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MONETARY POLICY AND TAYLOR REACTION FUNCTIONS: BUSINESS CYCLES, CENTRAL BANK GOVERNANCE AND CENTRAL BANKERS' PREFERENCES

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Monetary Policy and Taylor Reaction Functions: Business Cycles, Central Bank Governance and Central Bankers' Preferences

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A key tool has characterized monetary policy analysis over the past thirty years: the use of reaction functions. This paper aims to review the evolution of the economics of the monetary policy reaction function from Taylor's (1993) seminal contribution to present day. The review is based on two assumptions: (1) the peculiar property of the Taylor rule as a flexible tool explains its pathbreaking nature given its capacity to test multiple economic and institutional cases; and (2) this property can be described using a theoretical four-pillar approach. In this approach, the reaction function is the fourth pillar, which represents the final outcome of three intertwined drivers – business-cycle dynamics, central bank governance and central bankers' preferences – and is itself a feedback instrument rule. Then, given the macroeconomic conditions and the infrequent changes of the monetary regime, it is highlighted the role that the central bankers' preferences has played at various points, describing how, after the founding conservative central banker was born, new members of the Taylor rule family progressively emerged: visionary, prudent, holistic and creative central bankers, respectively with their forward-looking, inertial, augmented, and shadow reaction functions. Finally the literature stresses that so far the true central bankers show a mixed attitude to adopt the flexible instrument rule perspective, particularly when they are confronted with the Odysseus versus Delphi dilemma.

Keywords: monetary policy, Taylor rule, reaction function, central bank independence, central banker conservatism, hawks versus doves, Odysseus versus Delphi

JEL Codes: E52, E58, E61

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1. Introduction

A key tool has characterized monetary policy analysis over the past thirty years: the reaction function. This function describes a central bank's reactions to macroeconomic developments. Its origins can be found in the work of John Taylor on flexible, rule-based monetary policy (Taylor 1993, 1999), where the concepts of Taylor rules and the monetary policy reaction function (MPRF) can be used interchangeably[1]. This paper aims to review the evolution of the economics of Taylor rule, which has revolutionized the way policymakers think about monetary policy.

To uncover the reasons for and features of this revolution, we utilize a methodological approach that allows us to analyse the state of the art, select extant literature and highlight relevant topics. The starting points of our methodology are the two intertwined tales on which monetary policy economics has been founded in the past four decades. On the one hand, we have the tale of how the institutional design of central bank rules – the procedures that govern central bankers' decisions – can shape policymakers' incentives[2]. On the other hand, we have the tale of how central bankers' preferences matter[3]. Central bankers' choices and central bank design have emerged as two crucial features of central bank governance that can shape monetary policy.

Moreover, central bankers' reactions reflect their assumptions about how the macroeconomic system works. If we assume their reactions follow a systematic strategy, then a policy rule can be identified. In other words, monetary policy becomes the final outcome of systematic interactions among four main components[4]: macroeconomics, monetary institutions, central bankers' preferences and policy rules[5]. Consequently, a four-pillar framework was born in which the monetary policy feedback rule incorporates all of the macroeconomic information, and central bank governance and central bankers' preferences simultaneously shape it.

The need to reconsider the state of the art regarding the Taylor rule can be further motivated from two perspectives: the continual debate on optimal money elasticity and predictability, and the recent wishes of the major central banks to normalize monetary policy. The Federal Reserve System's (the Fed's) mandate indicates that the aim of the US central bank is "to furnish an elastic currency"[6] given the dual mandate to pursue both "maximum employment" and "stable prices"[7]. In parallel, both the traditional[8] and the current[9] best practices in monetary policy view a high degree of transparency[10] and predictability as desirable. The intertwined concepts of elasticity and predictability can serve as effective

[1] Filardo et al. (2022).
[2] Sargent and Wallace (1981).
[3] Barro and Gordon (1983), Rogoff (1985).
[4] Masciandaro (2022) and (2023).
[5] Persson and Tabellini (1993), Svensson (1995).
[6] Federal Reserve Act (1913).
[7] Federal Reserve Reform Act (1977).
[8] Buchanan (1962).
[9] Blattner et al. (2008), Svensson (2015).
[10] Hughes Hallet and Weymark (2005), Kwabi et al. (2020), Dincer et al. (2022).

metaphors for the fundamental trade-off that the central banks in advanced economies, including the Fed[11], would like to address and fix.

Flexible monetary rules can be defined either as "constrained discretion" [12] or "instrument rule" [13]. This stresses the fact that given the central bank's commitment to achieving its macroeconomic targets in the medium run, the central bankers in charge wish to maintain discretion over changing the bank's main instrument – usually a short nominal interest rate – to address and fix macroeconomic imbalances.

Moreover, the recent structural change in the macroeconomic context from stag-deflation scenarios to high inflation risk has led major central banks to revise their conceptual frameworks[14] and to pursue monetary policy normalisation[15]. In such a scenario, the central bankers naturally need to provide more clarity on and be guided by their own MPRFs[16]. This represents an additional, contingent motivation to take stock of the state of the art regarding the monetary rules, including the increasing importance of central bank communication[17].

The analysis is organized as follows. First, in section 2, we use a simple and general three-equation model to present the four-pillar approach that will be used in the overall analysis. We then review the origins and evolution of the MPRF in sections 3 to 5. We discuss the policy implications in section 6, while section 7 concludes.

2. The Economics of the Taylor Rule

Our narrative on the four-pillar approach begins at the point where the roles of central bankers' preferences and the central bank's design emerged following the discovery of the general time-inconsistency problems that characterize economic policy[18]. The key feature was the identification of the relationship between the political cost-benefit analysis of any incumbent government and the likelihood of a sub-optimal macroeconomic equilibrium. In this context, either an independent central bank[19] or a conservative central banker[20] were identified as the solution to the problem of monetary policy effectiveness. At the same time, both concepts highlighted the importance of monetary stability in policymakers' goal functions.

[11] Blinder (2023).
[12] Bernanke and Mishkin (1997).
[13] Svensson (2003).
[14] Federal Open Market Committee (2020), European Central Bank (2021), Brunnermeier (2023).
[15] Lagarde (2022), Panetta (2022) and (2024), Waller (2022).
[16] Panetta (2023).
[17] Blinder et. al (2008), Gorodnichenko et al. (2023), Masciandaro et al. (2023), Bell et al. (2026).
[18] Kydland and Prescott (1977), Calvo (1978).
[19] Sargent and Wallace (1981), Barro and Gordon (1983).
[20] (Rogoff 1985). The situation when monetary policymaking is in the hands of a player who cares not at all about inflation has been defined the case of radical-populist central banker: see Guzzo and Velasco (1999), Lippi (2002), Jergen (2002).

Central bank governance became the institutional architecture for implementing day-to-day monetary policies aimed at smoothing business cycles[21] using monetary policy rules[22]. The operating lever can be a nominal interest rate[23], a quantitative target[24] or both[25].

All in all, monetary policy was viewed as the final outcome of complex interactions among four main components: monetary institutions, central bankers' preferences, flexible policy rules and macroeconomics[26] . In this regard, both central bankers' preferences and the central bank's design could influence the definition and implementation of the monetary policy rules given the assumptions about how the macroeconomic system works. The four-pillar framework was born.

On this respect, institutional architectures and policy rules are not necessarily alternative options, as Friedman claimed in 1962 and Taylor suggested in 2013. This is where the role of the flexible monetary policy rules came in. Moreover, the flexible monetary rule approach, beyond to be this funding pillar in the New Keynesian dynamic stochastic general equilibrium (DSGE) models[27] , it has been also used along post Keynesian and Classical-Marxian lines[28].

The key features of the four-pillar approach can be presented using a macroeconomic model that develops and simplifies a New Keynesian model of monetary policy[29]. The theoretical setting can be described as follows.

2.1 The Economy and the Monetary Policy Reaction Function

We assume that: 1) output growth is determined by a simplified supply curve with nominal and wage rigidities[30], where $\sigma > 0$ is the sacrifice ratio that summarizes the relative effects of any central bank choice in terms of inflation and output growth, being also a proxy for the trade-off between flexibility and credibility in the monetary policy action[31]; 2) aggregate demand depends on monetary policy via the expectations channel[32], acknowledging the existence in the real world of frictions and lags[33].

Monetary policy decisions are made targeting inflation and output growth, which is a goal-based rule. The decisions are then applied using instrument rules, which can be either interest-rate rules, in line with Taylor (1993), or money growth rules. The two specifications

[21] Bernanke and Gertler (1995), Clarida et al. (1999), Woodford (2003b), Gali and Monacelli (2005).
[22] Taylor (1993), Henderson and McKibbin (1993), Walsh (1995a), Orphanides (2003).
[23] Taylor (1993).
[24] Mc Callum (1987).
[25] Curdia and Woodford (2011).
[26] Persson and Tabellini (1993), Svensson (1995).
[27] Woodford (2001) and (2003b), Clerc and Boianovsky (2023).
[28] Rechard and Regmi (2023), Levrero (2024), Araujo and Moreira (2026).
[29] Favaretto and Masciandaro (2016), Masciandaro (2022).
[30] Barro and Gordon (1983), Backus and Driffill (1985). For the sake of simplicity, the natural rate is 0 here, as in Rogoff (1985).
[31] Fisher (1977), Rogoff (1985). For a metric for flexibility see: Nikolsko-Rzhevsky et al. (2014) and (2021), Istrefi et al. (2021), Morelli et al. (2024), Pittaluga and Seghezza (2026).
[32] Clarida et al. (1999).
[33] Schellekens (2002). For discussions of monetary policy uncertainty, see the seminal works of Friedman (1968), Poole (1970), and Cukierman and Meltzer (1986). On the supply side effects of monetary policy see Baqaee et al. (2024).

can be used sequentially without any loss of generality provided that the inflation-expectations channel works through changes in the real interest rate[34].

In other words, we use a standard business-cycle model that consists of three equations: the aggregate supply curve[35], the aggregate demand curve and the MPRF à la Taylor:

$$y = \sigma(\pi - \pi^e), \quad (1)$$
$$\text{and } y = \pi^e, \quad (2)$$
$$i = r^* + \pi^* + a(\pi - \pi^*) + b(y - y^*). \quad (3)$$

From the beginning, the 1993 Taylor specification became the "reaction function": a technique for modelling how a central bank alters monetary policy in response to economic developments[36]. While *i* is the reference rate, *r** is the natural (long-run real) rate - which is equal to 0 here for the sake of simplicity; π and *y* are the inflation rate and output growth, respectively, while π^* and *y** are the inflation target and potential output, respectively. Finally, the parameters *a* and *b* represent the central bank's sensibility with respect to the two fundamental macroeconomic gaps. That is, they are the "response factors". Monetary policy decisions affect both the real and monetary variables via the expectation channel, given the corresponding transmission mechanism[37].

The MPRF depends on the choices of the central bankers in charge. As monetary policy is conducted by committees[38], we assume in a standard way that the central bank board votes using a majority rule, yet remembering that heterogeneity in the composition of the central bank board, with a particular attention on the special role of the chairperson[39], can be a relevant factor in shaping the policy choices[40]. Then, median central bankers' preferences summarize the board's decisions. Alternatively, we can assume that the board's decisions mirror the chairperson preferences, given their abovementioned dominant role. In any case,

[34] Clarida et al. (1999), Tillmann (2012). More generally, the effects of monetary policy actions can be transmitted through either changes in the nominal interest rate or variations in the monetary aggregates. See McCallum (1997), Ireland (2004), Nelson (2005), Favara and Giordani (2009), Caraiani (2016) and Belongia and Ireland (2019) for more detailed discussions.

[35] In the standard specification the properties of the aggregate supply – the Phillips curve – do not depend on the monetary policy action. On the possible role of monetary policy in endogenizing the Phillips curve see: Jia (2023), L'Huillier et al. (2025), Acharya et al. (2026).

[36] Judd and Rudebush (1998).

[37] Uncovering the monetary policy transmission chain and its effects represents a key question in macroeconomics: see, among others Romer and Romer (2004a), Coibion (2012), Gertler and Karadi (2015), Clone and Hurtgen (2016), Ramey (2016), Caldara and Herbst (2019), Jarocinski and Karadi (2020), Miranda and Ricco (2021).

[38] Chappell et al. (1993),(1997), (2000), (2011) and (2014), Chappell and McGregor (2000), Fry et al. (2000), Sibert (2003), Lybek and Morris (2004) , Pollard (2004), Blinder and Morgan (2005), Dal Bo (2006), Crowe and Meade (2007), Gerlach-Kristen (2008) and (2009), Riboni and Murgia (2010) and (2014), Berger and Nitsch (2011), Farvaque et al. (2011) and (2018), Jung and Kiss (2012), Ejffinger et al. (2013), (2015) and (2018), Jung (2013), Hahn (2016), Firrell and Reinold (2020), Gross and Zanhner (2021) and Rieder (2021) analyse how the fact that the majority of central banks use boards, including the emergence of "shadow" committees (Siklos and Neuenkirch 2015).

[39] Chappell and McGregor (1993), Romer and Romer (2004b), Gerlach-Kristen (2008), Chappell et al. (2004), Riboni and Murgia (2010), Schonhardt-Bailey (2013), Binder (2020), Rechard and Regmi (2023), Howes et al. (2025).

[40] Romer and Romer (2004b), Reis (2013), Malmendier et al. (2021), Howes et al. (2025).

those preferences simultaneously define the optimal inflation rate and, given the sacrifice ratio, the consequences in terms of output growth, as well as the response factors in the MPRF.

Under these assumptions, given the features of the economy, the two intertwined drivers influence both the monetary policy goals and the relative sensibilities: the central bank's governance - i.e. its independence - and the central bankers' preferences - i.e. their conservativeness.

2.2 Bridging the Gap: Introducing Central Bank Governance and Central Bankers' Preferences

The simplest way to highlight the relationship between independence and conservativeness on the one hand and the features of the MPRF on the other is to envision an economy with perfect information in which citizens and policymakers interact. In this economy, the focus is on defining monetary policy actions to address the business cycle, taking into account the institutional setting.

The relevant actors are the central bank and society, where markets, households and firms interact, giving rise to a Nash equilibrium[41]. The central bank knows the pros and cons of inflation as well the features of the institutional setting, i.e. the monetary regime[42]. In addition, monetary policy is the only game in town[43]. The central bank's goal function can be expressed as[44]:

$$V_{CB}(\pi) = (\pi - \pi^e) - \frac{1}{2}\sigma\Omega_L\pi^2. \quad (4)$$

In order to obtain the optimal inflation rate, we assume that the central bank's goal function is such that: 1) the benefits of inflation surprises in terms of output growth are positive, 2) the costs of inflation are positive and 3) the monetary regime matters, such that the degree of central bank independence (CBI) - the monetary dominance level - implies higher levels of the parameter Ω_L .

It is worth noting that the CBI level has been already defined by the legislator. In fact here a two-stage political economy setting is used, assuming to be in a democratic country with a two-tier political architecture[45] in which, in defining the monetary policy perimeter, regime design and day-to-day policy are separated using a delegation approach[46]: in the

[41] Barro and Gordon (1983), Backus and Driffill (1985). The game-theoretical approach of monetary policy overcame the weakness of traditional monetary policy models that the Lucas (1976) critique highlighted - i.e. that the macroeconomic environment is given.

[42] Eijffinger and Hoeberichts (1998).

[43] In general, the distinction between institutions (monetary versus fiscal dominance) and policies (monetary versus fiscal choices) is often not crystal clear. Given this disclaimer, see Alesina and Tabellini (1987), Leeper (1991), Beetsma and Bovenberg (1998), Beetsma and Uhlig (1999), Dixit and Lambertini (2001, 2003), Adam and Billi (2008), Adam (2011), Giordano and Tommasino (2011), Martin (2011), Niemann (2011), Niemann et al. (2013), Bhattarai et al. (2014), Haga (2015), Martin (2015), Miller (2016, 2019), Barthelemy and Plantin (2018), Rottger (2019), and Bianchi and Melosi (2019) on the presence of both fiscal and monetary policymakers. See Neimann et al. (2013) on fiscal and monetary policymakers and the monetary tool problem (money growth versus interest rate). For a historical perspective, see Blancheton (2016).

[44] For a discussion of the micro foundations of the standard goal function ascribed to the central bank, see Woodford (2003a). For a discussion on central bank goal function with equal weights on inflation and unemployment for consistency with the Fed mandate see Bernanke (2007) and Clarida (2019).

[45] Persson and Tabellini (2004), Alesina and Tabellini (2007).

[46] Masciandaro and Romelli (2015), Masciandaro and Russo (2024).

legislative stage, citizens elect a legislator who chooses the central bank regime; in the policy stage, an incumbent central banker sets monetary instruments, taking the regime as given.

Turning to the economy, for each individual agent, aggregate output growth and inflation are givens. The best steps these agents can take are to be rational, accurately forecast inflation and try to overcome the time-inconsistency problems. Therefore, they maximize the following goal function:

$$V_{ec}(\pi^e) = -(\pi - \pi^e)^2. \quad (5)$$

If the central bank chooses the inflation rate at the same time that individuals decide on their inflation expectations, then the corresponding equilibrium is such that[47]:

$$\pi = \pi^e = \frac{1}{\sigma\Omega_L}. \quad (6)$$

Therefore, given the features of the economy summarized in σ, the inflation rate is associated with the type of monetary regime: higher CBI means lower inflation, while the real effects in terms of output growth are associated with the characteristics of the sacrifice ratio.

In parallel, the characteristics of the central banker in charge can also matter. The key assumption is that the central banker can be more or less conservative, where central bank conservatism (CBC) refers to the importance the central banker assigns to the monetary stability goal[48] . Initially, CBI and CBC were modelled using a proxy that represented the importance of monetary stability in the policymaker's goal function – our parameter Ω .

Yet, CBI and CBC are different concepts, and we are going to distinguish them. In fact independence is an institutional feature of the monetary regime, while conservatism is a personal attitude of the central banker. Conservatism is a key characteristic of the central banker as a bureaucrat, as delegating monetary policy to a player who is inflation averse represents an additional commitment to increasing the monetary policy's credibility and its effectiveness in terms of inflation performance[49].

In the literature, CBI and CBC are two distinct and relevant elements in central bank governance that are focused on effective monetary policy[50]. In general, CBI and CBC are viewed are substitutes[51].

In order to uncover in the clearest way the cost and benefit analysis of the central banker, following to assume a linear macroeconomic system, we consider non linearities in the central banker preferences.

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[47] Backus and Driffil (1985).

[48] Rogoff (1985).

[49] Rogoff (1985).

[50] As in the case of central bank independence, researchers developed indices of central banker conservatism, where the most accurate analyses discuss or use separate indicators for independence and conservatism : Vaubel (1997), Forder (1998), Fry (1998), Favero and Rovelli (2003), Ozlale (2003), Castelnuovo and Surico (2004), Berger and Woitek (2005), Dennis (2006), Berlemann and Hielscher (2013) and (2016), Levieuge and Lucotte (2014).

[51] Eijffinger and Hoeberichts (1998), Hughes Hallet and Weymark (2005), Eijffinger and Hoeberichts (2008), Hefeker and Zimmer (2011), Taylor (2013). At the same time, CBC and CBI have been used interchangeably (Rogoff 2025). For a case study where an unconservative central banker operates in an independent central bank see Wojtyna (2025).

Then, with the aim of highlighting the associations among CBI, CBC and inflation, let $V_{cb}(t_{cb}, \pi)$ be the central banker's utility function:

$$V_{cb}(t_{cb}, \pi) = B(t_{cb}, \pi) - C(t_{cb}, \pi) = \frac{2\pi^{0.5}}{t_{cb}} - \frac{1}{2}\sigma\Omega_L t_{cb}\pi^2, \quad (7)$$

where $B(t_{cb}, \pi)$ and $C(t_{cb}, \pi)$ are the individual benefits and costs[52], respectively; Ω_L is the CBI level; and t_{cb}> 0 is the degree of CBC. Given the central bank regime defined by the legislator, the central bankers' preferences are associated with the pros and cons of inflation.

The key assumption is that the central banker is a professional career concerned player, that cares about her/his reputation[53]. Reputation in turn can be associated with the inflation performances.

On the one side, individual central bankers are bureaucrats who can consider inflation - i.e. seignorage - as a financial resource for their organisations. Moreover, central bankers assume rational expectations. In other words, they do not try to exploit inflation surprises. Then individual opportunistic benefits can arise, due to seignorage revenues, given a basic central bank balance-sheet constraint[54], we know that when d is the real dividend the central bank pays to the state, h is the flow of currency and θ is the nominal cost of running the central bank, then the central bank's income increases with inflation:

$$d + \pi = h + \theta. \quad (8)$$

Yet these benefits are positive but decreasing - concavity in inflation - given that the more seignorage revenues are increasing, the more likely are inefficiency and/or externalities[55], signalling a weak and/or unstable governance[56] that harms the central bank reputation. Benefits are increasing and concave in the inflation rate:

$$\frac{\partial B(t_{cb},\pi)}{\partial \pi} = \frac{1}{\sqrt{\pi} t_{cb}} > 0; \frac{\partial B^2(t_{cb},\pi)}{\partial \pi} = -\frac{1}{2\pi^{3/2} t_{cb}} < 0. \quad (9)$$

On the other side, the higher is inflation the more likely is that increasing individual reputational losses[57] emerge (convexity in inflation). Costs are increasing and convex in the inflation rate:

$$\frac{\partial C(t_{cb},\pi)}{\partial \pi} = \sigma\Omega_L t_{cb}\pi > 0; \frac{\partial C^2(t_{cb},\pi)}{\partial \pi} = \sigma\Omega_L t_{cb} > 0. \quad (10)$$

[52] Here we adapt a general goal function - see: Alesina and Passarelli 2019 - to describe central bankers' behaviour.

[53] Sibert (2003), Alesina and Tabellini (2008).

[54] Jeanne and Svensson (2007), Stella and Lonnberg (2008), Hall and Reis (2015), Reis (2015), Benigno (2016*),* Adler and Castro (2016), Goncharov et al. (2017), and Kjellberg and Vestin (2019) have shown that profit and capital concerns are both present and effective in central bankers' choices. In other words, the central banker cares about the central bank's financial independence.

[55] Aizenman (1992), Klein and Newmann (1990), Buiter (2007).

[56] Andrabi (1987), Grilli (1989), Cukierman et al. (1992).

[57] Neuenkirch and Tillmann (2014).

Finally, we assume that central bankers can be heterogeneous with respect to their degree of conservatism, which is common knowledge[58]. Then they can be indexed, such that more conservative central bankers bear higher marginal costs and/or enjoy lower marginal benefits from any given monetary policy given that the implementation of an inflationary policy is costly for a conservative central banker:

$$\frac{\partial B(t_{cb},\pi)}{\partial \pi} = -\frac{2\sqrt{\pi}}{{t_{cb}}^2} < 0; \frac{\partial C(t_{cb},\pi)}{\partial \pi} = \frac{\sigma \Omega_L \pi^2}{2} > 0. \quad (11)$$

The central banker's preferred inflation rate,π_{cb}, is such that the marginal benefits match the marginal costs:

$$\frac{\partial B(t_{cb},\pi)}{\partial \pi} = \frac{\partial C(t_{cb},\pi)}{\partial \pi}; \frac{1}{\sqrt{\pi} t_{cb}} = \sigma \Omega_L t_{cb} \pi. \quad (12)$$

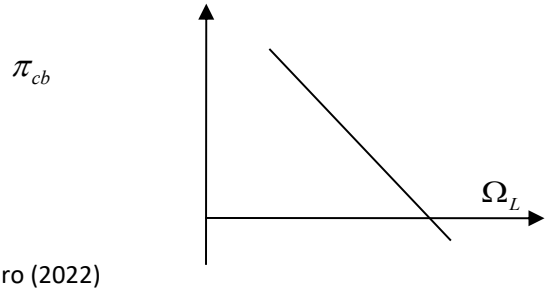
Then:

$$\pi_{cb} = \frac{1}{{t_{cb}}^{4/3} \sigma^{2/3} {\Omega_L}^{2/3}}. \quad (13)$$

Inflation and CBC are inversely associated; the same is true for inflation and CBI. Both central banker conservatism and central bank independence imply a lower risk of monetary policy capture, which means lower inflation risks, given the features of the economy summarized through the sacrifice ratio σ, which reflects the real effects of any monetary choice.

Going into the details, and starting from the relevance of the central bank governance, on the one side the inflation rate is associated with the type of monetary regime, where higher CBI is associated with lower inflation (Figure 1).

Figure 1: Inflation and central bank governance



Source: Masciandaro (2022)

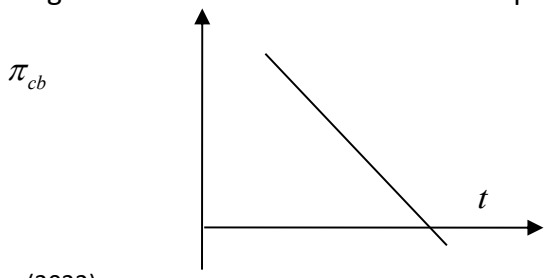
The inverse association between inflation and CBI reflect the macroeconomic consequences of a monetary dominance regime[59]: an institutional setting in which the monetary policymaker is the central bank, which is independent from the government . The monetary dominance regime mirrors the rationale that motivates a society to delegate monetary policy to a specialized bureaucracy: the central bank.

On the other side , going to the role of the central banker preferences, the inflation rate is inversely correlated also with the degree of CBC (Figure 2).

[58] For discussions of uncertainty and central bankers' preferences, see Beetsma and Jensen (1998), Muscatelli (1998), Lossani et al. (1998), Tillman (2008), Sorge (2013), and Morimoto (2018).

[59] Sargent and Wallace (1981).

Figure 2: Inflation and central banker preferences



Source: Masciandaro (2022)

CBI and CBC are substitutes: any change in CBI will modify the corresponding inflation rate given the degree of CBC. For instance, a regime reform that increases CBI will reduce the preferred inflation rate for any level of conservatism. This implies that, given the institutional reform, the same level of inflation is associated with a lower level of conservatism.

