$	$\frac{GK1P}{GK4P}$	$\frac{GK1B}{GK4B}$	$\frac{RO110Y}{RO410Y}$	$\frac{RO15Y}{RO45Y}$	$\frac{RO13Y}{RO43Y}$	$\frac{RE1}{RE4}$
19	CPIAUCSL	-4.86	-9.42	-0.793	-4.62	-3.87	-1.34	-3.94	-6.48	-4.27
20	FEDFUNDS	-1.27	10.2	4.23	-17.1	-23.5	2.22	-13	-20.5	4.21
21	BOGNONBR	-9.13	3.88	-18.8	4.26	2.93	-46.3	-52	-51.8	-45.5
22	M2SL	-7.39	-3.11	0.53	-2.73	0.186	2.3	-1.61	-4.23	1.1
23	INDPRO	3.49	0.475	-0.505	3.55	1.33	2.8	1.69	-2.48	1.26
24	UTL11	15.5	8.07	2.39	-13	-14.8	11.6	10.3	4.59	7.58
25	UNRATE	7.69	5.5	2.28	-24.6	60.4	5.92	4.09	1.68	5.74
26	HOUST	4.8	4.94	7.52	-7.71	4.43	3.8	0.414	-1.69	5.05
27	PPIFCG	-3.85	-3.11	-2.82	-0.6	-1.43	-2.93	-4.48	-7.31	-1.9
28	AHEMAN	2.93	1.51	2.85	2.23	2.27	5.8	2.69	-0.151	5.19
29	M1SL	-4.91	-8.19	-7.7	1.94	2.28	-0.144	-10.6	-15.7	2.74
30	PMCP	3.67	4.89	3.89	-9.47	5.47	5.25	3.69	0.0636	4.63
31	SP500	-0.774	-1.82	-0.796	-0.0857	0.258	-1.63	-3.14	-5.16	-0.459
32	GS10	-0.127	9.82	5.82	-13.3	8.33	5.69	2.76	0.355	6.33
33	EXUSUK	-0.14	-1.57	-0.707	0.169	0.271	-0.968	-4.49	-7.67	-0.168
34	PAYEMS	13.8	11.7	11.8	10.2	9.35	10.5	8.38	1.47	18.2
35	NAPMNOI	-0.185	0.175	-0.389	-15.8	8.21	-1.49	-6.6	-7.6	-0.0798
36	TB3MS	2.85	1.24E+03	3.62	-16.4	0.173	3.19	-4.59	-10.6	4.31
37	BUSLOANS	-3.92	4.08	3.07	4.27	3.81	1.96	-0.817	-5.46	4.25
38	TOTALSL	11.9	91.1	9.74	10.6	4.76	11.2	6.33	4.09	13.8
39	AAA	4.97	1.62E+03	3.12	-15.7	25.1	5.78	2.92	0.385	6.28
	Mean	1.669	6.796	1.350	-4.947	4.569	1.105	-2.953	-6.390	1.823
	t-stat.	0.251	0.311	0.214	-0.501	0.290	0.095	-0.233	-0.527	0.153

See Table 1 of the paper for model definitions. Trimmed means and t-stats are underlined, as the corresponding trimmed observations. Results computed from Table 3.

Table 16: RMSE ($h = 12$) relative performance of lag orders on last sixty percent of sample (monthly data)

	Series	$\frac{PPT12}{PPT41}$	$\frac{KP1}{KP4}$	$\frac{TVP1}{TVP4}$	$\frac{GK1P}{GK4P}$	$\frac{GK1B}{GK4B}$	$\frac{RO110Y}{RO410Y}$	$\frac{RO15Y}{RO45Y}$	$\frac{RO13Y}{RO43Y}$	$\frac{RE1}{RE4}$
19	CPIAUCSL	-0.127	-1.19	1.16	2.15	-5.05	1.7	-0.225	-3.4	-0.0734
20	FEDFUNDS	-49.1	1.56	-7.89	-0.959	1.75	1.78	3.06	-35.5	-2.43
21	BOGNONBR	-1.15	-7.27	-92.2	0.978	0.264	-93.8	-95.7	-99.7	-93.8
22	M2SL	-78.6	-7.11	0.717	-0.324	-2.02	0.723	0.589	1.47	0.993
23	INDPRO	-1.47	-28.2	0.667	0.518	0.369	-3.62	-11.9	-88	0.116
24	UTL11	4.33	4.83	5.05	32	36	13.3	19.4	0.883	4.31
25	UNRATE	14.1	13.5	-0.131	-94.2	16.9	21.7	20.1	-2.96	10.4
26	HOUST	7.9	9.94	1.37	1.53	18.2	-6.86	-5.75	-31.9	10.8
27	PPIFCG	-1.47	-6.1	0.151	0.147	0.0854	0.212	0.937	-2.9	-0.0991
28	AHEMAN	0.0829	-0.756	-0.366	-0.477	0.328	0.994	0.742	0.404	0.0511
29	M1SL	-29.3	-70.5	-55.1	0.606	-0.343	0.398	-69.3	-89.4	0.0891
30	PMCP	6.66	10.2	4.85	54.3	-11.8	8	12.2	2.86	4.95
31	SP500	-1.54	-4.19	-0.363	-0.375	-0.246	0.0359	-1.47	-8.14	-0.204
32	GS10	-37.9	-1.24	-4.27	-77.8	1.51	-4.11	0.0232	7.07	-0.974
33	EXUSUK	-0.609	-10.2	-0.87	-0.317	0.477	0.0859	-2.06	-70.7	0.115
34	PAYEMS	2.71	5.33	-8.78	0.0956	-2.5	-6.24	-31.1	-26.7	4.84
35	NAPMNOI	1.12	1.5	-5.3	-16.9	8.9	3.23	-18.8	-21.9	2.09
36	TB3MS	-27.5	192	-7.78	-28.4	6.89	2.75	2.55	-82.6	0.619
37	BUSLOANS	-60.6	2.77	4.05	4.69	0.524	-1	-1.49	-4.04	2.71
38	TOTALSL	5.19	26.4	5.53	2.1	-10.4	7.27	-1.53	-24.4	13.7
39	AAA	-62.6	153	-3.44	-99.5	10.8	-2.61	6.1	10.2	-1.29
	Mean	-14.756	6.564	-3.537	-1.391	3.364	1.887	-3.896	-23.483	2.536
	t-stat.	-0.538	0.138	-0.275	-0.056	0.320	0.283	-0.203	-0.709	0.573

See Table 1 of the paper for model definitions. Trimmed means and t-stats are underlined, as the corresponding trimmed observations. Results computed from Table 4.

Table 17: Average predictive likelihoods at horizon 1 on last sixty percent of sample (quarterly data)

	Series	PPT12	PPT41	KP1	KP4	GK1P	GK4P	GK1B	GK4B	TVP1	TVP4	RO140	RO120	RO440	RO420	RE1	RE4	UC-SV
1	GDPC96	0.422	0.402	0.425	0.416	0.452	0.433	0.353	0.367	0.439	0.437	0.435	0.440	0.419	0.385	0.354	0.356	0.446
2	PINCOME	0.364	0.363	0.363	0.371	0.344	0.346	0.343	0.358	0.377	0.382	0.360	0.378	0.360	0.332	0.368	0.385	0.380
3	PCECC96	0.431	0.439	0.442	0.468	0.454	0.476	0.397	0.422	0.485	0.495	0.497	0.506	0.509	0.464	0.434	0.446	0.469
4	PCECTPI	0.860	0.876	0.894	0.910	0.688	0.682	0.514	0.554	0.729	0.761	0.919	0.960	0.908	0.860	0.898	0.943	0.648
5	GPDIC96	0.257	0.245	0.267	0.261	0.309	0.297	0.277	0.280	0.312	0.272	0.292	0.294	0.284	0.265	0.251	0.251	0.313
6	OPHPBS	0.339	0.337	0.362	0.345	0.385	0.385	0.343	0.360	0.390	0.388	0.380	0.381	0.362	0.335	0.343	0.347	0.385
7	IMPGSC96	0.501	0.485	0.533	0.529	0.458	0.447	0.352	0.361	0.514	0.472	0.545	0.584	0.554	0.551	0.346	0.341	0.460
8	EXPGSC96	0.499	0.456	0.534	0.494	0.465	0.461	0.351	0.369	0.495	0.475	0.533	0.542	0.508	0.459	0.338	0.338	0.420
9	CBIC96	0.401	0.379	0.373	0.370	0.337	0.328	0.360	0.364	0.360	0.358	0.357	0.344	0.338	0.291	0.414	0.407	0.271
10	GCEC96	0.276	0.282	0.282	0.289	0.312	0.311	0.296	0.312	0.263	0.282	0.313	0.315	0.307	0.274	0.280	0.292	0.329
11	WASCUR	0.421	0.421	0.415	0.421	0.411	0.411	0.370	0.395	0.445	0.441	0.450	0.443	0.420	0.401	0.427	0.438	0.386
12	DIVIDEND	0.534	0.523	0.541	0.666	0.515	0.518	0.447	0.469	0.543	0.570	0.587	0.578	0.669	0.721	0.569	0.565	0.439
13	PSAVE	0.882	0.836	0.872	0.900	0.634	0.648	0.637	0.650	0.675	0.678	0.810	0.799	0.762	0.703	0.958	0.936	0.640
14	DPIC96	0.320	0.309	0.319	0.330	0.373	0.358	0.328	0.335	0.356	0.349	0.325	0.333	0.316	0.300	0.326	0.317	0.373
15	GDPDEF	1.190	1.120	1.290	1.180	0.868	0.845	0.471	0.604	0.894	0.915	1.240	1.260	1.260	1.140	1.050	1.090	0.730
16	ULCNFB	0.293	0.289	0.280	0.300	0.325	0.321	0.302	0.313	0.301	0.307	0.326	0.330	0.323	0.294	0.283	0.294	0.329
17	PRFI	0.372	0.343	0.410	0.386	0.415	0.403	0.314	0.320	0.425	0.347	0.408	0.436	0.393	0.401	0.298	0.295	0.383
18	GSAVE	0.283	0.285	0.286	0.292	0.287	0.280	0.291	0.302	0.302	0.302	0.282	0.276	0.291	0.266	0.287	0.293	0.286
19	CPIAUCSL	0.616	0.632	0.702	0.670	0.568	0.557	0.444	0.437	0.592	0.618	0.689	0.700	0.690	0.612	0.637	0.696	0.450
20	FEDFUNDS	1.780	2.060	2.210	1.720	0.993	0.952	1.080	1.070	1.260	1.210	1.720	1.740	2.220	2.250	1.240	1.290	0.574
21	BOGNONBR	21.90	21.20	21.80	21.00	3.760	3.800	4.170	4.010	3.280	2.780	24.10	24.70	22.70	21.00	27.60	26.40	1.160
22	M2SL	0.457	0.441	0.451	0.455	0.416	0.400	0.382	0.401	0.452	0.450	0.460	0.478	0.448	0.405	0.462	0.457	0.349
23	INDPRO	1.090	0.997	1.080	1.050	0.851	0.829	0.617	0.759	0.879	0.839	1.140	1.210	1.070	1.070	0.814	0.895	0.576
24	UTL11	3.810	4.310	3.290	4.050	0.837	0.805	1.380	1.220	1.830	1.550	4.270	4.300	5.130	4.530	3.340	4.070	0.789
25	UNRATE	3.450	4.270	3.540	4.390	1.320	1.270	1.610	1.540	1.880	1.850	4.080	4.040	4.720	4.310	3.510	4.430	0.738
26	HOUST	3.300	3.350	3.330	3.450	0.697	0.654	1.240	1.100	1.640	1.320	3.770	3.930	3.740	3.450	3.350	3.500	0.809
27	PPIFCG	0.246	0.262	0.253	0.267	0.289	0.280	0.285	0.294	0.276	0.282	0.262	0.267	0.255	0.223	0.277	0.284	0.234
28	AHEMAN	0.572	0.555	0.606	0.615	0.491	0.541	0.420	0.480	0.538	0.583	0.634	0.637	0.669	0.591	0.443	0.559	0.405
29	M1SL	0.256	0.240	0.265	0.284	0.280	0.270	0.289	0.294	0.292	0.279	0.270	0.266	0.254	0.224	0.305	0.298	0.233
30	PMCP	3.590	3.740	3.560	3.880	1.340	1.250	0.450	0.446	1.750	1.810	3.530	3.340	3.950	3.610	3.680	3.920	0.832
31	SP500	2.010	1.910	2.040	1.930	1.140	1.120	1.060	1.120	1.230	1.210	1.970	1.920	1.880	1.650	2.060	1.990	0.758
32	GS10	1.900	1.840	1.850	2.170	1.010	1.000	1.140	1.120	1.300	1.300	2.200	2.220	2.150	2.030	2.170	2.190	0.678
33	EXUSUK	0.294	0.256	0.298	0.268	0.304	0.301	0.310	0.312	0.320	0.314	0.276	0.284	0.257	0.239	0.285	0.280	0.258
34	PAYEMS	1.110	1.080	1.170	1.110	0.811	0.776	0.564	0.604	0.945	0.850	1.190	1.260	1.150	1.210	0.888	0.947	0.538
35	NAPMNOI	5.360	5.530	5.390	5.660	1.680	1.560	0.489	0.488	2.250	2.170	5.500	5.350	5.450	5.470	5.490	5.720	1.000
36	TB3MS	1.810	2.270	1.970	1.630	1.030	0.975	1.110	1.090	1.320	1.260	1.920	1.910	2.330	2.350	1.550	1.630	0.600
37	BUSLOANS	0.892	0.852	0.884	0.888	0.642	0.631	0.563	0.620	0.720	0.713	0.903	0.880	0.834	0.802	0.926	0.917	0.489
38	TOTALSL	1.650	1.610	1.690	1.660	1.100	1.060	0.570	0.588	1.130	1.150	1.690	1.810	1.620	1.740	1.680	1.680	0.651
39	AAA	2.530	2.360	2.350	2.800	1.130	1.060	1.320	1.280	1.520	1.470	2.850	2.940	2.800	2.690	2.750	2.810	0.746

