
Macro Model Comparison and Forecast Competition: New Tools and Results

Goethe University – Macroeconomics Seminar
January 21, 2021

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IMFS, Goethe University Frankfurt

Sources for seminar talk

New model comparison tools in Macro Model Data Base (MMB) 3.1 just released (www.macromodelbase.com)

Model comparison & robust policy: Cochrane, Taylor, Wieland (2019) „*Evaluating rules in the Fed’s Report and Measuring Discretion*“, working paper.

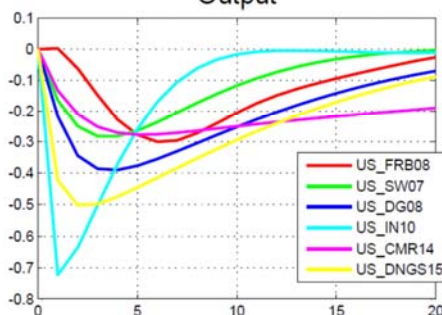
Model comparison & forecast competition: Binder, Farkas, Taylor, Sun, Wolters, Wieland (2020) forthcoming, *Forecasting the Great Recession in the United States: First Results from a Forecasting Model Competition*.

1. New tools in MMB 3.1 just released

Make macro modeling



Output



more reproducible
more collaborative
more comparative

The Macroeconomic Model Comparison Initiative

The MMB is developed by contributors around the world under the auspices of the Macroeconomic Model Comparison Initiative (MMCI), a joint project of the **Hoover Institution at Stanford University** and the **Institute for Monetary and Financial Stability (IMFS) at Goethe University Frankfurt**, which is supported financially by the **Alfred P. Sloan Foundation**. The MMCI aims to facilitate the comparison of macroeconomic models, enable the reproducibility of macroeconomic research and bring together researchers in this area.

[Learn more about project and initiative](#)



Macroeconomic
Model Data Base

 **Third Research Conference of the CEPR Network on Macroeconomic Modelling and Model Comparison (MMCN)**

13 June 2019



Download MMB

Get started by downloading the latest version of the MMB software.



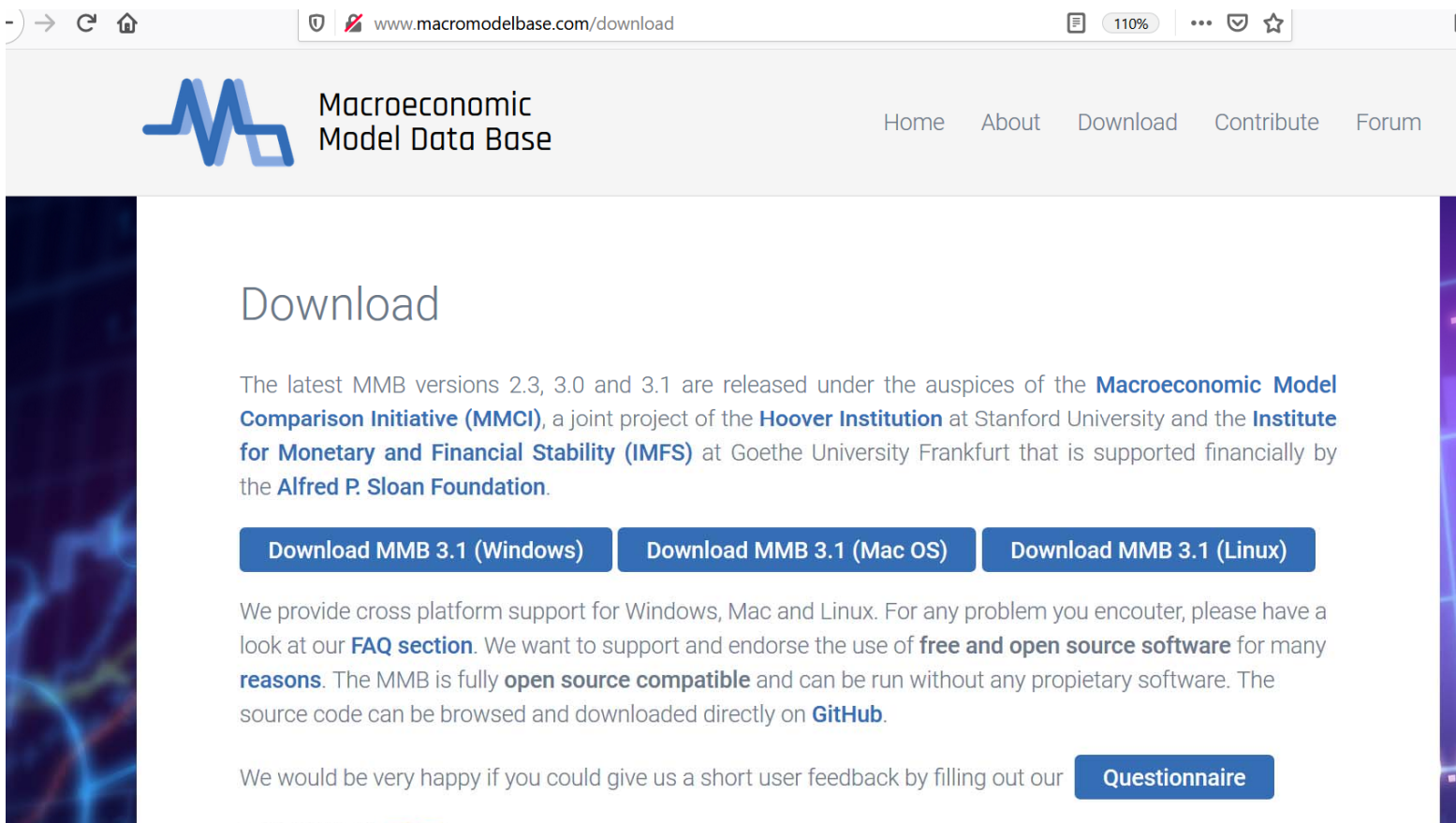
Contribute

Guidelines and tools to contribute your model to the MMB.



Join the Discussion

Any suggestions or ideas? Spread your thoughts in the community.



The screenshot shows the 'Download' page of the Macroeconomic Model Data Base (MMDB). The website has a blue header with the logo and navigation links: Home, About, Download, Contribute, and Forum. The main content area is titled 'Download' and contains text about the latest versions (2.3, 3.0, and 3.1) being released under the auspices of the Macroeconomic Model Comparison Initiative (MMCI), a joint project of the Hoover Institution at Stanford University and the Institute for Monetary and Financial Stability (IMFS) at Goethe University Frankfurt, supported by the Alfred P. Sloan Foundation. Below this text are three buttons: 'Download MMB 3.1 (Windows)', 'Download MMB 3.1 (Mac OS)', and 'Download MMB 3.1 (Linux)'. Further down, there is a paragraph about cross-platform support and a link to the FAQ section. At the bottom, there is a link to a 'Questionnaire' for user feedback.

Download

The latest MMB versions 2.3, 3.0 and 3.1 are released under the auspices of the [Macroeconomic Model Comparison Initiative \(MMCI\)](#), a joint project of the [Hoover Institution](#) at Stanford University and the [Institute for Monetary and Financial Stability \(IMFS\)](#) at Goethe University Frankfurt that is supported financially by the [Alfred P. Sloan Foundation](#).

[Download MMB 3.1 \(Windows\)](#) [Download MMB 3.1 \(Mac OS\)](#) [Download MMB 3.1 \(Linux\)](#)

We provide cross platform support for Windows, Mac and Linux. For any problem you encounter, please have a look at our [FAQ section](#). We want to support and endorse the use of **free and open source software** for many [reasons](#). The MMB is fully **open source compatible** and can be run without any proprietary software. The source code can be browsed and downloaded directly on [GitHub](#).