The relevance of the central banker's personal attitude becomes even more evident if we explore its possible determinants. For the sake of simplicity, we normalize both the sacrifice ratio and the degree of CBI to 1. Therefore, the central banker's utility function becomes:

$$V_{cb}(t_{cb}, \pi) = \frac{2\pi^{0.5}}{t_{cb}} - \frac{1}{2} t_{cb} \pi^2, \tag{14}$$

and the preferred inflation rate is:

$$\pi_{cb} = \frac{1}{{t_{cb}}^{4/3}}. \tag{15}$$

This result stresses a well-known finding that hiring a central banker who is more conservative than the average citizen is optimal [60]. In a sense, the optimal level of conservatism becomes a state-contingent variable given the institutional setting[61], Ω, as well as the structural features, σ, of the economy: a more efficient economy - i.e. a lower sacrifice ratio, which also means a more convenient trade-off between credibility and flexibility - means lower inflation[62].

Moreover, the central banker personal attitudes can be more or less relevant depending on the governing rules which characterize a given central bank setting[63], and the decisions of the central bankers can be affected by the nature of the macroeconomic shocks,

[60] Brainard (1967), Rogoff (1985), Hughes Hallet and Proske (2018).
[61] The institutional setting includes the features of central banker's office, such as term length. See Waller and Walsh (1996).
[62] Svensson (1999), Ball (1999), Lippi (2002). For details on CBI and CBC in an economy with liquidity traps, see Jeanne and Svensson (2007), and Nakata and Schmidt (2019), respectively.
[63] Klose (2024).

where disagreements are less (more) frequent when demand (supply) shocks are the predominant source of inflation fluctuations[64] .

Finally, conservatism is associated with terminological metric which is expressed in a hawk-dove scale, where a *hawk* is a policymaker who dislikes inflation – i.e. conservatism is high - while a *dove* is a policymaker who is more tolerant of inflation, pursuing other policy goals, such as output growth and employment - i.e. conservatism is low. Given equation (15), this differentiation between doves and hawks has become one of the main focal areas in analyses of the relationship between central bankers' preferences, monetary policy decisions and macroeconomic performance[65], where such explorations has been enriched through the inspection of minutes and transcripts, using also the textual analysis tools [66]. Over time, the dovish/hawkish attitudes have become a main focus in analyses of monetary policy board decisions, as we will see in uncovering the family of MPRF that the original Taylor rule generated.

2.3 Closing the Circle: The Monetary Policy Reaction Function and its Drivers

Now we have all the information we need to close the circle. Let us come back to the MPRF. The monetary policy goals as well as the sensibilities with respect to the business-cycle shocks that can affect inflation and/or output growth can be associated with the three abovementioned drivers that can systematically influence the bureaucracy that governs the interest rate path: macroeconomics, central bank governance and central bankers' preferences:

$$i_t = r^* + \pi^*(\sigma, \Omega, \tau) + a(\sigma, \Omega, \tau)(\pi - \pi^*(\sigma, \Omega, \tau)) + b(\sigma, \Omega, \tau)(y - y^*). \quad (3')$$

In other words, both the inflation target and the parameters *a* and *b* that represent the central bank sensibility with respect to the two fundamental macroeconomic gaps – the response factors – can be considered endogenous variables. The properties of those variables derive from three different drivers.

Moreover, it is worth remembering that one more step could be taken, given that central bank governance and central bankers' preferences can be endogenized. Central bankers' conservatism can depend on regional biases[67]; gender[68]; education, occupational

[64] Madeira et al. (2023).

[65] Chappell et al. (1993), (1997), (2004), (2011) and (2014), Chappell and McGregor (2000), Asso et al. (2010), Jung (2013), Jung and Kiss (2012), Jung and Latsos (2014), Eijffinger et al. (2013), (2015) and (2018), Neuenkirch and Neumeier (2013), Wilson (2014), Istrefi(2017), Bennani et al. (2018), Bordo and Istrefi (2018) and (2023), Eijffinger and Masciandaro (2018), Kahn and Oksol (2018), Istrefi et al. (2019), Kokoszczynski and Mackiewicz-Lyziak (2023), Amador and Phelan (2026). On hawkishness and central bank communication see: Tobback et al. (2017), Apel et al. (2019).

[66] Belden (1989), Waller (1992), Chappell et al. (1993), von Hagen and Suppel (1994), Blinder and Morgan (2005), Gerling et al. (2005), Meade and Stasavage (2008), Lucca and Trebbi (2009), Meade and Thornton (2012), Schonhardt-Bailey (2013), Apel and Grimaldi (2014), Hansen et. al. (2014), Hansen and McMahon (2016b), Istrefi (2016), Hansen and McMahon (2016a) and (2016b), Malmendier et al. (2021), Howes et al. (2025).

[67] Meade and Sheets (2005), Chappell et al. (2008), Eichler and Lahner (2014), Jung and Latsos (2015), Ehrmann et al. (2026).

[68] Comunale et al. (2023), Masciandaro et al. (2023), Bodea and Kerner (2025).

background and political preferences[69]; personal experiences[70]; or a combination of these drivers[71]. All else equal, any change in a relevant driver can trigger a change in the central bankers' conservatism and, consequently, influence the MPRF.

On the other hand, taking advantage of the first wave of studies on CBI, including the critical views[72], the literature took an important step by beginning to treat also the central bank governance as an endogenous variable that has to be explained. The original theoretical motivation is as follows: in normal times, the policymaker grants independence to a conservative central banker, but the politicians retain the option to override the central banker's decisions in extreme situations (i.e. in extraordinary times)[73]. The subsequent key intuition is that the government is a politician that can shape central bank governance by taking different drivers into account. This creates dynamic institutional cycles that are characterized by ups and downs[74], during which CBI can show different degrees of resilience in terms of how difficult is to change constitutions and laws, and then use those changes to modify the central bank's setting[75].

This allowed for exploration of the drivers that can motivate decisions by one or more countries to maintain or reform their monetary regimes. Different interpretative hypotheses were advanced to explain the genesis of the political process that leads policymakers to change monetary regimes.

Developments in endogenizing monetary regime have been subject to analyses in both economics and political science, originating three different strands of literature - the culture view[76], the political view[77] and the macroeconomic view[78] - which also explored the role of central bank governance as an institutional factor that influences political decisions regarding the banking and financial supervisory architectures[79].

Here this literature deserves attention, given that it explains the reasons of the fact that changes in the central bank governance, which represent one of the four pillar in our theoretical setting, has been not so frequent in the period that we are going to analyse[80].

[69] Belden (1989), Havrilesky and Gildea (1991), Gohlmann and Vaubel (2007), Besley et al. (2008), Gerlach-Kristen (2009), Farvaque et al. (2011), Belke and Potrafke (2012), Adolph (2013), Neuenkirch and Neumeier (2015), Eichler and Lahner (2017), Farvaque et al. (2018), Bordo and Istrefi (2018) and (2023), Mishra and Reshef (2019).

[70] Malmendier et al. (2021).

[71] Eichler and Lahner (2018), Bennani et al. (2018).

[72] McCallum (1995), Bibow (2004).

[73] Lohmann (1992), Jensen (1997).

[74] Masciandaro and Romelli (2015).

[75] Alesina and Grilli (1992), Walsh (2000), Chortareas and Miller (2003), Gabillon and Martimort (2004), Blinder (2010), Erhart et al. (2010), Campoy et al. (2026).

[76] Posen (1995), De Haan and Van't Hag (1995), Berger (1997), Maxfield (1997), Hayo (1998), Miller (1998), Franzese (1999), Crowe (2008), Eggertsson and Le Borgne (2010), Berggren et al. (2014), Gillitzer et al. (2021).

[77] Goodman (1991), Sieg (1997), Vaubel (1997), Moser (1999), Bernhard (1998), Milesi-Ferretti (1995), Lohmann (1997), Bagheri and Habibi (1998), Banaian and Luksetich (2001), Keefer and Stasavage (2003), Acemoglu et al. (2008), Hielscher et al. (2012), Burkovskaya (2019).

[78] Farvaque (2002), Aghion et al. (2004), Polillo and Guillen (2005), Brumm (2006) and (2011); Bodea and Hicks (2015). Both the political view and the macroeconomic view are present in Masciandaro and Romelli (2015).

[79] Masciandaro (2005), (2007) and (2009), Dalla Pellegrina et al. (2013), Melecki and Podpiera (2013), Masciandaro and Volpicella (2016), Masciandaro and Romelli (2018), Fraccaroli et al. (2024).

[80] Romelli (2022).

3. The Taylor Conservative Central Banker

Above, we defined the methodological four-pillar setting that we use to implement our review analysis and select the articles that represent the members of the Taylor rule family in order to appreciate the novelty of the MPRF approach, where the founding father has been a conservative central banker. The novelty emerges even more evidently if we begin our narrative by summarizing the "rules versus discretion" debate that has traditionally characterized the monetary policy debate[81].

Before the 1980s, macroeconomics did not pay explicit, systematic attention to either central bankers' preferences or the central bank's institutional setting when developing positive and normative arguments[82]. Both features were hidden. This reflected the "rules versus discretion" dilemma – or the Monetarist-Keynesian debate – regarding the optimal conduct of monetary policy[83], which originated at the University of Chicago in the early 1930s. This discussion identified uncertainty as the main drawback of discretionary policies[84]. In the traditional debate, "rule" implies that monetary policy is essentially an automatic process, while discretion implies the absence of any public commitment about its goals or tools[85]. That dilemma still offers key insights[86] that highlight two relevant evolutions in monetary policy analysis.

First, the concepts of "rule" and "discretion" are viewed differently today[87]. As we will see, "rule" is a systematic policy reaction function (Taylor 1993). The dilemma is how much discretion the central banker has in applying a policy. In other words, the crucial question is the following: "What is the optimal degree of activism in a rule?" [88] .

Second, in the 1980s, the policy rule became intertwined with another feature – the central bank's design, which influences the de jure and/or de facto CBI[89] and, through that channel, macroeconomic performance[90]. The central bank's governance highly influences the discretionary policy rule and, eventually, monetary policy.

In the traditional debate, the design of the central bank's governance did not matter for several reasons. On the one hand, Friedman (1962) generally distrusted collective bodies and consistently advocated for constitutional rules in the monetary policy field in order to completely tie central bankers' hands[91]. On the other hand, Keynes viewed the government as the monetary policymaker that sets the goals for monetary policy[92] . The main effect was

[81] Masciandaro (2022) and (2023).
[82] Masciandaro (2022).
[83] Bibow (2002), Rivot (2013), Tavlas (2015), (2021), (2023), Dellas and Tavlas (2016) and (2021), Nakamura and Steinsson (2019).
[84] Asso et al. 2007, Dellas and Tavlas (2021), Tavlas (2023), Hetzel (2024a).
[85] Mishkin (2017) and (2018), Tavlas (2023).
[86] Nelson (2007), Bibow (2010), Taylor (2011a), Dellas and Tavlas (2021), Bordo (2026).
[87] Rivot (2013), Dellas and Tavlas (2021).
[88] Dellas and Tavlas (2021).
[89] Adrian et al. (2024), Dincer (2024), Romelli (2025), Garriga (2025).
[90] Grilli et al. (1991), Cukierman et al. 1(992), Romelli (2022), Athanasopoulos et al. (2023), Ioannidou et al. (2023), Strong (2025). Specifically, on the relationship between central bank mandates and macroeconomic performances see Garriga and Rodriguez (2025).
[91] Rivot (2013). The same monetary policy rigid rule can be associated with the Kindland and Prescott's (1977) seminal work on time inconsistency; see Rogoff (2025).
[92] Bibow (2002), Rivot (2013).

that up until the 1990s, the idea that a central bank and/or the central banker could be independent was unanimously considered unrealistic[93].

Moreover, in the Keynesian view, the central bank is a technical body that retains discretion in implementing the day-to-day policy, and the need for cooperation between the central bank and the treasury is stressed[94]. However, in this perspective, the need for cooperation is defined in a set of rules that govern the hierarchical relationship between the monetary policymaker (i.e. the government) and an expert bureaucracy (i.e. the central bank). In other words, the central bank's design is likely to be no more than an application of the general rules that govern the interactions between the political principal and its administrative bureaucratic agents. The central bank's design does not have special status with respect to other public agencies[95].

In the eighties the importance of central banker conservatism on the one hand and central bank independence on the other hand took centre stage. The roles of central bankers' preferences and central bank design became increasingly intertwined and, eventually, the two were merged. The contemporaneous and explicit roles of both factors were recognized in the literature on monetary policy committees, which emerged in the 2000s[96].

Notably, in analysing the evolution of the relationships between monetary policy economics and the central bank setting, a series of studies [97] offered fundamental contributions and interesting insights. In parallel, some studies analysed CBI from a historical perspective and within the history of economic thought[98]. However, none of these articles viewed the nexus among macroeconomics, central bankers' preferences and the central bank's design as the key to the evolution of the literature since the 1980s.

This nexus is the methodological key that we use to analyse the origins and evolution of the MPRF approach. The approach emerged 30 years ago when John Taylor (1993), who was analysing the period from 1987 to 1992, found that the Fed's interest-rate policy seemed to systematically follow a simple rule of reacting to gaps between actual inflation and the inflation target on the one side, and between actual output and potential output on the other side. Taylor (1993) assumed that the central bank knows the value of the long-run real interest rate[99].

The starting point of our analysis is the original Taylor (1993) rule specification:

$$i_t = r^* + \pi^* + a(\pi_{t-1} - \pi^*) + b(y_{t-1} - y^*), \qquad (16)$$

where *i* is the reference rate; *r** is the natural (long-run real) rate; π and *y* are the inflation rate and the output growth, respectively; and π^* and *y** are the inflation target and the potential output, respectively. Finally, the parameters *a* and *b* represent the central

[93] Rogoff (2025). In an 1824 pamphlet, David Ricardo anticipated the modern literature on CBI; see Tavlas (2023).
[94] Bibow (2002), Rivot (2013).
[95] Masciandaro (1995) and (2022), Pond (2021).
[96] Sibert (2003), Blinder and Morgan (2005), Chappell et al. (1993),(1997), (2000), (2011) and (2014), Chappell and McGregor (2000), Dal Bo (2006), Riboni and Murgia (2010) and (2014), Farvaque et al. (2011) and (2018), Jung and Kiss (2012), Ejffinger et al. (2013), (2015) and (2018), Jung (2013), Firrell and Reinold (2020), Rieder (2021), Colla De Robertis (2026).
[97] Cukierman (1994), Romer and Romer (1997), Bibow (2004), Alesina and Stella (2010), Parkin (2012), Cukierman (2013), Reis (2013), Blancheton (2016), De Haan and Eijffinger (2016), Hartwell (2018), Castillo-Martinez and Reis (2026).
[98] Toniolo (1988); Bibow (2004) and (2010); Forder (2005).
[99] Notably, the original Taylor rule specification is still used; see Vinci and Licandro (2021).

bank's sensibility with respect to the fundamental macroeconomic gaps – that is, the response factors. From the late 1990s through the early 2000s other studies adopted the Taylor perspective, that related a policy tool to macroeconomic outcomes[100]: the monetary policy reaction function was born.

In this original specification is assumed that the central bank knows what its targets are and the value of the natural rate[101], as well as the past values of both inflation and output growth. In turn, the dynamics of these variables are motivated by a corresponding macroeconomic model.

Economically, given a medium-term horizon and the information set which is available at time t, we assume that monetary policy can be either neutral (passive) or active[102]. Monetary policy is *neutral* when neither accommodative nor restrictive actions are implemented – that is, when the economy is at its bliss point (growth and inflation are equal to the potential output and the inflation target, respectively). The corresponding reference rate will be equal to the sum of the neutral rate and the inflation target, consistent with Fisher's definition of the nominal interest rate.

Otherwise, monetary policy is *active* and becomes a stabilisation device. The reference rate is associated with both the inflation gap and the output gap,, given the central bank's goal of minimizing the discrepancies between actual values and targets. Moreover, we assume that the Taylor principle holds – that is, the nominal interest-rate elasticity with respect to inflation is greater than 1 – in order to avoid the determinacy problem[103], i.e. the path for the nominal interest rate is consistent with multiple equilibrium paths for inflation and output[104].

For the sake of simplicity, we assume that the natural rate and the targets are constant in the medium term. Therefore, the MPRF becomes as follows:

$$i_t = r^* + \pi^* + \alpha(\pi_{t-1} - \pi^*) + \beta(y_{t-1} - y^*),$$
$$i_t = (r^* + (1-a)\pi^* - \beta y^*) + \alpha\pi_{t-1} + \beta y_{t-1}. \quad (17)$$

Econometrically, specification (2) becomes:

$$i_t = C + \alpha\pi_{t-1} + \beta y_{t-1} + \varepsilon_t, \quad (18)$$

where:

$$C = r^* + (1-a)\pi^* - \beta y^*. \quad (19)$$

[100] Svensson (1997), Clarida and Gertler (1997), Levin et al. (1999), Rudebush and Svensson (1999), Clarida et al. (1998) and (2000), Owyang and Ramey (2004), Levin et al. (2003).

[101] The literature has extensively studied the natural rate estimation procedures, from Laubach and Williams (2003) to Rungcharoenkitkul and Winkler (2026).

[102] Hattori et al. (2025).

[103] Sargent and Wallace (1975), Angeletos and Lian (2023).

[104] Empirically, the distinction between active and passive monetary policies has been used in analyses of the key parameter describing the sensitivity of the reference rate to the inflation gap, where such a parameter can be greater than 1 (active monetary policy) or not (passive monetary policy). See Clarida et al. (2000) and Gokan and Turnvsky (2023).

Parameters α and β represent the central bank's response factors to inflation and growth, respectively; ε is an independent, normally distributed random variable with a mean of 0 and finite variance.

From a macroeconomic point of view, the reference-rate policy is a stabilisation tool if: a) the inflation response factor, α, is greater than one; in this case, if the Fisher effect holds, any nominal rate change modifies the real rate; and b) the growth response factor, β, is greater than zero, which implies that the central bank wishes to stabilize output growth. Moreover, intercept *C* can be considered a spurious proxy for the natural rate, acknowledging that, by construction, it just embeds the long-run real rate. Finally, regressors in lagged values allow us to avoid endogeneity problems[105].

A plethora of econometric studies have since estimated the Taylor rule for many countries and different business-cycle situations, starting from the end of the nineties and the early two-thousands[106]. These studies have tested its key assumption that a central bank reacts if actual macroeconomic performance differs from the central bank's targets. For example, when inflation exceeds the target and/or actual output is above potential, a central bank must raise its policy rates. Moreover, the Taylor rule became a ubiquitous method for teaching the actual conduct of monetary policy[107] .

In parallel, the interest-rate rule has been well grounded theoretically [108] . Consequently, the Taylor rule became the consensus specification of monetary policy in macroeconomic theory. Although the concrete specifications of the rule can vary, most existing macroeconomics models include an equation similar to the original one.

Taylor (1993) is a pathbreaking article in the macroeconomic literature, achieving a near-mythical status[109]. In a scientific ranking that selected ten seminal articles covering a variety of different approaches and methods[110], with an average citation count for the group of approximately 1,500, Taylor (1993) ranked first with more than 3,000 citations. The article is one of four that are so well known that the authors' names have become shorthand for the papers' salient contributions (the other three being Calvo pricing, Blanchard-Quah decomposition and Romer dates. In fact, Richard Clarida wrote "the two most consequential papers in monetary economics written over the past 75 years are Friedman (1968) and Taylor (1993)" [111] .

In order to further highlight the pathbreaking nature of the Taylor rule in a synthetic and simultaneously quantitative way, we built two metrics that cover the period up to

[105] However, endogeneity problems can be minimized. In fact, central banks react to variables that are endogenous to previous monetary policy shocks (both intended and unintended). In this case, using ordinary least squares (OLS) estimations, endogeneity implies a correlation between regressors and the error term (i.e. an asymptotic bias), although this can be addressed (Carvalho et al. 2021). Alternatively, estimations by instrumental variables (IV) or the generalized method of moments (GMM) can solve such endogeneity problems (Clarida et al. 2000). On the methodological problems in applying the Taylor rule see Sam et al. (2023).

[106] Clarida et al. (1998), Peersman and Smets (1999), Orphanides (2001), (2003) and (2008).

[107] Waters (2022).

[108] Rudebush and Svensson (1999), Woodford (2001) and (2003a), Walsh (2015). In terms of monetary policy theory, the pillar has been identified in the Taylor principle, i.e. the prescription that the nominal interest rate shall change more than one-for-one with inflation, conditional on the output gap, in order to avoid equilibrium indeterminacy: see Obstfeld and Rogoff (1983), (1986) and (2021), Benhabib et al. (2001) and (2002), Woodford (2003a), Cochrane (2011).

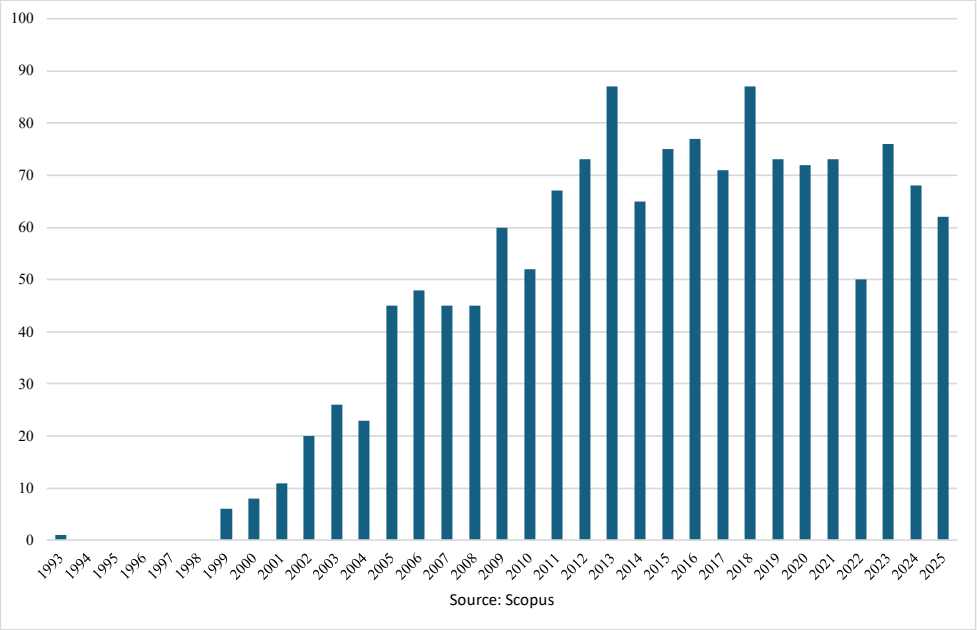
[109] Nakamura et al. (2025).

[110] Glandon et al. (2023).

[111] Bordo et al. (2025).

December 19, 2025. The first metric (Figure 3) shows the number of papers on the Taylor rule indexed annually in Scopus (i.e. those with the term in the title, abstract, and/or keywords) from 1993 to 2025. Overall, publications increased from the late 1990s through the late 2010s, followed by a slight decline in recent years. This metric serves as an indicator of research output explicitly and directly focused on the Taylor Rule.

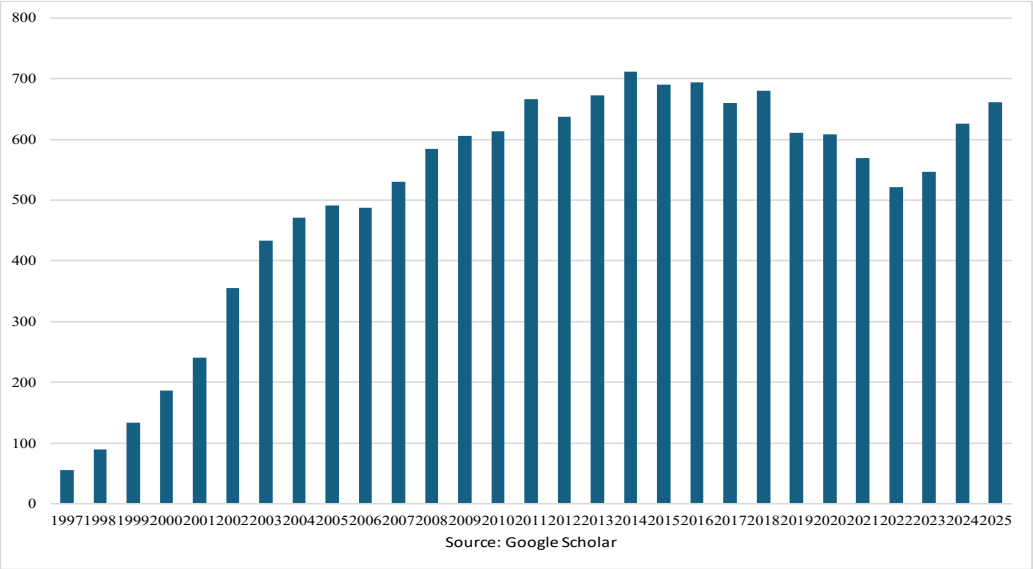
Figure 3: Number of papers on Taylor Rules



Source: Author's own calculation

The second metric (Figure 4) concerns the number of citations of Taylor's foundational 1993 paper as retrieved from Google Scholar. Although this is a more general measure, as it includes works that cite the paper but are not necessarily centred on the Taylor rule, the two metrics exhibit similar trends. This reinforces the overall pattern of scholarly attention to the Taylor rule over time. Moreover, the latter metric shows a more pronounced increase from 2022 onward following the earlier decline. It is worth noting that the decline roughly coincides with the years of the unconventional monetary policies (UMP) in advanced economies when the application of the Taylor rule techniques became a challenging task, as we will see in Section 5. All in all, the two measures on the Taylor rule provide an indication of the overall scholarly influence and continued relevance of the foundational contribution over time.

Figure 4: Number of papers citing Taylor (1993)



Source: Author's own calculation

Moreover, it is worth noting that the introduction of the reaction function perspective inspired also a corresponding literature that extensively used the same device to explore fiscal policy issues[112].

How can we explain the pathbreaking impact of the Taylor rule? If we use the description utilized in the abovementioned ranking [113] that "the paper shifted the conceptualisation of monetary policy from the discretionary setting of the money supply to an interest-rate rule. Classified as descriptive (….) analysis", the answer can easily be found by investigating the Rule's empirical contribution in terms of descriptive value.