See Table 1 of the paper for model definitions.

Table 18: Average predictive likelihoods at horizon 4 on last sixty percent of sample (quarterly data)

	Series	PPT12	PPT41	KP1	KP4	GK1P	GK4P	GK1B	GK4B	TVP1	TVP4	RO140	RO120	RO440	RO420	RE1	RE4	UC-SV
1	GDPC96	0.375	0.328	0.386	0.374	0.431	0.421	0.345	0.351	0.406	0.390	0.403	0.411	0.377	0.335	0.340	0.333	0.448
2	PINCOME	0.312	0.304	0.324	0.327	0.306	0.306	0.326	0.341	0.346	0.341	0.341	0.334	0.326	0.283	0.329	0.351	0.372
3	PCECC96	0.397	0.371	0.458	0.402	0.440	0.419	0.389	0.398	0.459	0.434	0.460	0.460	0.428	0.387	0.418	0.415	0.463
4	PCECTPI	0.539	0.556	0.596	0.629	0.485	0.472	0.399	0.472	0.491	0.534	0.691	0.782	0.724	0.678	0.584	0.645	0.624
5	GPDIC96	0.247	0.226	0.256	0.249	0.303	0.291	0.277	0.284	0.301	0.185	0.284	0.277	0.266	0.227	0.251	0.248	0.306
6	OPHPBS	0.327	0.306	0.341	0.332	0.376	0.363	0.343	0.353	0.391	0.371	0.379	0.367	0.356	0.311	0.343	0.340	0.379
7	IMPGSC96	0.426	0.372	0.442	0.435	0.440	0.429	0.355	0.367	0.454	0.342	0.470	0.493	0.440	0.410	0.350	0.341	0.446
8	EXPGSC96	0.457	0.387	0.493	0.451	0.446	0.438	0.344	0.363	0.456	0.417	0.500	0.503	0.459	0.408	0.328	0.329	0.163
9	CBIC96	0.313	0.278	0.294	0.282	0.272	0.263	0.297	0.297	0.287	0.271	0.282	0.262	0.253	0.214	0.331	0.317	0.117
10	GCEC96	0.267	0.258	0.275	0.279	0.312	0.310	0.295	0.306	0.207	0.250	0.307	0.316	0.298	0.267	0.277	0.285	0.324
11	WASCUR	0.323	0.313	0.331	0.328	0.313	0.305	0.321	0.330	0.366	0.350	0.369	0.363	0.345	0.329	0.343	0.353	0.381
12	DIVIDEND	0.436	0.394	0.447	0.410	0.367	0.355	0.396	0.410	0.415	0.391	0.449	0.414	0.424	0.338	0.478	0.474	0.388
13	PSAVE	0.808	0.721	0.813	0.798	0.605	0.587	0.629	0.615	0.638	0.626	0.775	0.726	0.708	0.611	0.922	0.909	0.622
14	DPIC96	0.311	0.287	0.313	0.306	0.354	0.344	0.329	0.338	0.349	0.335	0.335	0.320	0.306	0.266	0.325	0.320	0.363
15	GDPDEF	0.739	0.764	0.817	0.875	0.595	0.623	0.387	0.547	0.584	0.674	0.884	1.000	0.989	0.924	0.647	0.792	0.710
16	ULCNFB	0.263	0.246	0.328	0.266	0.295	0.294	0.287	0.297	0.238	0.261	0.303	0.317	0.294	0.266	0.259	0.273	0.320
17	PRFI	0.282	0.239	0.295	0.277	0.333	0.322	0.273	0.277	0.326	0.216	0.309	0.334	0.293	0.288	0.250	0.243	0.355
18	GSAVE	0.272	0.260	0.282	0.278	0.285	0.268	0.289	0.295	0.291	0.282	0.277	0.262	0.267	0.231	0.282	0.284	0.285
19	CPIAUCSL	0.436	0.412	0.519	0.466	0.403	0.383	0.352	0.351	0.449	0.449	0.583	0.612	0.562	0.522	0.444	0.487	0.282
20	FEDFUNDS	0.651	0.533	0.668	0.554	0.398	0.349	0.511	0.475	0.534	0.417	0.657	0.621	0.580	0.574	0.572	0.529	0.281
21	BOGNONBR	14.60	14.20	18.00	18.00	3.800	3.720	4.020	3.860	2.050	1.130	20.30	20.50	19.70	16.80	23.60	24.70	0.737
22	M2SL	0.321	0.303	0.323	0.332	0.278	0.268	0.301	0.312	0.332	0.329	0.352	0.368	0.344	0.315	0.340	0.343	0.212
23	INDPRO	0.827	0.739	0.831	0.806	0.747	0.696	0.576	0.685	0.715	0.648	0.903	0.913	0.840	0.798	0.732	0.755	0.347
24	UTL11	1.480	1.270	1.480	1.310	0.266	0.245	0.470	0.491	0.751	0.447	1.780	1.470	1.580	1.050	1.550	1.390	0.436
25	UNRATE	1.290	1.170	1.340	1.220	0.514	0.443	0.765	0.783	0.784	0.478	1.590	1.120	1.380	1.090	1.450	1.290	0.396
26	HOUST	1.500	1.250	1.620	1.360	0.203	0.205	0.409	0.454	0.696	0.434	1.680	1.700	1.640	1.530	1.710	1.440	0.459
27	PPIFCG	0.204	0.207	0.205	0.218	0.241	0.240	0.251	0.262	0.214	0.225	0.233	0.233	0.220	0.194	0.230	0.237	0.150
28	AHEMAN	0.501	0.485	0.554	0.580	0.465	0.502	0.397	0.469	0.522	0.551	0.586	0.626	0.636	0.564	0.374	0.532	0.287
29	M1SL	0.189	0.159	0.194	0.200	0.180	0.168	0.228	0.232	0.198	0.190	0.216	0.196	0.195	0.153	0.225	0.223	0.131
30	PMCP	1.710	1.630	1.720	1.720	0.727	0.664	0.400	0.385	0.906	0.779	1.790	1.620	1.710	1.380	1.870	1.820	0.498
31	SP500	1.760	1.650	1.830	1.780	1.150	1.100	1.020	1.100	1.120	1.070	1.830	1.760	1.680	1.470	1.910	1.880	0.491
32	GS10	0.796	0.616	0.814	0.842	0.535	0.450	0.627	0.620	0.590	0.517	0.987	1.070	0.863	0.865	0.995	0.880	0.381
33	EXUSUK	0.275	0.224	0.273	0.246	0.296	0.283	0.295	0.296	0.301	0.274	0.251	0.256	0.236	0.215	0.268	0.265	0.161
34	PAYEMS	0.646	0.550	0.676	0.596	0.480	0.431	0.447	0.443	0.565	0.438	0.684	0.702	0.595	0.666	0.580	0.545	0.290
35	NAPMNOI	3.350	3.300	3.510	3.510	0.999	0.867	0.440	0.433	1.370	1.170	3.550	3.310	3.280	2.650	3.670	3.680	0.616
36	TB3MS	0.650	0.576	0.661	0.637	0.430	0.374	0.547	0.537	0.568	0.448	0.719	0.672	0.657	0.556	0.679	0.661	0.298
37	BUSLOANS	0.551	0.508	0.560	0.542	0.430	0.421	0.449	0.483	0.456	0.421	0.557	0.574	0.488	0.494	0.590	0.576	0.286
38	TOTALSL	0.929	0.847	0.955	0.909	0.605	0.574	0.490	0.487	0.632	0.590	0.937	0.969	0.887	0.885	0.990	0.925	0.365
39	AAA	1.060	0.758	1.030	1.050	0.575	0.450	0.707	0.700	0.680	0.537	1.320	1.480	1.130	1.270	1.280	1.100	0.423

See Table 1 of the paper for model definitions.

