Regeln und diskretionäres Handeln in der Geldpolitik

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Regeln vs diskretionäres Handeln

1. Regeln im Monetary Policy Report der Fed
2. Diskretionäres Handeln messen
3. Politikregeln evaluieren
4. Regeln für den Euro-Raum

Cochrane, J. , J.B. Taylor, V. Wieland, Evaluating Rules in the Fed's Report and Measuring Discretion, forthcoming in, Cochrane et al, Strategies for Monetary Policy, 2019.

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1. Regeln im Monetary Policy Report der Fed


A. Monetary policy rules

Taylor (1993) rule	$R_t^{T93} = r_t^{LR} + \pi_t + 0.5(\pi_t - \pi^{LR}) + (u_t^{LR} - u_t)$
Balanced-approach rule	$R_t^{BA} = r_t^{LR} + \pi_t + 0.5(\pi_t - \pi^{LR}) + 2(u_t^{LR} - u_t)$
Taylor (1993) rule, adjusted	$R_t^{T93\,adj} = maximum\ \{R_t^{T93} - Z_t, 0\}$
Price-level rule	$R_t^{PL} = maximum\ \{r_t^{LR} + \pi_t + (u_t^{LR} - u_t) + 0.5(PLgap_t), 0\}$
First-difference rule	$R_t^{FD} = R_{t-1} + 0.5(\pi_t - \pi^{LR}) + (u_t^{LR} - u_t) - (u_{t-4}^{LR} - u_{t-4})$

Board of Governors of the Federal Reserve System

FRB Rules

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 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 target federal funds rate data extend through 2019:Q2.
SOURCE: Federal Reserve Bank of Philadelphia; Wolters Kluwer, Blue Chip Economic Indicators; Federal Reserve Board staff estimates.

Regeln für das Zinsniveau

$$i_t = \varphi_\pi \pi_t + \varphi_y y_t + \mu$$

TR93:   1.5   0.5

BA: 1.5   1.0

Zusätzlich, berücksichtigen wir eine „inflation-tilting" Regel vorgeschlagen von Nikolsko-Rzhevskyy, Papell, Prodan (2019)

NPP: 2.0   0.5

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Fed Funds Rate, T93 Regel, BA Regel

- BIP Deflator
- CBO Produktions-lücke
- Langfristrealzins = 2%
- Inflationsziel = 2%
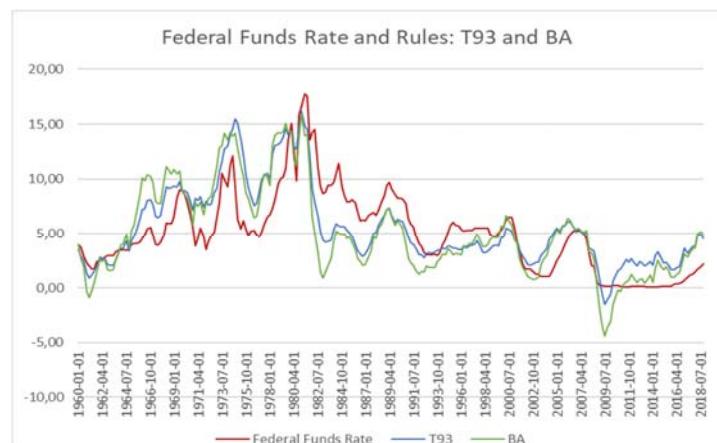
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Regeln für die Zinsänderung

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

FD: 0.5   0.5   -0.5   1.0

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2. Diskretionäres Handeln messen