The effectiveness of the MPRF in generating 1,466 scientific studies thus far depends on its unique twofold property as a flexible device that produced a general technical application. In fact, the large body of empirical literature that followed the original Taylor (1993) contribution contains variants of the original rule. Flexibility and then generality are outcomes of the possibility to change a series of hypotheses that characterise the two phases of any MPRF development: identification and evaluation[114].

In the identification phase, the original Taylor rule can be varied by selecting the macroeconomic measures – nominal interest rate, inflation, output growth, natural rate, inflation goal and potential output growth – that the researcher needs to design and implement their empirical strategy, given their choice of econometric methodology [115]. Macroeconomists largely used the flexibility of the Taylor rule in modelling the central bank's

[112] Checherita- Westphal and Zdarek (2017), Heimberger (2023), Wolswijk (2026).

[113] Glandon et al. (2022).

[114] At the same time, the freedom to develop variants of the Taylor rule, given its flexible and general properties, can raise econometric issues in terms of overfitting. This is not an argument in the present analysis. See Nakamura et al. (2025).

[115] On the econometric concerns associated with the monetary policy rule identification see Arias (2019).

reaction function. The Fed and the ECB have been the two cases researchers have explored most frequently (Tables 1 and 2).

Table 1: Taylor Rules on the Federal Reserve System

Article	Sample period	Inflation response factor	Real variable response factor	Econometric method
Alba and Wang (2017)	1973Q3 - 2014Q1	1.21*** (0.03)	Output gap (real-time quadratic): 0.27*** (0.02)	Markov regime-switching ML
Bauer and Neuenkirch (2017)	1990Q1 - 2016Q4	-0.061 (0.124)	Expected GDP growth gap: 0.246*** (0.075)	Conditional LS
Baxa et al. (2013)	1981M1 - 2009M6	1.59 (0.99)	Output gap: 1.51 (0.53)	GMM
Branch (2014)	1993Q1 - 2008Q3	2.27 (0.12)	Output gap (nowcast): 1.03 (0.05)	LS with Newey-West SE
Carvalho et al. (2021)	1979Q3 - 2007Q4	2.00*** (0.31)	Output gap: 0.81*** (0.16)	OLS with robust SE
Castelnuovo (2003)	1987Q3 - 2002Q3	1.44** (0.28)	Output gap: 0.79** (0.12)	2SLS
Castro (2011)	1982M10 - 2007M12	1.542*** (5.53)	Output gap: 1.039*** (2.71)	GMM
Cukierman & Muscatelli (2008)	1987Q4 - 2005Q4	1.01** (0.36) / -0.92 (0.85)	Output gap: 0.88** (0.12) / -0.84** (0.14)	GMM
Dolado et al. (2005)	1984M01 - 2001M09	1.92 (0.30)	Output gap: 0.25 (0.08)	GMM
Hafner & Lauwers (2017)	1979M10 - 2011M11	1.874*** (0.096)	Output gap: 0.364*** (0.080)	GMM
Hayford & Malliaris (2005)	1987Q3 - 2000Q2	1.16 (7.80)	CBO GAP: 0.64 (11.86)	OLS
Jawadi et al. (2024)	2000M01 - 2023M08	0.865***	Output gap: 0.301**	OLS-type with HAC SE
Molodtsova et al. (2008)	1979Q1 - 1998Q4	1.36 (0.21)	Output gap: 0.01 (0.12)	NLLS
Orphanides (2001)	1987Q1 - 1992Q4	0.79 (0.26)	Output gap: 0.65 (0.06)	LS with Newey-West SE
Orphanides (2003)	1982Q3 - 1997Q4	0.52 (0.13)	Output gap: 0.10 (0.03)	LS with HAC SE

Source: Author's own compilation

Table 2: Taylor Rules on the European Central Bank

Article	Sample period	Inflation response factor	Real variable response factor	Econometric method
Bauer and Neuenkirch (2017)	2002Q4 - 2016Q4	0.575*** (0.163)	Expected GDP growth gap: 0.178 (0.211)	Conditional LS
Belke and Cui (2010)	1999M1 - 2006M12	0.134***	Output gap: 0.030**	Partial VECM
Belke and Klose (2011)	1999Q1 - 2010Q2	0.60*** (0.18)	Output gap: 0.43** (0.18)	GMM
Bennani (2018)	1999M1 - 2014M8	1.53*** (0.41)	Output growth (exp): 1.47*** (0.13)	Two-step GMM
Caputo and Diaz (2018)	1999.I - 2016.I	0.241*** (3.21)	Contemporaneus output gap: 0.0782*** (5.77)	IV-GMM
Castro (2011)	1999M1 - 2007M12	2.43*** (3.37)	Output gap: 1.80*** (7.34)	GMM
Czudaj (2023)	2002Q1 - 2020Q2	0.07*** (0.015)	GDP growth gap (forecast): 0.036*** (0.0105)	Fixed effects
Dolado et al. (2005)	1984Q1 - 2001Q3	1.46 (0.69)	Output gap: 0.82 (0.35)	GMM
Gorter et al. (2008)	1997M1 - 2006M12	1.35*** (0.30)	Output gap: 1.23*** (0.16)(exp)	LS
Nebot et al. (2019)	2000M1 - 2016M9	0.37**	Output gap: 0.039* / 0.122***	TS-MARS
Rühl (2015)	1999M1 - 2012M12	0.137	Output gap: 0.288***	GMM
Sauer and Sturm (2007)	1991M1 - 2003M10	0.47 (2.04)	Output gap: 0.38 (4.83)	OLS with Newey-West SE
Siklos and Bohl (2009)	1978 - 2003	1.90* (0.01)	Output gap: 6.49* (0.01)	GMM
Sturm and De Haan (2011)	1999M1 - 2007M6	1.414** (2.12)	Expected output growth: 1.725*** (6.35)	OLS

Source: Author's own compilation

Tables 1 and 2 present selected examples of empirical studies on the Taylor rule applied to the Federal Reserve System and the European Central Bank. The tables include a selection of journal articles retrieved from Scopus that match the theme of Taylor rule analysis for the two central banks of interest. The selection has been obtained with the general aim to retain only scientific articles published in top 100 economics journals that mention in the title the Taylor rule.

For each article, the tables report the sample period and the estimated coefficients of the response factors, i.e. the sensibility of the reference rate respectively to the inflation gap and to a real activity gap, most commonly the output gap. Also the econometric methods are documented. Finally, when an article presents multiple specifications or estimation strategies, the tables report the specification that appeared most appropriate for comparison and/or most representative[116].

[116] For each study has been collected also information on the data frequency, the reference rate, R2 metric when reported, as well as the coefficient capturing interest-rate smoothing, when included, and/or the response factors for financial stability and/or exchange rate gaps, when present.

The Tables clearly show how flexible the Taylor rule can be. Different explanations support this flexibility. In any study, the motivation for the results is state and/or time contingent, where the contingencies can be associated potentially with macroeconomic developments, the central bankers' preferences, and/or the central bank's governance features.

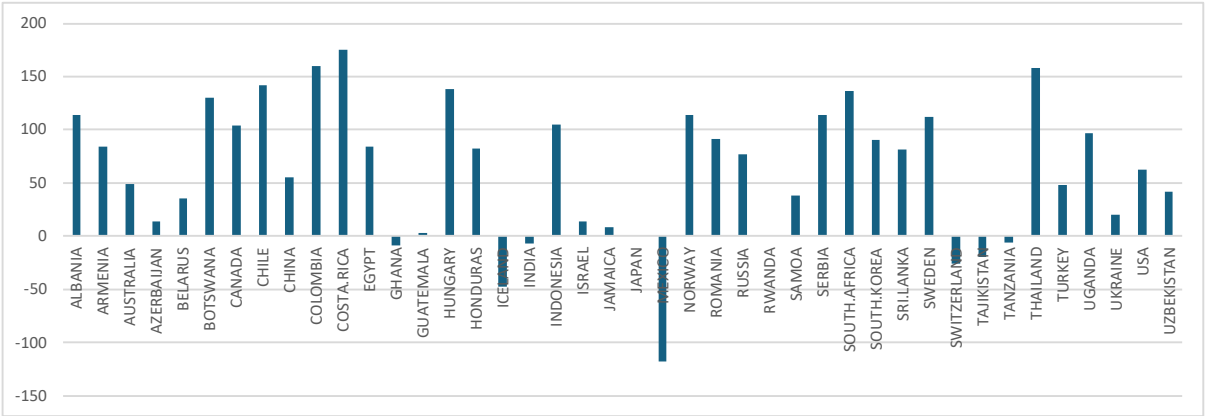
In the evaluation phase, the results of the identification phase can be interpreted while considering a series of both economic and institutional variables. In fact, given a country and/or a period, the corresponding macroeconomic data, and the econometric results of the identification phase, the second step is to economically interpret them, taking stock of all available information. This highlights the usefulness of our theoretical four-pillar approach, which focuses the research attention on the possible three drivers mentioned above: business cycles conditions, central bankers' preferences and central bank governance.

All in all, the three drivers that can explain the features of any policy reaction function can be used to shed light on the specific monetary policy case study that is under the researcher's lens. If a case occurs in which any pillar seems relevant, the researcher can focus on this "Taylor residual" to investigate other possible explanations.

If this perspective is adopted, the applications of the initial MPRF specification that evolved from the family of the Taylor rules can be analysed, wondering which assumptions have changed in terms of macroeconomic scenarios, central bankers' preferences, and/or central bank governance. We will discover that, given the different business cycle conditions, and the fact that the monetary regime changes are infrequent, we will differentiate the different members of the Taylor rule family zooming on the central bankers' preferences.

Notably, flexibility and generality are two faces of the same coin. In fact, without flexibility, the Taylor rule shows its limits, especially with regard to its possible prescriptive value. Consider for example the empirical analysis that estimates the same Taylor rules for 50 inflation-targeting countries around the world[117]. In that analysis, the adherence to the Taylor principle - the prediction that responses to inflation with changes in the interest rate will be larger than the change in inflation - seems to be an exception, at best (Figures 5 and 6).

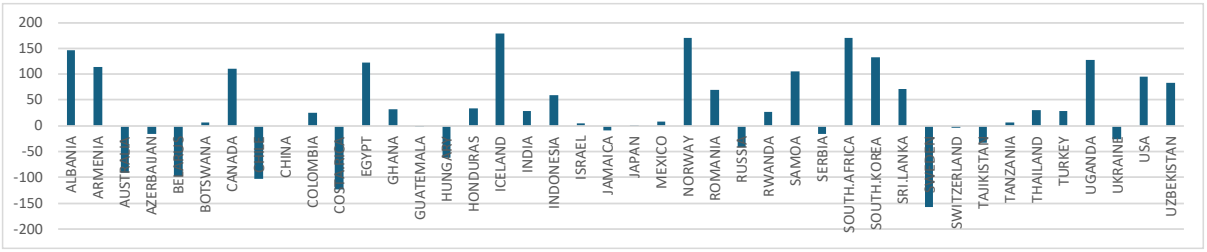
Figure 5: Taylor Rules, Inflation Response Factor



[117] El-Shagi and Ma (2023).

Source: Author's own compilation from: El-Shagi and Ma (2023).

Figure 6: Taylor Rules, Output Growth Response Factor



Source: Author's own compilation from: El-Shagi and Ma (2023).

The baseline estimation is a unique, rigid Taylor rule that uses a simplified, backward-looking Taylor specification in which each central bank responds only to current growth and inflation. Without any surprises, the results show high heterogeneity in terms of both inflation sensibility and output growth sensibility. Evidently, a rigid Taylor rule cannot work by definition, as the aim of an MPRF is to describe a flexible policy rule. Moreover, the MPRF is evidently more likely to be a potential effective devise for positive descriptive analyses, not for normative prescriptive ones[118].

4. Visionary and Prudent Central Bankers: Forward-Looking and Inertial Monetary Policy Reaction Functions

Given the macroeconomic scenario and the central bank governance, the description of the evolution of the economics of the Taylor rule can be associated with changes in the theoretical assumptions that characterize the central bankers' preferences. The first relevant modifications of the original MPRF can be identified analysing two different types of central bankers: visionary central bankers – forward looking players - and prudent central bankers – inertial players.

On the one side, the MPRF's evolution has been characterized by the acknowledgement that the central banker's behaviour is not necessarily based only on past information. In fact, specification (3) is a backward-looking rule, as it uses past values of both inflation and output growth. Alternatively, the central bank can base its choices on its own forecasts for inflation and output growth. If this assumption holds, the specification becomes a forward-looking rule[119]:

$$i_t = C + \alpha\pi_t^e + \beta y_t^e + \varepsilon_t. \qquad (20)$$

[118] On the prescriptive value of the Taylor rule see Arias (2019).

[119] Clarida et al. (1998), (1999) and (2000), Orphanides (2001) and (2003), Svensson (2003), Fourcans and Vranceanu (2004), Castelnuovo (2007), Sauer and Sturm (2007).

The assumption of a forward-looking central bank does not imply that disagreement between the monetary authority and the markets is impossible. In fact, different data and different perspectives on the Taylor rule help explain why the central bankers and the markets can disagree on future policy rates[120].

On the other side, one more feature of the Taylor rule emerged in parallel: specification (3) implies that the central bank immediately changes its interest rate. This means that past monetary policy decisions do not matter, i.e. monetary inertia – or persistence - is not a relevant phenomenon.

Alternatively, we can argue that past choices are relevant. In this case, we will have interest-rate smoothing, or monetary policy inertia, such that past interest-rate choices influence current choices[121].

How can we explain monetary inertia? Traditionally, central bankers offer two general explanations of such behaviour, i.e. that they prudently smooth changes toward the reference rate target for reasons related to informational frictions (e.g. uncertainty) and/or governance (e.g. consensus).

The recent behavioural evolution in economic analysis provides a unique explanation of prudence that can be used in the monetary policy field. More specifically, if we assume the view that the central bankers are "Econs" [122] we can explain the monetary policy inertia as the outcome of central banker choices affected by a well-defined psychological bias: prudence.

Going into the details, monetary policy inertia has been defined as the tendency of central bankers to adjust interest rates only gradually[123] . When the velocity of adjustment is zero, we have total inertia. It is worth noting that total inertia has been a relevant phenomenon in the last decade, acknowledging that the lower bound phenomenon – that we will discuss below – characterized the period. Considering the months between December 2015 and December 2025, and the decisions taken by the Fed and the ECB, the cases when the central bankers decided to hold the interest rate level represent respectively the 75 percent and the 61 percent of the overall sample (Figure 7).

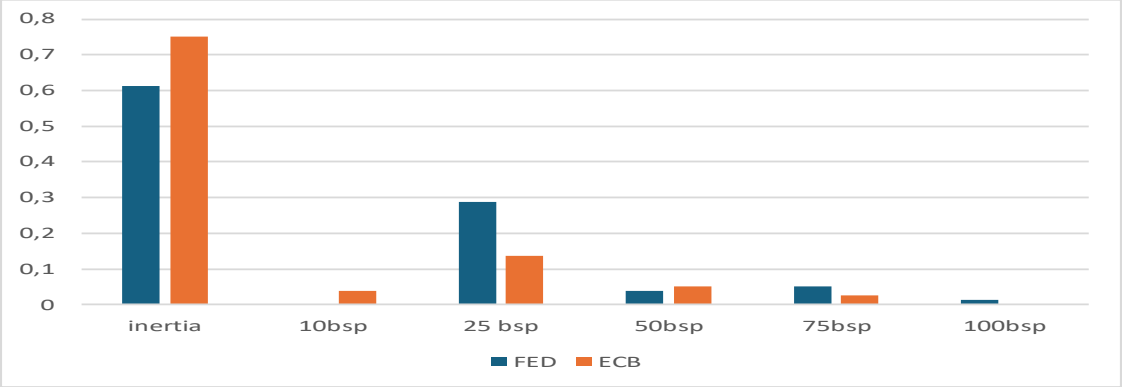
[120] Jia et al. (2023).

[121] Goodfriend (1991), Clarida et al. (1998), Favero and Rovelli (2003), (Ozlale 2003), Smets and Wouters (2003), Dennis (2006), Castelnuovo (2007), Beck and Wieland (2008), Orphanides and Wieland (2013), Canzoneri et al. (2015), Boehm and House (2019), Moreira and Monte (2020).

[122] "Econs" has been introduced in Leijonhufvud (1973).

[123] Woodford (1999).

Figure 7: Central Banker Decisions: Interest Rate Changes



Source: Author's own calculation

Originally, as we anticipated, monetary inertia was motivated by the observation that central bank decisions depend on information on the state of the economy, and by recognition of the long and variable lags in the transmission of monetary policies. In this framework, agent expectations are assumed to be rational[124]. Therefore, monetary inertia can be viewed as a rational strategy aimed at avoiding tough stop-and-go policies and their consequences in the form of negative macroeconomic spillovers. Thus, the tendency of central banks to gradually adjust interest rates in response to changes in economic conditions can be considered optimal.

Subsequently, monetary policy inertia was analysed under a completely different perspective by exploring the role of central bank governance[125]. In these studies inertia in interest-rate decisions can be associated with well-defined features of central bank governance.

Alternatively, given the central bank regime, monetary policy inertia can be explained assuming that it emerges when the central bankers becomes prudent[126], where prudence is associated with loss aversion and status quo[127]. It is worth noting that this perspective is consistent with the more general idea that behavioural economics and behavioural political economics[128] can be used to explain the monetary policy mechanism[129], as well as its outcomes[130].

[124] Muth (1961).

[125] In this respect, two studies focusing on monetary policy committees (MPCs) seem particularly interesting: Dal Bo (2006), and Riboni and Ruge-Murcia (2010). Dal Bo (2006) shows that when the voting procedure requires a supermajority, this rule mitigates issues of time inconsistency and introduces inertia in monetary policy decisions. Riboni and Ruge-Murcia (2010), adopting the same approach, discovered two central bank governance regimes - the consensus regime and the agenda-setting regime – that create monetary policy inertia.

[126] Favaretto and Masciandaro (2016).

[127] Ebert and Wiesen (2014), Alesina and Passarelli (2019), Brunette and Jacob (2019), Passarelli and Del Ponte (2020).

[128] Schnellenbach and Schubert (2015).

[129] Molnar and Santoro (2014).

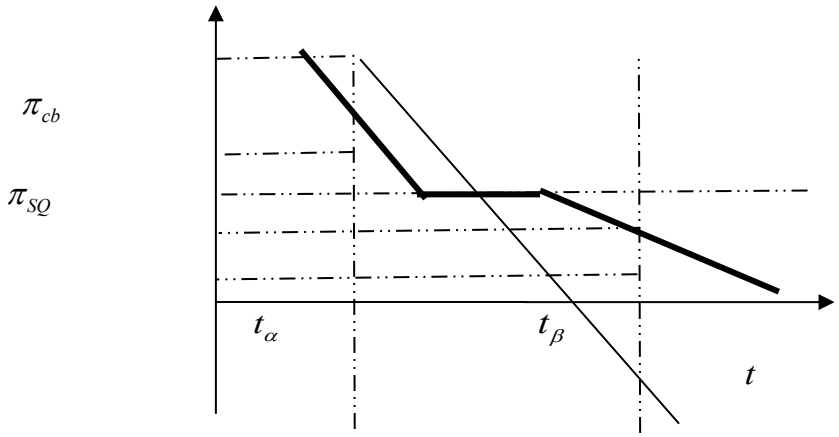
[130]Bertasiute et al. (2018), Gabaix (2020), Cozzi and Di Dio (2026). Researchers have claimed and found evidence consistent with predictable behavioural errors in the Fed's decision making due to overconfidence biases

Going into the details, what happens if we assume that prudence can characterize central bankers' behaviour? The intuition is straightforward: the central banker becomes prudent when losses loom larger than gains for every monetary policy choice, and both are evaluated with respect to the current interest rate, which is in turn associated with its corresponding status-quo inflation[131].

Let π_{SQ} be the status-quo inflation and $z > 0$ be the parameter that captures prudence. With prudence, the central banker becomes particularly risk adverse from two symmetrical points of view. On the one hand, the prudent central banker dislikes the upside risks – an increase in inflation, such that $\pi > \pi_{SQ}$, normally entails more benefits than costs. However, with prudence, higher inflation costs yield psychological losses that amount to:

$$z\big[C(t_{cb},\pi) - C(t_{cb},\pi_{SQ})\big] = z\frac{1}{2}t_{cb}(\pi^2 - \pi_{SQ}^2). \tag{21}$$

Figure 8: Prudent Central Banker



Source: Favaretto and Masciandaro (2016)

In other words, with prudence the central banker becomes relatively more hawkish when $\pi > \pi_{SQ}$, given that the prudent central banker overestimates inflation costs. See, for example, the central banker with conservatism, t_α, in Figure 8.

On the other hand, the prudent central banker would like to avoid the downside risks. Reducing the inflation rate, such that $\pi < \pi_{SQ}$, entails fewer benefits than costs overall, with psychological losses in terms of benefits amounting to:

$$z\big[B(t_{cb},\pi_{SQ}) - B(t_{cb},\pi)\big] = z\frac{2\pi^{0.5}}{t_{cb}}(\pi_{SQ}{}^{0.5} - t\pi^{0.5}). \tag{22}$$

(Konchitchki et al. 2023). Moreover, the introduction of behavioural biases, instead of the standard rational expectations assumption can magnify the nexus between inflation bias and time inconsistency, which revamped the scientific attention paid to the monetary rules: Baddeley (2025). Recently the non-rational perspective has been applied in exploring the relationships between diagnostic expectations and macroeconomic outcomes; see Bordalo et al. (2022) and (2026).

[131]A more specific assumption could be that policy reversal aversion can characterize central bankers: Hasui et al. (2021).

With prudence, when $\pi < \pi_{SQ}$, each central banker becomes relatively more dovish, given that the prudent central banker underestimates the benefits of monetary stability. In Figure 4, see the central banker with conservatism, t_{β}.

Therefore, the central banker's goal function with prudence is given by the standard utility $V_{cb}(t_{cb}, \pi)$ minus the psychological losses due to the departure from the status quo:

$$V_{cb}(t_{cb}, \pi/\pi_{SQ}) = \frac{2\pi^{0.5}}{t_{cb}} - \frac{1}{2}t_{cb}\pi^2 - \frac{1}{2}zt_{cb}(\pi^2 - t\pi_s^2)\ if\pi > \pi_s, \quad (23)$$

and

$$V_{cb}(t_{cb}, \pi/\pi_{SQ}) = \frac{2\pi^{0.5}}{t_{cb}} - \frac{1}{2}t_{cb}\pi^2 - z\frac{2\pi^{0.5}}{t_{cb}}({\pi_{SQ}}^{0.5} - t\pi^{0.5}) \qquad if\pi < \pi_s \quad . \quad (24)$$

For the prudent central banker, the marginal optimal conditions and the corresponding preferred inflation rates, $\pi_H < \pi_{SQ} < \pi_D$, are as follows:

$$\frac{1}{\pi^{0.5}t_{cb}} = (1+z)t_{cb}\pi \text{ and } \pi_H = \frac{1}{t^{4/3}(z+1)^{2/3}} \qquad if\pi > \pi_{SQ}, \quad (25)$$

$$\frac{1}{\pi^{0.5}t_{cb}} = t_{cb}\pi \qquad \text{and} \quad \pi_{SQ} = \frac{1}{t^{4/3}} \qquad if\pi = \pi_{SQ} \quad (26)$$

$$(1+z)\frac{1}{\pi^{0.5}t_{cb}} = t_{cb}\pi \text{ and} \quad \pi_D = \frac{(z+1)^{2/3}}{t^{4/3}} \qquad if\pi < \pi_{SQ} \quad (27)$$

Given the status-quo inflation, the conservatism of the prudent central banker will remain in a corridor where the lower and the upper limits represent the doves and hawks, respectively. Discounting the aversion to the inflation risks in equilibrium, the prudent dovish central banker will be characterized by a level of conservatism, t_D, such that:

$$\frac{\partial B(t_D,\pi)}{\partial \pi} = (1+z)\frac{\partial C(t_D,\pi)}{\partial \pi}, \text{ i.e.: } \quad \frac{1}{\pi^{0.5}t_D} = (1+z)t_D\pi, \quad (28)$$

where:

$$t_D = \frac{1}{\pi^{0.5}\sqrt{\pi^{1/2}z+\pi^{1/2}}}. \quad (29)$$

At the opposite end of the corridor, avoiding the risks of any monetary stability obsession, the prudent hawkish central banker will be characterized in equilibrium by a level of conservatism, t_H, such that:

$$(1+z)\frac{\partial B(t_H,\pi)}{\partial \pi} = \frac{\partial C(t_H,\pi)}{\partial \pi}; \text{ i.e.: } \frac{(1+z)}{\pi^{0.5}t_H} = t_H\pi, \quad (30)$$

where:

$$t_H = \frac{\sqrt{\frac{z}{\pi^{1/2}}+\frac{1}{\pi^{1/2}}}}{\pi^{1/2}}. \quad (31)$$

As $t^D < t^H$, the dovish attitude and the hawkish attitude represent the bounds of the corridor of the prudent central banker. Therefore each central banker, j, will set his or her preferred inflation rate, π_j, given his or her level of conservatism, t_j, according to the following rule:

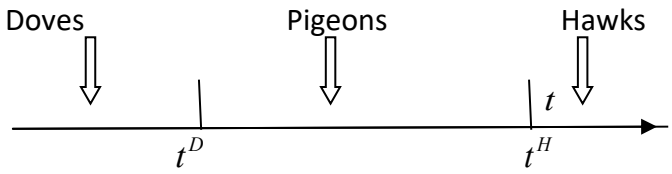
$$\pi_D = \frac{(z+1)^{2/3}}{t^{4/3}} \text{ if } \quad t_j < t_D, \tag{32}$$

$$\frac{1}{\pi^{0.5} t_{cb}} = t_{cb}\pi \quad \text{if} \quad t_D < t_j < t_H \text{ and} \tag{33}$$

$$\pi_H = \frac{1}{t^{4/3}(z+1)^{2/3}} \text{ if } t_j > t_H. \tag{34}$$

The introduction of prudence produces a novel result regarding the diversity of a monetary committee. Now every central bank board can be divided into in three groups: doves ($if\, t_i < \overset{d}{t}$), hawks ($if\, t_i > \overset{h}{t}$) and pigeons ($if\, t^d < t < t^h$) (Figure 9).