Table 19: Average predictive likelihoods at horizon 1 on last sixty percent of sample (monthly data)

Series	PPT12	PPT41	KP1	KP4	GK1P	GK4P	GK1B	GK4B	TVP1	TVP4	RO110Y	RO15Y	RO13Y	RO410Y	RO45Y	RO43Y	RE1	RE4	UCSV
CPIAUCSL	1.35	1.38	1.34	1.32	0.90	0.90	0.69	0.71	0.95	0.97	1.37	1.43	1.46	1.38	1.40	1.41	1.23	1.30	0.64
FEDFUNDS	12.20	13.70	9.50	8.77	2.18	2.17	2.16	2.27	2.78	2.72	10.30	11.00	12.90	13.40	14.60	16.10	5.52	6.02	0.95
BOGNONBR	38.80	38.60	20.40	20.20	4.61	4.84	5.17	5.19	3.99	3.52	40.80	40.30	41.00	40.80	39.80	38.70	49.40	48.90	1.14
M2SL	1.03	1.04	1.03	1.04	0.79	0.77	0.54	0.55	0.83	0.84	1.09	1.11	1.13	1.09	1.09	1.06	1.14	1.15	0.56
INDPRO	0.45	0.46	0.46	0.45	0.43	0.45	0.37	0.38	0.46	0.46	0.46	0.47	0.47	0.48	0.48	0.46	0.39	0.39	0.35
UTL11	4.93	5.30	4.13	4.50	0.94	0.93	1.38	1.36	2.00	1.58	5.04	5.09	5.13	5.58	5.50	5.30	4.11	4.43	0.83
UNRATE	15.60	16.30	15.70	16.40	2.43	2.35	2.54	2.80	3.66	3.28	17.10	16.90	17.30	17.70	17.30	17.20	15.60	16.40	1.09
HOUST	3.59	3.71	3.54	3.67	0.90	0.89	1.25	1.29	1.71	1.57	3.78	3.87	3.97	3.97	3.97	3.91	3.55	3.69	0.88
PPIFCG	0.53	0.51	0.51	0.49	0.47	0.48	0.42	0.43	0.48	0.49	0.50	0.53	0.52	0.50	0.52	0.49	0.48	0.49	0.37
AHEMAN	0.61	0.60	0.61	0.59	0.53	0.53	0.45	0.47	0.54	0.55	0.61	0.63	0.63	0.64	0.64	0.62	0.51	0.53	0.50
M1SL	0.51	0.48	0.49	0.48	0.45	0.45	0.44	0.45	0.49	0.50	0.53	0.53	0.54	0.53	0.52	0.50	0.57	0.59	0.41
PMCP	6.08	6.18	6.07	6.31	1.83	1.75	1.86	1.88	2.43	2.38	6.35	6.30	6.14	6.67	6.53	6.10	6.20	6.38	0.51
SP500	0.84	0.84	0.84	0.84	0.65	0.65	0.60	0.61	0.67	0.68	0.84	0.84	0.84	0.82	0.81	0.80	0.85	0.85	0.63
GS10	9.19	9.14	8.47	9.99	2.15	2.06	2.11	2.18	2.93	2.79	9.61	9.90	9.79	10.00	10.20	9.88	9.40	10.10	1.02
EXUSUK	1.23	1.24	1.25	1.32	0.81	0.81	0.80	0.82	0.86	0.89	1.22	1.22	1.22	1.22	1.20	1.18	1.34	1.35	0.60
PAYEMS	2.18	2.49	2.16	2.30	1.22	1.29	0.81	0.87	1.26	1.34	2.17	2.29	2.40	2.43	2.47	2.43	1.53	1.72	0.79
NAPMNOI	7.41	7.41	7.36	7.44	2.03	1.92	2.01	2.06	2.65	2.55	7.75	7.75	7.75	7.76	7.61	7.45	7.49	7.45	1.03
TB3MS	11.40	12.90	0.40	8.52	2.17	2.08	2.09	2.22	2.84	2.76	10.40	11.00	12.40	12.10	13.10	14.30	6.55	7.07	0.97
BUSLOANS	0.48	0.48	0.48	0.49	0.42	0.43	0.41	0.42	0.45	0.47	0.48	0.48	0.49	0.49	0.48	0.48	0.49	0.50	0.36
TOTALSL	0.84	0.88	0.48	0.88	0.68	0.72	0.51	0.54	0.69	0.74	0.80	0.84	0.88	0.89	0.89	0.90	0.76	0.86	0.53
AAA	12.40	12.40	0.93	12.90	2.24	2.12	2.41	2.47	3.20	2.95	12.50	13.00	13.30	13.00	13.40	13.20	11.90	13.00	1.07

See Table 1 of the paper for model definitions.

Table 20: Average predictive likelihoods at horizon 12 on last sixty percent of sample (monthly data)

Series	PPT12	PPT41	KP1	KP4	GK1P	GK4P	GK1B	GK4B	TVP1	TVP4	RO110Y	RO15Y	RO13Y	RO410Y	RO45Y	RO43Y	RE1	RE4	UCSV
CPIAUCSL	0.99	0.76	0.97	0.93	0.69	0.65	0.64	0.65	0.78	0.74	1.14	1.25	1.30	1.14	1.22	1.19	0.96	0.99	0.16
FEDFUNDS	1.17	0.82	1.49	1.27	0.63	0.47	0.95	0.98	0.64	0.44	1.80	1.61	1.51	1.48	1.56	1.62	1.41	1.24	0.22
BOGNONBR	13.60	11.40	17.40	15.80	4.68	4.90	5.10	5.08	2.30	0.45	38.00	36.20	36.00	37.00	34.30	33.20	46.10	45.80	0.32
M2SL	0.60	0.49	0.67	0.66	0.52	0.52	0.48	0.48	0.60	0.58	0.82	0.85	0.89	0.81	0.83	0.83	0.81	0.81	0.15
INDPRO	0.37	0.31	0.40	0.38	0.41	0.40	0.36	0.37	0.37	0.33	0.44	0.45	0.44	0.43	0.42	0.39	0.36	0.36	0.09
UTL11	0.75	0.64	0.97	0.80	0.14	0.13	0.16	0.20	0.33	0.18	1.13	0.91	0.88	1.02	0.84	0.87	1.03	0.84	0.17
UNRATE	2.84	2.51	3.37	3.03	0.62	0.48	1.43	1.47	0.77	0.53	3.89	2.73	2.61	3.57	2.73	2.60	3.72	3.19	0.27
HOUST	0.98	1.05	1.28	1.44	0.22	0.17	0.18	0.26	0.49	0.42	1.30	1.38	1.72	1.56	1.60	1.83	1.36	1.52	0.19
PPIFCG	0.43	0.34	0.42	0.39	0.43	0.43	0.40	0.41	0.42	0.41	0.46	0.47	0.47	0.45	0.46	0.43	0.46	0.45	0.11
AHEMAN	0.51	0.44	0.56	0.53	0.53	0.52	0.45	0.46	0.52	0.50	0.59	0.61	0.61	0.59	0.59	0.57	0.51	0.51	0.51
M1SL	0.41	0.26	0.37	0.33	0.35	0.34	0.41	0.42	0.40	0.38	0.45	0.42	0.42	0.44	0.40	0.39	0.49	0.50	0.38
PMCP	1.40	1.32	1.67	1.68	0.58	0.53	1.03	0.93	0.63	0.52	1.75	1.61	1.51	1.74	1.56	1.37	1.81	1.79	0.50
SP500	0.72	0.66	0.78	0.77	0.63	0.63	0.59	0.60	0.64	0.62	0.81	0.80	0.80	0.80	0.77	0.74	0.83	0.82	0.63
GS10	1.58	1.17	2.04	2.11	0.96	0.71	1.23	1.18	0.72	0.56	2.47	2.66	2.63	2.17	2.43	2.47	2.43	2.24	0.25
EXUSUK	1.09	0.91	1.09	1.13	0.80	0.80	0.79	0.80	0.80	0.77	1.15	1.15	1.15	1.13	1.12	1.04	1.25	1.25	0.18
PAYEMS	1.20	1.14	1.30	1.47	0.98	0.90	0.76	0.80	0.92	0.73	1.55	1.51	1.60	1.59	1.49	1.47	1.27	1.29	0.18
NAPMNOI	2.77	2.73	3.30	3.30	0.62	0.52	1.46	1.35	0.93	0.79	3.48	3.26	3.03	3.43	3.15	2.77	3.50	3.50	0.25
TB3MS	1.09	0.97	0.33	1.49	0.70	0.56	1.04	1.05	0.67	0.49	1.95	1.75	1.48	1.62	1.65	1.49	1.66	1.53	0.23
BUSLOANS	0.30	0.27	0.31	0.32	0.27	0.27	0.33	0.33	0.30	0.29	0.34	0.34	0.36	0.34	0.34	0.33	0.34	0.35	0.09
TOTALSL	0.51	0.47	0.31	0.56	0.41	0.39	0.44	0.44	0.46	0.44	0.56	0.59	0.61	0.58	0.56	0.55	0.55	0.60	0.12
AAA	1.84	1.37	0.55	2.71	1.02	0.63	1.44	1.40	0.77	0.54	3.21	3.65	3.67	2.97	3.44	3.54	3.14	2.87	0.27

See Table 1 of the paper for model definitions.