Measures of Discretion: T93 and BA
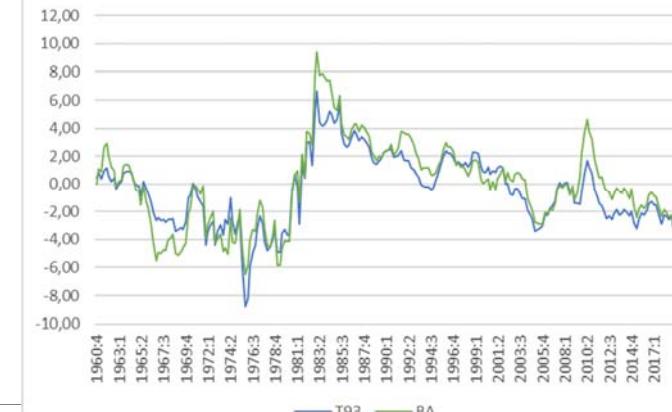
Measure of Discretion: NPP and FD
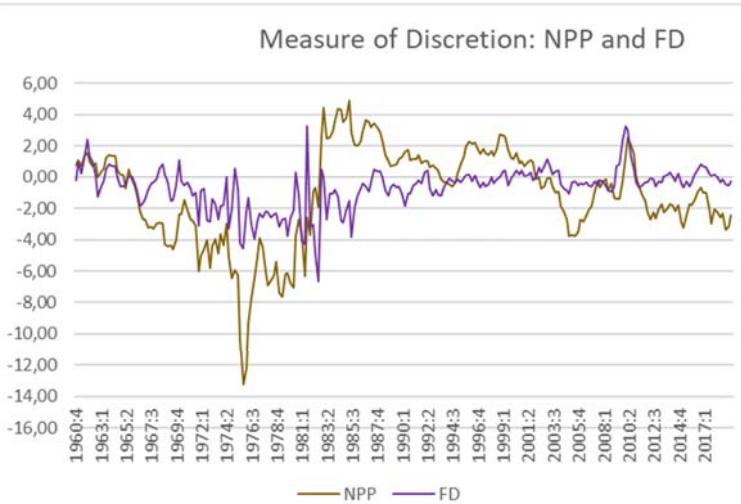
Nullzinsgrenze, Adaptierte Taylor-Regel und Preisniveau-Regel

Federal Funds Rate and Rules: T93, T93adj and PL

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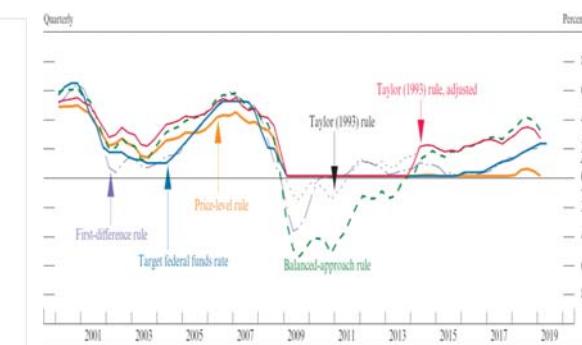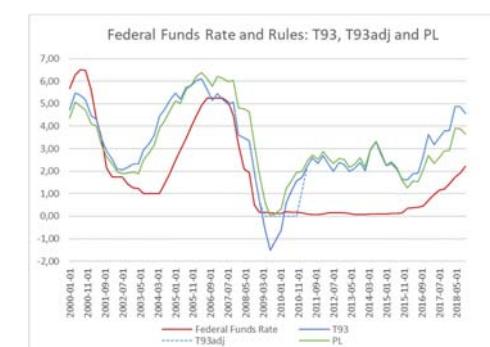
Inflationsmaß: PCE Deflator

Federal Funds Rate and Rules: T93, T93adj and PL

Legend: Federal Funds Rate — T93 — T93adj — PL

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3. Politik(-Regeln) evaluieren

Slide 15
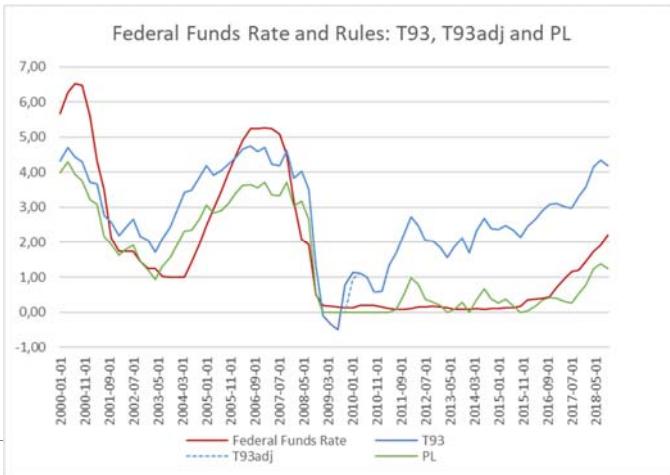
Use models to evaluate rules

Small New Keyesian Model (NW)

Small Old Keyesian Model (OK)

Medium-Scale New Keyesian Model (SW)

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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
T93	3.45	2.27	0.90	4.24	4.50	4.27
BA	3.49	1.99	0.96	2.83	6.87	3.56
NPP	2.65	2.59	0.84	4.38	2.83	4.74
FD	∞	∞	0.88	3.12	1.39	4.62
E	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]

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Wie nahe an einer optimalen Regel?