Figure 9: Central Banker Types



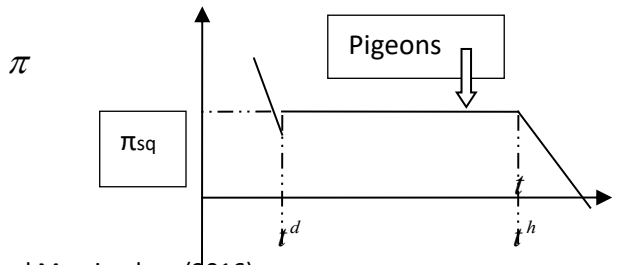
Source: Favaretto and Masciandaro (2016)

Each board member expresses well-defined inflation preferences, but now, with respect to a situation without psychological distortion, i) each central banker evaluates any policy in terms of changes from the monetary policy status quo and ii) any negative effect of a change with respect to the status quo will loom larger than a positive effect of equal magnitude. However, if prudence produces a loss/gain asymmetry for central bankers, then monetary policy decisions will change.

We already know that the MPC chooses the monetary policy strategy using a standard majority rule and that the outcome is the median type's inflation rate, π_m. Therefore, the preferred inflation rate will depend on median conservatism, t_m , which has three possibilities: dove, pigeon and hawk. More precisely, three different equilibria can arise (Figure 10):

$$\pi > \pi^{SQ} if < t^D, \pi = \pi^{SQ} if t^D < t_m < t^H, \pi < \pi^{SQ} if t_m > t^H. \tag{35}$$

Figure 10: Monetary Policy Inertia



Source: Favaretto and Masciandaro (2016)

The existence of prudence can influence monetary decisions through the *inertia effect*. The policy outcome will be the status-quo inflation, π^S, if the median voter is a pigeon.

Furthermore, given that the distance between t^d and t^h is increasing in $z > 0$, the more prudence is increasing, the more likely the median voter is to be a pigeon. In other words, a status-quo bias in monetary strategy - i.e. monetary inertia - will emerge.

As such, more prudence among MPC members reduces the distance among their monetary policy positions. The doves overestimate the inflation costs, which limits their dovishness. The hawks underestimate the inflation gains, which dampens their hawkishness. As the central bankers become more prudent, pigeons increase in number and monetary inertia is likely to arise and/or to persist.

Moreover, this classification can be useful for analysing a fourth type of central banker: swingers. Swingers are central bankers who switch types during their tenure.

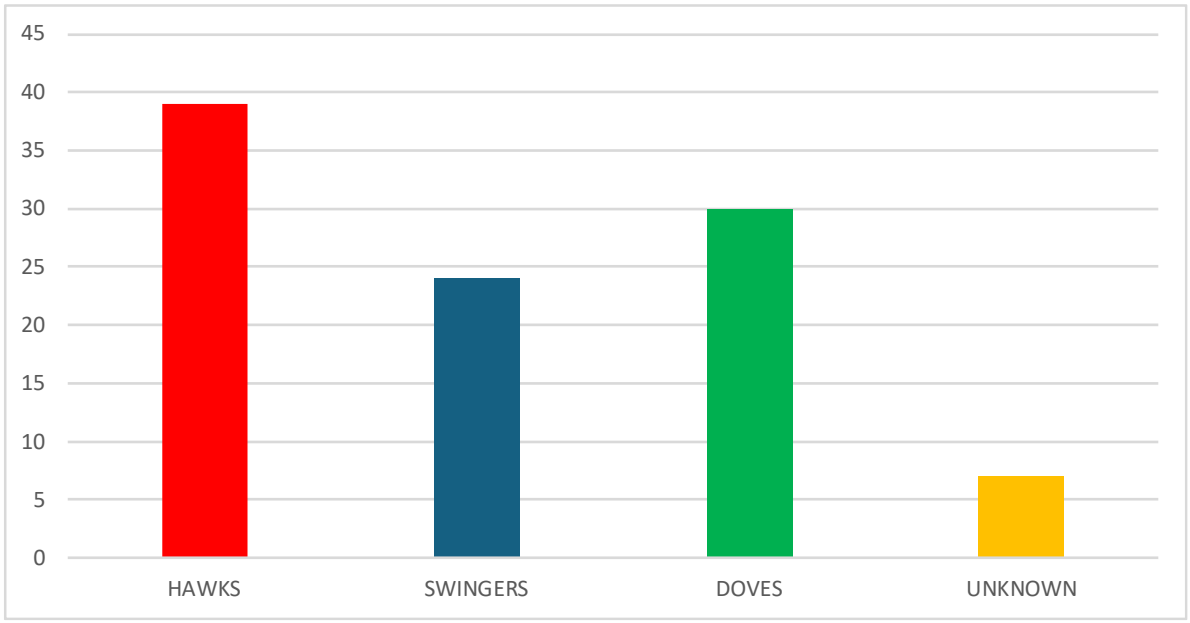
The swingers has been identified through a quantification of the narratives on 130 central bankers serving in the FOMC between 1960 and 2015, including information with regard to members personal background, political interests, political supporters, economic beliefs, and voting actions[132].

Observing the evolution of the metric hawk-dove for each central banker , and defining as persistent hawks the central bankers always perceived as relatively more worrying about inflation, irrespective of the business cycle situation, and persistent doves the central banker relatively less worrying, the analysis uncovered a share of central bankers that during their FOMC experience has been perceived as swingers from one camp to the other one; in same cases the perception was that they switch more than once.

Moreover, it has been acknowledged that a central banker can be either a perceived "heart swinger" – a shift in the preferences occurred – or a "circumstance swinger" – a temporary position due to specific circumstances – where admittedly such theoretical distinction is not easy to be systematically guessed, given the available information set. The swingers represented the 24 percent of the overall sample, where the hawks and the doves represented respectively the 39 percent and the 30 percent, with a residual to include the central bankers that was not possible to classify (Figure 11).

[132]Istrefi (2017), Bordo and Istrefi (2018) and (2023). See also Deyris et al. 2025.

Figure 11: Hawks, Doves, and Swingers



Source: Author's own compilation from: Bordo and Istrefi (2023).

By training, being a non-economist and having graduated from university with no immediate relation to Keynesian/monetarist schools increase the odds of being a swinger. Time to time, the swingers can contribute to the composition of the hawkish and dovish majorities that defined the monetary policy action.

To understand when swings occurred, it has been noted that three main swing periods can be identified, associated with changes in the business cycle situations[133]. In the early to mid-1970s the first swing occurred, when, after an inflation hiking, some dovish central bankers swung to becoming hawks. The second wave of hawkish swingers has been detected during the 1990s, when the importance of price stability increased. The third swing has been dovish, in the late 1990s and early 2000s, when the observed productivity trend in the 1990s suggested the potential for non-inflationary growth, a view that some previously hawkish central bankers endorsed. Yet it has been noted that the swinger type can be associated with endemic individual features, as to be born during the Great Depression.

In our framework, the importance of swingers depends on the extent to which the change in individual preferences is relevant. In fact, swingers emerge when a change in the distribution of conservatism occurs.

Let us call θ the shock in preferences. This shock produces swingers as well as a change in the prudence corridor, where t_n^D, t_n^H are the new lower and upper bounds, respectively, while t_{nm} is the conservatism of the new median central banker. If the shock is relatively small, the median central banker will remain in the corridor, the monetary policy decisions will be the same and the presence of swingers will be irrelevant. The swingers matter when the shock, θ, is relatively large (i.e. when either $\theta > t_n^H - t_{nm} \geq 0$ or $\theta < t_n^D - t_{nm} \leq 0$).

[133]Malmendier et al. (2021), Bordo and Istrefi (2018) and (2023).

This results support the above mentioned assumption that times of economic hardship - i.e. a big θ in our framework - can shape central bankers' preferences.

Similarly, we can identify a prudence bias that turns the central banker's psychological concerns regarding uncertainty that shapes their own macroeconomic goals [134], or we can interpret the fact that in uncertain times the dispersion in central bankers' views does not increase and there is no significant increase in voting dissent rates[135]: all the central bankers become more prudent. Moreover also the "opportunist" central bankers' behaviour[136] can be explained using the motivation of prudence, as well as the role of life experience[137], or the documented fact that it is likely to have disagreement among central bankers without dissent, being dissent costly, given that dissenters see a measurable decline in their future influence in committee decisions[138].

In any case, whatever should be the theoretical explanation to support monetary policy inertia, the more common assumption is that the smoothing mechanism links just two subsequent central bank decisions. In this case, we have an autoregressive process with only one lag. We can write:

$$i^* = C + \alpha\pi_{t-1} + \beta y_{t-1}, \quad (36)$$
$$i_t = \rho i_{t-1} + (1-\rho) i^* + u_t, \quad (37)$$
$$i_t = \rho i_{t-1} + (1-\rho)(C + \alpha\pi_{t-1} + \beta y_{t-1}) + u_t, \quad (38)$$
$$i_t = \rho i_{t-1} + C' + \alpha'\pi_{t-1} + \beta' y_{t-1} + u_t. \quad (39)$$

Where the implicit reference rate i^* follows the standard Taylor rule (2), $0 < \rho < 1$ is the inertia factor, and u is an independent and normally distributed random variable with a mean of 0 and finite variance. Specification (7) represents an inertial Taylor rule, where the reference rate is associated with observable regressors, including its lagged value, and ρ is the corresponding smoothing factor[139].

[134] Dupraz et al. (2020)., Cieslak et al. (2023).

[135] Firrell and Reinold (2020).

[136] Orphanides and Wilcox (2002).

[137] Gohlmann and Vaubel (2007) Istrefi (2017), Bennani et al. (2018), Eichler and Lahner (2018), Malmendier et al. (2021), Bordo and Istrefi (2018) and (2023), Madeira (2025).

[138] For the Fed case, on its central bankers' preferences see Primiceri (2006) and Sargent et al. (2006). On disagreement and dissent see Howes et al. (2025). On dissent see also: Thornton and Wheelock (2014), Farvaque et al. (2018), Hogan (2022), Peskoff et al. (2023), Bobrov et al. (2025), Djourelova et al. (2025), Tsang and Yang (2025), Banerjee and Paramanik (2026).

[139] It is worth remembering also the assumption that the central bankers can have asymmetrical preferences, i.e. they can assign different weights to positive and negative inflation and output gaps. In this case non-linear Taylor rules has been proposed: Cukierman and Muscatelli (2003) and (2007), Ruge-Murcia (2003), Martin and Milas (2004), Taylor and Davradakis (2006), Petersen (2007), Surico (2007a) and (2007b), Castro (2011), Neuenkirch and Tillmann (2014), Beckmann et al. (2017), Klose (2018), Caporale et al. (2018), Wang et al. (2019). Non-linear Taylor rules can be used to estimate implicit country weights in the conduct of monetary policy by the ECB: see Pereira and Tavares (2019).

5. Holistic and Creative Central Bankers: Augmented and Shadow Monetary Policy Reaction Functions

Particularly after the Great Financial Crisis, other two big changes in central bankers' preferences emerged. Financial stability issues emerged[140], which influenced their goals, while their tools were affected by the introduction of unconventional monetary policies(UMP).

In other words other two different types of central bankers can be identified: holistic central bankers – players with more than two macro goals - and creative central bankers – players who invented unconventional tools.

Starting from the holistic central bankers, promoting financial stability has been a general priority. When thinking about ways to prevent financial disasters in the future, it has been natural to look at the financial consequences of monetary policy actions.

However, whether and how the overall effectiveness of the monetary policy action is associated with developments in the banking and financial sectors is far from clear. Monetary policy and financial variables are linked through a series of two-way relationships that may be complementary or conflicting rings in the overall chain that goes from the central bank's choices to the macroeconomic stabilisation purposes[141]. In a nutshell, financial stability uncertainty can influence central bankers' decisions. Then the question becomes: How do central bankers make their choices when there is a source of financial stability uncertainty that can affect monetary policy outcomes?

Consider a monetary policy choice when a source of financial stability uncertainty can change the overall expected outcomes – monetary policy and financial stability are associated but their true relationship is unknown. On the one hand, for any level of the inflation rate, π , the benefits depend on a random variable, Ψ (i.e. the gains from central bank involvement in financial stability issues). On the other hand, losses from the central banker's involvement in financial stability can occur. The size and likelihood of such losses are captured through another random variable, Δ. The central bankers know the distribution of both benefits and costs. We assume that financial stability uncertainty influences only the central banker's benefits. However, this simplification is irrelevant, as uncertainty can affect both benefits and costs with different weights without any change in our results.

We assume that the features of financial stability uncertainty are homogenous across the board members – all the board members homogeneously agree that the financial stability pattern is a relevant source of uncertainty. Therefore, the function is the same for all central bankers:

$$B(t_i, \pi, \Psi, \Delta) = B(t, \pi, \Psi, \Delta). \tag{40}$$

The utility of the central banker becomes:

$$V_j(t_j, \pi, \Psi, \Delta) = \frac{2\pi^{0.5}\Psi}{t_j\Delta} - \frac{1}{2}t_j\pi^2. \tag{41}$$

[140] Iskrev et al. (2021).

[141] Woodford (2012), Brunnermeier and Sannikov (2014), International Monetary Fund (2015), Beyer (2017), Baker et al. (2018). For a historical perspective on the relationship between monetary regimes and financial stability, see Bordo (2018). For a theoretical model on CBI and financial stability, see Berger and Kibmer (2013). For a discussion of banking bailouts and CBI, see Rosas (2006).

From the optimality conditions. the preferred inflation rate will be:

$$\pi_j = \frac{\Psi^{2/3}}{t^{4/3}\Delta^{2/3}}. \quad (42)$$

Therefore, in defining the optimal monetary policy stance, the central banker must address the unpleasant and uncertain trade-off between expected costs and benefits implied by the involvement in financial stability issues. When we enrich the specification with the central bank sensibility to financial stability issue – the parameter γ – the "augmented" MPRF becomes:

$$i = r^* + \pi^*(\sigma, \Omega, \tau, \Delta, \psi) + a(\sigma, \Omega, \tau, \Delta, \psi)\big(\pi - \pi^*(\sigma, \Omega, \tau)\big) + b(\sigma, \Omega, \tau, \Delta, \psi)(y - y^*) + \gamma(\Delta, \psi) \quad . \quad (3'')$$

Therefore, the inclusion of financial variables in interest-rate rules has been motivated by the need to assess whether central banks take financial stability issues into account when making their decisions[142]. In such augmented Taylor rules, the relevance of financial stability is typically proxied using financial variables or with specific financial indexes[143]:

$$i_t = \rho i_{t-1} + C' + \alpha' \pi_{t-1} + \beta' y_{t-1} + \gamma(fin\_variable/s)_{t-1} + u_t. \quad (43)$$

Interestingly, the augmented Taylor rule was introduced well before the Great Financial Crisis by John Taylor himself (Taylor 2001). The author noted that, regardless of the exchange-rate regime, the debate about how exchange rates are taken into account in formulating monetary policy must be addressed with a new formulation of the Taylor rule:

$$i_t = f\ \pi_t + g y_t + h_0\ e_t + h_1\ e_{t-1} + u_t, \quad (44)$$

with the following assumptions: the target inflation rate is 0; the interest rate and the exchange rate are measured relative to the long-run steady-state values, which are known; as usual, output growth is the deviation of real GDP from potential GDP; the variable e is the real exchange rate, where its increase is a real appreciation; and exchange-rate inertia matters. From that moment on, the augmented Taylor rule has been extensively used to test whether monetary policy decisions are influenced by exchange-rate movements[144] .

Moreover, the augmented MPRF has been used to test a plethora of potential factors that can influence central banker choices, including stock-market information[145], money supply shifts[146], forecast uncertainty[147], the nature of the macroeconomic shocks (demand

[142] Borio and Lowe (2002), Svensson (2017), Filardo et al. (2022).
[143] Zhu et al. (2021), Verona et al. (2017).
[144] Svensson (2000), Chadha et al. (2004), Galimberti and Moura (2013), Lubik and Schorfheide (2007), Heimonen et al. (2017), Caporale et al. (2018), Rodriguez et al. (2021), El-Shagi and Ma (2023), Wang and Hausken (2023), Ma et al. (2025).
[145] Heimonen et al. (2017).
[146] Fendel and Frenkel (2006), Surico (2007a) and (2007b).
[147] Bauer and Neuenkirch (2017).

driven shocks vs. supply driven shocks)[148], media coverage[149], reputational losses[150], corporate rate spreads[151], public debt[152], climate change[153]. More generally, an augmented MPRF specification can be used when other sources of heterogeneity could affect central bank decisions[154], as in the case of the Eurozone[155]. Moreover, the Taylor rule specification can be used to model and forecast exchange-rate movements[156] or the central bank's reaction to climate risks[157].

The creative central bankers emerged when, in the aftermath of the Great Financial Crisis, the introduction of new unconventional monetary policies (UMP) in advanced economies made the application of the Taylor rule techniques a challenging task. The development of the Taylor rule applications can be seen in two subsequent and correlated phenomena, which involved two of the three drivers that motivate our four-pillar setting. On the one hand, we find the market-fragmentation effect that characterized the business cycle. On the other hand, we see the reactions of the central bankers, who changed their policy preferences as they explored the UMP strategies, as well as their consistency with the mainstream principle of monetary conservatism[158].

Our starting point is the market-fragmentation effect given that the central banks at the time designed their strategies with the goal of "preventing financial fragmentation and distortions in credit pricing" (Lagarde 2020). Fragmentation characterized the global financial markets[159] and was particularly evident in the euro area.[160] Market fragmentation can be defined as a business-cycle situation in which, for a wide range of asset classes, the corresponding relative prices are characterized by divergence[161] with unstable and unpredictable features. The macroeconomic effect is a gradual creep in the standard monetary policy mechanism based on the real interest rate effect. In normal times, this is activated when the central bank moves its reference rate[162].

The simplest way to capture the market-fragmentation effect in our macro setting is to introduce the overall interest-rate structure – that is, the yield curve. We assume that in our economy *n* different financial assets exist, and starting from the micro foundations, in normal times we know that, given any of these financial assets, its corresponding nominal interest rate, j, is equal to:

$$j = \alpha + \beta t + \gamma i + \delta j^{e}, \tag{45}$$

[148] Kakhbod et al. (2026).
[149] Bennani (2018).
[150] Neuenkirch and Tillmann (2014).
[151] Caldara and Herbst (2019).
[152] Bajaro et al. (2025).
[153] Bajaro et al. (2025), Jawadi et al. (2024).
[154] Malmendier et al. (2021).
[155] Papadamou et al. (2018).
[156] Wang et al. (2019).
[157] Jawadi et al. (2024), Ramlall (2024).
[158] On the relationships between UMPs strategies and the conservative central bank principle see Janus and Mucha 2025.
[159] Claessens (2017) and (2019).
[160] Baele et al. (2014), Battistini et al. (2014), Mayordomo et al. (2015), Di Maggio and Kacperczyk (2017), Horvath (2018).
[161] Ruscher and Vasicek (2016).
[162] Bernanke and Gertler (1995), Romer and Romer (2000), Ellingsen and Soderstrom (2012), Gurkaynak et al. (2005).

where α is the risk premium, β is the liquidity premium, t is a time index that serves as a proxy for asset duration, γ is the pass-through coefficient, i is the central bank rate and j^e represents the interest-rate expectations. Then, all else equal, any monetary policy decision (i.e. any change in the central bank reference rate) will change the other interest rates, influencing both households and firms and, therefore, the patterns of the monetary and real variables.

However, in extraordinary times, the fragmentation effect implies that the central banks no longer know how effective the conventional interest-rate channel is. The aggregate consequence is that leverage, or the financial accelerator, is more likely to become a source of instability[163]. Its role can be captured using an augmented supply side function[164]:

$$y = \sigma(\pi - \pi^e) + \zeta\eta, \tag{46}$$

where η is the leverage and ζ is the corresponding positive parameter. To address and fix the market-fragmentation effect, the central banks define their unconventional action[165], where any new tool is calibrated to directly affect the different drivers of the overall yield curve.

In fact, during the Great Financial Crisis, the conventional monetary tools of interest rates and open-market operations were implemented in unconventional ways using extraordinary interest-rate and quantitative policies, and experiments with announcement policies. The aim of the extraordinary interest-rate policies was to strengthen the pass-through coefficient, γ, between the reference rate and the other interest rates[166], while the quantitative policies where calibrated to directly influence both the risk premium and the liquidity premium, given that the higher asset demand due to the central bank activism can influence both α and β[167]. Last but not least, the central bankers aimed to influence the interest-rate expectations, j^e, via the announcement policies, i.e. the forward-guidance innovation [168].

More specifically:

- Zero interest-rate policies (ZIRP) (floor system) (FED) and negative interest-rate policies (NIRP) (ECB, among others) (corridor system) were established. In general, a ZIRP

[163]Schularick and Taylor (2009), Jordà et al. (2010), Gourinchas and Obstfeld (2011), Claessens et al. (2012), Drehmann et al. (2012), Borio (2012), Caruana and Shim (2016).

[164] Ueda and Valencia (2012) and (2014), Smets (2014), Masciandaro and Russo (2024).

[165] Al-Eyd and Berkmen (2013), Szczerbowicz (2015), Andrade et al. (2016), Krishnamurthy et al. (2017), Gagnon and Gimet (2023).

[166] On the relationship between the ZIRP and NIRP policies and the yield curve see: Oda and Ueda (2007), Ichiue and Ueno (2015), Christensen (2019), Bordo and Haubrich (2020), Rostagno et al. (2025), Shiratsuka (2025).

[167] On the relationship between the quantitative policies and the yield curve see: Oda and Ueda (2007), Christensen and Rudebush (2012), Huther and Seligman (2013), Greenwood et al. (2015), Kinateder and Wagner (2017), Altavilla et al. (2019), Krishnamurthy and Vissing-Jorgensen (2021), Karadi and Nakov (2021), Koeda and Wei (2023), Equiza et al. (2024), Goodhead (2024), Jarocinski (2024), Bro de Commères et al. (2025) , Shiratsuka (2025), Swanson (2026).

[168] On the relationship between the FG policies and the yield curve see: Huther and Seligman (2013), Greenwood et al. (2015), Moessner (2015), Yu (2016), Altavilla et al. (2019), Moessner and Rungcharoenkitful (2019), Fendel et al. (2020), Lunsford (2020), Koeda and Wei (2023), Sutherland (2023), Goodhead (2024), Jarocinski (2024), Bro de Commères et al. (2025), Poli and Venturi (2025), Chada et al. (2026), Swanson (2026).

strategy can be described as a potential narrowing of the rate corridor, maintaining the central bank's deposit in positive (non-negative) territory, as in case of the FED. The NIRP policies consist of setting negative deposit remunerations, as in the cases of Switzerland and Japan, and/or negative lending costs (e.g. the Swedish central bank and the ECB) with the goal of having a strong influence on bank behaviour[169].

- Quantitative easing (QE). This policy consists of buying other types of public and private assets via open-market operations. These assets might include long-term government bonds and asset-backed private securities. The aim is to increase the liquidity and push long-term interest rates down – central bank asset purchases directly compress risk premia on securities and loans. QE policies change the portfolio composition of the banking and financial sector, and these changes can influence private leverage in terms of both costs and credit availability[170].
- Forward guidance (FG) (announcement policy or expectations policy). This policy entails providing explicit, binding guidance about the future path of monetary policy (interest rates and/or monetary aggregates) in order to reduce uncertainty and influence market expectations. In other words, having reached the limit of conventional monetary tools, central banks attempted to provide further accommodation by announcing their commitments to future interest rates and/or open-market operations. Usually, such guidance is conditional. In other words, the central bank spells out specific conditions that might be relevant to its monetary decisions. The effectiveness of the forward-guidance policy depends on the assumption that monetary-policy announcements influence expectations, which trigger changes in consumption and investments[171].

Moreover, the adoption of unconventional monetary policy tools, such as forward guidance and quantitative easing, has further stressed the importance of communication as a monetary policy instrument. Central bank communication has become more frequent and diverse since the crisis, and it increasingly aims to reach a broader, non-expert audience[172].

Central banks have significantly transformed their communication practices over the past 30 years[173]. Prior to the 1990s, communication around monetary policy was surrounded by silence and secrecy. However, in recent decades, central bank transparency and communication have become key instruments in central bankers' policy toolkits and have drastically transformed the conduct of monetary policy[174]. From this point of view, how the major central banks employed Twitter as the main social-media

[169] On ZIRP and NIRP policies see: Arteta et al. (2016), Bech and Malkhozov (2016), Wu and Xia (2016), Belongia and Ireland (2017), International Monetary Fund (2017), Rogoff (2017), Agarwal and Kimball (2019), Sims (2020), Anderson and Hawkins (2021).

[170] On quantitative easing policies see: Cova and Ferrero (2015), De Haan (2016), Bordo and Duca (2020), Fabo et al. (2024).

[171] On forward guidance policies see: Qvigstad (2006), de Haan (2013), Bassetto (2019), Detmers et al. (2018), Campbell et al. (2019), Ehrmann et al. (2019), Andrade and Ferroni (2021), De Groot and Mazelis (2020), Papell and Prodan (2020), Cole et al. (2023), Rostagno et al. (2025).

[172] Coenen et al. (2017), Cieslak (2019), Coibion et al. (2020) and (2022), ECB (2021), Ehrmann and Wabitsch (2021), Curti and Kazinnik (2023), de Haan and Hoogduin (2024), Gorodnichenko et al. (2024) and (2025), Heinemann and Kemper (2026). On central bankers and: voice tone, see Cho and Rho (2026), Ciganovic et al. (2026); non-verbal communication, see Alexopoulos et al. (2024).

[173] Issing (2005), Assenmacher et al. (2021).

[174] Blinder et al. (2008).

platform for engaging with both experts and a broader, non-expert public is paradigmatic[175].

Communication can enhance the effectiveness of monetary policy by either highlighting news that is complementary to policy actions, or "reducing noise" and, thereby, uncertainty in the public's interpretation of policy actions[176]. This is achieved by increasing the predictability of monetary policy, clarifying policy objectives and strategies to allow for more informed decisions by firms and households, and enabling financial-market participants to gain a better understanding of how policy is likely to respond to incoming information[177].

Beyond its role in enhancing policy effectiveness, the importance of communication also rests on its democratic accountability. In other words, the ways in which central banks communicate their policy objectives, deliberations and decisions to the public are central to their accountability as public policy institutions[178].