Table 21: APL ($h = 1$) relative performance of AR(1) break models on last sixty percent of sample (quarterly data)

	Series	$\frac{PPT12}{KP1}$	$\frac{PPT12}{GK1P}$	$\frac{PPT12}{GK1B}$	$\frac{PPT12}{TVP1}$	$\frac{KP1}{GK1P}$	$\frac{KP1}{GK1B}$	$\frac{KP1}{TVP1}$	$\frac{GK1P}{GK1B}$	$\frac{GK1P}{TVP1}$	$\frac{GK1B}{TVP1}$
1	GDPC96	-0.731	-6.66	19.5	-3.95	-5.97	20.4	-3.24	28	2.9	-19.6
2	PINCOME	0.187	5.75	5.89	-3.65	5.56	5.7	-3.82	0.132	-8.89	-9.01
3	PCECC96	-2.35	-5.06	8.57	-11	-2.78	11.2	-8.82	14.4	-6.22	-18
4	PCECTPI	-3.77	25	67.5	18	29.9	74	22.6	33.9	-5.66	-29.6
5	GPDIC96	-3.63	-16.9	-7.09	-17.6	-13.8	-3.59	-14.5	11.8	-0.893	-11.4
6	OPHPBS	-6.55	-12.1	-1.26	-13.2	-5.93	5.66	-7.14	12.3	-1.28	-12.1
7	IMPGSC96	-6.08	9.24	42.5	-2.51	16.3	51.7	3.8	30.4	-10.8	-31.6
8	EXPGSC96	-6.5	7.44	42.3	0.971	14.9	52.2	8	32.5	-6.02	-29
9	CBIC96	7.46	19.1	11.6	11.6	10.8	3.81	3.82	-6.32	-6.31	0.00335
10	GCEC96	-1.99	-11.4	-6.79	5.11	-9.63	-4.9	7.24	5.23	18.7	12.8
11	WASCUR	1.46	2.62	13.8	-5.26	1.14	12.2	-6.63	10.9	-7.68	-16.8
12	DIVIDEND	-1.24	3.76	19.6	-1.61	5.07	21.1	-0.368	15.3	-5.17	-17.7
13	PSAVE	1.12	39.2	38.4	30.8	37.7	36.9	29.3	-0.571	-6.08	-5.54
14	DPIC96	0.19	-14.3	-2.41	-10.2	-14.5	-2.59	-10.4	13.9	4.76	-8.01
15	GDPDEF	-7.99	36.9	152	33	48.7	174	44.5	84.3	-2.83	-47.3
16	ULCNFB	4.71	-9.83	-3.01	-2.68	-13.9	-7.38	-7.05	7.56	7.94	0.349
17	PRFI	-9.26	-10.3	18.4	-12.5	-1.17	30.5	-3.61	32	-2.46	-26.1
18	GSAVE	-1.2	-1.55	-2.79	-6.48	-0.36	-1.61	-5.35	-1.26	-5.01	-3.8
19	CPIAUCSL	-12.3	8.46	38.7	4.03	23.7	58.2	18.7	27.9	-4.08	-25
20	FEDFUNDS	-19.5	78.9	65	40.8	122	105	74.9	-7.73	-21.3	-14.7
21	BOGNONBR	0.565	483	425	568	479	422	564	-9.9	14.6	27.2
22	M2SL	1.35	9.97	19.7	1.27	8.51	18.2	-0.0776	8.89	-7.91	-15.4
23	INDPRO	0.955	27.9	76.5	23.8	26.7	74.8	22.7	38	-3.21	-29.8
24	UTL11	15.9	355	175	109	293	137	80.1	-39.6	-54.2	-24.2
25	UNRATE	-2.54	163	115	83.2	169	121	88	-18	-30.2	-14.8
26	HOUST	-0.681	374	166	102	377	168	103	-43.9	-57.5	-24.2
27	PPIFCG	-2.73	-14.9	-13.6	-10.8	-12.5	-11.2	-8.25	1.5	4.84	3.29
28	AHEMAN	-5.59	16.6	36.2	6.36	23.5	44.3	12.7	16.8	-8.79	-21.9
29	M1SL	-3.39	-8.55	-11.4	-12.2	-5.33	-8.34	-9.1	-3.17	-3.98	-0.834
30	PMCP	0.775	169	697	105	167	691	103	197	-23.8	-74.3
31	SP500	-1.29	76.3	90.3	63.7	78.6	92.8	65.8	7.97	-7.14	-14
32	GS10	2.95	87.4	66.7	46.6	82	62	42.4	-11	-21.8	-12.1
33	EXUSUK	-1.37	-3.33	-5.15	-8.14	-1.99	-3.83	-6.86	-1.88	-4.98	-3.16
34	PAYEMS	-5.79	36.5	96.4	17.1	44.8	108	24.3	43.9	-14.2	-40.4
35	NAPMNOI	-0.449	219	995	139	220	1.00E+03	140	243	-25.2	-78.2
36	TB3MS	-8.09	75.4	63.5	36.6	90.9	77.9	48.6	-6.79	-22.1	-16.5
37	BUSLOANS	0.931	39	58.5	24	37.7	57	22.8	14	-10.8	-21.8
38	TOTALSL	-2	50.4	190	46.3	53.5	196	49.2	93	-2.77	-49.6
39	AAA	7.55	125	92.2	66.6	109	78.7	54.9	-14.5	-25.8	-13.3
	Mean	-1.818	16.905	30.266	12.884	17.810	29.167	17.976	11.350	-9.521	-18.875
	t-stat.	-0.313	0.560	0.894	0.494	0.607	0.902	0.617	0.420	-0.630	-0.954

See Table 1 of the paper for model definitions. Trimmed means and t-stats are underlined, as the corresponding trimmed observations. Results computed from Table 17.

Table 22: APL ($h = 1$) relative performance of AR(4) break models on last sixty percent of sample (quarterly data)

	Series	$\frac{PPT41}{KP4}$	$\frac{PPT41}{TVP4}$	$\frac{PPT41}{GK4B}$	$\frac{PPT41}{GK4P}$	$\frac{KP4}{TVP4}$	$\frac{KP4}{GK4B}$	$\frac{KP4}{GK4P}$	$\frac{GK4B}{TVP4}$	$\frac{GK4P}{TVP4}$	$\frac{GK4B}{GK4P}$
1	GDPC96	-3.34	-7.97	9.37	-7.14	-4.79	13.1	-3.93	-15.9	-0.889	-15.1
2	PINCOME	-2.15	-5.12	1.29	4.85	-3.03	3.52	7.16	-6.33	-9.51	3.52
3	PCECC96	-6.26	-11.3	3.97	-7.81	-5.4	10.9	-1.66	-14.7	-3.81	-11.3
4	PCECTPI	-3.7	15.1	58	28.4	19.5	64.1	33.3	-27.2	-10.3	-18.8
5	GPDIC96	-6.2	-10	-12.6	-17.7	-4.05	-6.8	-12.3	2.95	9.4	-5.9
6	OPHPBS	-2.32	-13.3	-6.31	-12.4	-11.2	-4.08	-10.4	-7.42	-0.94	-6.54
7	IMPGSC96	-8.38	2.77	34.4	8.53	12.2	46.7	18.5	-23.6	-5.31	-19.3
8	EXPGSC96	-7.78	-4.04	23.4	-1.24	4.07	33.8	7.1	-22.2	-2.83	-20
9	CBIC96	2.47	5.9	4.12	15.4	3.35	1.62	12.6	1.71	-8.21	10.8
10	GCEC96	-2.33	-0.0389	-9.57	-9.34	2.34	-7.41	-7.17	10.5	10.3	0.257
11	WASCUR	-0.0513	-4.64	6.67	2.52	-4.59	6.73	2.57	-10.6	-6.98	-3.9
12	DIVIDEND	-21.5	-8.24	11.6	1.03	16.9	42.1	28.7	-17.8	-9.18	-9.46
13	PSAVE	-7.17	23.3	28.7	28.9	32.8	38.6	38.9	-4.19	-4.39	0.215
14	DPIC96	-6.4	-11.7	-7.86	-13.8	-5.65	-1.57	-7.94	-4.15	2.49	-6.47
15	GDPDEF	-4.85	22.4	85.6	32.6	28.7	95	39.3	-34	-7.64	-28.6
16	ULCNFB	-3.83	-5.96	-7.79	-9.89	-2.21	-4.12	-6.31	1.99	4.37	-2.28
17	PRFI	-11.2	-1.09	7.05	-15	11.4	20.5	-4.26	-7.6	16.3	-20.6
18	GSAVE	-2.37	-5.83	-5.77	1.77	-3.54	-3.48	4.25	-0.0599	-7.47	8.01
19	CPIAUCSL	-5.66	2.28	44.8	13.5	8.42	53.5	20.3	-29.4	-9.87	-21.6
20	FEDFUNDS	20.1	70.7	93.2	117	42.1	60.8	80.2	-11.6	-21.1	12.1
21	BOGNONBR	1.02	662	428	458	654	422	452	44.4	36.6	5.69
22	M2SL	-3.2	-2.15	9.9	10.2	1.08	13.5	13.9	-11	-11.2	0.304
23	INDPRO	-5.43	18.8	31.4	20.2	25.6	38.9	27.1	-9.59	-1.2	-8.49
24	UTL11	6.36	178	253	435	161	232	403	-21.3	-48	51.5
25	UNRATE	-2.91	131	176	235	138	185	245	-16.5	-31	21
26	HOUST	-2.69	155	205	413	162	213	427	-16.3	-50.3	68.5
27	PPIFCG	-1.86	-7.08	-10.6	-6.2	-5.33	-8.9	-4.43	3.92	-0.943	4.91
28	AHEMAN	-9.69	-4.73	15.7	2.56	5.5	28.1	13.6	-17.7	-7.11	-11.4
29	M1SL	-15.6	-14	-18.3	-11	1.82	-3.27	5.45	5.26	-3.44	9.01
30	PMCP	-3.65	106	738	199	114	770	211	-75.4	-31.1	-64.3
31	SP500	-0.821	58.4	70.2	70.9	59.7	71.6	72.3	-6.93	-7.3	0.4
32	GS10	-15.2	42	64.3	83.6	67.3	93.7	116	-13.6	-22.7	11.7
33	EXUSUK	-4.48	-18.5	-17.9	-15	-14.7	-14	-11.1	-0.786	-4.09	3.45
34	PAYEMS	-1.95	27.4	79.5	39.6	30	83	42.4	-29	-8.7	-22.2
35	NAPMNOI	-2.37	155	1.03E+03	254	161	1.06E+03	262	-77.5	-28	-68.8
36	TB3MS	38.8	79.6	107	133	29.4	49.3	67.6	-13.3	-22.8	12.2
37	BUSLOANS	-4.02	19.5	37.5	35	24.5	43.3	40.6	-13.1	-11.5	-1.82
38	TOTALSL	-2.67	39.9	175	52.2	43.7	182	56.4	-49.1	-8.11	-44.6
39	AAA	-15.5	61.2	84	124	90.7	118	165	-12.4	-27.9	21.5
	Mean	-3.302	10.714	22.838	10.841	15.048	27.701	21.210	-10.720	-9.086	-4.267
	t-stat.	-0.346	0.406	0.673	0.420	0.617	0.858	0.685	-0.701	-0.571	-0.175

See Table 1 of the paper for model definitions. Trimmed means and t-stats are underlined, as the corresponding trimmed observations. Results computed from Table 17.