We would be very happy if you could give us a short user feedback by filling out our [Questionnaire](#)

MMCI: Make it easier to evaluate policy across models

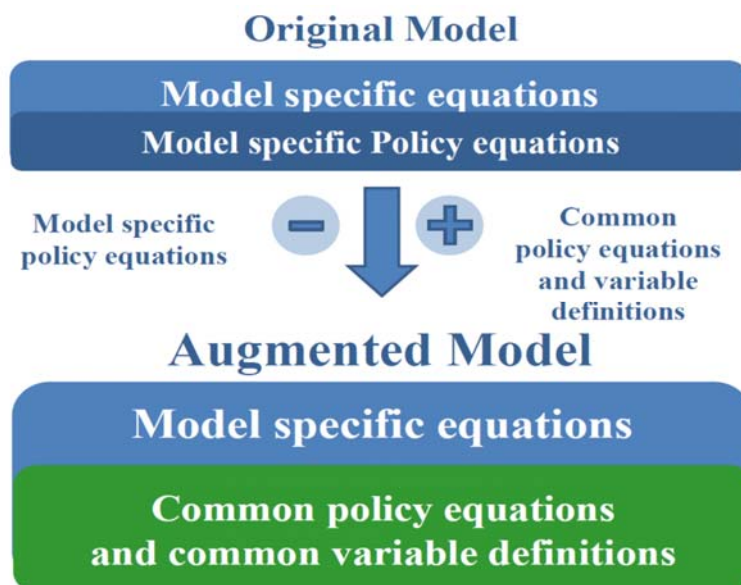
Long tradition in monetary policy: Bryant, Hooper & Mann (Brookings 1993), Taylor (NBER 1999), Levin, Wieland & Williams (AER 2003).

Also in fiscal policy: For example, IMF project - Coenen, Erceg, Freedman, Furceri, Kumhof, Lalonde, Laxton, Lindé, Mourougane, Muir, Mursula, Resende, Roberts, Roeger, Snudden, Trabandt, in't Veld, AEJ-Macro, 2012.

9 models: IMF, OECD, ECB, FRB (2), BoC, EU Commission, 2 academic.

Similarly ECB on fiscal consolidation, 2015, 15 models.

A systematic approach to model comparison



Model(-specific) elements

Table 1: Model-Specific Variables, Parameters, Shocks and Equations

Notation	Description
x_t^m	endogenous variables in model m
$x_t^{m,g}$	policy variables in model m (also included in x_t^m)
η_t^m	policy shocks in model m
ε_t^m	other economic shocks in model m
$g_m(\cdot)$	policy rules in model m
$f_m(\cdot)$	other model equations in model m
γ^m	policy rule parameters in model m
β^m	other economic parameters in model m
Σ^m	covariance matrix of shocks in model m

A particular model: Policy rules and other equations

$$(1) \quad E_t[g_m(x_t^m, x_{t+1}^m, x_{t-1}^m, \eta_t^m, \gamma^m)] = 0$$

$$(2) \quad E_t[f_m(x_t^m, x_{t+1}^m, x_{t-1}^m, \epsilon_t^m, \beta^m)] = 0$$

Innovations/shocks

$$(3) \quad E([\eta_t^m \epsilon_t^m]') = 0$$

$$(4) \quad E([\eta_t^{m'} \epsilon_t^{m'}]' [\eta_t^{m'} \epsilon_t^{m'}]) = \Sigma^m = \begin{pmatrix} \Sigma_{\eta}^m & \Sigma_{\eta\epsilon}^m \\ \Sigma_{\eta\epsilon}^m & \Sigma_{\epsilon}^m \end{pmatrix}$$

Introducing common ingredients

Table 2: Comparable Common Variables, Parameters, Shocks and Equations

Notation	Description
z_t	common variables in all models
z_t^g	common policy variables in all models (also included in z_t)
η_t	common policy shocks in all models
$g(\cdot)$	common policy rules
γ	common policy rule parameters

Augmented model

$$E_t[g(z_t, z_{t+1}, z_{t-1}, \eta_t, \gamma)] = 0 \quad (5)$$

$$E_t[h_m(z_t, x_t^m, x_{t+1}^m, x_{t-1}^m, \theta^m)] = 0 \quad (6)$$

$$E_t[f_m(x_t^m, x_{t+1}^m, x_{t-1}^m, \epsilon_t^m, \beta^m)] = 0 \quad (7)$$


$h_m(\cdot, \theta^m)$: model-specific equations defining common variables in terms of model-specific variables.

Solution


$$z_t = k_z(z_{t-1}, x_{t-1}^m, \eta_t, \varepsilon_t^m, \kappa_z) \quad (8)$$

$$x_t^m = k_x(z_{t-1}, x_{t-1}^m, \eta_t, \varepsilon_t^m, \kappa_x) \quad (9)$$

- Numerical approximation,
- Compute comparable objectives
 - IRF's of z's to η 's, variances and correlations of z's given all shocks, etc.
- Compute metric measuring distance between different models.


Macroeconomic Model Database

File Edit View Window Help


Macroeconomic Model Database

Menu

Welcome to the Macroeconomic Model Database (MMB) v.3.1. Contribute your model using our [Contribute Form](#) or get in touch via our [forum](#).

Models (0/152) [Clear](#)

Search models...

Calibrated

☐ NK_AFL15
☐ NK_BGEU10
☐ NK_BGG99
☐ NK_BGUS10
☐ NK_CFP10
☐ NK_CGG02
☐ NK_CGG99
☐ NK_CK08

Estimated US

☐ US_ACELm
☐ US_ACELswm
☐ US_ACELswt
☐ US_ACELt
☐ US_AJ16
☐ US_BKM12
☐ US_CCF12
☐ US_CCTW10

Estimated Euro Area

☐ EA_ALSV06
☐ EA_AWM05
☐ EA_BE15
☐ EA_BF17
☐ EA_CKL09
☐ EA_CW05fm
☐ EA_CW05ta
☐ EA_DKR11

Other

☐ BRA_SAMBA08
☐ CA_BMZ12
☐ CA_LS07
☐ CA_ToTEM10
☐ CL_MS07
☐ EACZ_GEM03
☐ EAES_RA09
☐ EAUS_NAWM08

Adaptive Learning

☐ NK_BGG99AL
☐ NK_CGG02AL
☐ NK_CGG99AL
☐ NK_IR04AL
☐ NK_LWW03AL
☐ NK_RW06AL
☐ NK_RW97AL
☐ US_FM95AL

[Documentation of Models](#)

Policy Rules (0/9) [Clear](#)

☐ User specified rule

Shocks (0/2) [Select all](#) [Clear](#)

☐ Monetary Policy Shock

Variables (4/4) [Select all](#) [Clear](#)

☒ Inflation

Options

☐ Plot autocorrelation functions

A comparison across model types

Macroeconomic Model Database

File Edit View Window Help

Models (5/152) Clear

Search models...

Calibrated

- ☐ NK_KM16
- ☐ NK_KRS12
- ☐ NK_KW16
- ☐ NK_LWW03
- ☐ NK_MCN99cr
- ☐ NK_MI14
- ☐ NK_MM10
- ☐ NK_MPT10
- ☐ NK_NS14

Estimated US

- ☐ US_CM14
- ☐ US_CM14noFA
- ☐ US_CPS10
- ☒ US_DG08
- ☒ US_DNGS15
- ☐ US_DNGS15_SW
- ☐ US_DNGS15_SWpi
- ☐ US_DNGS15_SWSP
- ☐ US_FGKR15

Estimated Euro Area

- ☐ EA_PV17
- ☐ EA_QR14
- ☐ EA_QUEST3
- ☐ EA_SR07
- ☐ EA_SW03
- ☐ EA_SWW14
- ☐ EA_VI16bgg
- ☐ EA_VI16gk

Other

- ☐ BRA_SAMBA08
- ☐ CA_BMZ12
- ☐ CA_LS07
- ☐ CA_ToTEM10
- ☐ CL_MS07
- ☐ EACZ_GEM03
- ☐ EAS_RA09
- ☐ EAS_NAWM08

Adaptive Learning

- ☐ NK_BGG99AL
- ☐ NK_CGG02AL
- ☐ NK_CGG99AL
- ☐ NK_IR04AL
- ☐ NK_LWW03AL
- ☐ NK_RW06AL
- ☐ NK_RW97AL
- ☐ US_FM95AL

Documentation of Models

Policy Rules (1/9) Clear

- ☐ Christiano et al. (2014)
- ☐ Coenen et al. (2012)
- ☐ Gerdtsmeier & Roffia (2004)
- ☐ Levin et al. (2003)
- ☐ Orphanides & Wieland (2008)
- ☐ Orphanides & Wieland (2013)
- ☒ Smets & Wouters (2007)
- ☐ Taylor (1993)

Shocks (1/2) Select all Clear

- ☐ Monetary Policy Shock
- ☒ Fiscal Policy Shock

Variables (4/6) Select all Clear

- ☒ Inflation
- ☒ Interest
- ☒ Output
- ☒ Output Gap
- ☐ fispol
- ☐ inflationq

Options

- ☒ Plot autocorrelation functions
- ☒ Plot variances

Horizon: 20

Gain: 0.01

Select states

Documentation of Policy Rules



A comparison across economies

Macroeconomic Model Database

File Edit View Window Help

Models (4/152) Clear

Search models...