In summary, central banks used new and conventional monetary-policy operations in the face of demand for goods and services that was deteriorating and failing to respond to the usual tools. The central banks were forced to explore unchartered waters, as the traditional chain between monetary-policy action and aggregate demand was broken. They used a mixed strategy in which they simultaneously implemented ultra-low interest-rate policies, ultra-aggressive open-market operations, and unusual announcements regarding the future paths of interest rates and market operations, producing relevant macroeconomic effects[179].

The fact that several central banks used such UMPs and innovative procedures resulted in an overall fine tuning of empirical analyses based on the Taylor rule[180] .Two different empirical strategies were adopted: structural break techniques and shadow rates.

On the one side, some studies introduced structural break techniques in the estimates[181]. Other analyses used "shadow" rates – that is, new proxies for the policy rates[182].

Structural break techniques can also be introduced as a useful device to capture changes in the central bank governance driver, especially when the distinction between legal and actual independence is crucial. In fact, given the legal central bank governance setting, actual independence can be different, as it is shaped by political pressures over time[183], which can reflect voters' wishes and/or politicians' own interests[184].

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[175] Masciandaro et al. (2024).

[176] Blinder et al. (2008).

[177] Bernanke (2004). On central bank communication and: firm expectations, see Di Pace et al. (2025); market beliefs, see Sastry (2026).

[178] Bank for International Settlements (2009).

[179] Rossi (2021).

[180] Hattori et al. (2025).

[181] Canova (2009), Bunzel and Enders (2010), Mavroeidis (2010), Ilbas (2012), Coibion and Gorodnichenko (2015), Nakamura and Steinsson (2018), Dean and Schuh (2021).

[182] Ichiue and Ueno (2013), Krippner (2013), Lombardi and Zhu (2014), Christensen and Rudebush (2015), Wu and Xia (2016), Anderson et al. (2017), Wu and Zhang (2019), Cekin et al. (2021), Ellington (2021), Avdjiev et al. (2020), De Rezende and Ristiniemi (2023), Debortoli et al. (2020), Groff (2020), Ouerk et al. (2020), Jones et al. (2021), Rossi(2021), Anderl and Caporale (2022), Choi et al. (2022), Durkò (2023), Hohberger et al. (2023), Gonzalez-Astudillo and Tanvir (2026).

[183] Abrams (2006), Bianchi et al. (2019), Tillmann (2020), Binder (2020) and (2021), Camous and Matveev (2021), Bolhuis et al. (2026). On the present state of central bank independence in the Fed case see Cochrane et al. (2025). On the practice of the independence under the perspective of the FED Chairs see Nelson 2026.

[184] Masciandaro and Romelli (2015), Masciandaro and Passarelli (2020).

This acknowledgement matches real-world practice. On the one hand, as central banks' mandates are defined in broad terms, the central bankers in charge can stretch them with or without explicit support from governments[185]. On the other hand, governments can directly or indirectly affect central bankers through pressure and scapegoating, and publicly blame them for macroeconomic outcomes[186]. If central bankers do not align themselves, they may face hearings or even dismissal[187].

Moreover, the gap between legal and actual independence becomes even more relevant in a context where populism is or is going to become more prominent. Populist policies typically offer short-run gains for a majority at the expense of long-run welfare. As institutions tasked with intertemporal trade-offs, central banks are natural targets for such pressures. Several authors argue that the rise of populism may weaken the political consensus around CBI that prevailed from the late 1980s to the Great Financial Crisis[188].

On the other side, the intuition to use shadow rates is directly associated with the market-fragmentation phenomenon described earlier. Even if the usual short-term (reference) rate is constrained given the lower bound floor, the central bank can stimulate the economy by influencing a long-term interest rate. In general, shadow rates are empirically obtained using the term structure of the actual interest rates. The same intuition has been applied to build "Taylor rule yields", extending the rule to maturities up to 10 years[189].

It is worth noting that in the recent literature flexible money growth rules has been considered[190], consistently with the traditional view that the effects of monetary policy actions can be transmitted either through changes of the nominal interest rate or variations in the monetary aggregates[191]. Moreover rules that focus on targeting growth in monetary aggregates may be useful when interest rates reach the effective lower bounds. The innovation has been the assumption that central banks can adopt money growth policies adjustable to movements in both the output gap and inflation - or zooming just on the nominal output growth, combining the real output and inflation targets - in a manner similar to that of the canonical Taylor rule, and taking into account the money endogeneity issue[192].

Moreover, researchers have theoretically explored how, given the alternatives of history-dependent rules (e.g. price level targeting (PLT) or average inflation targeting (AIT)) and non-history dependent inflation targeting (IT), the advantages of the two options can change when expectation formation deviates from full information-rational expectations. In other words, the degree of bounded rationality increases, with mixed results[193].

Finally, with regard to the macro variables that should be included in the rule specification, some recent analyses discussed the pros and cons of raising the central bank's

[185] Moser (1999), Masciandaro and Russo (2024), Chortareas et. al. (2025).

[186] Bianchi et al. (2019), Binder (2020) and (2021), Tillmann (2020), Traber et al. (2020), Camous and Matveev (2021).

[187] Lohmann (1992), Walsh (1995b), 2010.

[188] Buiter (2014), de Haan and Eijffinger (2017) and (2019), Goodhart and Lastra (2018), Rajan (2017), Rodrik (2018), Agur (2020), Masciandaro and Passarelli (2020), Thies (2022), Gavin and Manger (2023), Kiley and Mishkin (2025), Mojtyna 2025, Eijffinger and de Haan (2026), Scheurer et al. (2026).

[189] Hattori et al. 2025.

[190] Belongia and Ireland (2022), Rodriguez et al. (2024).

[191] McCallum (1987), (1993) and (1999), Ireland (2004), Nelson (2005), Favara and Giordani (2009), Caraiani (2016), Belongia and Ireland (2021). For McCallum rule estimates for China see: Burdekin and Siklos (2008), Sun et al. (2012), Burdekin and Siklos (2026).

[192] Goodhart (2013).

[193] Benchimol and Bounader (2023), Dobrew et al. (2023).

inflation targets[194], as well as of comparing inflation targeting vs. nominal GDP targeting[195], while others examined the presence of asymmetries in central banks' goals[196], including "unconventional" intermediate indicators, such as racial disparities[197]. Finally, efforts to uncover new identification methods renewed interest in testing both the Taylor and Friedman specifications of monetary rules[198].

6. True Central Bankers and the Taylor Rules

With regard to the relationships between the MPRF perspective and the concrete central banking practices, central bankers have extensively integrated into their policy discussions the Taylor rule from the beginning[199], but generally central banks avoided explicitly adopting such perspective using a pre-committed – or Odysseus type - instrument rule, which implies selecting a policy rate but also a pre-committed policy path, which is announced through a forward guidance policy.

On this issue the starting question is: How can we describe central bank reactions to MPRFs? In general, a central bank uses an MPRF in a transparent way when the central bankers in charge decide to adopt at least one of two non-alternative perspectives: the financial literacy view and the monetary policy announcement view. Both views are associated with the central bank's aim to implement an expectations-management action[200], with the aim to improve the market perception of its reaction function[201].

The first view reflects the recent recognition in the literature that financial literacy can be positively associated with more stability in macroeconomic performance in general[202] and with more trust in the actions of the central bank specifically[203]. Therefore, consistent with empirical analyses confirming that, in general, the policymaker's level of activism in financial education is positively associated with instability risks[204], central banks naturally disseminate information on the MPRF with the aim of increasing citizens' knowledge[205]. Even more

[194] Blanchard et al. (2010), Ball (2013), Gnan and Holtzmann (2023), Borio (2025).
[195] Beckworth (2020), Benchimol and Fourcans (2019), Benchimol (2024), Dvalishvili et al. (2024).
[196] Kocherlakota (2023).
[197] Ume (2025).
[198] Arefa and Arefyev (2024).
[199] Asso et al. (2010). Taylor rules have been presented to the Federal Open Market Committee since 2005 and included in the Fed's Monetary Policy Report since 2017; see Board of Governors (2017), Cochrane et al. (2020), Istrefi et al. (2021).
[200] Coibion et al. (2020).
[201] An empirical literature has been specifically devoted to explore the market perception of the monetary policy action, the so called market policy reaction function: see Gavin and Mandal (2000), Romer and Romer (2002), Sauer and Sturm (2007), Gorter et al. (2008), Mitchell and Pearce (2010), Fendel et al. (2011), Hamilton et al. (2011), Hofmann and Bogdanova (2012), Neuenkirck and Siklos (2013), Carvalho and Nechio (2014), Bundick (2015), Carlstrom and Jacobson (2015), Drager and Lamla (2017), Kim and Pruitt (2017), Cieslak (2018), Schmeling et al. (2022), Bauer and Swanson (2023), Czudaj (2023), Jia et al. (2023), Barthelemy (2024), Bauer et al. (2024), (2025), Bocola et al. (2024), Cuciniello (2024), Haba et 2026.
[202] Guiso (2010), Jappelli (2010), Sapienza and Zingales (2012), Hastings et al. (2013), Lo Prete (2013), Ghafoori et al. (2021), Lusardi and Mitchell (2023), Boikos et al. (2025).
[203] Hastings et al. (2013); van der Cruijsen et al. (2021a) and (2021b), Nitoi and Pochea (2024).
[204] Borghi et al. (2024).
[205] Board of Governors of the Federal Reserve System (2025), Federal Reserve Bank of Atlanta (2025), Federal Reserve Bank of Cleveland (2025).

importantly, with the shift toward expectations management as a monetary policy tool, the educational role of central banks will became a component of their overall policymaking[206].

In fact, expectations management also motivates the second view. The use of an MPRF is more likely to become a key factor in defining the central bank's overall strategy when the central bank implements a flexible instrument rule coupled with a well-defined forward-guidance policy. Concretely, the fundamental issue becomes whether and how to publish future policy rates, which is connected with the debate concerning forward-guidance policies.

In choosing these policies, two options can be identified in the literature[207]: Odysseus-type instrument rule, which involves commitment to a future monetary policy action, and Delphi-type instrument rule, which involves just information on present action, without any pre-commitment.

The dilemma between the two options is characterized by specular cost-and-benefit analyses. On the one side, the Odysseus-type instrument rule can have higher benefits in terms of expectation management, increasing the reputation of the central banker as a far-sighted player, symmetrically it carries higher risks of reputational failure, if the pre-committed behaviour produces imprudent negative outcomes. On the other side, the Delphi-type forward guidance is more likely to avoid such reputational risks, but may have unintended negative consequences on expectations, signalling the central banker as a myopic player.

How can we explain which option a central bank adopts? In this case, the answer can be found unveiling the incentives that may motivate central bankers to adopt a given type of the instrument rule, where the adopted type is again the endogenous outcome that depends on the three structural drivers: macroeconomic developments, central bankers' preferences and central bank governance.

The choices in terms of instrument rule type (IRT) can be modelled applying a general delegation framework[208] already used in the monetary policy field[209], where the citizens represent the principal and the agent is the central banker, and the policy design is summarised by a parameter $1 > \Omega > 0$ that measures how close the designed policy is to the Odysseus IRT.

The intuition is simple: given the institutional setting, a series of different degrees of monetary policy commitment is available[210], and the central banker in charge can pick up

[206] Binder (2025). On financial literacy as a component of central bank communication see also: Fluch (2007), Gnan et al. (2007), Haldane and McMahon (2018), Haldane et al. (2020), Binder and Skinner (2023).

[207] Campbell et al. (2012), Campbell (2013), Andrade and Ferroni (2021), Bernanke (2020), Bhattarai and Neely (2022).

[208] Alesina and Tabellini (2007) and (2008).

[209] Masciandaro and Romelli (2015), Masciandaro and Russo (2024).

[210] Schaumburg and Tambalotti (2007). It is worth noting that during the extraordinary times a series of FG policies have been introduced, that can be differentiated respect to the properties of any policy in terms of interest rate projection features and degree of commitment. Regarding the interest rate projections, that characterize the Delphi type FG, a taxonomy distinguishes them in three categories: open-ended, state-dependent, time dependent; see Filardo and Hofmann (2014), Charbonneau and Rennison (2015), Sablik (2022), Ihrig and Waller (2024). Then, given a category, the intended commitment by the central bank can be more or less stringent, given that a policy intention is likely to be more impactful than a simple statement; see Woodford (2013), . Yet it has been noted that, without credibility, the difference between Delphi type FG and Odysseus type FG is likely to become blurred; see Evans (2017). On the role that discretion can play in setting the interest rate path see Campbell and Weber (2021).

her/his optimal one; a higher Ω implies that the central banker selected a policy-rate as a commitment device, lower levels of Ω are associated with the Delphi IRT.

On the one hand, citizens care about the properties of the IRT policy through a standard concave social welfare function, $U = U(\Omega)$, where welfare increases with the optimal degree of IRT. They not only value the fact that the Odysseus type increases the benefits of monetary policy's transparency, but also recognise that higher monetary transparency increases the costs associated with the risk that mistakes can affect the central bank's reputation, reducing the monetary policy's credibility.

On the one side citizens delegate the task of choosing the optimal IRT level for managing the trade-off between far-sightedness and prudence to the central banker. For simplicity, we assume that citizens' utility is linear in Ω:

$$U(\Omega) = \Omega. \tag{47}$$

In modelling citizens' preferences, the linear function is used to represent the relationship between the perceived importance of a policy issues and the corresponding policymaker stance[211]. In this case the linear approach assumes that citizens' support for effective instrumental rule increases or decreases in direct proportion to their perceptions of the importance of the monetary policy action with its macroeconomic effects. The simplification helps capture how citizens' views translate into central bankers' behaviour without adding unnecessary complexity to the model.

On the other side the central banker's behaviour is guided by their individual cost-benefit analysis. We adopt the "helping-hand" view to model the central banker's type – the central banker aims to please citizens rather than specific lobbies, as it is the case when the "grabbing-hand" view is assumed[212]. Our assumption is conservative in the sense that, even under such a benevolent perspective, we will show that the chosen IRT level Ω can differ from the socially optimal one. The IRT level is determined by the central bank's ability, μ, and effort, a:

$$\Omega = a + \mu. \tag{48}$$

The sequence of events is as follows. First, the institutional and political setting is such that citizens delegate the definition of the IRT policy to the central banker[213]. Second, the central banker chooses their effort, a_L, before they know their ability, μ_L, for this specific task, as the IRT is not usually a routine activity. Third, the central banker defines the policy, thereby revealing her ability. Finally, citizens reward the central banker with their appreciation and support. The central bank's utility is:

$$L(R, C) = R(U) - C(a_L), \tag{49}$$

[211] Alesina and Tabellini (2007) and (2008).

[212] Frye and Shleifer (1996), Shleifer and Vishny (2002), Masciandaro and Quintyn (2008).

[213] In other words, being the focus of our analysis the central bankers' behaviour, for the sake of simplicity we assume that the "helping hand" view characterized also the politicians in charge.

where $R(U)$ is the central banker's own consensus reward and $C(a_L)$ is the cost of effort. Being the central banker a bureaucrat, in general for the bureaucracies is optimal to please the citizens' preferences, gaining public support[214]. Given that in this case citizens care about the capacity to address the trade -off between far-sightedness and prudence, the central banker' benefits are proportional to the value of the Odysseus IRT choice in terms of social utility[215], while the costs are an increasing function of the effort needed to design such IRT, which is a proxy of the bureaucratic costs for a self-interested central bankers of tying their hands with monetary commitments, giving up policy flexibility[216].

Let the central banker value in terms of public consensus of performing the central bank design task be $0 \leq \xi_L \leq 1$. Then:

$$R(U) = \xi_L U. \tag{50}$$

The alignment of incentives between the central banker and the citizens is complete only if $\xi_L = 1$. From the central banker's perspective, the gains from designing and implementing a given IRT policy reflect expected benefits, conditional on delivering a minimum level of utility, W, to citizens. The minimum condition for the incumbent central banker, assuming effective and/or potential competition in the professional category of monetary policymakers[217], in terms of monetary policy effectiveness, can be written as:

$$R_L = \xi_L \Pr(U \geq W). \tag{51}$$

For the cost of effort, we assume a quadratic specification:

$$C(a_L) = c_L a_L^2, \tag{52}$$

where $c_L > 0$ is the cost parameter, assuming that for the central banker the reputational risks associated with tying- the- hands policies increase in a more than proportional way, being the standard intuition that reputation is earned progressively through consistent policy but can be lost instantly when actual choices and/or performances are inconsistent with pre-committed words[218]. Thus, the central banker maximises the citizens' utility net of the bureaucratic cost of performing the task, weighted by the individual value of the assignment:

$$\max L = R(U) - C(a_L) = \xi_L U - c_L a_L^2 = \xi_L(a_L + \mu_L) - c_L a_L^2. \tag{53}$$

The first-order condition is:

$$\frac{\partial L}{\partial a_L} = \xi_L - 2c_L a_L = 0, \tag{54}$$

[214] Tirole (2023).
[215] Tabellini (1987).
[216] Lohmann (1992).
[217] Waller (1992).
[218] On non-linear reputation see Moreira (2013); on reputation building see Lu et al. (2016); the reputational losses can be associated with the risk of political overriding, or reappointment likelihood: see Lohmann (1992), Jensen (1997); On the relationship between reputation and conservativeness see Fratianni and Huang (1994).

which implies:

$$a_L = \frac{\xi_L}{2c_L}. \tag{55}$$

Given a_L, the effective central banker reward depends on the monetary policy effectiveness condition:

$$R_L = \xi_L \Pr(U \geq W) = \xi_L \Pr(a_L + \mu_L \geq a^e + \bar{\mu}) = \xi_L \Pr(\mu_L - \bar{\mu} \geq a^e - a_L), \tag{56}$$

where $\bar{\mu}$ is the average ability of the central bankers and a^e is expected effort. Nature draws the incumbent's ability, μ_L. Under rational expectations, $a^e = a_L$, so $R_L > 0$ only if the incumbent's ability exceeds the mean, $\mu_L > \bar{\mu}$. Given this condition, the optimal IR level is:

$$\Omega_L = a_L + \mu_L = \frac{\xi_L}{2c_L} + \mu_L. \tag{57}$$

Thus, for a given ability μ_L, the likelihood of the Odysseus type Ω_L choice is increasing in the individual value for the central banker of adopting a pre-committed monetary policy (higher ξ_L) and decreasing in the cost of the involvement in a policy that ties her hands (higher c_L).

The conclusion is straightforward: the central bankers' preferences determine the central banks' attitudes in choosing between the Odysseus approach and the Delphi approach, and such preferences are both time contingent and state contingent.

The endogeneity of the policy choices in terms of policy rules is evident looking at the real world facts. As we discussed in the previous paragraph, the Odysseus approach dominated in the aftermath of the Great Financial Crisis, when instrument rules were systematically implemented. Yet a divergence emerged starting in 2021.

On the one hand, the Delphi approach has been adopted by the major central banks, including the Fed, the ECB, the Bank of England and the Bank of Japan. This approach can be summarized by the formula that defines central bank decisions as being made using a "meeting by meeting and data dependent approach" [219], which implies that "monetary policy is not on a preset course" [220]; in other words, instrument rules with forward guidance were abandoned.

The interpretation of this strategic choice can be illustrated focusing on studies that has been devoted to the Fed and the ECB, where a common factor seems to characterized both experiences: the proclivity for discretion and accommodation[221].

In the US monetary policy case, the motivation goes as follow[222]: the Fed, in order to provide unconventional accommodation, implemented forward guidance policies, but without proper conditioning them on the macroeconomic evolution. Then, when stronger than anticipated growth, coupled with supply bottlenecks, triggered inflation, the Fed used

[219] Lane (2025).

[220] Federal Open Market Committee (2025), Hetzel (2025).

[221] On discretion and accommodation, although with different perspectives: Taylor (2022), Bullard (2022), Bordo and Levy (2023), Kedia (2023), Taylor (2023), Blinder (2024), Bordo et al. (2024), Cieslak et al. (2024), Tatar and Wieland (2025), Ireland (2024), Reifshneider (2024). On discretion and: language: Bordo et al. (2025); money growth: Ireland (2023).

[222] Orphanides (2025b).

its discretion to continue to peg the interest rate at zero. The Fed fell into the so called forward guidance trap, whose features has been illustrated comparing the actual monetary policy action with a flexible policy rule [223].

In 2022 - after the adoption in 2020 of the average inflation targeting, that has been later on abandoned in 2025[224] - the Fed corrected its policy stance, limiting the cost of the post-pandemic policy mistake, but without adopting a policy rule. It has been claimed that such adoption can facilitate more clear and coherent communication, then increasing monetary policy effectiveness, by linking current and future policy decisions explicitly to the evolving macroeconomic conditions[225]. Yet on the rules-based approach both supporters and opponents characterized the debate[226].

In the euro area case, it has been noted that the comparison between instrument rules and the actual monetary policy stance unveiled discrepancies, suggesting that the ECB should deserve more attention to the monetary policy rules, that can protect against significant policy errors[227].

On the other hand, some central banks, such as Sveriges Riksbank, the Reserve Bank of New Zealand, Norges Bank, the Bank of Israel and the Czech National Bank[228], have adopted the Odysseus approach.

Odysseus-type central banks provide interest-rate projections as conditions for reaching the target variables at an appropriate horizon. In these cases, a policy-rate path is published along with corresponding forecasts for inflation and real variables.

We can look more carefully at two commonly analysed experiences. In Sweden, the Riksbank's Executive Board has normally communicated the interest-rate path needed for monetary policy to be well balanced five times per year since 2007. Its aim has been to make monetary policy easier to understand, predict and evaluate[229]. Moreover, the board specifies that the interest-rate path is a forecast rather than a promise, given that the rate path can be revised on the basis of new information[230]. A new Riksbank Act entered into force on January 1, 2023. Under the act, low, stable inflation remains the overriding goal, and its independence is specifically highlighted with regard to monetary policy. This encompasses demand for transparency. Therefore, the Riksbank endeavours to ensure that its communication, including the forecast tables, is open and clear[231]. Monetary policy in Sweden has been analysed using the Taylor rule[232].

In the New Zealand case, the Reserve Bank of New Zealand follows a structure forecast process. It has published a policy-rate path since 1997. The Reserve Bank's forecast shows the path that monetary policy should take in order to meet its dual inflation and employment goals[233]. This strategy stands in contrast to that of other central banks, like the European

[223] Orphanides (2023) and (2024); see also Reis (2022) and Clarida (2023).
[224] On the average inflation targeting see: Nessen and Vestin (2005), Amano (2020), Beckworth and Horan (2022), Budianto et al. (2023), Coibion et al. (2023), Jia and Wu (2023), Ireland (2024), Dean (2026).
[225] Orphanides (2025b), Hetzel (2024b) and (2026).
[226] Supporters: Taylor (2011b) and (2015), Hansen et al. (2016). Opponents: Blinder (2016), Yellen (2015), Bernanke (2015). Kocherlakota (2016). See Bordo et al. (2025).
[227] Durkò (2023), Orphanides (2025a), de Cos (2025), Tatar and Wieland (2025).
[228] Svensson (2015).
[229] Sveriges Riksbank (2022).
[230] Sveriges Riksbank (2022).
[231] Sveriges Riksbank (2023).
[232] Chappell and McGregor (2014), Jonsson and Katinic (2017), Owusu (2020).
[233] Bohm and Sing (2022).

Central Bank and the Bank of England, which communicate an exogenous policy forecast and assume that interest rates will evolve in line with market expectations[234].

In the same vein, the Reserve Bank of New Zealand's forecast strategy cannot be compared with the Fed's procedures. The US experience of publishing a policy-rate path started in January 2012. Since then, the Federal Open Market Committee (FOMC) has published a Summary of Economic Projections (SEP), which includes the economic projections of its participants in light of their individual assessments of projected appropriate monetary policy. However, the SEP is a snapshot of the different views of the FOMC members. It does not represent a joint decision by the FOMC[235]. The use of the SEP and, in particular, the median policy-rate path as an approximation of a joint FOMC decision should be done with a great deal of a care[236].

Overall, the procedures of both Sveriges Riksbank and the Reserve Bank of New Zealand show that a flexible instrument rule can be designed and implemented[237]. Publication of the policy-rate path can be considered an effective device for managing expectations, especially if it is predictable and credible, i.e. the extent to which central bank projections, private expectations and actual macro performance are aligned[238]. In any case, examinations of the circumstances that can explain actual discrepancies are useful for improving the effectiveness of the policy-rate path[239].

7. Conclusion

Central banking has changed dramatically in recent years. In response of the Great Financial Crises of 2008, major central banks implemented a series of unconventional monetary policies. Now, the need to normalize monetary policy has again taken centre stage, making it even more important to reconsider the state of the art on the MPRF approach.

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[234] Bohm and Sing (2022).

[235] Svensson (2020).

[236] Svensson (2015).

[237] In terms of definitions, we can compare an interest-rate path consistent with the standard Taylor (1993) rule to an interest-rate path associated with a flexible target rule (Svensson (1997), (1999), (2003) and 2020):

$$i_t = r^* + \pi^* + a(\pi_{t-1} - \pi^*) + b(y_{t-1} - y^*) \text{ and} \quad (58)$$

$$i_t = r^* + \pi^* + \alpha(\pi_{t-1} - \pi^*) + \beta(y_{t-1} - y^*) + \gamma x_t. \quad (59)$$

In equation (59) it is assumed that the monetary policy tool can react to the usual two macroeconomic gaps, but also to any relevant exogenous disturbance that influences the aggregate supply and/or the aggregate demand; variable x represents such disturbance, while γ is the corresponding response factor. In the Taylor interest-rate path, the parameters reflect the central bankers' preferences. In the Svensson interest-rate path, the coefficients depend on the macro models the central bankers use, including the role of macro variables other than inflation and output growth. The more there will be consistency between the central bankers' preferences and the analytical tools they used, including the set of the relevant macro variables, the more the two interest rate paths tend to be similar. On the difficulty in applying the two categories – instrument rule vs. target rule – see Kahn (2015).

[238] Svensson (2015).

[239] Woodford (2013),Svensson (2015).