Table 23: APL ($h = 4$) relative performance of AR(1) break models on last sixty percent of sample (quarterly data)

	Series	$\frac{PPT12}{KP1}$	$\frac{PPT12}{GK1P}$	$\frac{PPT12}{GK1B}$	$\frac{PPT12}{TVP1}$	$\frac{KP1}{GK1P}$	$\frac{KP1}{GK1B}$	$\frac{KP1}{TVP1}$	$\frac{GK1P}{GK1B}$	$\frac{GK1P}{TVP1}$	$\frac{GK1B}{TVP1}$
1	GDPC96	-2.9	-12.9	8.84	-7.53	-10.3	12.1	-4.77	24.9	6.16	-15
2	PINCOME	-3.72	1.82	-4.27	-9.87	5.76	-0.565	-6.38	-5.98	-11.5	-5.85
3	PCECC96	-13.3	-9.72	2.03	-13.4	4.11	17.7	-0.153	13	-4.09	-15.1
4	PCECTPI	-9.59	11.2	35.2	9.69	23	49.5	21.3	21.6	-1.33	-18.9
5	GPDIC96	-3.44	-18.6	-10.8	-18.1	-15.7	-7.59	-15.2	9.56	0.518	-8.26
6	OPHPBS	-4.21	-13.1	-4.63	-16.2	-9.28	-0.438	-12.6	9.75	-3.61	-12.2
7	IMPGSC96	-3.47	-3.11	20.1	-6.21	0.374	24.4	-2.84	23.9	-3.2	-21.9
8	EXPGSC96	-7.31	2.27	32.6	0.194	10.3	43	8.09	29.6	-2.03	-24.4
9	CBIC96	6.44	15	5.16	9.02	8.04	-1.21	2.42	-8.56	-5.2	3.67
10	GCEC96	-3.19	-14.6	-9.77	28.9	-11.8	-6.8	33.1	5.67	50.9	42.8
11	WASCUR	-2.31	3.09	0.734	-11.7	5.53	3.12	-9.57	-2.29	-14.3	-12.3
12	DIVIDEND	-2.57	18.6	10.1	4.94	21.7	13	7.71	-7.21	-11.5	-4.65
13	PSAVE	-0.658	33.4	28.4	26.5	34.3	29.2	27.3	-3.77	-5.15	-1.44
14	DPIC96	-0.67	-12	-5.55	-11	-11.4	-4.92	-10.4	7.34	1.19	-5.73
15	GDPDEF	-9.52	24.3	91	26.4	37.4	111	39.8	53.7	1.75	-33.8
16	ULCNFB	-19.8	-11	-8.4	10.3	11	14.2	37.5	2.87	23.9	20.4
17	PRFI	-4.34	-15.4	3.35	-13.5	-11.6	8.04	-9.6	22.2	2.22	-16.3
18	GSAVE	-3.55	-4.78	-6	-6.73	-1.27	-2.54	-3.29	-1.29	-2.05	-0.768
19	CPIAUCSL	-16	8.16	23.8	-2.96	28.8	47.4	15.6	14.4	-10.3	-21.6
20	FEDFUNDS	-2.64	63.6	27.3	21.9	68	30.7	25.2	-22.2	-25.5	-4.22
21	BOGNONBR	-19	284	263	610	373	347	776	-5.53	85	95.9
22	M2SL	-0.621	15.3	6.65	-3.34	16.1	7.32	-2.74	-7.53	-16.2	-9.37
23	INDPRO	-0.476	10.8	43.7	15.8	11.3	44.4	16.4	29.8	4.55	-19.4
24	UTL11	-0.207	456	215	97	457	215	97.4	-43.4	-64.5	-37.4
25	UNRATE	-3.56	151	68.5	64.4	160	74.7	70.5	-32.7	-34.4	-2.44
26	HOUST	-7.19	639	267	116	696	296	133	-50.3	-70.8	-41.2
27	PPIFCG	-0.414	-15.3	-18.6	-4.56	-14.9	-18.3	-4.17	-3.95	12.6	17.3
28	AHEMAN	-9.54	7.73	26.1	-4.14	19.1	39.4	5.98	17.1	-11	-24
29	M1SL	-2.67	4.86	-17.1	-4.97	7.74	-14.9	-2.36	-21	-9.37	14.7
30	PMCP	-0.505	136	329	89.1	137	331	90.1	81.9	-19.8	-55.9
31	SP500	-3.77	52.9	72	57.3	58.9	78.7	63.5	12.5	2.91	-8.51
32	GS10	-2.15	48.7	27	34.9	52	29.8	37.9	-14.6	-9.29	6.19
33	EXUSUK	0.906	-6.99	-6.59	-8.44	-7.83	-7.42	-9.26	0.438	-1.55	-1.98
34	PAYEMS	-4.4	34.5	44.6	14.3	40.7	51.2	19.6	7.48	-15	-20.9
35	NAPMNOI	-4.46	235	662	144	251	697	155	127	-27.2	-67.9
36	TB3MS	-1.6	51.3	18.8	14.4	53.7	20.7	16.2	-21.4	-24.4	-3.73
37	BUSLOANS	-1.58	28.2	22.6	20.7	30.3	24.6	22.6	-4.4	-5.9	-1.57
38	TOTALSL	-2.72	53.6	89.6	47	57.9	94.9	51.1	23.4	-4.34	-22.5
39	AAA	3.26	84.9	50.5	56.3	79.1	45.7	51.4	-18.6	-15.5	3.88
	Mean	-4.293	13.234	19.616	11.697	17.911	22.397	16.285	3.589	-6.085	-8.574
	t-stat.	-0.792	0.495	0.674	0.451	0.683	0.801	0.624	0.146	-0.244	-0.330

See Table 1 of the paper for model definitions. Trimmed means and t-stats are underlined, as the corresponding trimmed observations. Results computed from Table 18.

Table 24: APL ($h = 4$) relative performance of AR(4) break models on last sixty percent of sample (quarterly data)

	Series	$\frac{PPT41}{KP4}$	$\frac{PPT41}{TVP4}$	$\frac{PPT41}{GK4B}$	$\frac{PPT41}{GK4P}$	$\frac{KP4}{TVP4}$	$\frac{KP4}{GK4B}$	$\frac{KP4}{GK4P}$	$\frac{GK4B}{TVP4}$	$\frac{GK4P}{TVP4}$	$\frac{GK4B}{GK4P}$
1	GDPC96	-12.3	-15.9	-6.61	-22.1	-4.14	6.47	-11.2	-9.96	7.96	-16.6
2	PINCOME	-7.21	-11	-11	-0.73	-4.13	-4.08	6.99	-0.0548	-10.4	11.5
3	PCECC96	-7.68	-14.4	-6.63	-11.3	-7.27	1.14	-3.97	-8.32	-3.44	-5.05
4	PCECTPI	-11.6	4.04	17.7	17.8	17.7	33.2	33.3	-11.6	-11.7	0.0778
5	GPDIC96	-9.43	21.7	-20.5	-22.5	34.3	-12.2	-14.5	53	57	-2.53
6	OPHPBS	-7.75	-17.4	-13.3	-15.7	-10.5	-5.99	-8.59	-4.77	-2.06	-2.77
7	IMPGSC96	-14.5	8.7	1.4	-13.3	27.2	18.6	1.47	7.2	25.3	-14.5
8	EXPGSC96	-14	-7.04	6.84	-11.5	8.09	24.2	2.92	-13	5.03	-17.2
9	CBIC96	-1.48	2.68	-6.44	5.68	4.22	-5.04	7.26	9.75	-2.84	13
10	GCEC96	-7.52	3.14	-15.5	-16.8	11.5	-8.69	-10.1	22.1	24	-1.51
11	WASCUR	-4.51	-10.6	-5.11	2.6	-6.35	-0.622	7.45	-5.77	-12.8	8.12
12	DIVIDEND	-4.01	0.54	-4.11	11	4.74	-0.0975	15.6	4.85	-9.41	15.7
13	PSAVE	-9.67	15.3	17.3	22.9	27.6	29.8	36	-1.7	-6.18	4.77
14	DPIC96	-6.42	-14.6	-15.1	-16.8	-8.69	-9.32	-11.1	0.698	2.72	-1.97
15	GDPDEF	-12.7	13.3	39.6	22.7	29.8	59.9	40.5	-18.8	-7.62	-12.1
16	ULCNFB	-7.66	-5.81	-17.2	-16.3	2	-10.4	-9.35	13.8	12.5	1.15
17	PRFI	-13.7	10.7	-13.6	-25.7	28.2	0.0609	-13.9	28.1	49	-14
18	GSAVE	-6.31	-7.66	-11.7	-2.73	-1.45	-5.71	3.82	4.52	-5.08	10.1
19	CPIAUCSL	-11.8	-8.25	17.1	7.38	3.97	32.8	21.7	-21.7	-14.6	-8.34
20	FEDFUNDS	-3.86	27.8	12.1	52.6	33	16.6	58.7	14	-16.2	36.1
21	BOGNONBR	-21.2	1.15E+03	267	281	1.49E+03	365	383	241	228	3.85
22	M2SL	-8.86	-7.94	-2.92	12.8	1.01	6.52	23.8	-5.17	-18.4	16.2
23	INDPRO	-8.31	14	7.93	6.14	24.4	17.7	15.8	5.66	7.44	-1.66
24	UTL11	-2.66	185	159	420	192	166	434	9.82	-45.2	101
25	UNRATE	-3.95	145	49.9	165	155	56.1	176	63.6	-7.37	76.6
26	HOUST	-8.17	187	175	507	213	199	561	4.54	-52.7	121
27	PPIFCG	-5.18	-8.03	-21.1	-14	-3	-16.8	-9.3	16.6	6.95	8.98
28	AHEMAN	-16.5	-12	3.26	-3.51	5.33	23.6	15.5	-14.8	-8.84	-6.55
29	M1SL	-20.6	-16.2	-31.7	-5.46	5.55	-13.9	19.1	22.6	-11.4	38.4
30	PMCP	-5.36	109	322	145	121	346	159	-50.6	-14.8	-41.9
31	SP500	-7.14	54.7	50.2	49.7	66.7	61.7	61.2	3.06	3.35	-0.286
32	GS10	-26.9	19.2	-0.687	36.7	63	35.9	87.1	20	-12.9	37.7
33	EXUSUK	-8.69	-18.2	-24.1	-20.9	-10.4	-16.9	-13.4	7.85	3.46	4.25
34	PAYEMS	-7.61	25.6	24.1	27.7	35.9	34.4	38.2	1.19	-1.64	2.88
35	NAPMNOI	-5.94	181	662	281	199	711	305	-63.1	-26.1	-50.1
36	TB3MS	-9.63	28.7	7.23	54.1	42.4	18.7	70.5	20	-16.4	43.7
37	BUSLOANS	-6.27	20.9	5.3	20.6	29	12.3	28.7	14.8	0.207	14.6
38	TOTALSL	-6.82	43.4	73.8	47.5	53.9	86.5	58.3	-17.5	-2.81	-15.1
39	AAA	-27.6	41.1	8.24	68.4	94.8	49.4	132	30.3	-16.2	55.6
	Mean	-9.782	5.469	3.373	11.529	18.133	15.172	24.691	3.452	-3.478	10.593
	t-stat.	-1.627	0.280	0.146	0.332	0.716	0.586	0.605	0.150	-0.073	0.320