Calibrated

- ☐ NK_KM16
- ☐ NK_KRS12
- ☐ NK_KW16
- ☐ NK_LWW03
- ☐ NK_MCN99cr
- ☐ NK_MI14
- ☐ NK_MM10
- ☐ NK_MPT10
- ☐ NK_NS14

Estimated US

- ☐ US_PV15
- ☐ US_RA07
- ☐ US_RE09
- ☐ US_RS99
- ☒ US_SW07
- ☐ US_VI16bgg
- ☐ US_VI16gk
- ☐ US_VMDno
- ☐ US_VMDno

Estimated Euro Area

- ☐ EA_PV17
- ☐ EA_QR14
- ☐ EA_QUEST3
- ☐ EA_SR07
- ☐ EA_SW03
- ☒ EA_SWW14
- ☐ EA_VI16bgg
- ☐ EA_VI16gk

Other

- ☒ BRA_SAMBA08
- ☐ CA_BMZ12
- ☐ CA_LS07
- ☐ CA_ToTEM10
- ☒ CL_MS07
- ☐ EACZ_GEM03
- ☐ EAES_RA09
- ☐ EAUS_NAWM08

Adaptive Learning

- ☐ NK_BGG99AL
- ☐ NK_CGG02AL
- ☐ NK_CGG99AL
- ☐ NK_IR04AL
- ☐ NK_LWW03AL
- ☐ NK_RW06AL
- ☐ NK_RW97AL
- ☐ US_FM95AL

Documentation of Models

Policy Rules (1/9) Clear

- ☐ Christiano et al. (2014)
- ☐ Coenen et al. (2012)
- ☐ Gerdsemeier & Roffia (2004)
- ☐ Levin et al. (2003)
- ☐ Orphanides & Wieland (2008)
- ☐ Orphanides & Wieland (2013)
- ☒ Smets & Wouters (2007)
- ☐ Taylor (1993)

Shocks (3/3) Select all Clear

- ☒ Monetary Policy Shock
- ☒ Fiscal Policy Shock
- ☒ Technology shock

Variables (5/14) Select all Clear

- ☒ Inflation
- ☒ Interest
- ☒ Output
- ☒ Output Gap
- ☐ Technology shock process
- ☐ Consumption
- ☐ Investment
- ☒ Capital

Options

- ☒ Plot autocorrelation functions
- ☒ Plot variances
- Horizon: 20
- Gain: 0.01
- Select states

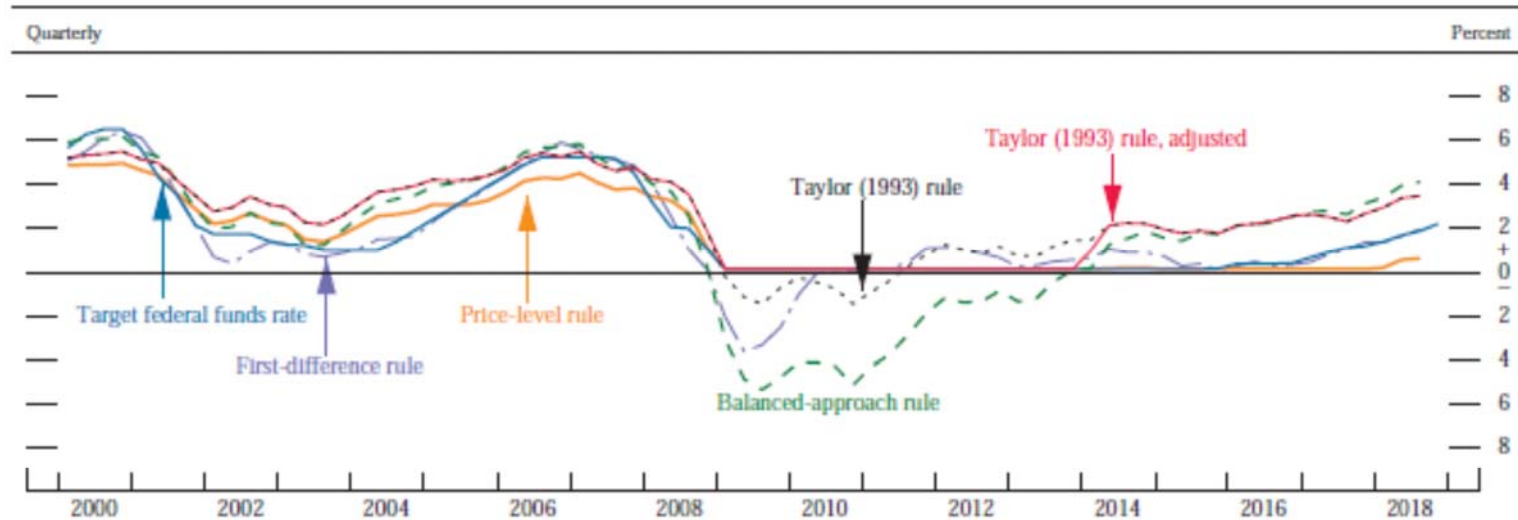
Documentation of Policy Rules



2. Model comparison & robust policy: Cochrane, Taylor, Wieland (2019) „Evaluating rules in the Fed’s Report and Measuring Discretion“, working paper.

Monetary Policy Rules *(continued)*

B. Historical federal funds rate prescriptions from simple policy rules



NOTE: The rules use historical values of inflation, the federal funds rate, and the unemployment rate. Inflation is measured as the 4-quarter percent change in the price index for personal consumption expenditures (PCE) excluding food and energy. Quarterly projections of long-run values for the federal funds rate and the unemployment rate are derived through interpolations of biannual projections from Blue Chip Economic Indicators. The long-run value for inflation is taken as 2 percent. The target value of the price level is the average level of the price index for PCE excluding food and energy in 1998 extrapolated at 2 percent per year. The data extend through 2018:Q3, with the exception of the target federal funds rate data, which go through 2018:Q4.

SOURCE: Federal Reserve Bank of Philadelphia; Wolters Kluwer; Blue Chip Economic Indicators; Federal Reserve Board staff estimates





Table 1: The Rules in the Monetary Policy Report

Taylor (1993) rule: $T93$	$i_t^{T93} = \pi_t + 0.5(\pi_t - \pi^*) + (u_t^* - u_t) + r_t^*$
Balanced-approach rule: BA	$i_t^{BA} = \pi_t + 0.5(\pi_t - \pi^*) + 2(u_t^* - u_t) + r_t^*$
First-difference rule: FD	$i_t^{FD} = i_{t-1} + 0.5(\pi_t - \pi^*) + (u_t^* - u_t) - (u_{t-4}^* - u_{t-4}) + r_t^*$
Taylor (1993) adjusted: $T93adj$	$i_t^{T93adj} = \max\{i_t^{T93} - Z_t, 0\}$
Price-level rule: PL	$i_t^{PL} = \max\{\pi_t + 0.5(PLgap_t) + (u_t^* - u_t) + r_t^*, 0\}$

Note to Table 1: i_t is the nominal federal funds rate, π_t is the inflation rate, for which the Fed uses core PCE inflation, u_t is the unemployment rate, π^* is the Fed's longer-run inflation objective of 2%, r_t^* is the Fed's estimate level of the neutral real federal funds rate in the longer-run, u_t^* is the Fed's estimate of rate of unemployment in the longer run. Z_t is the cumulative sum of past deviations from the Taylor rule forced by the zero bound, and $PLgap_t$ is the price level gap, defined as the percent deviation of the actual level of prices from a price level that rises 2 percent per year from its level in a specified starting period.