This paper reviewed the evolution of the economics of the monetary policy reaction function from Taylor's (1993) seminal contribution to present day. The review is based on two assumptions: (1) the peculiar property of the Taylor rule as a flexible tool explains its pathbreaking nature given its capacity to test multiple economic and institutional cases; and (2) this property can be described using a theoretical four-pillar approach. In this approach, the reaction function is the fourth pillar, which represents the final outcome of three intertwined drivers – business-cycle dynamics, central bank governance and central bankers' preferences – and is itself an instrument feedback rule.

Then, given the macroeconomic conditions and the infrequent changes of the monetary regime, it is highlighted the role that the central bankers' preferences has played at various points, describing how, after the founding conservative central banker was born, new members of the Taylor rule family progressively emerged: visionary, prudent, holistic and creative central bankers, respectively with their forward-looking, inertial, augmented, and shadow reaction functions. Finally the literature stresses that so far the true central bankers show a mixed attitude to adopt the flexible instrument rule perspective, particularly when they are confronted with the Odysseus versus Delphi dilemma.

The exploration of possible MPRFs has become a benchmark for evaluating the effectiveness of actual monetary strategies, supported by empirical analyses that aim to explore the association between central bank regime, central bankers' preferences and macroeconomic performance. Nevertheless, a consensus does not constitute complete agreement.

At the same time, critical views can stimulate further advances in this stream of research. In particular, the abovementioned discrepancies between the literature on monetary policy rules and actual central bank practices deserve further exploration on the central bankers' preferences to uncover their properties, as well as their economic and political drivers.

In fact, a key take home value of the present study is the acknowledgment that "one might expect that, armed with the same data (*A/N: our first pillar*) -and the same mandate *(A/N: our second pillar)* policymakers would usually reach similar conclusions (*A/N: our fourth pillar*); what the new evidence shows however is that disagreement is widespread (…). What explains (it)? Differences in beliefs (A/N: our third pillar)" [240] . In other words, the assumptions on the shape and the drivers that characterizes the central bankers' preferences need to be always updated using new knowledge.

On this respect also the assumption that the central bankers can act based on behavioural biases deserves attention. Future research can devote additional effort to uncovering the relationship between behavioural biases and alternative monetary policy actions, in order to better understand how to design the more effective MPRFs for policy identification and evaluation, including the explorations on how artificial intelligence (AI) can transform the central bankers' strategic decision making[241].

At the end of the day, the Taylor rule can be as good a guide for analysis as the inputs the researchers plug into it, but also depending on the researchers' quality in picking up, time to time, the best member of the Taylor family for the identification and evaluation of the monetary policy stance.

[240] Howes et al. (2025).

[241] Poloz (2021), Dundua and Gorgodze (2022), Bogner and Jerger (2023), Kazinnik (2025).

References

Abrams, B.A. (2006). How Richard Nixon pressured Arthur Burns: Evidence from the Nixon tapes. *Journal of Economic Perspectives*, 20(4), 177–188.

Acemoglu, D., S. Johnson, P. Querubin and J.A. Robinson (2008). *When does policy reform work? The case of central bank independence*. Brooking Papers on Economic Activity, 1, 351-417.

Acharya, V., Plantin, G. and O. Wang (2026). *Indebted supply and monetary policy: A theory of financial dominance*. NBER Working Paper Series, n. 34798.

Adam, K. (2011). Government debt and optimal monetary and fiscal policy. *European Economic Review*, 55, 57-74.

Adolph, C. (2013). *Bankers, bureaucrats and central bank politics: The myth of neutrality.* Cambridge, Cambridge University Press.

Adrian, T., Khan, A. and I. Menand (2024). *A new measure of central bank independence*. IMF Working Paper Series, n. 35.

Aghion, P., Alesina, A. and F. Trebbi (2004). Endogenous political institutions. *Quarterly Journal of Economics,* 119(2), 565-611.

Agarwal, R. and M.S. Kimball (2019). *Enabling deep negative rates to fight recessions: A guide.* IMF Working Paper Series, n. 84.

Agur, I. (2020). Populism, institutional quality, and central bank independence. In: E. Gnan and D. Masciandaro, (eds.), *Populism, Economic Policies and Central Banking*, Paris, Larcier, 121-127.

Aizenman, J. (1992). Competitive externalities and the optimal seigniorage. *Journal of Money, Credit and Banking*, 24(1), 61-71.

Alba, J. D. and P. Wang (2017). Taylor rule and discretionary regimes in the United States: Evidence from a k-state Markov regime-switching model. *Macroeconomic Dynamics*, 21, 817-833.

Alesina, A. and V. Grilli (1992). The European Central Bank: Reshaping monetary politics in Europe. In M. Canzoneri, V. Grilli and P.R Masson, (eds.), *Establishing a central bank: Issues in Europe and lessons from the US.* Cambridge, Cambridge University Press.

Alesina, A. and F. Passarelli (2019). Loss aversion in politics. *American Journal of Political Science*, 1-12, 63(4), 936-947.

Alesina, A. and A. Stella (2010). The politics of monetary policy. *Handbook of Monetary Economics,* p.1001-1054.

Alesina, A. and G. Tabellini (1987). Rules and discretion with non-coordinated monetary and fiscal policies. *Economic Inquiry*, 25(4), 619-630.

Alesina, A., and G. Tabellini (2007). Bureaucrat or politician? Part I: A single policy task. *American Economic Review*, 97(1), 169–179.

Alesina, A., and G. Tabellini (2008). Bureaucrat or politician? Part II: Multiple policy tasks. *Journal of Public Economics*, 92(3-4), 426-447.

Alexopoulos, M., Han, X., Kryvtsov, O. and X. Zhang (2023). More than words: Fed Chairs' communication during congressional testimonies. *Journal of Monetary Economics*, 142, 103515.

Al-Eyd, A. and S.P. Berkmen (2013). *Fragmentation and monetary policy in the euro area*. IMF Working Papers, n.13.

Altavilla, C., Brugnolini, L., Gurkaynak, R.S., Motto, R. and G. Ragusa (2019). Measuring euro area monetary policy. *Journal of Monetary Economics*, 108, 162-179.

Amador, M. and C. Phelan (2026). Central bank reputation with noise. *Journal of Monetary Economics*, 158, 10396.

Amano, R., Gnocchi, S., Leduc, S. and J. Wagner (2020). *Average is good enough: Average inflation targeting and the ELB*. Bank of Canada, Staff Working Paper Series, n.31.

Anderl, C. and G.M. Caporale (2022). *Shadow rates as a measure of the monetary policy stance: Some international evidence*. Cesifo Working Paper Series, n.9839.

Anderson, T. and J. Hawkins (2021). Modelling the Reserve Bank of Australia's policy decisions and the case for negative rates. *Australian Economic Review*, 1-10.

Anderson, E., Malin, B.A., Nakamura E., Simester, D. and J. Steinsson (2017). Information rigidities and the sickness of temporary sales. *Journal of Monetary Economics*, 90, 64-83.

Andrade, P., Breckenfelder, F., De Fiore, F., Karadi, P. and O. Tristani (2016). *The ECBs asset purchase programme: An early assessment*. ECB Working Paper Series, n.1956.

Andrade, P. and F. Ferroni (2021). Delphic and Odyssean monetary policy shocks: Evidence from the euro area. *Journal of Monetary Economics*, 117, 816-832.

Andrabi, T. (1997). Seigniorage, taxation, and weak government. *Journal of Money, Credit and Banking*, 29(1), 106-126.

Angeletos, G.M. and C. Lian (2023).Determinacy without the Taylor Principle. *Journal of Political Economy*, 131(8), 1949-2288.

Apel, M. and M.B. Grimaldi (2014). How informative are central bank minutes?. *Review of Economics*, 65(1), 53-76.

Arauj, R.A. and H.N. Moreira (2026). The Taylor rule as a stabilizing mechanism in Foley's supply-side liquidity profit rate model. *Journal of Post Keynesian Economics*, https://doi.org/10.1080/01603477.2025.2605995.

Arefa, A. and N. Arefyev (2025). Playing by the Taylor rules or sticking to Friedman's policy: A new approach to monetary policy identification. *Economic Modelling*, 143, 106966.

Arias, J.E., Caldara, D. and J.F. Rubio-Ramirez (2019). The systematic component of monetary policy in SVARs: An agnostic identification procedure. *Journal of Monetary Economics*, 101, 1-13.

Arteta, C., Kose, M., Stocker, M. and T. Taskin (2016). *Negative interest rate policies : Sources and implications*. World Bank, Policy Research Working Paper Series, n. 7791.

Assenmacher, K. (2021). *Clear, consistent and engaging: ECB monetary policy communication in a changing world.* ECB Occasional Paper Series, n. 274.

Asso, P.F., Kahn, G.A. and R. Leeson (2007). *The Taylor rule and the transformation of monetary policy*. Federal Reserve Bank of Kansas City, Economic Research Department, Research Working Papers, n.11.

Asso, P.F., Kahn, G.A. and R. Leeson (2010). *The Taylor rule and the practice of central banking.* Federal Reserve Bank of Kansas City, Economic Research Department, Research Working Papers, n.5.

Athanasopoulos, A., Masciandaro, D. and D. Romelli (2023). *Inflation: Persistence and central bank independence*. SSRN: https://ssrn.com/abstract=5110065.

Avdjiev, S., Gambacorta, L., Goldberg, L.S. and S. Schiaffi (2020). The shifting drivers of global liquidity. *Journal of International Economics*, 125, 103324.

Backus, D. and J. Driffill (1985). Inflation and reputation. *American Economic Review*, 75(3), 530-538.

Baddeley, M. (2025). *Time inconsistency, present bias and inflation targeting: A behavioural empirical analysis.* SSRN: https://ssrn.com/abstract=5141793.

Baele, L., Ferrando, A., Hordahl, P., Krylova, E. and C. Monnet (2014). *Measuring financial integration in the euro area*. ECB Occasional Papers, n.14.

Baqaee, D.R., Farhi, E. and K. Sangani (2024). The supply side effects of monetary policy. *Journal of Political Economy*, 132, 727287.

Bagheri, F. M. and N. Habibi (1998). Political institutions and central bank independence: A cross-country analysis. *Public Choice,* 96(1-2), 187–204.

Bajaro, D.E., Galimberti, J.K. e I.A. Qureshi (2025). Monetary policy under fiscal stress: A forward-looking analysis of fiscal dominance. *Journal of Macroeconomics*, 86, 103701.

Baker, S.S., Lòpez-Salido, D. and E. Nelson (2018). *The money view versus the credit view*. CEPR Discussion Paper Series, n. 12982.

Ball, L. (2013). *The case for four percent inflation*. Econstor Working Paper Series, n. 607.

Banaian, K. and W.A. Luksetich (2001). Central bank independence, economic freedom, and inflation rates. *Economic Inquiry,* 39(1), 149–61.

Banerjee, S. and R.J. Paramanik (2026). A study of implicit disagreement in MPC meetings for selected Eastern European Economies using the Taylor rule*. Journal of Economics, Finance and Accounting Studies*, 7, 1032996.

Bank for International Settlements (2009). *Issues in the governance of central banks. A report from the central bank governance group*. Basle, BIS publications.

Barro, R.T. (1986). Reputation in a model of monetary policy with incomplete information. *Journal of Monetary Economics*, 17(1), 3-20.

Barro, R. T. and D.B. Gordon (1983). Rules, discretion and reputation in a model of monetary policy. *Journal of Monetary Economics*, 12, 101-121.

Barthelemy, J. (2024). *Market perception of monetary policy responsiveness*. Banque de France, Eco Notepad, 359.

Bassetto, M. (2019). Forward guidance: Communication, commitment, or both?. *Journal of Monetary Economics*, 108, 69-86.

Battistini, N., Pagano, M. and S. Simonelli (2014). Systemic risk, sovereign yields and bank exposures in the euro crisis. *Economic Policy*, 29, 203-251.

Bauer C. and M. Neuenkirch (2017). Forecast uncertainty and the Taylor rule. *Journal of International Money and Finance*, 77, 99-116.

Bauer, M.D., Pflueger, C.E. and A. Sunderam (2024). Perceptions about monetary policy. *Quarterly Journal of Economics*, 139(4), 2227-2278.

Bauer, M.D., Pflueger, C.E. and A. Sunderam (2025). Current perceptions about monetary policy. Federal Reserve Bank of San Francisco, *Economic Letter*, February, 1-5.

Bauer, M.D. and E.T. Swanson (2023). An alternative explanation for the "Fed information effect". *American Economic Review*, 113(3), 664-700.

Baxa, J., Horvath, R. and B. Vasicek (2013). Time-varying monetary-policy rules and financial stress: Does financial instability matter for monetary policy?. *Journal of Financial Stability*, 9, 117-138.

Bech, M. and A. Malkhozov (2016). *How have central banks implemented negative interest rates?.* BIS Quarterly Review, March, 31-44.

Beck, G.W. and V. Wieland (2008). Central bank misperceptions and the role of money in interest rate rules. *Journal of Monetary Economics*, 55(1), 1-17.

Beckmann, J. Belke, A. and C. Dreger (2017). The relevance of international spillovers and asymmetric effects in the Taylor rule. *Quarterly Review of Economics and Finance*, 64(2), 162-170.

Beckworth, D. (2020). *The stance of monetary policy: The NGDP gap*. Mercatus Center, Policy Brief, April.

Beckworth, D. and P.J. Horan (2022). The fate of fait: Salvaging the Fed's framework. *Southern Economic Journal*, 91(4), 1391-1403.

Beetsma, N. and A.L. Bovenberg (1998). Monetary union without fiscal coordination may discipline policymaker. *Journal of International Economics,* 45, 239-258.

Beetsma, N. and H. Uhlig (1999). An analysis of the stability path. *Economic Journal*, 109, 546-571.

Belden, S. (1989). Policy preferences of FOMC members as revealed by dissenting votes. *Journal of Money, Credit and Banking*, 21(4), 432-441.

Belke, A. and Y. Cui (2010). US-euro area monetary policy interdependence: New evidence from Taylor rule-based VECMs. *The World Economy*, 33(5), 778-797.

Belke, A. and J. Klose (2011). Does the ECB rely on a Taylor rule during the financial crisis? Comparing ex-post and real time data with real time forecasts. *Economic Analysis and Policy*, 41(2), 147-171.

Belke, A. and N. Potrafke (2012). Does government ideology matter in monetary policy? A panel analysis for OECD countries. *Journal of International Money and Finance*, 31, 1126-1139.

Bell, S., Chavaz, M., Hofmann, B., Rees, D. and M. Rottner (2026). *Evolving approach to monetary policy communication in the face of uncertainty: Fan charts, scenarios and guidance*. Bis Quarterly Review, 17-30.

Belongia, M.T. and P.N. Ireland (2017). Circumventing the zero lower bound with monetary policy rules based on money. *Journal of Macroeconomics*, 54(A), 42-58.

Belongia, M.T. and P.N. Ireland (2021). A classical view of the business cycle. *Journal of Money, Credit and Banking,* 53(2-3), 333-366.

Belongia, M.T. and P.N. Ireland (2022). A reconsideration of money growth rules. *Journal of Economic Dynamics & Control*, 135, 104312.

Benhabib, J., Schmitt-Grohè, S. and M. Uribe (2001). The perils of Taylor rules. *Journal of Economic Theory*, 96, 40-69.

Benhabib, J., Schmitt-Grohè, S. and M. Uribe (2002). Avoiding liquidity traps. *Journal of Political Economy*, 110, 535-563.

Benchimol, J. (2024). Central bank objectives, monetary policy rules, and limited information. *Journal of Macroeconomics*, 103604.

Benchimol, J. and L. Bounader (2023). Optimal monetary policy under bounded rationality. *Journal of Financial Stability*, 67, 101151.

Benchimol, J. and A. Fourcans (2019). Central bank losses and monetary policy rules: A DSGE investigation. *International Review of Economics and Finance*, 61, 289-303.

Bennani, H. (2018). Media coverage and ECB policy-making: Evidence from an augmented Taylor rule. *Journal of Macroeconomics*, 57, 26-38.

Bennani, H., Farvaque, E. and P. Stanek (2018). Influence of regional cycles and personal background on FOMC members' preferences and disagreement. *Economic Modelling,* 68, 416–424.

Berger, H. (1997). The Bundesbank's path to independence: Evidence from the 1950s. *Public Choice,* 93(3-4), 427–453.

Berger, H. and U. Woitek (2005). Does conservatism matter? A time series approach to central banking. *Economic Journal*, 115, 745-766.

Berger, W. and F. Kibmer (2013). Central bank independence and financial stability: A tale of perfect harmony?. *European Journal of Political Economy*, 31, 109-118.

Berger, H. and V. Nitsch (2011). Too many cooks? Committees in monetary policy. *Southern Economic Journal*, 78(2), 452-475.

Berggren, N., Daunfeldt S.O. and J. Hellstrom (2014). Social trust and central-bank independence. *European Journal of Political Economy,* 34(C), 425–439.

Berlemann, M. and K. Hielscher (2013). Effective monetary conservatism: A comparison of 13 OECD countries. *Scottish Journal of Political Economy*, 60, 267-290.

Berlemann, M. and K. Hielscher (2016). Measuring effective monetary conservatism of central banks: A dynamic approach. *Annals of Economics and Finance*, 17(1), 105-132.

Bernanke, B.S. (2004). *Fed speak*. Remarks at the Meetings of the American Economic Association, San Diego, California, January 3.

Bernanke, B.S. (2007). *Federal Reserve communications*. Board of Governors of the Federal Reserve System, Washington DC, n.344.

Bernanke, B.S. (2020). The new tools of monetary policy. *American Economic Review*, 110(4), 943-983.

Bernanke, B.S. and M. Gertler (1995). Inside the black box: The credit channel of monetary policy transmission. *Journal of Economic Perspectives*, 9, 27-48.

Bernanke, B.S. and F. Mishkin (1997). Inflation targeting: A new framework for monetary policy?. *Journal of Economic Perspective*, 11(2), 97-116.

Bernhard, W. (1998). A political explanation of variations in central bank independence. *American Political Science Review,* 92(2), 311–327.

Bertasiute, A., Massaro, D., and M. Weber (2018). *The behavioural economics of currency unions: Economic integration and monetary policy*. Bank of Lithuania, Working Paper Series, n.49.

Besley, T., Meads, N., and P. Surico (2008). Insiders versus outsiders in monetary policy- making. *American Economic Review,* 98 (2), 218–23.

Beyer, A., Nicoletti, G., Papadopoulou, N., Pasdorf, P., Runstler, G., Schwarz, C., Sousa, J. and O. Vergote (2017). *The transmission channels of monetary, macro and microprudential policies and their interrelations*. ECB Occasional Paper Series, n. 191.

Bhattarai, S. and C.J. Neely (2022). An analysis of the literature on international unconventional monetary policy. *Journal of Economic Literature*, 60(2), 527-597.

Bianchi, F., Kung, H. and T. Kind (2019). *Threats to central bank independence: High–frequency identification with twitter*. NBER Working Paper Series, n. 26308.

Bibow, J. (2002). Keynes on central banking and the structure of monetary policy. *History of Political Economy*, 34(4), 749-787.

Bibow, J. (2004). Reflections on the current fashion for central bank independence. *Cambridge Journal of Economics*, 28(4), 549-576.

Bibow, J. (2010). *A post Keynesian perspective on the rise of central bank independence: A dubious success story in monetary economics*. Levy Economics Institute of Bard College, Working Paper Series, n.625.

Binder, C. C. (2020). Presidential antagonism and central bank credibility. *Economics & Politics*, 33, 244–263.

Binder, C.C. (2021). Political pressure on central banks. *Journal of Money, Credit and Banking*, 53(4), 715–744.

Binder, C. (2025). *Central banks as educators.* NBER Working Paper Series, n.34002.

Binder, C. and C. Skinner (2023). Laboratories of central banking. *Review of Banking and Financial Law*, 42(1), 235-300.

Blanchard, O., Dell'Ariccia, G. and P. Mauro (2010). Rethinking macroeconomic policy. *Journal of Money, Credit and Banking*, 42, 199-215.

Blancheton, B. (2016). Central bank independence in a historical perspective. Myth, lessons and a new model. *Economic Modelling*, 52(A), 101-107.

Blattner, T., Catenaro, M., Ehrmann, M., Strauch, R. and J. Jarkko (2008). *The predictability of monetary policy*. ECB Occasional Paper Series, n.83.

Blinder, A.S. (2010). How central should the central bank be?. *Journal of Economic Literature*, 48(1), 123-133.

Blinder, A.S. (2016). Comment on: Rules versus discretion: A reconsideration, by Narayana Kocherlakota. In: *Brooking Papers on Economic Activity*, Brooking Institution Press, 56-59.

Blinder, A.S. (2023). Landings, soft and hard: The Federal Reserve, 1965-2022. *Journal of Economic Perspectives*, 37(1), 101-120.

Blinder, A.S. (2024). *Was something structurally wrong at the FOMC?*. Peterson Institute for International Economics, PIIE Policy Brief, n.11

Blinder, A. S., Ehrmann, M. Fratzscher, M. and, De Haan, J. and D.J. Jansen (2008). Central bank communication and monetary policy: A survey of theory and evidence. *Journal of Economic Literature,* 46 (4), 910–45.

Blinder, A. S. and J. Morgan (2005). Are two heads better than one? Monetary policy by committee. *Journal of Money, Credit and Banking*, 37(5), 789-811.

Board of Governors of the Federal Reserve System (2017). *Monetary policy rules and their role in the Federal Reserve's policy process*. Monetary Policy Report, Federal Reserve System, July 7.

Board of Governors of the Federal Reserve System (2025). *Monetary policy principles and practice*. Federalreserve.gov.

Bocola, L., Dovis, A., Jorgensen, K. and R. Kirpalani (2024*). Bond market view of the Fed*. NBER Working Paper Series, n.32620.

Bodea, C. and R. Hicks (2015). Price stability and central bank independence: Discipline, credibility and democratic institutions. *International Organization*, 69(1), 35-61.

Bodea, C. and A. Kerner (2025). Can the conservative central banker be a woman?. In E. Farvaque and P. Stanek, (eds.), *Are central banks still conservative? Framework, monetary policy and inflation after Rogoff*. Cheltenham, UK, Edward Elgar Publishing, 96-114.

Boehm, C.E. and C.L. House (2019). Optimal Taylor rules when targets are uncertain. *European Economic Review*, 119, 274-286.

Bohm, T. and M. Sing (2022). Evaluating the Reserve Bank's forecasting performance. *Bulletin*, Reserve Bank of New Zealand, 85(4), 1-33.

Boikos, S., Panagiotidis, T. and G. Voucharas (2025). Financial literacy, financial development and economic growth. *International Journal of Finance and Economics*, 0, 1-15.

Bolhuis, M.A., Mano, R.C. and H. Thorell (2026). *The macroeconomic consequences of undermining central bank independence: Evidence from governor transitions*. IMF Working Paper Series, n. 40.

Bordalo, P., Gennaioli, N. and A. Shleifer (2022). Overreaction and diagnostic expectations in macroeconomics. *Journal of Economic Perspectives*, 36(3), 223-244.

Bordalo, P., Gennaioli, N. and A. Shleifer (2026). Real credit cycles. *American Economic Review*, 116(4), 1274-1308.

Bordo, M.D. (2018). An historical perspective on the quest for financial stability and the monetary policy regime. *Journal of Economic History*, 78(2), 319-357.

Bordo, M.D. (2026). *The future of monetarism after Milton Friedman*. NBER Working Paper Series, n. 34765.

Bordo, M.D., Cochrane J.H. and J.S. Hartley (2025). *John Taylor's contributions to economics*. Princeton University, Department of Economics, Center for Economic Policy Studies, Working Papers, n. 346.

Bordo, M.D., Cochrane, J.H. and J.B. Taylor (2023). *Getting monetary policy back on track*. Stanford, Hoover Institution Press.

Bordo, M.C. and J.V. Duca (2020). *How new FED corporate bond programs dampened the financial accelerator in the COVID-19 recession*. NBER Working Paper Series, n.28097.

Bordo, M.D. and J.G. Haubrich (2020). *Low interest rates, policy, and the predictive content of the yield curve*. NBER Working Paper Series, n. 27691.

Bordo, M.D and K. Istrefi (2018). Perceived FOMC: The making of hawks, doves and swingers. In S.C. Eijffinger and D. Masciandaro, (eds.), *Hawks and Doves: Deeds and Words. Economics and Politics of Monetary Policymaking*, London, CEPR Press, 41-61.

Bordo, M.D and K. Istrefi (2023). Perceived FOMC: The making of hawks, doves and swingers. *Journal of Monetary Economics*, 136, 125-143.

Bordo, M.D, Istrefi, K. and H. Martinez (2025). *Rules vs. discretion: Decoding FOMC policy deliberations*. NBER Working Paper Series, n. 33262.

Bordo, M.D and M.D. Levy (2023). The Feds monetary policy exit once again behind the curve. In: R.G. King and A.L. Wolman, (eds*.), How Monetary Policy Got Behind the Curve and How to Get Back*, Stanford, Hoover Institution Press.

Borghi, E., Masciandaro, D. and A. Papini (2024). European politicians and financial literacy activism: Does financial (in)stability matter?. *Economics Letters*, 244, 111981.

Borio, C. (2012). *The financial cycle and macroeconomics: What have we learnt?*. BIS Working Paper Series, n. *395*.

Borio, C.E. and M.Chavaz (2025). Moving targets? Inflation targeting frameworks, 1990-2025. *BIS Quarterly Review*, March, 31-52.

Borio, C. and O. Lowe (2002). *Asset prices, financial and monetary stability: Exploiting the nexus*. BIS Working Paper Series, n. 114.

Bobrov, A., Kamdar, R. and M. Ulate (2025). Regional dissent: Do local economic conditions influence FOMC votes?. *American Economic Review: Insights*, 7(2), 268-284.

Bogner, A. and J. Jerger (2023). Big data in monetary policy analysis: A critical assessment. *Economics and Business Review*, 9(2), 27-40.

Branch, W. A. (2014). Nowcasting and the Taylor rule. *Journal of Money, Credit and Banking*, 46(5), 1035-1055.

Bro de Comères, Q., Oros, C., Pourroy, M., Radiguerau – Hannotin, L. and A.G. Vaubourg (2025). Non-standard monetary policy and ECB communication: Confusion or predictability?. Journal of International Money and Finance, 151, 103236.