See Table 1 of the paper for model definitions. Trimmed means and t-stats are underlined, as the corresponding trimmed observations. Results computed from Table 18.

Table 25: APL ($h = 1$) relative performance of AR(1) break models on last sixty percent of sample (monthly data)

	Series	$\frac{PPT12}{KP1}$	$\frac{PPT12}{GK1P}$	$\frac{PPT12}{GK1B}$	$\frac{PPT12}{TVP1}$	$\frac{KP1}{GK1P}$	$\frac{KP1}{GK1B}$	$\frac{KP1}{TVP1}$	$\frac{GK1P}{GK1B}$	$\frac{GK1P}{TVP1}$	$\frac{GK1B}{TVP1}$
19	CPIAUCSL	1.05	49.5	96	41.9	48	94	40.4	31.1	-5.14	-27.6
20	FEDFUNDS	28.5	460	465	338	336	340	241	0.934	-21.7	-22.4
21	BOGNONBR	90.6	743	652	872	343	294	410	-10.9	15.3	29.3
22	M2SL	0.372	31.1	90	24.4	30.6	89.3	23.9	45	-5.12	-34.5
23	INDPRO	-2.08	4.74	20.7	-1.12	6.97	23.3	0.985	15.2	-5.59	-18.1
24	UTL11	19.4	427	257	146	341	199	106	-32.2	-53.2	-31
25	UNRATE	-0.852	541	514	327	547	519	330	-4.24	-33.4	-30.5
26	HOUST	1.3	297	188	110	292	184	107	-27.5	-47.2	-27.3
27	PPIFCG	2.49	11.5	26.2	10.1	8.82	23.1	7.39	13.1	-1.31	-12.8
28	AHEMAN	0.0756	14.8	33.9	11.9	14.8	33.8	11.8	16.6	-2.56	-16.4
29	M1SL	2.89	13.8	16.2	3.08	10.6	13	0.181	2.17	-9.39	-11.3
30	PMCP	0.187	232	228	150	232	227	150	-1.41	-24.7	-23.6
31	SP500	0.171	30.5	41.1	25.8	30.3	40.8	25.6	8.1	-3.58	-10.8
32	GS10	8.51	327	335	213	294	301	189	1.84	-26.7	-28
33	EXUSUK	-1.35	53.1	55.1	42.5	55.2	57.2	44.5	1.27	-6.9	-8.07
34	PAYEMS	0.796	79.1	170	72.7	77.7	168	71.3	51.1	-3.57	-36.2
35	NAPMNOI	0.675	264	268	180	262	265	178	0.932	-23.2	-23.9
36	TB3MS	2.77E+03	424	445	301	-81.7	-81	-86	4.06	-23.5	-26.5
37	BUSLOANS	0.739	13.9	18.4	5.9	13.1	17.5	5.12	3.95	-7.02	-10.6
38	TOTALSL	76.1	22.7	65.2	22.6	-30.3	-6.17	-30.4	34.7	-0.073	-25.8
39	AAA	1.24E+03	452	413	286	-58.7	-61.6	-71.1	-7.1	-30	-24.7
	Mean	12.083	29.522	57.527	23.615	9.645	31.633	3.360	6.986	-15.169	-17.948
	t-stat.	0.458	1.306	1.236	1.081	0.217	0.490	0.076	0.338	-0.902	-1.162

See Table 1 of the paper for model definitions. Trimmed means and t-stats are underlined, as the corresponding trimmed observations. Results computed from Table 19.

Table 26: APL ($h = 1$) relative performance of AR(4) break models on last sixty percent of sample (monthly data)

	Series	$\frac{PPT41}{KP4}$	$\frac{PPT41}{TVP4}$	$\frac{PPT41}{GK4B}$	$\frac{PPT41}{GK4P}$	$\frac{KP4}{TVP4}$	$\frac{KP4}{GK4B}$	$\frac{KP4}{GK4P}$	$\frac{GK4B}{TVP4}$	$\frac{GK4P}{TVP4}$	$\frac{GK4B}{GK4P}$
19	CPIAUCSL	4.71	42.8	95	54.3	36.4	86.2	47.4	-26.8	-7.44	-20.9
20	FEDFUNDS	56.7	405	504	532	222	286	304	-16.5	-20.2	4.61
21	BOGNONBR	91.5	996	644	699	472	289	317	47.3	37.2	7.33
22	M2SL	0.707	23.9	89.9	35.1	23	88.5	34.1	-34.7	-8.28	-28.9
23	INDPRO	0.648	-0.117	18.8	1.62	-0.759	18	0.969	-15.9	-1.71	-14.4
24	UTL11	17.8	235	289	471	184	231	385	-14.1	-41.4	46.6
25	UNRATE	-0.497	397	482	594	399	485	598	-14.7	-28.4	19.2
26	HOUST	1.21	137	188	318	134	185	313	-17.8	-43.4	45.1
27	PPIFCG	3.58	4.45	18.6	4.97	0.831	14.4	1.34	-11.9	-0.502	-11.5
28	AHEMAN	0.326	8.23	26.1	11.4	7.88	25.7	11.1	-14.1	-2.87	-11.6
29	M1SL	-0.508	-3.48	6.09	6.35	-2.99	6.63	6.89	-9.02	-9.25	0.25
30	PMCP	-1.95	160	228	253	165	235	260	-20.8	-26.3	7.51
31	SP500	0.505	23.9	37.1	29.7	23.3	36.4	29.1	-9.61	-4.45	-5.41
32	GS10	-8.43	228	320	344	258	359	384	-22	-26.1	5.57
33	EXUSUK	-6.26	39.1	51.4	52.1	48.3	61.5	62.3	-8.17	-8.57	0.445
34	PAYEMS	8.1	86.2	187	92.3	72.2	166	77.9	-35.1	-3.19	-33
35	NAPMNOI	-0.485	190	259	285	191	261	287	-19.2	-24.7	7.33
36	TB3MS	51.1	366	480	518	209	284	309	-19.6	-24.6	6.55
37	BUSLOANS	-0.322	4	14.5	12.2	4.33	14.9	12.6	-9.2	-7.35	-2
38	TOTALSL	0.201	20.3	65.1	22.8	20	64.8	22.6	-27.1	-2.06	-25.6
39	AAA	-4.24	319	401	484	337	423	509	-16.5	-28.3	16.4
	Mean	10.209	22.662	42.259	29.349	47.458	41.703	27.845	-15.024	-13.422	-2.592
	t-stat.	0.407	0.868	1.327	1.059	0.505	1.346	1.091	-0.927	-0.763	-0.114

See Table 1 of the paper for model definitions. Trimmed means and t-stats are underlined, as the corresponding trimmed observations. Results computed from Table 19.

Table 27: APL ($h = 12$) relative performance of AR(1) break models on last sixty percent of sample (monthly data)

	Series	$\frac{PPT12}{KP1}$	$\frac{PPT12}{GK1P}$	$\frac{PPT12}{GK1B}$	$\frac{PPT12}{TVP1}$	$\frac{KP1}{GK1P}$	$\frac{KP1}{GK1B}$	$\frac{KP1}{TVP1}$	$\frac{GK1P}{GK1B}$	$\frac{GK1P}{TVP1}$	$\frac{GK1B}{TVP1}$
19	CPIAUCSL	1.6	42.3	54.2	26.2	40.1	51.8	24.2	8.35	-11.3	-18.2
20	FEDFUNDS	-21.6	85.6	23.2	84.7	137	57.1	136	-33.6	-0.496	50
21	BOGNONBR	-21.9	191	167	492	273	242	658	-8.2	103	122
22	M2SL	-10.2	15.2	25.3	0.502	28.3	39.6	12	8.83	-12.7	-19.8
23	INDPRO	-8.23	-8.83	2.69	-0.371	-0.658	11.9	8.56	12.6	9.28	-2.98
24	UTL11	-22.6	447	378	127	606	517	193	-12.7	-58.5	-52.5
25	UNRATE	-15.6	361	98.9	271	446	136	340	-56.9	-19.5	86.7
26	HOUST	-23.3	339	437	99	472	601	159	22.4	-54.7	-63
27	PPIFCG	1.57	0.199	5.64	2.61	-1.35	4.01	1.03	5.43	2.41	-2.87
28	AHEMAN	-8.23	-3.74	13.7	-1.67	4.89	23.9	7.14	18.1	2.15	-13.5
29	M1SL	10.9	17.8	-0.412	2.96	6.26	-10.2	-7.14	-15.5	-12.6	3.39
30	PMCP	-16.2	141	35.7	122	188	62	165	-43.8	-8.21	63.3
31	SP500	-7.97	13.3	22.5	12.9	23.1	33.1	22.7	8.13	-0.275	-7.78
32	GS10	-22.8	64.4	28.2	118	113	66.2	183	-22	32.8	70.2
33	EXUSUK	-0.241	35	38.4	36.3	35.3	38.7	36.6	2.52	0.942	-1.54
34	PAYEMS	-7.8	22.6	57.6	31	32.9	71	42.1	28.6	6.86	-16.9
35	NAPMNOI	-16	344	90.6	198	429	127	255	-57.1	-32.8	56.6
36	TB3MS	231	56.3	4.89	62.9	-52.7	-68.3	-50.7	-32.9	4.23	55.3
37	BUSLOANS	-3.44	11	-8.37	-0.324	14.9	-5.11	3.22	-17.4	-10.2	8.79
38	TOTALSL	62.4	23.9	15.5	10.4	-23.7	-28.9	-32	-6.76	-10.9	-4.39
39	AAA	234	80.6	27.8	140	-45.9	-61.7	-28.1	-29.2	33	87.9
	Mean	-6.823	30.375	25.714	20.624	4.726	17.819	3.047	-10.529	-7.025	13.936
	t-stat.	-0.351	1.023	1.040	0.759	0.158	0.409	0.112	-0.421	-0.307	0.315

See Table 1 of the paper for model definitions. Trimmed means and t-stats are underlined, as the corresponding trimmed observations. Results computed from Table 20.