First 3 rules nested in

$$i_t = \varphi_\pi \pi_t + \varphi_y y_t + \varphi_{yl} y_{t-4} + \varphi_i i_{t-1} + \mu$$

				
TR93:	1.5	0.5	0	0
BA:	1.5	1.0	0	0
FD:	0.5	0.5	-0.5	1.0

Also, we consider an inflation-tilting rule as suggested by Nikolsko-Rzhevskyy, Papell, Prodan (2019)

NPP:	2.0	0.5	0	0
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Use models to evaluate rules

Small New-Keynesian Model (NK):

par's
Levin, Wieland
& Williams 2003

$$y_t = E_t y_{t+1} - 1.59(i_t - E_t \pi_{t+1} - r_t^*)$$

$$r_t^* = 0.35r_{t-1}^* + \eta_t$$

$$\pi_t = .99E_t \pi_{t+1} + .096y_t + \varepsilon_t$$

Small Old-Keynesian Model (OK):

par's

Rudebusch

& Svensson 1999

$$y_t = 1.16y_{t-1} - .25y_{t-2} - .1(i_{t-1}^{4q} - \pi_{t-1}) + \eta_t$$

$$\pi_t^q = .7\pi_{t-1}^q - .1\pi_{t-2}^q + .28\pi_{t-3}^q + .12\pi_{t-4}^q - .14y_{t-1} + \varepsilon_t$$

Medium-Scale New Keynesian Model (SW):

Volker Wieland
Smets & Wouters 2007

Table 2

Steady-State Standard Deviation of Inflation and Output Gap in the Models

Rules/Models	OK		NK		SW	
	Inflation	Output Gap	Inflation	Output Gap	Inflation	Output Gap
<i>T93</i>	3.45	2.27	0.90	4.24	4.50	4.27
<i>BA</i>	3.49	1.99	0.96	2.83	6.87	3.56
<i>NPP</i>	2.65	2.59	0.84	4.38	2.83	4.74
<i>FD</i>	∞	∞	0.88	3.12	1.39	4.62
<i>E</i>	2.33	2.80	0.86	2.78	2.22	4.61

Note to Table 2: The models are the small old-Keynesian (OK), small new-Keynesian (NK) and the medium-size policy model (SW). The rules are the Taylor (1993) rule (*T93*), the balanced approach rule (BA), the inflation-tilting Taylor rule proposed by Nikolsko-Rzhevskyy, Papell, and Prodan rule (NPP), the first-difference rule (FD). E refers to the outcome under the model's estimated rule with its residuals, when that rule and residual covariance matrix is available, or to sample standard deviations when not available.⁴

Four more models

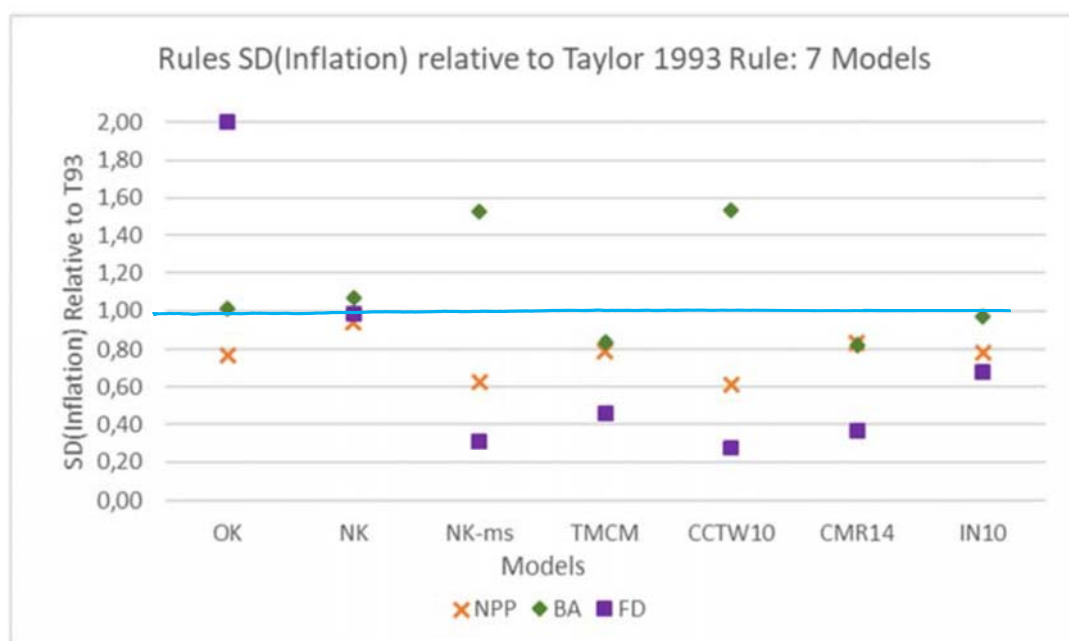
TMCM: A multi-country model due to Taylor (1993), which is a first-generation New Keynesian model. It is a model with rational expectations, nominal rigidities based on staggered contracts, and an interest-rate policy rule.

CCTW10: A model due to Cogan, Cwik, Taylor and Wieland (2010), which extends the SW model. It includes including Keynesian rule-of-thumb consumers. This modification affects, for example, the size of the fiscal multipliers, and improves fit a little bit.

CMR14: A model due to Christiano-Motto-Rostagno (2014), which adds financial frictions and considers post-crisis data.

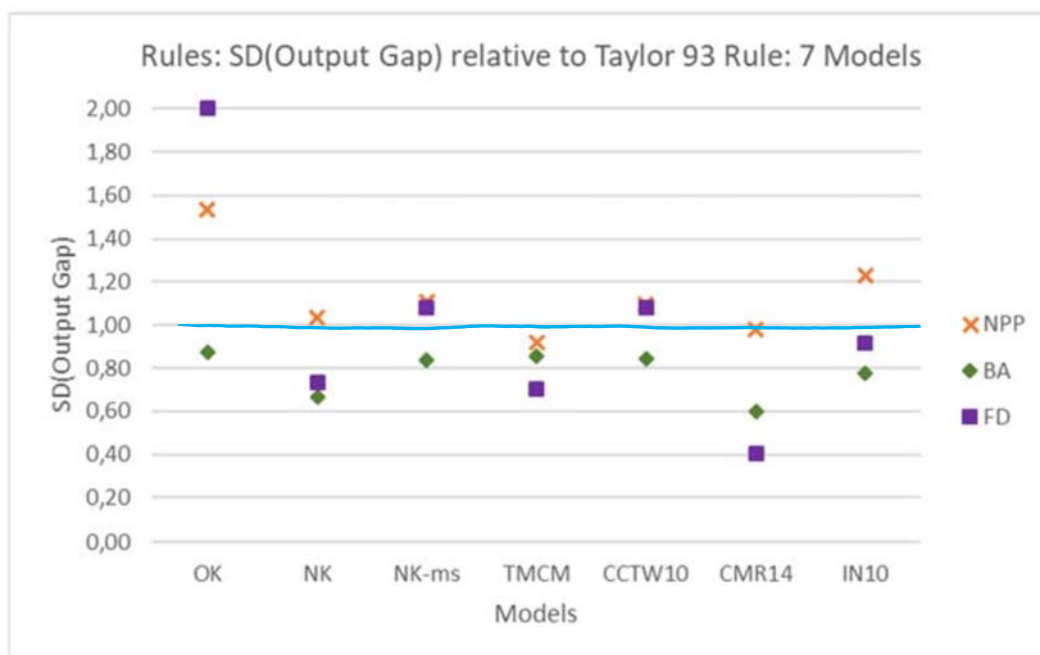
IN10: A model of Iacoviello and Neri (2010), which adds a housing market as well as financial frictions.