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

$$\lambda \in [0, \overline{\lambda}]$$

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

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

OK-Model: Optimized Rules - Output-Inflation Variability Tradeoffs

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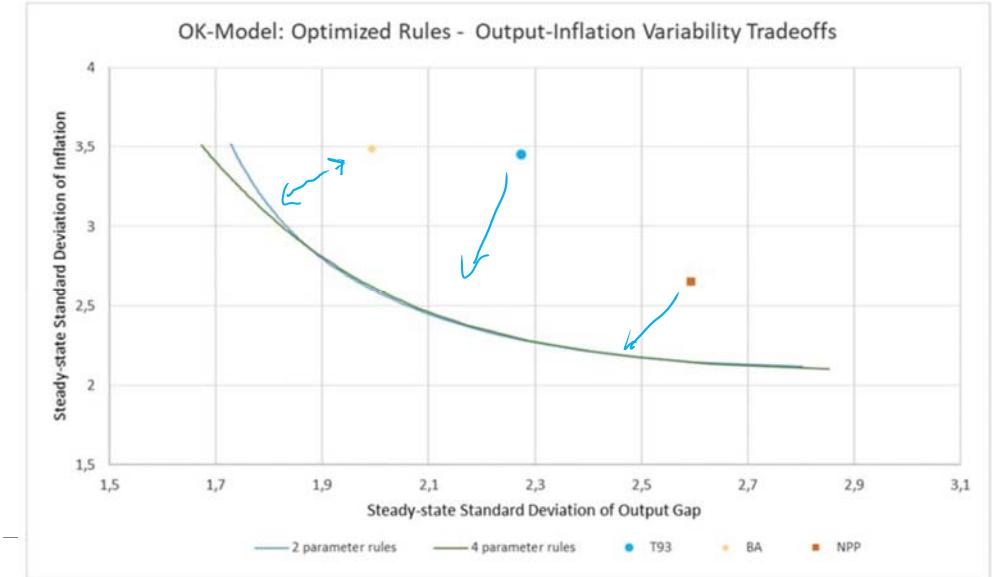
OK Model: Optimized Coefficients
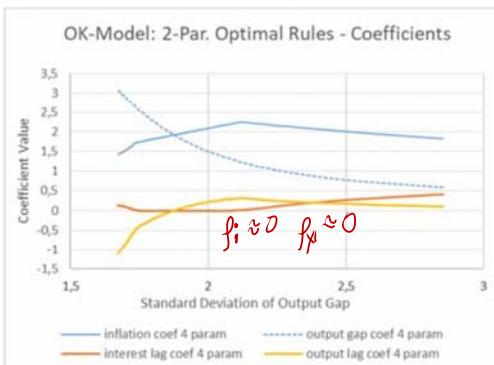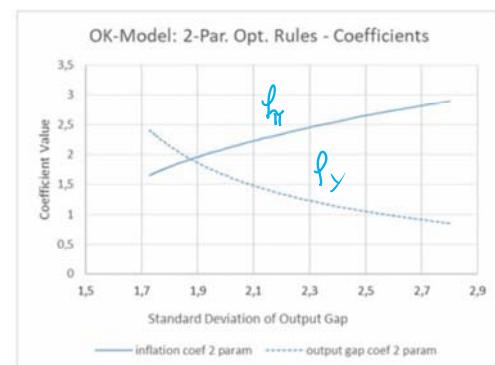
φ_π

φ_y

$\varphi_i \approx 0 \quad \varphi_{yl} \approx 0$

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SW-Model: Optimized Rules - Output-Inflation Variability Tradeoffs