Table 28: APL ($h = 12$) relative performance of AR(4) break models on last sixty percent of sample (monthly data)

	Series	$\frac{PPT41}{KP4}$	$\frac{PPT41}{TVP4}$	$\frac{PPT41}{GK4B}$	$\frac{PPT41}{GK4P}$	$\frac{KP4}{TVP4}$	$\frac{KP4}{GK4B}$	$\frac{KP4}{GK4P}$	$\frac{GK4B}{TVP4}$	$\frac{GK4P}{TVP4}$	$\frac{GK4B}{GK4P}$
19	CPIAUCSL	-19.1	1.71	15.6	15.8	25.7	42.8	43.1	-12	-12.2	0.239
20	FEDFUNDS	-36	87.7	-16.9	72.3	193	29.8	169	126	8.96	107
21	BOGNONBR	-27.5	2.47E+03	125	133	3.44E+03	210	222	1.04E+03	999	3.71
22	M2SL	-26.7	-15.7	0.852	-7.14	15.1	37.6	26.7	-16.4	-9.17	-7.92
23	INDPRO	-18.2	-5.12	-14.6	-21.4	16	4.46	-3.81	11.1	20.6	-7.91
24	UTL11	-19.5	252	220	392	337	297	511	10.1	-28.4	53.7
25	UNRATE	-17.2	376	70.3	419	475	106	527	179	-8.25	205
26	HOUST	-27	153	303	523	246	452	753	-37.2	-59.4	54.5
27	PPIFCG	-13	-16.8	-18.1	-21.1	-4.34	-5.89	-9.25	1.65	5.41	-3.57
28	AHEMAN	-16.3	-11.6	-3.93	-15.8	5.61	14.8	0.561	-7.97	5.02	-12.4
29	M1SL	-22.4	-31	-37.8	-23.1	-11	-19.8	-0.89	10.9	-10.2	23.5
30	PMCP	-21.7	151	42	151	221	81.4	221	76.8	0.0889	76.7
31	SP500	-14.6	6.15	9.49	4.3	24.3	28.2	22.1	-3.05	1.77	-4.74
32	GS10	-44.9	108	-1.43	64.2	278	78.8	198	111	26.9	66.6
33	EXUSUK	-20.1	17.4	13.9	14	46.9	42.5	42.7	3.12	2.98	0.136
34	PAYEMS	-22.3	55.4	43.2	26.8	100	84.3	63.1	8.52	22.6	-11.5
35	NAPMNOI	-17.3	247	103	430	319	145	541	71.3	-34.5	162
36	TB3MS	-34.8	100	-7.64	73.5	207	41.6	166	117	15.4	87.8
37	BUSLOANS	-15.4	-6.29	-19	1.6	10.8	-4.22	20.1	15.7	-7.77	25.4
38	TOTALSL	-17.4	6.71	6.8	18.1	29.2	29.3	43	-0.0807	-9.62	10.6
39	AAA	-49.6	154	-2.43	117	403	93.4	330	160	17.2	122
	Mean	-23.857	7.380	4.724	14.433	15.827	36.191	22.492	8.233	-2.629	20.873
	t-stat.	-2.409	0.131	0.176	0.424	0.937	1.053	0.946	0.297	-0.126	0.618

See Table 1 of the paper for model definitions. Trimmed means and t-stats are underlined, as the corresponding trimmed observations. Results computed from Table 20.

Table 29: APL ($h = 1$) relative performance of lag orders
on last sixty percent of sample (quarterly data)

	Series	$\frac{PPT12}{PPT41}$	$\frac{KP1}{KP4}$	$\frac{TVP1}{TVP4}$	$\frac{GK1P}{GK4P}$	$\frac{GK1B}{GK4B}$	$\frac{RO140}{RO440}$	$\frac{RO120}{RO420}$	$\frac{RE1}{RE4}$
1	GDPC96	4.99	2.24	0.603	4.45	-3.93	3.76	14.1	-0.41
2	PINCOME	0.182	-2.16	-1.35	-0.671	-4.17	-0.149	13.9	-4.34
3	PCECC96	-1.7	-5.64	-2.09	-4.55	-5.87	-2.41	9.08	-2.62
4	PCECTPI	-1.81	-1.73	-4.18	0.81	-7.35	1.22	11.7	-4.76
5	GPDIC96	5.07	2.27	14.8	4.02	-1.13	2.72	11.1	-0.0634
6	OPHPBS	0.549	5.09	0.496	0.147	-4.59	5.17	13.9	-1.35
7	IMPGSC96	3.3	0.768	8.89	2.63	-2.52	-1.62	5.9	1.51
8	EXPGSC96	9.61	8.11	4.18	0.756	-4.93	4.81	18	0.13
9	CBIC96	5.93	1	0.553	2.63	-1.14	5.74	18.1	1.74
10	GCEC96	-2.18	-2.52	-6.97	0.131	-5.09	1.82	14.9	-4.15
11	WASCUR	0.129	-1.37	0.787	0.0306	-6.16	7.18	10.5	-2.47
12	DIVIDEND	2.1	-18.8	-4.79	-0.591	-4.76	-12.3	-19.8	0.661
13	PSAVE	5.55	-3.11	-0.508	-2.26	-1.91	6.24	13.6	2.35
14	DPIC96	3.69	-3.13	2	4.27	-2.11	2.64	10.9	2.93
15	GDPDEF	6.03	9.64	-2.38	2.7	-22	-1.77	11.2	-3.76
16	ULCNFB	1.35	-6.92	-2.07	1.28	-3.65	0.809	12.4	-3.73
17	PRFI	8.4	6.11	22.6	2.8	-1.98	4	8.81	1.02
18	GSAVE	-0.788	-1.97	-0.0955	2.56	-3.83	-3.28	3.88	-2
19	CPIAUCSL	-2.62	4.8	-4.26	1.9	1.69	-0.168	14.4	-8.56
20	FEDFUNDS	-13.9	28.5	4.44	4.24	0.813	-22.4	-22.9	-3.83
21	BOGNONBR	3.34	3.8	17.9	-1.09	3.87	6.27	17.7	4.72
22	M2SL	3.83	-0.829	0.325	4.08	-4.71	2.53	18.2	1.09
23	INDPRO	9.2	2.3	4.77	2.64	-18.7	6.06	13	-9.02
24	UTL11	-11.6	-18.8	17.9	3.9	13.6	-16.8	-5.07	-18
25	UNRATE	-19	-19.3	1.95	3.21	4.05	-13.7	-6.24	-20.8
26	HOUST	-1.53	-3.51	24.6	6.54	12.8	0.878	13.8	-4.36
27	PPIFCG	-6.21	-5.37	-2.35	3.35	-2.94	2.64	19.5	-2.45
28	AHEMAN	3.06	-1.41	-7.67	-9.34	-12.4	-5.17	7.85	-20.8
29	M1SL	6.67	-6.76	4.44	3.86	-1.61	6.65	18.5	2.29
30	PMCP	-4.11	-8.32	-3.38	6.89	0.772	-10.5	-7.52	-6.36
31	SP500	4.92	5.41	1.53	1.7	-6.18	5.02	16.1	3.44
32	GS10	3.26	-14.9	0.0067	1.15	1.78	2.1	9.36	-0.832
33	EXUSUK	14.8	11.1	1.79	0.853	-0.643	7.34	18.9	1.79
34	PAYEMS	2.15	6.32	11.1	4.49	-6.66	3.85	4.25	-6.21
35	NAPMNOI	-3.01	-4.88	3.55	7.52	0.359	0.933	-2.22	-4.04
36	TB3MS	-20.1	20.6	4.98	5.85	1.17	-17.7	-18.6	-4.47
37	BUSLOANS	4.69	-0.446	0.897	1.69	-9.18	8.2	9.68	0.926
38	TOTALSL	2.47	1.77	-2.01	3.69	-3.05	4.15	3.85	0.194
39	AAA	7.17	-15.8	3.64	6.64	2.59	1.96	9.3	-2.06
	Mean	0.869	-0.714	2.939	2.177	-2.813	-0.084	8.052	-2.991
	t-stat.	0.120	-0.074	0.387	0.683	-0.435	-0.011	0.749	-0.506

See Table 1 of paper for model definitions. Results computed from Table 17.