Brumm, H.J. (2006). The effect of central bank independence on inflation in developing countries. *Economics Letters*, 90(2), 189-193.

Brumm, H.J. (2011). Inflation and central bank independence: Two-way causality?. *Economics Letters*, 111(3), 220-222.

Brunnermeier, M.K. (2023). Monetary policy in a changing world. *Finance & Development*, March, 5-9.

Brunnermeier, M. and Y. Sannikov (2014). Monetary analysis: Price and financial stability. In: *ECB Forum on Central Banking, Monetary Policy in a Changing Financial Landscape*, Conference Proceedings, Frankfurt, European Central Bank, 61-80.

Brunette, M. and J. Jacob (2019). Risk aversion, prudence and temperance: An experiment in gain and loss. *Research in Economics*, 73(2), 174-189.

Buchanan, J.M. (1962). Predictability: The criterion of monetary constitutions. Cap VI, *In search of a monetary constitution*, Harvard, Harvard University Press.

Budianto, F., Nakata, T. and S. Schmidt (2023). Average inflation targeting and the interest rate lower bound. *European Economic Review*, 152, 104384.

Buiter, W.H. (2007). Seignorage. *Economics*, 10, 1-46.

Buiter, W.H. (2014). *Central banks: Powerful, political and unaccountable.* CEPR Discussion Paper Series, n.10223.

Bullard, J. (2022). *Getting into the zone*. Remarks at Greater Louisville Inc., November 17.

Bundick, B. (2015). Estimating the monetary policy rule perceived by forecasters. Federal Reserve Bank of Kansas City, *Economic Review*, 100(4), 33-49.

Bunzel, H. and W. Enders (2010). The Taylor rule and the "opportunist" monetary policy. *Journal of Money, Credit and Banking*, 42(5), 931-949.

Burdekin, R.C.K. and P.L. Siklos (2008). What has driven Chinese monetary policy since 1990?. *Journal of International Money and Finance*, 27, 847-859.

Burdekin, R.C.K. and P.L. Siklos (2026). Combating crises and deflation: China's monetary policy from financial liberalization through the pandemic. *Economic Modelling*, forthcoming.

Burkovskaya A. (2019). Political economy behind central bank independence. *Journal of Macroeconomics*, 61, 103121.

Caldara, D. and E. Herbst (2019). Monetary policy, real activity, and credit spreads: Evidence from Bayesian Proxy SVARs. *American Economic Journal: Macroeconomics*, 11(1), 157-192.

Calvo, G.A. (1978). On the time consistency of optimal policy in a monetary economy. *Econometrica*, 46(6), 1411-1428.

Camous, A. and D. Matveev (2021). Furor over the Fed: Presidential tweets and central bank independence. *CESifo Economic Studies*, 67(1), 106–127.

Campbell, J.R. (2013). Odyssean forward guidance in monetary policy: A primer. *Economic Perspective*, Federal Reserve Bank of Chicago, 4Q, 130-152.

Campbell, J.R., Evans C.L., Fisher J.D.M., Justiniano A., Calomiris C.W. and M. Woodford (2012). Macroeconomic effects of Federal Reserve forward guidance. *Brookings Papers on Economic Activity*, Spring, 1-80.

Campbell, J.R., Ferroni, F., Fisher, J.D.M. and L. Melosi (2019). The limits of forward guidance. *Journal of Monetary Economics*, 108, 118-134.

Campbell, J.R. and J.P. Weber (2021). Discretion rather than rules: Equilibrium uniqueness and forward guidance with inconsistent optimal plans. *Review of Economic Dynamics*, 41, 243-254.

Campoy, J.C., Candel-Sanchez, F. and J.C. Negrete (2026). Central bank self-selection contracts and the inflationary bias under preference uncertainty. *International Economic Journal*, 46, 2650787.

Canova, F. (2009). What explains the Great Moderation in the US? A structural analysis. *Journal of the European Economic Association*, 7(4), 697-721.

Canzoneri, M., Cumby, R. and B. Diba (2015). Monetary policy and the natural interest rate. *Journal of Money, Credit and Banking*, 47(2-3), 383-414.

Caporale, G.M., Helmi, M.H., Catik, A.N., Ali, F.M. and C. Akdeniz (2018). Monetary policy rules in emerging countries: Is there an augmented nonlinear Taylor rule?. *Economic Modelling*, 72, 306-319.

Caputo, R., and A. Diaz (2018). Now and always, the relevance of the Taylor rule in Europe. *International Journal of Financial Economics,* 23, 41-46.

Caraiani, P. (2016). Money and output causality: A structural approach. *International Review of Money and Finance,* 42, 220-236.

Carlstrom, C.T. and M. Jacobson (2015). Do forecasters agree on a Taylor rule?. Federal Reserve Bank of Cleveland, *Economic Commentary*, n.10.

Carvalho, C. and F. Nechio (2014). Do people understand monetary policy?. *Journal of Monetary Economics*, 66, 108-123.

Carvalho, C., Nechio, F. and T. Tristao (2021). Taylor rule estimation by OLS. *Journal of Monetary Economics*, 124, 140-154.

Caruana, J. and I. Shim (2016). La politique macroprudentielle: Un ouvrage en cours pour les banques centrales. *Revue d'Économie Financière*, 1(121), 111–130.

Castelnuovo, E. (2007). Taylor rules and interest rate smoothing in the euro area. *Manchester School*, 75(1), 1-16.

Castelnuovo, E. and P. Surico (2004). Model uncertainty, optimal monetary policy and the preferences of the FED. *Scottish Journal of Political Economy*, 51, 105-126.

Castillo-Martinez, L. and R. Reis (2026). How do central banks control inflation? A guide for perplexed. *Journal of Economic Literature*, 64(1), 195-245.

Castro, V. (2011). Can central bank monetary policy be described by a linear (augmented) Tylor rule or by a nonlinear rule?. *Journal of Financial Stability*, 7, 228-246.

Çekin, S.E., Gupta, R. and E. Olson (2021). The Taylor curve: International evidence. *Applied Economics*, 53(40), 4680-4691.

Chadha, J. S., Sarno, L. and G. Valente (2004). Monetary policy rules, asset prices, and exchange rates. *IMF Staff Papers*, 51, 529-552.

Chadha, J. S., Macchiavelli, C., Goel, S., Hantzsche, A. and S. Mellina (2026). Deciphering Delphi guidance: The Bank of England and geopolitical uncertainty. *Journal of International Money and Finance*, 162, 103530.

Chappell, H. W., Havrilesky T. and R.R. McGregor (1997). Monetary policy preferences of individual FOMC members: A content analysis of the memoranda of discussion. *Review of Economics and Statistics*, 79(3), 454-460.

Chappell, H. W., and R.R. McGregor (1993). Partisan monetary policies: Presidential influence through the power of appointment. *The Quarterly Journal of Economics*, 108(1), 185-218.

Chappell , H.W. and R.R. McGregor (2000). A Long history of FOMC voting behavior. *Southern Economic Journal*, 66(4), 906-922.

Chappell , H.W., McGregor, R.R. and T. Vermilyea (2004). *Committee decisions on monetary policy: Evidence from historical records of the Federal Reserve Open Market Committee.* Cambridge, MA, MIT Press.

Chappell , H.W., McGregor, R.R. and T. Vermilyea (2011). Deliberation and learning in monetary policy committees. *Economic Inquiry*, 50(3), 839-847.

Chappell , H.W., McGregor, R.R. and T. Vermilyea (2014). Power-sharing in monetary policy committee: Evidence from the United Kingdom and Sweden. *Journal of Money, Credit and Banking*, 46(4), 665-692.

Checherita-Westphal, C. and V. Zdarek (2017). *Fiscal reaction function and fiscal fatigue: Evidence for the euro area*. ECB Working Paper Series, n.2036.

Christensen, J.H.E. (2019). Yield curve responses to introducing negative policy rates. Federal Reserve Bank of San Francisco, *Economic Letter*, 27, 1-5.

Christensen, J.H.E. and G.D. Rudebush (2012). The response of interest rates to US and UK quantitative easing. *Economic Journal*, 122, 385-414.

Cho, D. and S. Rho (2026). Can the tone of central bankers' speeches help shape inflation expectations?: Evidence from Japan. *Journal of International Financial Markets, Institutions and Money*, 107, 102283.

Choi, J., Doh, T., Foerster, A. and Z. Martinez (2022). Monetary policy stance is tighter than federal funds rate. Federal Reserve Bank of San Francisco, *Economic Letter*, n.30.

Chortareas, G. E., Masciandaro, D. and R. Russo (2025). Designing a green memorandum: Central bankers, politicians, monetary policy, and macroprudential regulation. *Macroeconomic Dynamics*, 29, 1–15.

Chortareas, G.E. and S.M. Miller (2003). Central banker contracts, incomplete information and monetary policy surprises: In search of a selfish central banker?. *Public Choice*, 116(3-4), 271-295.

Christensen, J.H.E. and G.D. Rudebush (2015). Estimating shadow-rate term structure models with near-zero yields. *Journal of Financial Econometrics*, 13, 226-259.

Cieslak, A. (2018). Short-rate expectations and unexpected returns in Treasury bonds. *Review of Financial Studies*, 31(9), 3265-3306.

Cieslak, A., Hansen, S., McMahon, M. and S. Xiao (2023). *Policymakers' uncertainty*. NBER Working Paper Series, n. 31849.

Cieslak ,A., McMahon, M. and H. Pang (2024). *Did I make myself clear? The Fed and the market in the post-2020 framework period.* CEPR Discussion Papers, n. 19360.

Cieslak, A. and A. Schrimpf (2019). Non-monetary news in central bank communication. *Journal of International Economics*, 118, 293-315.

Ciganovic, M., Ragusa, G. and V. Sanna (2026). The voice of monetary policy: Evidence from the European Central Bank. *Economics Letters*, 264, 112976.

Claessens, S. (2017). Global banking: Recent developments and insights from research. *Review of Finance*, 21, 1513-1555.

Claessens, S. (2019). *Fragmentation in global financial markets: Good or bad for financial stability?*. BIS Working Papers, n.815.

Claessens, S., Kose, M. and M.E. Terrones (2012). How do business and financial cycles interact?. *Journal of International Economics*, 87(1), 178–190.

Clarida, R. (2019). The Federal Reserve's review of its monetary policy strategy, tools, and communications practices. *Cato Journal*, 40, 255-267.

Clarida, R. (2023). *US monetary policy and the return to price stability*. NBER Working Paper Series, n. 31520.

Clarida, R., Galì, J. and M. Gertler (1998). Monetary policy rules in practice. *European Economic Review*, 42(6), 1033-1067.

Clarida, R., Galì, J. and M. Gertler (1999). The science of monetary policy: A new Keynesian perspective. *Journal of Economic Literature,* 37, 1661-1707.

Clarida, R., Galì, J. and M. Gertler (2000). Monetary policy rules and macroeconomic stability: Evidence and some theory. *Quarterly Journal of Economics* 115, 147-180.

Clarida, R. and M. Gertler (1997). How the Bundesbank conduct monetary policy. In: C. Romer and D. Romer, (eds.), *Reducing Inflation*, University of Chicago Press, Chicago, 363-412.

Clerc P. and M. Boianovsky (2023). *Michael Woodford's Interest & Prices after twenty years*. SSRN: https://ssrn.com/abstract=4340476.

Cloyne, J. and P. Hurtgen (2016). The macroeconomic effects of monetary policy: A new measure for the United Kingdom. *American Economic Journal: Macroeconomics,* 8(4), 1-32.

Cochrane, J.H. (2011). Determinacy and identification with Taylor rule. *Journal of Political Economy*, 119, 565-615.

Cochrane, J.H., Posen, A.S. and D. Wilcox (2025). *Central bank independence in practice*. Peterson Institute for International Economics, PIIE Briefing, n.3.

Cochrane, J.H., Taylor. J. and V. Wieland (2020). *Evaluating rules in the FED's report and measuring discretion*. in J. Cochrane and J. B. Taylor, (eds.), *Strategies of Monetary Policy*, Stanford, Hoover Institution Press.

Coenen, G., Ehmann, M., Gaballo, G., Hoffmann, P., Nakov, A., Nardelli, S., Persson, E. and G. Strasser (2017). *Communication of monetary policy in unconventional times*, ECB Working Paper Series, n. 2080.

Coibion, O. (2012). Are the effects of monetary policy shocks big or small?. *American Economic Journal: Macroeconomics,* 4(2), 1-32.

Coibion, O., Georgarakos, D., Gorodnichenko, Y. and M. Weber (2022). Monetary policy communication and their effects on household inflation. *Journal of Political Economy*, 130(6), 1537-1584.

Coibion, O. and Y. Gorodnichenko (2015). Is the Phillips curve alive and well after all? Inflation expectations and the missing disinflation. *American Economic Journal: Macroeconomics,* 7(1), 197-232.

Coibion, O., Gorodnichenko, Y., Knotek, E.S. and R. Schoenle (2023). Average inflation targeting and household expectations. *Journal of Political Economy: Macroeconomics*, 1(2), 403-446.

Coibion, O., Gorodnichenko, Y., Kumar, S. and M. Pedemonte (2015). Inflation expectations as a policy tool?. *Journal of International Economics*, 124, 103297.

Cole, S., Martinez-Garcia, L. and E.R. Sims (2023). *Living up to expectations: Central bank credibility, the effectiveness of forward guidance, and inflation dynamic post-global financial crisis*. NBER Working Paper Series, n.31777.

Colla De Robertis, E. (2026). Monetary policy committees, independence, and influence. *Games*, 17(6),1-23.

Comunale, M., De Bruxelles, P., Kockhar, K. and J. Raskauskas (2023). *Who are central banks? Gender, human resources and central banking*. IMF Working Paper Series, n.91.

Consolo, A. and C.A. Favero (2009). Monetary policy inertia: More a fiction than a fact?. *Journal of Monetary Economics*, 56(6), 900-906.

Cova, P. and G. Ferrero (2015). *The Eurosystem's Asset Purchase Programmes for monetary policy purposes*. Bank of Italy, Occasional Papers, n.270.

Cozzi, G. and F. Di Dio (2026). Do heterogeneous beliefs drive the US business cycles?. *Journal of Economic Behavior and Organization*, 245, 107501.

Crowe, C. (2008). Goal independent central banks: Why politicians decide to delegate. *European Journal of Political Economy,* 24(4), 748–762.

Crowe, C. and E.E. Meade (2007). The evolution of central bank governance around the world. *Journal of Economic Perspectives*, 21(4), 69-90.

Cuciniello, V. (2024*). Market perceptions, monetary policy and credibility*. Bank of Italy, Working Paper Series, n. 1449.

Cukierman, A. (1994). Central bank independence and monetary control. *Economic Journal*, 104, 1437-1448.

Cukierman, A. (2013). Monetary policy and institutions before, during, and after the global financial crisis. *Journal of Financial Stability,* 9(3), 373-384.

Cukierman, A., Edwards, S. and G. Tabellini (1992). Seignorage and political instability. *American Economic Review*, 82(3), 537-555.

Cukierman, A. and A.H Meltzer (1986). A theory of ambiguity, credibility, and inflation under discretion and asymmetric information. *Econometrica*, 54(5), 1099-1128.

Cukierman, A. and V.A. Muscatelli (2003). *Do central banks have precautionary demands for expansions and for price stability? Theory and evidence*. Cesifo Working Paper Series, n.764.

Cukierman, A. and V.A. Muscatelli (2008). Non linear Taylor rules and asymmetric preferences in central banking: evidence from the United Kingdom and the United States. *B.E. Journal of Macroeconomics*, 8(1), 1-31.

Cukierman, A., Web, S.B. and B. Neyapti (1992). Measuring the independence of central banks and its effect on policy outcomes. *World Bank Economic Review*, 6(3), 353-398.

Curdia, V. and M. Woodford (2011). The central-bank balance sheet as an instrument of monetary policy. *Journal of Monetary Economics*, 58, 54-79.

Curti, F. and S. Kazinnik S. (2023). Let's face it: Quantifying the impact of non-verbal communication in FOMC press conference. *Journal of Monetary Economics*, 139, 110-126.

Czudaj, R. L. (2023). Are the forecasts of professionals compatible with the Taylor rule? Evidence from the euro area. *Macroeconomic Dynamics*, 27, 698-717.

Dal Bo, E. (2006). Committees with super majority voting yield commitment with flexibility. *Journal of Public Economics*, 90(4), 573-599.

Dalla Pellegrina, L., Masciandaro, D. and R.V. Pansini (2013). The central banker as prudential supervisor: Does independence matter?. *Journal of Financial Stability*, 9(3), 415-427.

Dean, J. (2026). Better on average? Average inflation targeting with an unclear averaging window. *Southern Economic Journal*, 92, 70020.

Dean, J. and S. Schuh (2021). *Is the Taylor rule still an adequate representation of monetary policy in macroeconomic models?*. West Virginia University, College of Business and Economics, December, 1-60.

Debortoli, D., Galì, J. and L. Gambetti (2020). On the empirical (ir)relevance of the zero lower bound constraint. *NBER Macroeconomics Annual*, 34, 141-170.

de Cos, P.H. (2025). *Lessons for the European Central Bank from the 2021-23 inflationary episode*. PIIE Working Paper Series, n.10.

De Groot, O. and F. Mazelis (2020). *Mitigating the forward guidance puzzle: Inattention, credibility, finite planning horizons and learning*. ECB Working Paper Series, n. 2426.

de Haan, J. and S. C. Eijffinger (2016). *The politics of central bank independence*. DNP Working Papers, n.539.

de Haan, J. and S. C. Eijiffinger (2017). *Central bank independence under threat?.* CEPR Policy Insight, 87.

de Haan, J. and S. C. Eijffinger (2019). The politics of central bank independence. In R. D. Congleton, B. Grofman and S. Voigt, (eds.), *The Oxford Handbook of Public Choice*, Oxford, Oxford University Press.

de Haan, J. and L. Hoogduin (2024). ECB communication policies : An overview and comparison with the Federal Reserve. *Journal of International Money and Finance*, 42, 103050.

de Haan, J. and G. Van't Hag (1995). Variation in central bank independence across countries: Some provisional empirical evidence. *Public Choice*, 85(3-4), 335–351.

den Haan, W. (2013). *Forward guidance*. London, CEPR Press.

den Haan, W.J. (2016). *Quantitative easing*. London, CEPR Press.

Dellas, H. and G.S. Tavlas (2016). *Friedman, Chicago and monetary rules.* In R.A. Cord and J.D. Hammond, (eds.), Milton Friedman, Chapter 11, Oxford, Oxford University Press, 198-216.

Dellas, H. and G.S. Tavlas (2021). *On the evolution of the rules versus discretion debate.* Hoover Institution, Economics Working Paper Series, n. 21105.

Dennis, R. (2006). The policy preferences of the US Federal Reserve. *Journal of Applied Econometrics*, 21(1), 55-77.

De Rezende, R.B. and A. Ristiniemi (2023*).* A shadow rate without a lower bound constraint. *Journal of Banking and Finance*, 146, 106686.

Detmers, G.A., Karagedikli, O. and R. Moessner (2018). *Quantitative or qualitative forward guidance: Does it matter? The case of New Zealand*. CESifo Working Paper Series, n.7314.

Deyris, J., Stellinga, B. and M. Thiemann (2025). Central bankers as migrating birds: How inflation shapes the rhetorical strategies of doves and hawks. *Journal of Common Market Studies*, 63, 1-24.

Di Maggio, M. and M. Kacperczyk (2017). The unintended consequences of the zero lower bound policy. *Journal of Financial Economics*, 123, 59-80.

Dincer, N., Eichengreen, B. and P. Geraats (2022). Trends in monetary policy transparency: Further updates. *International Journal of Central Banking*, 18(1), 331-348.

Dincer, N., Eichengreen, B. and J.J. Martinez (2024). Central bank independence: Views from history and machine learning. *Annual Review of Economics*, 16(1), 393-428.

Djourelova, M., Ferroni, F., Melosi, L. and A.T. Villa (2025*). One Fed, many voices: Coordinated communication vs. transparent debate.* Federal Reserve Bank of Chicago, Working Paper Series, n. 23.

Di Pace, F., Mangiante, G. and R.M. Masolo (2025). Do firms expectations respond to monetary policy announcements?. *Journal of Monetary Economics*, 149, 103648.

Dixit, A. and L. Lambertini (2001). Monetary-fiscal interactions and commitment versus discretion in a monetary union. *European Economic Review*, 45, 977-987.

Dixit ,A. and L. Lambertini (2003). Interactions of commitment and discretion in monetary and fiscal issues. *American Economic Review*, 93, 1522-1542.

Dobrew M., Gerke R., Kienzler D. and A. Schwemmer (2023). *Monetary policy rules under bounded rationality*. Deutsche Bundesbank Discussion Papers, n.18.

Dolado, J. J., María-Dolores, R. and M. Naveira (2005). Are monetary-policy reaction functions asymmetric? The role of nonlinearity in the Phillips curve. *European Economic Review*, 49, 485-503.

Drager, L. and M.J. Lamla (2017). Explaining Disagreement on interest rates in a Taylor rule setting. *Scandinavian Journal of Economics*, 119(4), 987-1009.

Drehmann, M., Borio, C. and K. Tsatsaronis (2012). *Characterising the financial cycle: Don't lose sight of the medium term!*. BIS Working Paper Series, n.380.

Driffill J. and Z. Rotondi (2007). *Inertia in Taylor rules*. CEPR Discussion Paper Series, n.6570.

Dundua, M. and O. Gorgodze (2022). *Application of artificial intelligence for monetary policy-making*. National Bank of Georgia, NBG Working Papers, n.2.

Dupraz, S., Guilloux-Nefussi S. and A. Penalver (2020). *A pitfall of cautiousness in monetary policy*. Banque de France, Working Paper Series, n.758.

Durkò R. (2023). How major central banks reacted to the Inflationary wave of the early 2020s – The case of the ECB. *Financial and Economic Review*, 22(4), 31-57.

Dvalishvili A., Dvalishvili M. and T. Thurston (2024). Nominal GDP growth targeting vs. Taylor rules in a model with financial frictions. *Economic Modelling*, 141, 106900.

Ebert, S. and D. Wiesen (2014). Joint measurement of risk aversion, prudence, and temperance. *Journal of Risk and Uncertainty*, 48, 231-252.

ECB (2021). *Economics bulletin*. Technical report, Issue n. 8.

Eichler, S. and T. Lahner (2018). Regional, individual and political determinants of FOMC members' key macroeconomic forecasts. *Economics Journal of Forecasting,* 37, 119–132.

Eggertsson, G. B. and E. Le Borgne (2010). A political agency theory of central bank independence. *Journal of Money, Credit and Banking,* 42(4), 647–677.

Ehrmann, M., Gaballo, G., Hoffmann, P. and G. Strasser (2019). Can more information raise uncertainty? The international evidence on forward guidance. *Journal of Monetary Economics*, 108, 93-112.

Ehrmann, M. and A. Wabitsch (2021). *Central bank communication with non-experts: A road to nowhere?*. ECB Working Paper Series, n.2594.

Ehrmann, M., Tietz, R. and B. Visser (2026). Voting right rotation, speeches, and financial market reactions: Evidence from the U.S. Federal Open Market Committee. *Journal of International Money and Finance*, 164, 103574.

Eijffinger, S.C. and J. de Haan (2026). *Central bank independence: An update*. Goethe University Frankfurt, Institute for Monetary and Financial Stability, IMFS Working Paper Series, n.229.

Eijffinger, S.C. and M. Hoeberichts (1998). The trade- off between central bank independence and conservativeness. *Oxford Economic Papers* 50 (3), 397-411.

Eijffinger, S. C., Mahieu, R. and L. Raes (2013). *Estimating the preferences of central bankers: An analysis of four voting records*. CEPR Discussion Paper Series, n. 9602.

Eijffinger, S. C., Mahieu, R. and L. Raes (2015). *Hawks and doves in the FOMC*. CEPR Discussion Paper Series, n. 10442.

Eijffinger, S. C., Mahieu, R. and L. Raes, (2018). Inferring hawks and doves from voting records. *European Journal of Political Economy*, 51, 107-120.

Eijjffinger, S.C. and D. Masciandaro (2018). *Hawks and doves: Deeds and words. Economics and politics of monetary policymaking.* London, CEPR Press.

Ellingsen, T. and U. Soderstrom (2001). Monetary policy and market interest rates. *American Economic Review,* 91(5), 1594-1607.

Ellington, M. (2021). The empirical relevance of the shadow rate and the zero lower bound. *Journal of Money, Credit and Banking,* 54(6), 1605-1635.

El-Shagi, M. and Y. Ma (2023). Taylor rules around the world: Mapping monetary policy. *Economics Letters*, 232, 111275.

Equiza,J., Gimeno, R. Moreno, A. and C. Thomas (2024). Evaluating the yield curve effects of central bank asset purchases under a forward-looking supply factor. *European Economic Review*, 165, 104744.

Erhart, S., Lehment, H. and J.L. Vasquez Paz (2010). Monetary policy committee size and inflation volatility. *International Economics and Economic Policy*, 7(4), 411-421.

European Central Bank (2021). *The ECB's monetary policy strategy statement*. ECB website, July, 8.

Evans, C.L. (2017). *The future of Odyssean and Delphi guidance*. European Central Bank Conference, Frankfurt, November 17.

Fabo, B., Jancovà, M. and E. Kempf (2024). Fifty shades of QE: Robust evidence. *Journal of Banking and Finance*, 159, 107065.

Farvaque, E. (2002). Political determinants of central bank independence. *Economics Letters*, 77(1), 131-135.

Farvaque, E., Hammadou, H. and P. Stanek (2011). Selecting your inflation targeters: Background and performance of monetary policy committee members. *German Economic Review,* 12 (2), 223–238.

Farvaque, E., Parent, A. and P. Stanek, P. (2018). Debates and dissent inside the FOMC during WWII. *Business History*, December, 1-25.

Favara, G. and Giordani P. (2009). Reconsidering the role of money for output, prices and interest rates. *Journal of Monetary Economics*, 56(3), 419-430.

Favaretto F. and D. Masciandaro (2016). Doves, hawks and pigeons: Behavioural monetary policy and interest rate inertia. *Journal of Financial Stability*, 27(4), 50-58.