SW-Model: 2-Par-Opt.Rules - Coefficients

SW-Model: 4-Par Opt Rules - Coefficients
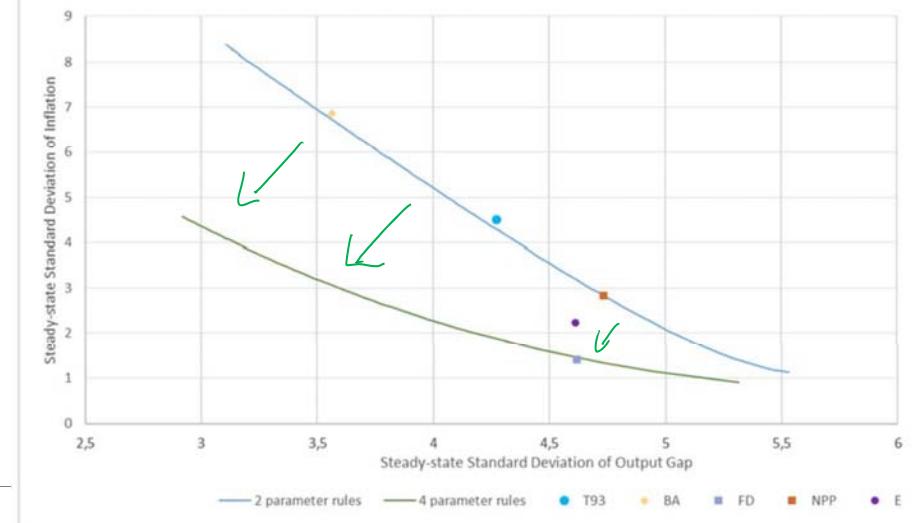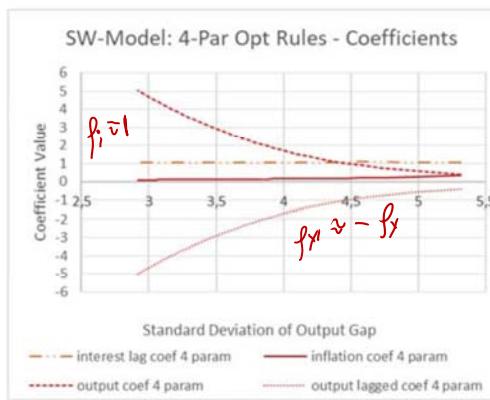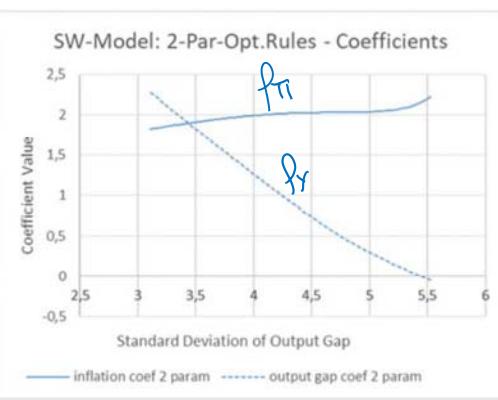
4. Regel für den Euro-Raum

Taylor Regel (Euro-Raum)

Taylor Rule for the euro area with ECB real-time data and AMECO nowcasts
Forecast is based on latest ECB staff projections (September 2019)

MRO (3rdMonth)
Taylor Rule (with core HICP)
Taylor Rule (with Deflator)
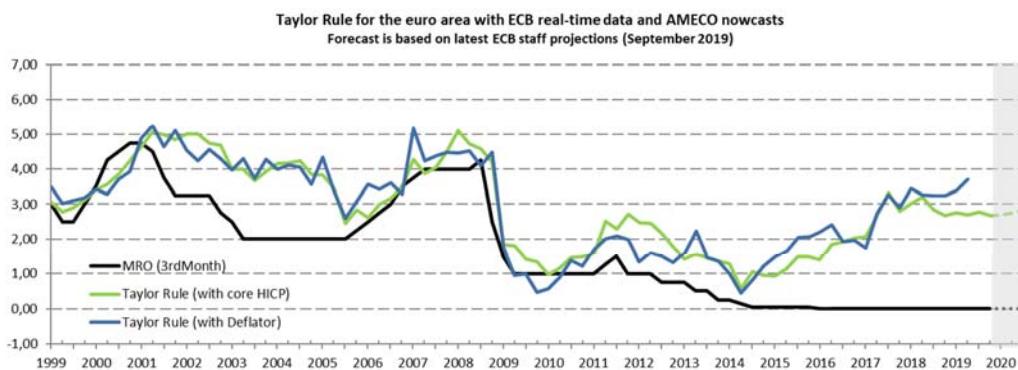
Echtzeit: BIP Deflator, Kern-HVPI, Ameco Produktionslücke

Orphanides-Wieland (2013) Regel
(Änderungsregel mit SPF Prognosen)

OW rule prescriptions based on SPF data

Percent