Table 30: APL ($h = 4$) relative performance of lag orders
on last sixty percent of sample (quarterly data)

	Series	$\frac{PPT12}{PPT41}$	$\frac{KP1}{KP4}$	$\frac{TVP1}{TVP4}$	$\frac{GK1P}{GK4P}$	$\frac{GK1B}{GK4B}$	$\frac{RO140}{RO440}$	$\frac{RO120}{RO420}$	$\frac{RE1}{RE4}$
1	GDPC96	14.5	3.42	4.1	2.37	-1.76	6.98	22.8	1.96
2	PINCOME	2.67	-1.06	1.32	0.0961	-4.55	4.74	18.2	-6.35
3	PCECC96	7.04	13.9	5.82	5.11	-2.05	7.49	18.7	0.717
4	PCECTPI	-3.06	-5.22	-8.05	2.71	-15.6	-4.58	15.3	-9.5
5	GPDIC96	9.36	2.57	62.5	4.04	-2.58	6.73	22.1	1.12
6	OPHPBS	6.81	2.87	5.32	3.65	-2.87	6.55	18.1	0.894
7	IMPGSC96	14.6	1.49	32.8	2.6	-3.21	6.87	20.2	2.67
8	EXPGSC96	17.9	9.34	9.34	1.99	-5.03	9.06	23.1	-0.15
9	CBIC96	12.5	4.15	5.98	3.39	0.108	11.5	22.4	4.24
10	GCEC96	3.23	-1.39	-17.4	0.558	-3.39	2.79	18.6	-2.97
11	WASCUR	3.19	0.862	4.45	2.69	-2.8	6.92	10.5	-2.81
12	DIVIDEND	10.7	9.09	6.09	3.61	-3.52	6.04	22.4	0.718
13	PSAVE	12	1.81	2.04	3.16	2.32	9.35	18.9	1.43
14	DPIC96	8.58	2.29	4.2	2.65	-2.45	9.39	20	1.56
15	GDPDEF	-3.29	-6.67	-13.3	-4.52	-29.3	-10.6	8.58	-18.4
16	ULCNFB	6.8	23	-8.81	0.388	-3.52	3.02	19	-5.18
17	PRFI	18	6.5	51	3.65	-1.36	5.73	16.1	2.75
18	GSAVE	4.38	1.39	3.33	6.63	-1.9	3.67	13.5	-0.627
19	CPIAUCSL	5.96	11.4	0.182	5.19	0.281	3.64	17.3	-8.86
20	FEDFUNDS	22.2	20.7	28.2	14	7.64	13.1	8.15	7.95
21	BOGNONBR	2.99	0.18	81.3	2.18	4.15	2.77	22.2	-4.5
22	M2SL	5.89	-2.89	0.85	3.6	-3.61	2.35	16.8	-0.912
23	INDPRO	12	3.17	10.3	7.31	-15.9	7.42	14.4	-3.11
24	UTL11	16.3	13.5	68.1	8.81	-4.19	12	39.5	11.6
25	UNRATE	9.83	9.39	63.9	16.1	-2.29	14.9	3.22	12.4
26	HOUST	20.5	19.2	60.3	-0.999	-9.78	2.84	10.7	19.4
27	PPIFCG	-1.09	-5.83	-4.68	0.396	-4.09	5.99	20.5	-3.08
28	AHEMAN	3.34	-4.59	-5.17	-7.44	-15.4	-7.84	10.9	-29.8
29	M1SL	18.8	-3.16	4.69	7.08	-2.08	10.6	28	0.838
30	PMCP	5.37	0.233	16.3	9.55	3.72	4.78	17.6	2.63
31	SP500	6.61	2.88	4.85	4.4	-6.92	8.83	19.6	1.82
32	GS10	29.4	-3.36	14.3	19	1.13	14.3	23.4	13.1
33	EXUSUK	22.7	11.1	9.72	4.4	-0.291	6.22	19.1	1.23
34	PAYEMS	17.4	13.4	28.9	11.4	0.768	15	5.47	6.53
35	NAPMNOI	1.53	-0.046	16.9	15.2	1.64	8.37	24.9	-0.252
36	TB3MS	12.9	3.65	27	15	1.86	9.47	20.8	2.8
37	BUSLOANS	8.36	3.2	8.55	1.93	-6.93	14.2	16.3	2.4
38	TOTALSL	9.75	5.13	7.08	5.39	0.574	5.62	9.53	6.96
39	AAA	40.3	-1.6	26.6	27.7	0.908	16.3	16.3	17
	Mean	10.691	4.205	15.869	5.512	-3.392	6.731	17.773	0.723
	t-stat.	1.209	0.575	0.661	0.840	-0.518	1.183	2.711	0.084

See Table 1 of paper for model definitions. Results computed from Table 18.

Table 31: APL ($h = 1$) relative performance of lag orders on last sixty percent of sample (monthly data)

	Series	$\frac{PPT12}{PPT41}$	$\frac{KP1}{KP4}$	$\frac{TVP1}{TVP4}$	$\frac{GK1P}{GK4P}$	$\frac{GK1B}{GK4B}$	$\frac{RO110Y}{RO410Y}$	$\frac{RO15Y}{RO45Y}$	$\frac{RO13Y}{RO43Y}$	$\frac{RE1}{RE4}$
19	CPIAUCSL	-2.33	1.21	-1.68	0.772	-2.83	-0.815	2.21	3.56	-4.7
20	FEDFUNDS	-11.1	8.38	2.31	0.406	-4.91	-22.5	-24.4	-19.9	-8.2
21	BOGNONBR	0.519	1.03	13.3	-4.78	-0.463	0.192	1.29	5.86	0.973
22	M2SL	-1.41	-1.08	-1.78	1.61	-1.47	-0.723	1.95	6.2	-0.547
23	INDPRO	-1.38	1.37	-0.382	-4.31	-2.98	-3.88	-1.81	2.05	-0.683
24	UTL11	-6.96	-8.23	26.5	0.873	1.5	-9.57	-7.46	-3.2	-7.36
25	UNRATE	-4.2	-3.86	11.5	3.71	-9.15	-3.58	-2.31	0.614	-4.72
26	HOUST	-3.27	-3.36	9.36	1.84	-3.2	-4.79	-2.63	1.5	-3.77
27	PPIFCG	4.01	5.13	-1.3	-2.1	-2.25	-0.335	2.37	6.37	-1.62
28	AHEMAN	1.87	2.13	-1.47	-1.16	-4.06	-3.99	-1.33	2.99	-3.07
29	M1SL	5.63	2.14	-1.09	-1.25	-3.6	0.47	2.13	7.82	-2.95
30	PMCP	-1.66	-3.75	2.17	4.42	-1.49	-4.84	-3.53	0.6	-2.82
31	SP500	-0.0639	0.269	-1.56	-0.661	-2.85	1.35	3.16	5.88	0.136
32	GS10	0.472	-15.2	5.07	4.31	-2.98	-4.26	-2.89	-0.892	-6.7
33	EXUSUK	-0.292	-5.25	-2.73	-0.952	-2.63	0.0911	1.13	3.56	-0.367
34	PAYEMS	-12.6	-6.29	-5.77	-6.15	-7.26	-10.8	-7.16	-1.03	-10.8
35	NAPMNOI	-0.011	-1.16	3.6	5.74	-2.39	-0.0537	1.92	3.97	0.456
36	TB3MS	-11.5	-95.3	3.03	4.43	-5.82	-14	-16.4	-13.4	-7.34
37	BUSLOANS	-1.02	-2.06	-2.79	-2.45	-4.24	-2.5	-1.61	1.98	-3.38
38	TOTALSL	-5.08	-46	-6.87	-4.98	-5.15	-9.63	-5.71	-1.95	-11.4
39	AAA	0.0678	-92.8	8.44	5.77	-2.21	-4.2	-2.82	0.409	-7.9
	Mean	-2.396	-8.494	2.755	0.242	-3.354	-4.684	-3.043	0.619	-4.132
	t-stat.	-0.499	-0.365	0.359	0.067	-1.459	-0.804	-0.455	0.095	-1.121

See Table 1 of the paper for model definitions. Trimmed means and standard deviations are underlined, as the corresponding trimmed observations. Results computed from Table 19.

Table 32: APL ($h = 12$) relative performance of lag orders on last sixty percent of sample (monthly data)

	Series	$\frac{PPT12}{PPT41}$	$\frac{KP1}{KP4}$	$\frac{TVP1}{TVP4}$	$\frac{GK1P}{GK4P}$	$\frac{GK1B}{GK4B}$	$\frac{RO110Y}{RO410Y}$	$\frac{RO15Y}{RO45Y}$	$\frac{RO13Y}{RO43Y}$	$\frac{RE1}{RE4}$
19	CPIAUCSL	30.5	3.96	5.16	6.18	-2.23	0.353	2.94	8.98	-2.85
20	FEDFUNDS	43.7	17.3	46	33.3	-3.06	21.9	3.13	-6.67	13.2
21	BOGNONBR	19.1	10.6	416	-4.57	0.242	2.68	5.44	8.29	0.738
22	M2SL	23.7	0.99	3.84	-0.239	-0.446	0.772	3.02	6.81	-0.538
23	INDPRO	17.7	4.85	12.1	1.52	-2.12	3.89	6.34	13.1	-0.0533
24	UTL11	16.8	21.4	81.1	5.01	-21.8	10.5	7.39	0.907	22
25	UNRATE	13.5	11.3	45.4	27.6	-2.88	9.09	-0.241	0.38	16.5
26	HOUST	-6.65	-11.1	18.7	32.5	-30	-16.3	-13.5	-5.87	-10.8
27	PPIFCG	26.4	8.2	2.46	-0.466	-2.09	1.65	3.9	9.82	1.07
28	AHEMAN	16.3	6.13	4.61	1.75	-1.72	0.971	2.98	7.5	0.36
29	M1SL	57.8	10.4	5.8	2.96	-1.38	0.721	4.62	9.2	-0.328
30	PMCP	6.46	-0.534	20.6	10.6	11.4	0.598	3.34	10	0.988
31	SP500	9.63	1.72	3.03	0.965	-1.99	1.63	3.59	8.6	0.876
32	GS10	35.3	-3.35	29.2	35.2	4	13.7	9.75	6.53	8.65
33	EXUSUK	19.8	-4	3.25	1.21	-1.41	1.41	3.28	9.85	0.15
34	PAYEMS	5.21	-11.3	24.8	8.81	-4.43	-2.13	1.44	9.14	-1.8
35	NAPMNOI	1.67	0.0656	18.2	21.2	8.01	1.32	3.63	9.45	-0.26
36	TB3MS	12.5	-77.8	38.2	24.8	-0.981	20.1	5.97	-0.459	8.15
37	BUSLOANS	10.8	-2.94	4.18	1.44	-2.02	0.0539	0.199	7.38	-1.66
38	TOTALSL	9.12	-44.5	5.44	4.01	0.901	-3.89	4.4	9.89	-8.61
39	AAA	35	-79.6	42.7	62	3.04	7.96	5.84	3.48	9.6
	Mean	19.254	-6.581	20.739	13.132	-2.427	3.666	3.212	6.015	2.637
	t-stat.	1.285	-0.240	0.991	0.774	-0.277	0.444	0.721	1.121	0.337

See Table 5 of the paper for model definitions. Trimmed means and standard deviations are underlined, as the corresponding trimmed observations. Results computed from Table 19.

References

Bauwens L, Koop G, Korobilis D, Rombouts J. 2014. The contribution of structural break models to forecasting macroeconomic series. *Journal of Applied Econometrics* **forthcoming**.

Bauwens L, Rombouts J. 2012. On marginal likelihood computation in change-point models. *Computational Statistics & Data Analysis* **56**: 3415–3429.