Figure 1. Standard deviation of inflation and output gap



Note: The figure shows the standard deviations of inflation and the output gap of each of the rules relative to the Taylor 1993 rule in 7 different models. The rules shown are the balanced approach rule (BA), the first difference rule (FD) and the inflation-tilting rule (NPP). The models are as follows: (1) *OK Model* – specification from Rudebusch and Svensson (1999), (2) *NK Model* - specification from Levin, Wieland and Williams (2003), (3) *SW Model* from Smets and Wouters (2007)), (4) *TMCM Model* from Taylor (1993), (5) *CCTW10 Model* from Cogan, Cwik, Taylor and Wieland (2010), (6) *CMR14 Model* from Christiano, Motto and Rostagno (2014), and (7) *IN10 Model* from Iacoviello and Neri (2010).

Figure 1. Standard deviation of inflation and output gap



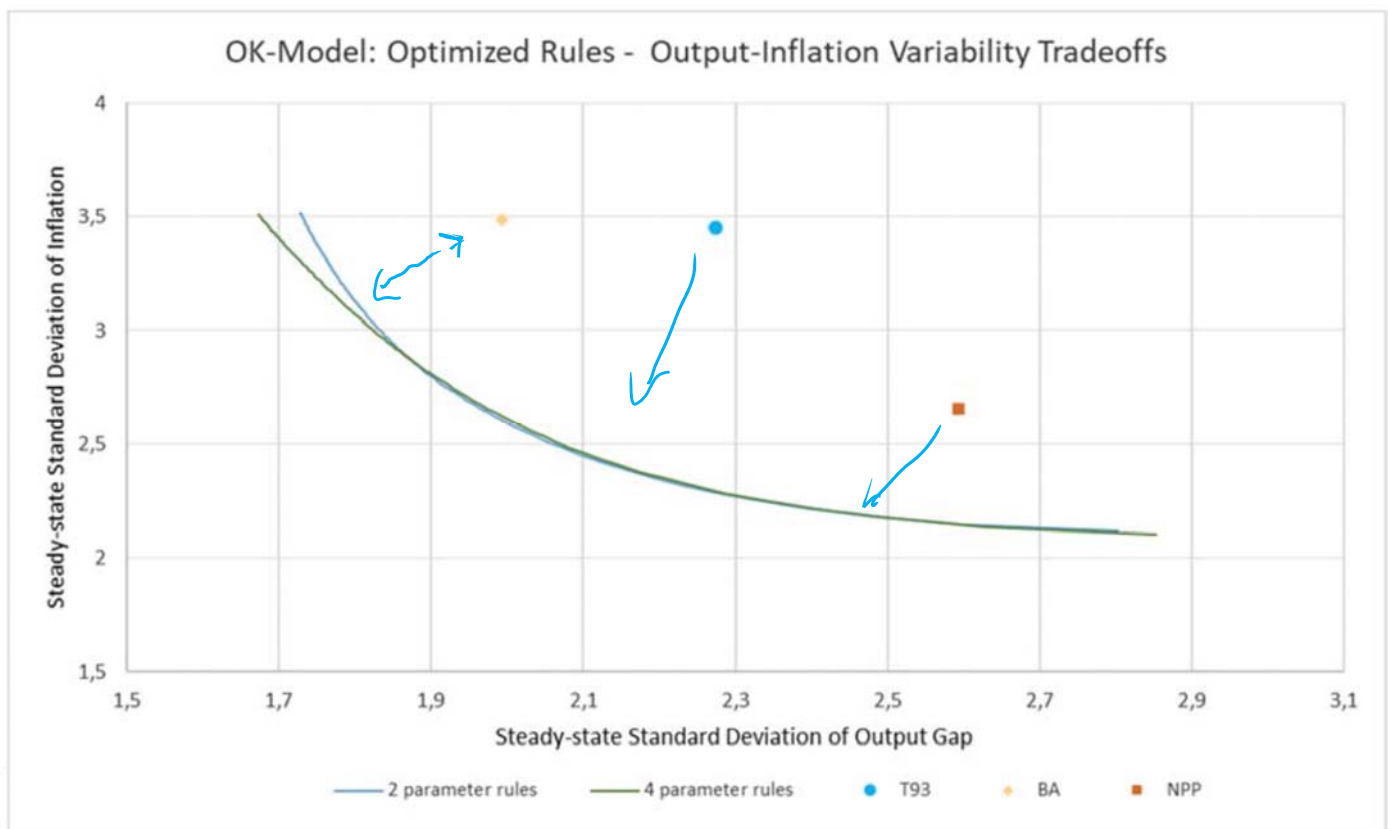
How close to optimal?

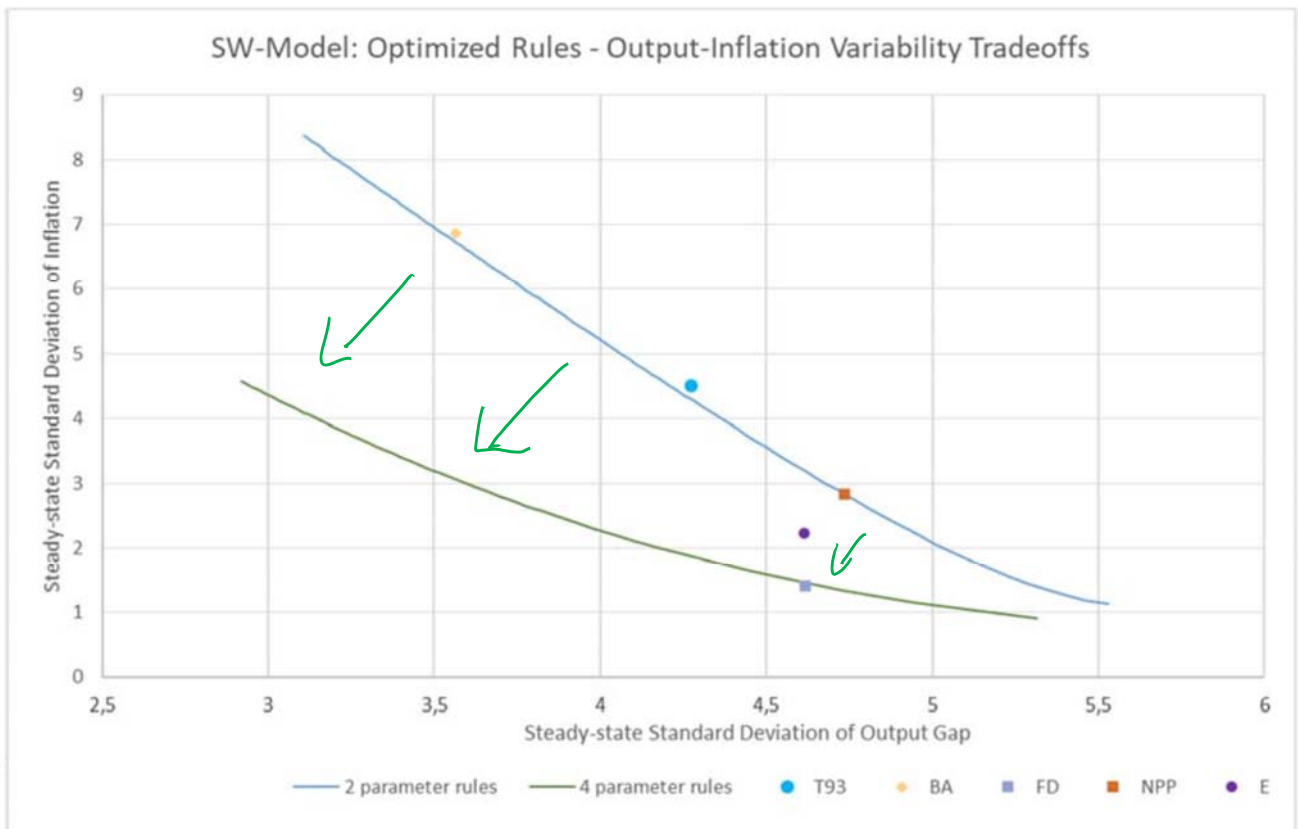
We find optimal response coefficients that solve in a given model:

$$\lambda \in [0, \infty]$$

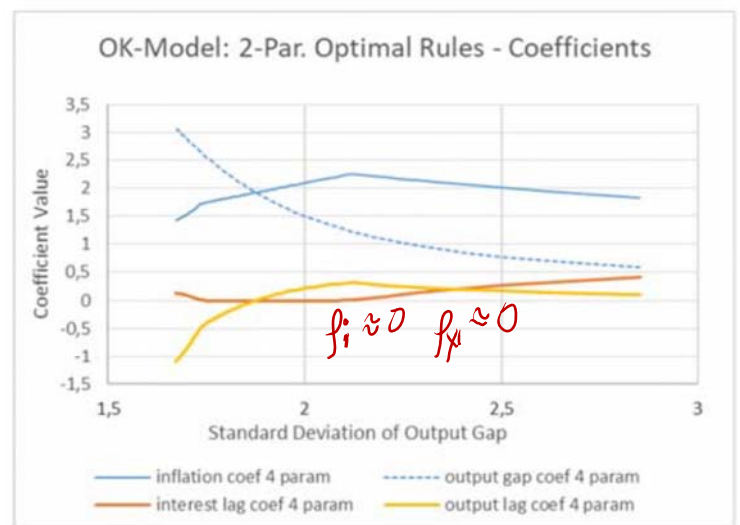
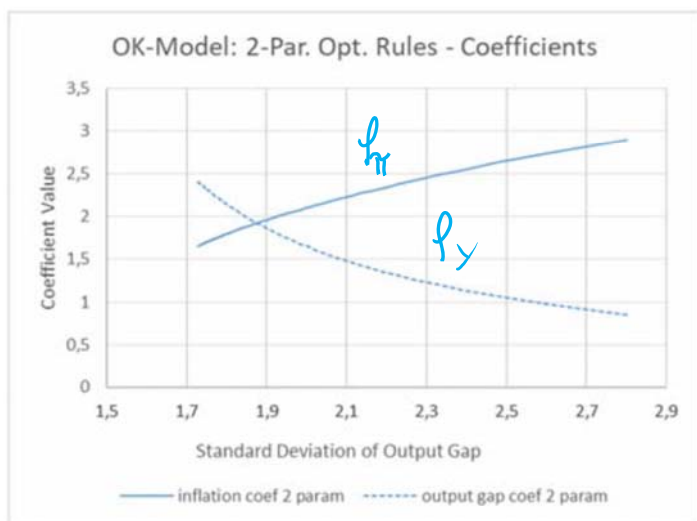
$$\underset{\varphi}{\text{Min}} \quad \text{Var}(\pi) + \lambda \text{Var}(y) + \text{Var}(\Delta i)$$

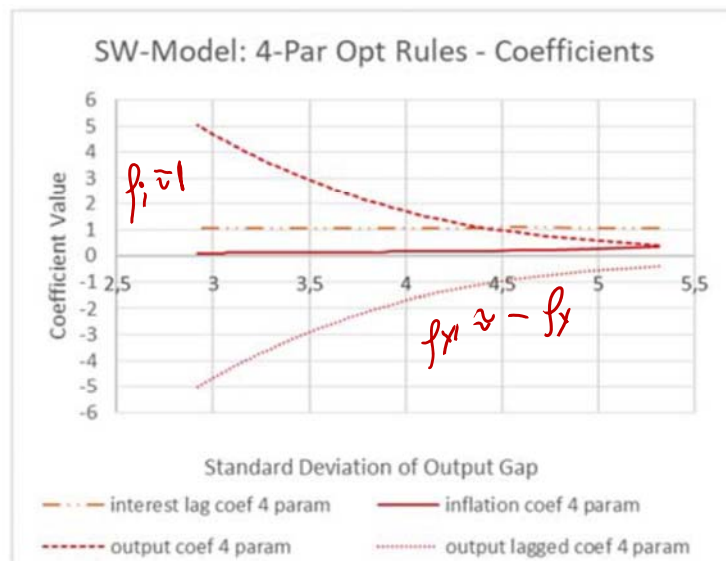
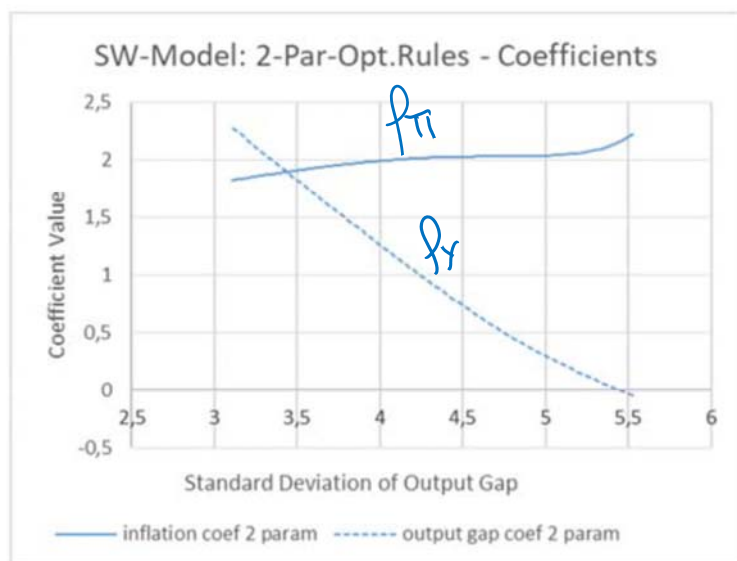
$$\text{s.t.} \quad i_t = \varphi_{\pi} \pi_t + \varphi_y y_t + \varphi_{yl} y_{t-1} + \varphi_i i_{t-1}$$





OK Model: Optimized Coefficients





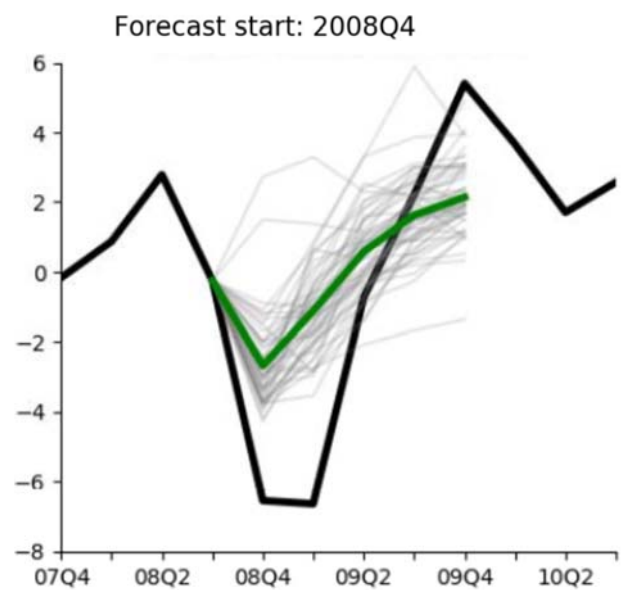
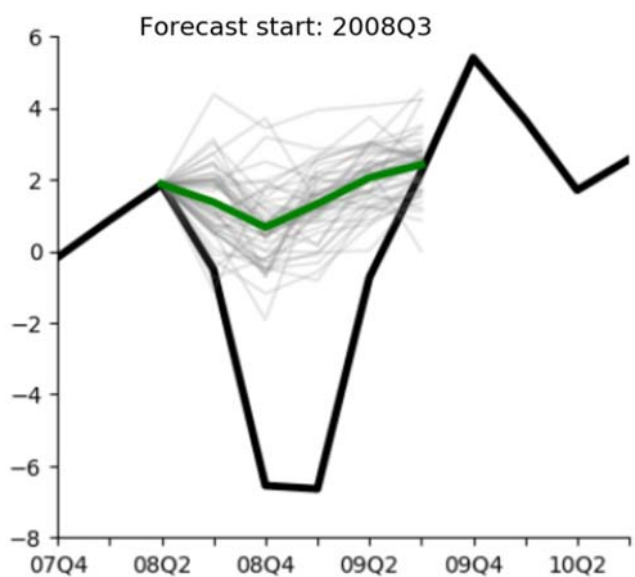
4. A model competition: Forecasting the Great Recession.

Would new post-crisis macro-financial models have performed better in forecasting the recession of 08/09?

First results: Binder, Farkas, Sun , Taylor, Wieland, Wolters (2020), (in preparation).

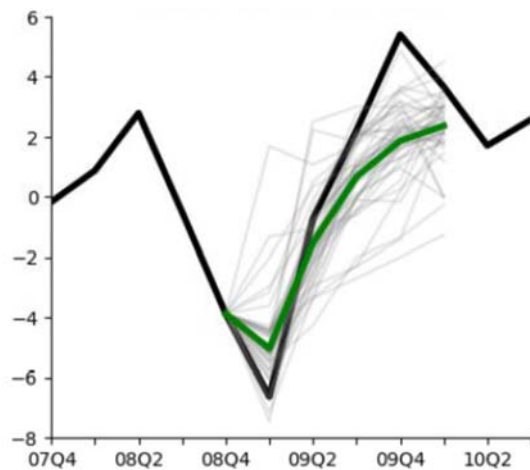
- Benchmark: Survey of professional forecasters in 2008/09
- Data: Quarterly real-time data vintages for U.S. economy
- Models:
 - Bayesian Vector Autoregressions (B-VARs)
 - Pre-crisis structural models
 - Post-crisis structural models

SPF Forecasts 2008:Q3 and 2008:Q4

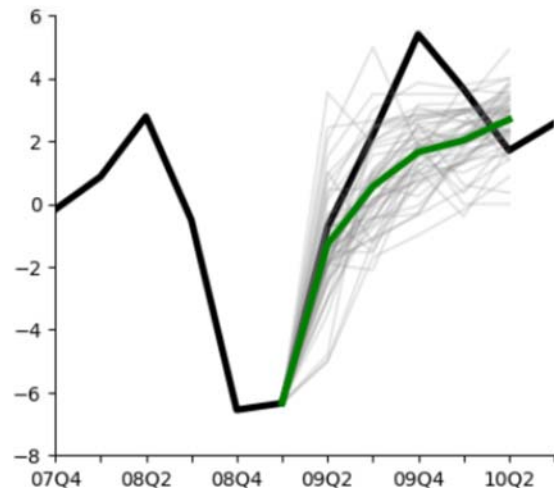


SPF Forecasts 2009:Q1 and 2009:Q2

Forecast start: 2009Q1



Forecast start: 2009Q2



Pre-Crisis Models

Del Negro and Schorfheide (2004)	NK-DS04	3: output growth, inflation, interest rate
Wieland and Wolters (2011)	NK-WW11	3: output growth, inflation, interest rate
Smets and Wouters (2007)	DSGE-SW07	7: output growth, consumption growth, investment growth, wages, hours, interest rate
Edge et al. (2008)	DSGE-FRBEDO	11: output growth, inflation, interest rate, consumption of non-durables and services, consumption of durables, residential investment, hours, wages, inflation for consumer nondurable goods, inflation for consumer durables
Giannone et al. (2015)	BVAR3, BVAR7, BVAR11	3, 7 or 11
Fair (2018)	CC-F18	more than 100

Post-Crisis Macro-Financial Models

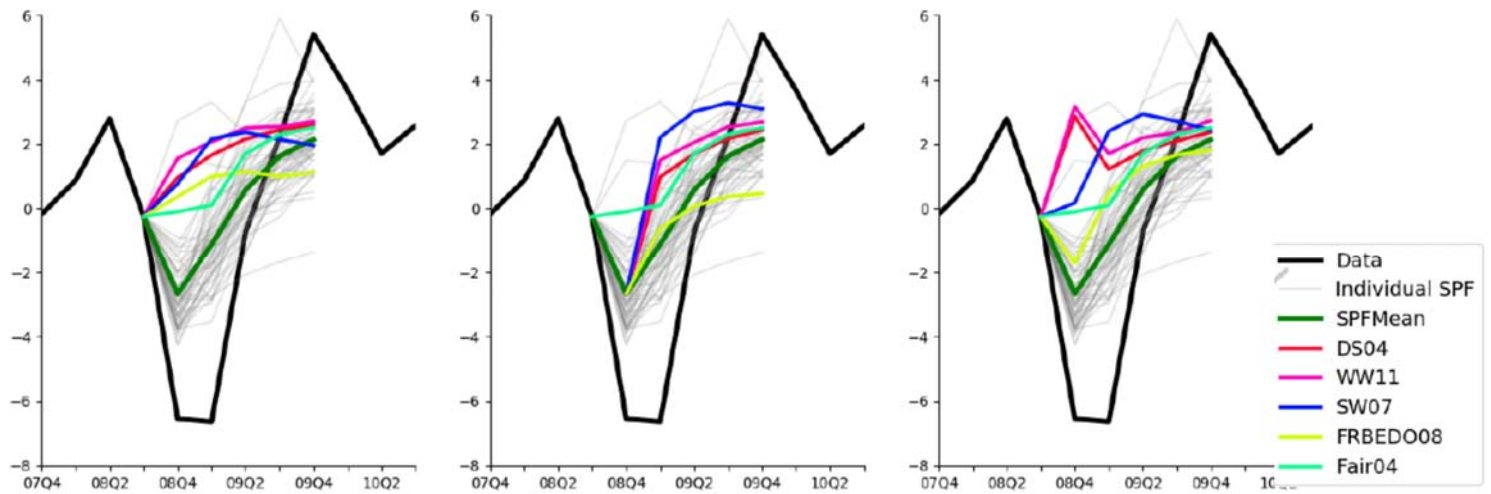
Bernanke et al. (1999)	FF-BGG99	5: output growth, inflation, interest rate, investment, credit spread
Del Negro and Schorfheide (2013), Del Negro et al. (2015)	FA-SW07	8: output growth, consumption growth, investment growth, wages, hours, interest rate, credit spread
Kolasa and Rubaszek (2015)	FF-DSSW07-FA1	9: output growth, consumption growth, investment growth, wages, hours, interest rate, credit spread, loan growth
Kolasa and Rubaszek (2015)	FF-DSSW07-CC	11: output growth, consumption growth, investment growth, wages, hours, interest rate, residential investment, mortgage house prices, mortgage loan spread
Carabenciov et al. (2008)	FF-IMFQP	6: unemployment rate, output growth, inflation, interest rate, housing tightness

Model-based forecasts: 4 different information sets

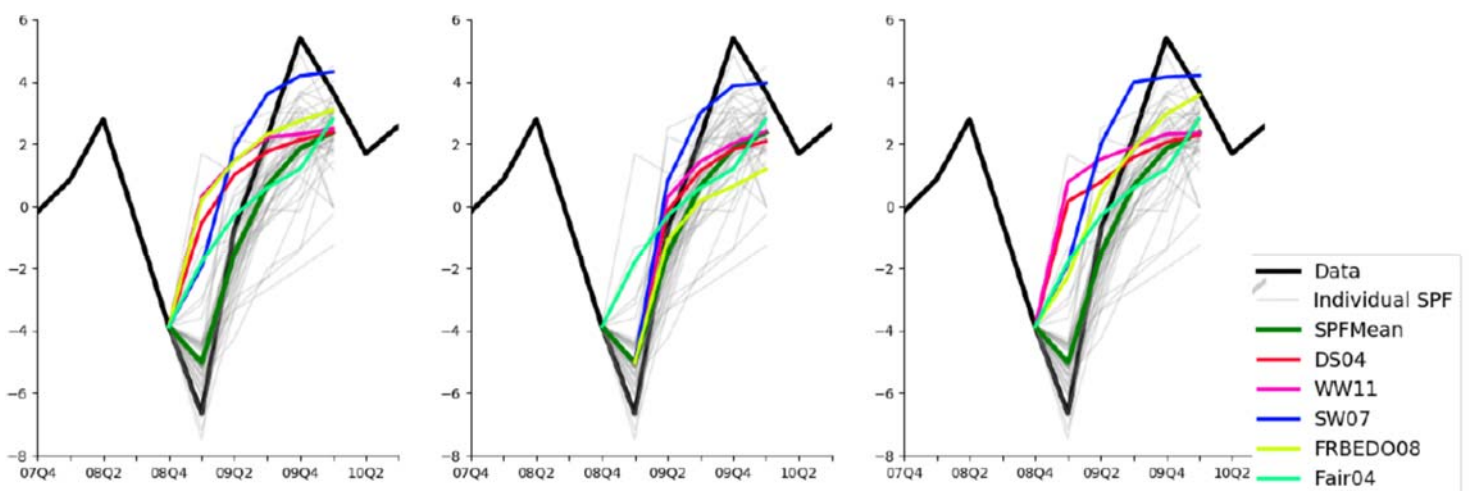
Scenarios:

- (1) Forecast based exclusively on information from preceding quarter
- (2) Condition on current quarter SPF nowcasts of output growth, unemployment rate, non-residential investment, residential investment
- (3) Condition on current quarter data: interest rates, credit spreads, mortgage spreads, and monthly observations such as inflation, unemployment, hours.
- (4) Condition on (2) and (3).

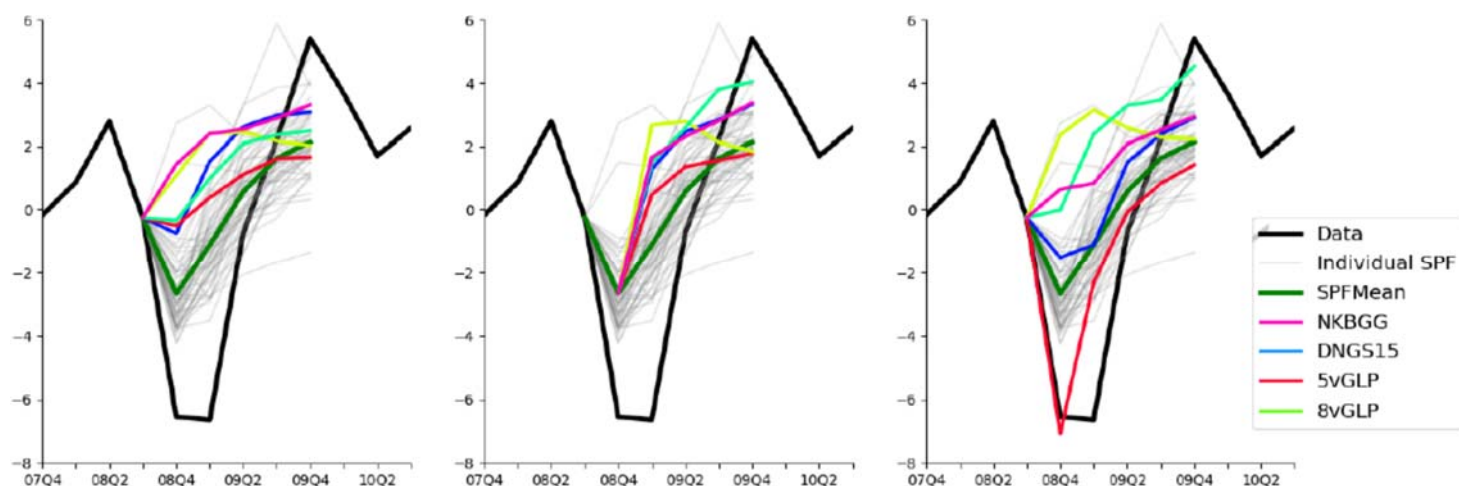
Pre-Crisis Models: Forecast 2008:Q4 , Scenario 1, 2 & 3



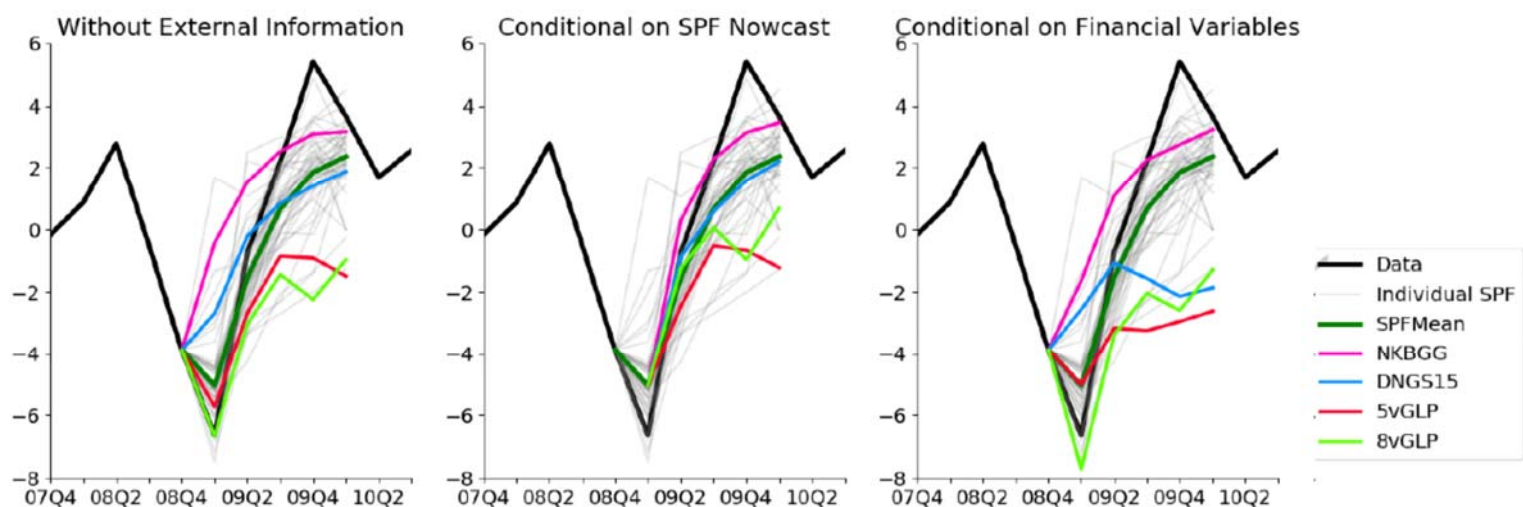
Pre-Crisis Models: Forecast 2009:Q1 , Scenario 1, 2 & 3



Post-Crisis Models: Forecast 2008:Q4 , Scenario 1, 2 & 3



Post-Crisis Models: Forecast 2009:Q1 , Scenario 1, 2 & 3



EstimationInterface

FORECAST PLATFORM

Models

☐ US_NK_BAS
 ☐ US_SW07
 ☐ DSGE_TEST
 ☐ NK_DS04

☐ US_FRBED008
 ☐ NK_WW11
 ☐ US_DNGS14
 ☐ US_DNGS14_SW

☐ US_SW07_BGG

☐ BVAR - GLP prior
 ☐ BVAR - Minnesota prior

Estimation Methods

☐ Bayesian (Mode Estimation)
 ☐ Bayesian (Metropolis-Hastings)

Settings

Chain Length:
Burn-in:

Number of Chains:
Scale For Acceptance Rate:

Plotting options

☐ Bayesian Impulse Response Functions with Periods =

☐ Historical Variance Decompositions with Periods =

Plot variance decomposition in:
☒ Absolute terms
 ☐ Relative terms

Data

Vintage Span

Year(YYYY)
Quarter

First Vintage:

Last Vintage:

Data Type

☒ Real-Time
 ☐ Revised

Estimation Type

☒ Expanding Series
 ☐ Rolling Window

Sample settings

Year(YYYY)
Quarter

First Obs.:

Rolling Window Length (Quarters):

☐ Augment Data with SPF Nowcast
 ☐ Incl. Financial Variables as Nowcasts

Forecasts & Performances

Forecast Horizon:

Benchmark:

Forecast Chart - Vintages

Year(YYYY)
Quarter

First Vintage:

Last Vintage:

Plot Options

☐ Plot SPF

Model Forecasts:

Density plot:

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Conclusions

New model comparison tools in Macro Model Data Base (MMB) 3.1 just released (www.macromodelbase.com)

Model comparison & robust policy: Cochrane, Taylor, Wieland (2019) „*Evaluating rules in the Fed’s Report and Measuring Discretion*“, working paper.

Model comparison & forecast competition: Binder, Farkas, Taylor, Sun, Wolters, Wieland (2020) forthcoming, *Forecasting the Great Recession in the United States: First Results from a Forecasting Model Competition*.