Favero, C. and R. Rovelli (2003). Macroeconomic stability and the preferences of the FED: A formal analysis, 1961-98. *Journal of Money, Credit and Banking*, 35(4), 545-556.

Federal Open Market Committee (2020). *Statement on longer-run goals and monetary policy strategy*. FED website, August, 27.

Federal Open Market Committee (2025). *Minutes of the Federal Open Market Committee*. Federal Reserve System, October 28-29.

Federal Reserve Bank of Atlanta, 2025. *Taylor rule utility*. Center for Quantitative Economic Research. Atlantafed.org.

Federal Reserve Bank of Cleveland, 2025. *Simple monetary policy rules*. Clevelandfed.org.

Fendel, R. and M. Frenkel (2006). Five years of single European monetary policy in practice: Is the ECB rule-based?. *Contemporary Economic Policy*, 24, 106-115.

Fendel, R., Frenkel, M. and J. Rulke (2011). Ex-ante Taylor rule – Newly discovered evidence from the G7 countries. *Journal of Macroeconomics*, 2(3), 235-271.

Fendel, R., Heins, J. and O. Mohr (2020). The effect of the ECB's forward guidance on interest rate forecast. *International Journal of Economics and Finance*, 12(8), 52-64.

Filardo, A. and B. Hofmann (2014). Forward guidance at the zero lower bound. *BIS Quarterly Review*, March, 37-53.

Filardo, A., Hubert, P. and P. Rungcharoenkitkul (2022). Monetary policy reaction function and the financial cycle. *Journal of Banking and Finance*, 142,106536.

Firrell, A. and K. Reinold (2020). *Uncertainty and voting on the Bank of England's Monetary Policy Committee*. Bank of England, Staff Working Paper Series, n.898.

Fisher, S. (1977). Long-term contracts, rational expectations, and the optimal money supply rule. *Journal of Political Economy*, 85, 191-206.

Fluch, M. (2007). Selected central banks' economic and financial literacy programs. ONB, *Monetary Policy and the Economy*, Third Quarter, 85-104.

Forder, J. (1996). On the assessment and implementation of "institutional" remedies. *Oxford Economic Papers*, 48, 39-51.

Fourcans, A. and R. Vranceanu (2004). The ECB interest rate rule under the Duisenberg presidency. *European Journal of Political Economy*, 20, 579-595.

Fraccaroli, N., Sowerbutts, R. and A. Whitworth (2024). Does regulatory and supervisory independence affect financial stability?. *Journal of Banking and Finance*, 170, 107318.

Franzese, R.J. (1999). Partially independent central banks, politically responsive governments, and inflation. *American Journal of Political Science,* 43(3), 681–706.

Fratianni, M. and H. Huang (1994). Reputation, central bank independence and the ECB. In P.L. Siklos, (ed.), *Varieties of Monetary Reforms*, Boston MA., Springer, 165-191.

Friedman, M. (1962). Should there be an independent monetary authority?. in L.B. Yeager (ed.), *Search of a Monetary Constitution*, Cambridge MA, Harvard University Press, 114-118.

Friedman, M. (1968). The role of monetary policy. *American Economic Review*, 56, 1-17.

Fry, M. (1998). Assessing central bank independence in developing countries: Do actions speak louder than words?. *Oxford Economic Papers*, 50, 512-529.

Fry, M., De Anne, J., Mahadeva, L., Roger, S. and G. Sterne (2000). Key issues in the choice of monetary policy framework. In L. Mahadeva and G. Sterne, (eds.), *Monetary Frameworks in a Global Context*. London, Routledge.

Gabaix X. (2020). A behavioral new Keynesian model. *American Economic Review*, 110(8), 2271-2327.

Gabillon, E. and D. Martimort (2007). The benefits of central bank's political independence. *European Economic Review*, 48, 353-378.

Gagnon M.H. and C. Gimet (2023). One size may not fit all: Financial fragmentation and European monetary policies. *Review of International Economics*, 31(1), 305-340.

Gali, J. and T. Monacelli, T. (2005). Monetary policy and exchange rate volatility in a small open economy. *Review of Economic Studies*, 72(3), 707-734.

Galimberti, J.K. and M.L. Moura (2013). Taylor rules and exchange rate volatility in a small open economy. *Journal of International Money and Finance*, 32(1), 1008-1031.

Garriga, A.C. (2025). Revisiting central bank independence in the world: An extended dataset. *International Studies Quarterly*, 69(2), 1-12.

Garriga, A.C. and C.M. Rodriguez (2025). *Balancing act or policy pitfall? The effects of central bank dual mandate*, MPRA Working Paper Series, n.125925.

Gavin, M. and R.J. Mandal (2000). *Forecasting inflation and growth: Do private forecasts match those of policymakers?*. Federal Reserve Bank of St. Louis, Working Paper Series, n.26A.

Gavin, M. and M. Manger (2023). Populism and de facto central bank independence. *Comparative Political Studies*, 56(8), 1189–1223.

Gerlach-Kristen, P. (2008). The role of the chairman in setting monetary policy: Individualistic vs. autocratically collegial MPCs. *International Journal of Central Banking*, 4(3), 119-150.

Gerlach-Kristen, P. (2009). Outsiders at the Bank of England's MPC. *Journal of Money, Credit and Banking*, 41(6), 1099-1115.

Gerling, K., Gruner, P.H., Kiel, A. and E. Schulte (2005). Information acquisition and decision making in committees: A survey. *European Journal of Political Economy*, 21(3), 563-597.

Gertler, M. and P. Karadi (2015). Monetary policy surprises, credit costs, and economic activity. *American Economic Journal: Macroeconomics*, 7(1), 44-76.

Ghafoori, E., Ip, E. and J. Kabatek (2021). The impact of a large-scale financial education intervention on retirement saving behaviors and portfolio allocation: Evidence from pension fund data. *Journal of Banking and Finance*, 106195.

Gillitzer, C., Prasad, N. and T. Robinson (2021). Political attitude and inflation expectations: Evidence and implications. *Journal of Money, Credit and Banking*, 53(4), 605-634.

Giordano, R. and P. Tommasino (2011). What determine debt intolerance? The role of political and monetary institutions. *European Journal of Political Economy*, 27, 471-484.

Glandon, P.J., Kuttner, K., Mazumder, S. and C. Stroup (2023). Macroeconomic research, present and past. *Journal of Economic Literature*, 61(3), 1088-1126.

Gnan, E., Silgoner, M.A. and B. Weber (2007). Economic and financial education: Concepts, goals and measurement. ONB, *Monetary Policy and the Economy*, Third Quarter, 28-49.

Gnan, E. and R. Holzmann (2023). *Should central banks raise inflation targets?*. Suerf Policy Note Series, n.304.

Gohlmann, S. and R. Vaubel (2007). The educational and occupational background of central bankers and its effect on inflation: An empirical analysis. *European Economic Review*, 51 (4), 925–941.

Gokan, Y. and S.T. Turnvsky (2023). Taylor rules: Consequences for wealth and income inequality. *Journal of Macroeconomics,* 77, 103544.

Gonzales-Astudillo, M. and R. Tanvir (2026). Hawkish or Dovish? Inferring intended monetary policy from the Fed's dot plot. *Journal of Economic Dynamics and Control*, 185, 105294.

Goodfriend, M. (1991). Interest rates and the conduct of monetary policy. *Carnegie-Rochester Conference Series on Public Policies*, 44(6), 1033-1061.

Goodhart. C.A. (2013). The endogeneity of money. In P. Arestis, M. Desai and S. Dow, (eds.), *Money, macroeconomics and Keynes*. London, Routledge, 14-24.

Goodhart, C.A. and R. Lastra (2018). Populism and central bank independence. *Open Economies Review*. 29, 49–68.

Goodhead, R. (2024). The economic impact of yield curve compression: Evidence from euro area forward guidance and unconventional monetary policy. *European Economic Review*, 164, 104716.

Goodman, J. B. (1991). The politics of central bank independence. *Comparative Politics, 23*(3), 329–349.

Gorodnichenko, Y., Pham, T. and O. Talavera (2023). The voice of monetary policy. *American Economic Review*. 113(2), 548-584.

Gorodnichenko, Y. , Pham, T. and O. Talavera (2024). *The voice of monetary policy*. NBER Working Paper Series, n.28592.

Gorodnichenko, Y. , Pham, T. and O. Talavera (2025). Central bank communication on social media: What, to whom, and how?, *Journal of Econometrics,* 249(C), 105869.

Gorter, J., Jacobs, J. and J. de Haan (2008). Taylor Rules for the ECB using expectations data. *Scandinavian Journal of Economics*, 110(3), 473-488.

Gourinchas, P. O. and M. Obstfeld (2011*). Stories of the twentieth century for the twenty–first*. NBER Working Paper Series, n. 17252.

Guiso, L. (2010). *A trust-driven financial crisis: implications for the future of financial markets*. EUI Working Paper Series, n. 7.

Guzzo, V. and A. Velasco (1999). The case for a populist central banker. *European Economic Review*, 43, 1317-1344.

Greenwood, R., Hanson, S. and D. Vayamos (2015). *Forward guidance in the yield curve: Short rates versus bond supply*. NBER Working Paper Series, n. 21750.

Grilli, V. (1989). Seignorage in Europe. In M. De Cecco and A. Giovannini, (eds.*), A European Central Bank?,* Cambridge University Press, Cambridge, New York.

Grilli, V., Masciandaro, D. and G. Tabellini (1991). Political and monetary institutions and public financial policies in the industrial countries. *Economic Policy*, 6(13), 341-392.

Groff, D. (2020). Comparing shadow rates in monetary policy shock identification. *Economics Bulletin*, 40(2), 1781-1796.

Gross J. and J. Zanhner (2021). What is on the ECB's mind? Monetary policy before and after the global financial crisis. *Journal of Macroeconomics*, 68, 103-292.

Gurkaynak, R. S., Sack, B., and E. Swanson (2005). Do actions speak louder than words? The response of asset prices to monetary policy actions and statements. *International Journal of Central Banking*, 1(1), 55-93.

Haba, S., Hirano, R., Ito, Y. and S. Kaihatsu (2026). *Changes in perceptions about monetary policy: Estimating the policy reaction function using market survey data*. Bank of Japan, Working Paper Series, n. 26.

Hafner, C. M. and A.R. Lauwers (2017). An augmented Taylor rule for the Federal Reserve's response to asset prices. *International Journal of Computational Economics and Econometrics,* 7(1-2), 115-151.

Hahn, V. (2016). Designing monetary policy committees. *Journal of Economic Dynamics & Control*, 65, 47-67.

Haldane, A., Macaulay, A. and M. McMahon (2020). *The 3 e's of central bank communication with the public*. Bank of England, Staff Working Papers, n.847.

Haldane, A. and M. McMahon (2018). Central bank communications and the general public. *American Economic Association Papers and Proceedings*, 108, 578-583.

Hamilton, J.D., Pruitt, S. and S. Borger (2011). Estimating the market-perceived monetary policy rule. *American Economic Journal: Macroeconomics*, 3(3), 1-28.

Hansen, S., McMahon, M. and Andrea Prat (2014). Transparency and Deliberation within the FOMC: A computational linguistics approach. *Quarterly Journal of Economics*, 129(2), 801-870.

Hansen, L.P. Lucas, R., Prescott, E., Shultz, G., Heller, R., Jordan, J. Orphanides, A., Poole, W., Bordo, M., Boskin, M., Calomiris, C., Chari, V., Cochrane, J., Cogan, J., Davis, S., Goodfriend, M., Hess, G., Ireland, P., Levy, M., McCallum, B., Meltzer, A., O'Driscoll, G., Ohanian, L., Sumner, S. and J.Taylor (2016). *Statement on Policy Rule Legislation*. Stanford University, February 9.

Hansen, S. and M. McMahon (2016a). First impressions matter: Signalling a source of policy dynamics. *Review of Economic Studies*, 83(4), 1645-1672.

Hansen, S. and M. McMahon (2016b). Shocking language: understanding the macroeconomic effects of central bank communication. *Journal of International Economics*, 99(1), S114-S133.

Hartwell, C.A. (2018). On the impossibility of central bank independence: Four decades of time (and intellectual) inconsistency. *Cambridge Journal of Economics*, 43(1), 61-84.

Hastings. J.S., Madrian, B.C. and W. L. Skimmyhorn (2013). Financial literacy, financial education, and economic outcomes. *Annual Review of Economics*, 5, 347-373.

Hasui, K., Kobayashi, T. and T. Sugo (2021). Optimal irreversible monetary policy. *European Economic Review*, 134, 103707.

Hattori, M., Mineyama, T. and J. Nakajima (2025). Taylor rule deviations across horizons: A practical tool for monetary policy. *Journal of Money, Credit and Banking*, doi: 10.1111/jmcb.70007.

Hayford, M. D. and A.G. Malliaris (2005). How did the Fed react to the 1990s stock market bubble? Evidence from an extended Taylor rule. *European Journal of Operational Research*, 163, 20-29.

Hayo, B. (1998). Inflation culture, central bank independence and price stability. *European Journal of Political Economy,* 14(2), 241–263.

Heimberger, P. (2023). The cyclical behaviour of fiscal policy: A meta-analysis. *Economic Modelling*, 123(6), 106259.

Heimonen, K., Junttila, J. and S. Karkkainen (2017). Stock market and exchange rate information in the Taylor rule: Evidence from OECD countries. *International Review of Economics & Finance*, 51, 1-18.

Heinemann, F. and J. Kemper (2026). *ECB's Council members' objectives and public debt at home – Evidence from an AI-based textual analysis*. ZEW Discussion Paper Series, n.5.

Henderson, D.W. and W. McKibbin (1993). A comparison of some basis monetary policy regimes for open economies: Implications of different degrees of instrument adjustment and wage persistence. *Carnegie – Rochester Series on Public Policy*, 39, 221-317.

Hetzel, R.L. (2024a). Monetarism and monetary policy, *Southern Economic Journal*, 91(4), 1347-1371.

Hetzel, R.L. (2024b). *Enhancing FOMC transparency: Making implicit monetary policy rules explicit*. George Mason University, Mercatus Center, Policy Brief, July.

Hetzel, R.L. (2026). Making Federal Reserve monetary policy transparent and accountable. *Journal of Risk and Financial Management*, 19(1), 24-52.

Hielscher, K. and G. Markwardt (2012). The role of political institutions for the effectiveness of central bank independence. *European Journal of Political Economy,* 28(3), 286–301.

Hofmann, B. and B. Bogdanova (2012). Taylor rules and monetary policy: A global "Great Deviation"?. *BIS Quarterly Review*, September, 37-49.

Hogan, T.L. (2022). The calculus of dissent: Bias and diversity in FOMC projections. *Public Choice*, 191, 105-135.

Hohberger, S., Ratto M. and L. Vogel (2023). The macroeconomic effects of unconventional monetary policy: Comparing euro area and US models with shadow rates. *Economic Modelling*, 17, 106438.

Horvath, R. (2018). Financial market fragmentation and monetary transmission in the euro area: What do we know?. *Journal of Economic Policy Reform*, 21(4), 319-334.

Howes, C., Dordal i Carreras, M.D., Colbion O. and Y. Gorodnichenko (2025). *How monetary policy is made: Lessons from Historical FOMC discussions*. CEPR Discussion Paper Series, n. 20968.

Hughes Hallet, A., Weymark, D., (2005). Independence before Conservatism: Transparency, Politics and Central Bank Design, *German Economic Review*, 6, 1-21.

Huther, J.W. and J.S. Seligman (2013). *Yield curve impact of forward guidance and maturity extension programs*. Federal Reserve Board, Divisions of research & Statistics and Monetary Affairs, Finance and Economics Discussion Series, n.72.

Ichiue, H. and Y. Ueno (2013). *Estimating term premia at the zero bound: An analysis of Japanese, US, and UK yields*. Bank of Japan Working Paper Series, n.8.

Ichiue, H. and Y. Ueno (2015). Monetary policy and the yield curve at zero interest. *Journal of the Japanese and International Economies*, 38, 1-12.

Ihrig, G. and C. Waller (2024). *The Federal Reserve responses to the post-Covid period of high inflation*. Board of Governors of the Federal Reserve System, Fed Notes, February 14.

International Monetary Fund (2015). *Monetary policy and financial stability*. IMF Staff Report, September.

International Monetary Fund (2017). *Negative interest rate policies.* Staff Report, August.

Ioannidou, V., Kokas, S., Lambert, T. and A. Michaelides (2023). *(In)dependent central banks*. CEPR Discussion Paper Series, n. 17802.

Iskrev, N., Lourenco, R. and C. Soares (2021). *Indicators of monetary policy stance and financial conditions: An overview*. Banco de Portugal Economic Studies, Economic Bulletin and Financial Stability Report, 3-26.

Issing, O. (2005). Communication, transparency, accountability: Monetary policy in the twenty-first century. Federal Reserve Bank of St. Louis, *Review,* 87*,* 65-136.

Istrefi, K. (2016). Central bank's beliefs about inflation and interest rates. *European Economic Review*, 85, 147-167.

Istrefi, K. (2017). *In Fed watchers eyes: Hawks, doves and monetary policy*. Banque de France, Working Paper Series, n.725.

Istrefi, K., Rzhevskyy, A.N., Papell, D.H. and R. Prodan (2019). *(Hawks versus doves) versus (rules versus discretion)*. SSRN, 3540831.

Ireland, P.N. (2004). Money's role in the monetary business cycle. *Journal of Money, Credit and Banking*, 36, 969-983.

Ireland, P.N. (2023). US monetary policy, 2020-23: Putting the quantity theory to the test. *Journal of Applied Corporate Finance*, 35(3), 42-48.

Ireland, P.N. (2024). The devolution of Federal Reserve monetary policy strategy. *Southern Economic Journal*, 91, 1247-1264.

Ilbas, P. (2012). Revealing the preferences of the US Federal Reserve. *Journal of Applied Econometrics*, 27(3), 440-473.

Janus, J. and K. Mucha (2025). Unconventional monetary policies and the conservative central banker principle: Two interpretations. In E. Farvaque and P. Stanek, (eds.), *Are central banks still conservative? framework, monetary policy and inflation after Rogoff*. Cheltenham, UK, Edward Elgar Publishing, 59-94.

Jappelli, T. (2010). Economic Literacy: An International Comparison. *Economic Journal,* 120(548), 429-451.

Jarocinski, M. (2024). Estimating the Fed's unconventional policy shocks. *Journal of Monetary Economics*, 144, 103548.

Jarocinski, M. and P. Karadi (2020). Deconstructing monetary policy surprises: The role of information shocks. *American Economic Journal: Macroeconomics*, 12(2), 1-43.

Jawadi F., Rozin P. and A.I. Cheffou (2024). Toward green central banking: proposing an augmented Taylor rule. *Energy Economics*, 107539.

Jensen, H. (1997). Credibility of optimal monetary delegation. *American Economic Review*, 87(5), 911-920.

Jerger, J. (2002). How strong is the case for a populistic central banker? A note. *European Economic Review*, 46(3), 623-632.

Jia, C. (2023). The information effect of monetary policy and the case for policy commitment. *European Economic Review*, 156, 104468.

Jia, C. and J.C. Wu (2023). Average inflation targeting: Time inconsistency and ambiguous communication. *Journal of Monetary Economics*, 138, 69-86.

Jia, P., Shen H. and S. Zheng (2023). Monetary policy rules and opinionated markets. *Economics Letters*, 223, 110995.

Jones, C., Kulish, M. and J. Morley (2021). *A structural measure of the shadow federal funds rate*. Federal Reserve Board, Finance and Economics Discussion Series, n.64.

Jonsson, M. and G. Katinic (2017). Is the Swedish monetary policy in line with the Taylor rule?. Sveriges Riksbank, *Economic Commentaries*, n.4, 1-9.

Jordà, Ò., Schularick, M. and A.M. Taylor (2010). Financial crises, credit booms and external imbalances: 140 years of lessons. *IMF Economic Review*, 59(2), 340–378.

Judd, J.P. and G.D. Rudebush (1988). Taylor's rule and the Fed: 1970:1997. Federal Reserve Bank of San Francisco, *Economic Review*, n.3, 3-40.

Jung, A. (2013). Policy makers interest rates preferences: Recent evidence for three monetary policy committees. *International Journal of Central Banking*, 93, 45-192.

Jung, A. and G. Kiss (2012). *Voting by monetary policy committees: Evidence from the CEE inflation targeting countries*. MNB Working Paper Series, n. 2.

Jung, A. and S. Latsos (2014). *Do Federal Reserve Bank president have a regional bias*?. ECB Working Paper Series, n. 1731.

Kahn, A. (2015). Taylor Rules or Target Rules?. FED of Kansas City, *Macro Bulletin*, August, 1-4.

Kakhbod, A., Kermani, A. and B. Maciel (2026). *In the Fed's mind*. NBER Working Paper Series, 35016.

Karadi, P. and A. Nakov (2021). Effectiveness and addictiveness of quantitative easing. *Journal of Monetary Economics*, 117, 1096-1117.

Kazinnik, S. and E. Brynjolfsson (2025). *AI and the Fed*. NBER Working Paper Series, n.33998.

Kedia, J. (2023). *Following the Taylor rule has the fed learned from its own "success"?*. Cato Institute, Working Paper Series, n.77.

Keefer, P. and D. Stasavage (2003). The limits of delegation: Veto players, central bank independence, and the credibility of monetary policy. *American Political Science Review, 97*(03), 407–423.

Kiley, M.T. and F.S. Mishkin (2025). Central banking post crises. In A.N. Berger, (ed.), *The Oxford Handbook of Banking*, Oxford, Oxford University Press, Chapter 23, 662-710.

Kim, J. and S. Pruitt (2017). Estimating monetary policy rules when nominal interest rates are stuck at zero. *Journal of Money, Credit and Banking*, 49(4), 585-602.

Kinateder, H. and N. Wagner (2017). Quantitative easing and the pricing of EMU sovereign debt. *Quarterly Review of Economics and Finance*, 66, 1-12.

Klein, M. and M.T.J. Neumann (1990). Seignorage: What is it and who gets it. *Weltwirtschaftliches Archiv*, 205-221.

Klose, J. (2018). *Are eastern European Taylor reaction functions asymmetric in inflation or output? Empirical evidence for four countries*. MAGKS Joint Discussion Paper Series in Economics, n.8.

Klose, J. (2024). Monetary policy rules and the ECB rotation model. *Journal of Economic Asymmetries*, 30, e00384.

Kocherlakota, N. (2016). Rules versus discretion: A reconsideration. In: *Brooking Papers on Economic Activity*, Brooking Institution Press, 1-55.

Kocherlakota, N. (2023). *Asymmetries in Federal Reserve objectives*. NBER Working Paper Series, n. 31003.

Koeda, J. and B. Wei (2023). *Quantifying forward guidance and yield curve control*. Federal Reserve Bank of Atlanta, Working Paper Series, n.8.

Kokoszczynski R. and J. Mackiewicz-Lyziak (2023). Making monetary policy in Poland: Are Polish hawks and doves different?. *European Journal of Political Economy*, 81, 102481.

Konchitchki, Y., Moore, D.A. and B. Zhang (2023). *Predictable errors in monetary policy communication and decisions*. SSRN: https://ssrn.com/abstract=4592687.

Krippner, L. (2013). Measuring the stance of monetary policy in zero lower bound environments. *Economic Letters*, 118(1), 135-138.

Krishnamurthy, A., Nagel, S. and A. Vissing-Jorgensen (2017). ECB policies involving government bond purchases: Impact and channels. *Review of Finance*, 22(1), 1-44.

Krishnamurthy, A. and A. Vissing-Jorgensen (2017). *The effects of quantitative easing on interest rates: Channels and implications for policy*. NBER Working Paper Series, n.17555.

Kwabi, F.O., Boateng, A. and M. Du (2020). Impact of central bank independence and transparency on international equity portfolio allocation: A cross-country analysis. *International Review of Financial Analysis*, 69, 101464.

Kydland, F.E. and E.C. Prescott (1977). Rules rather than discretion: The inconsistency of optimal plans. *Journal of Political Economy*, 85(3), 473-491.

Lagarde, C. (2020). *Our response to the coronavirus emergency*. The ECB Blog, March, 19.

Lagarde, C. (2022). *Monetary policy normalization in the Euro area*. The ECB Blog, May, 23.

Lane, P.R. (2025). *Inflation deviations and monetary policy*. Keynote Speech, Workshop on Exchange Rates, Banka Slovenij, Banca d'Italia, Bank for International Settlements, European Central Bank, Banque Nationale de Belgique, December 3.

Leeper, E.M. (1991). Equilibrium under active and passive monetary and fiscal policies. *Journal of Monetary Economics.* 27, 129-147.

Leijonhufvud, A. (1973). Life among the Econ. *Economy Inquiry*, 11(3), 327-337.

Levieuge, G. and Y. Lucotte (2014). A Simple empirical measure of central banks' conservatism. *Southern Economic Journal*, 81(2), 409-434.

Levin, A., Wieland, V. and J.C. Williams (1999). Robustness of simple monetary policy rules under model uncertainty. In J.B. Taylor (ed), *Monetary Policy Rules*, Chicago, University of Chicago Press, 263-318.

Levin, A., Wieland, V. and J.C. Williams (2003). The performance of forecast-based monetary policy rules under model uncertainty. *American Economic Review*, 93(3), 622-645.

Levrero, E.S. (2024). The Taylor rule and its aftermath: An interpretation along Classical-Keynesian Lines. *Review of Political Economy*, 36(2), 581-599.

L'Huillier, J.P., Phelan, G. and W.R. Zame (2025). The slope of the Phillips curve and the mandate of the central bank. *Review of Economic Studies*, rejected and resubmitted.

Lippi, F. (2002). Revisiting the case for a populistic central banker. *European Economic Review*, 46, 601-612.

Lohmann, S. (1992). Optimal commitment in monetary policy: Credibility versus flexibility. *American Economic Review*, 82, 401-46.

Lohmann, S. (1997). Partisan control of the money supply and decentralized appointment powers. *European Journal of Political Economy,* 13(2), 225–246.

Lombardi, M. and F. Zhu (2014). *A shadow policy rate to calibrate US monetary policy at the zero lower bound.* BIS Working Paper Series, n. 452.

Lu, Y.K., King, R.G. and E. Pasten (2016). Optimal reputation building in the New Keynesian model. *Journal of Monetary Economics*, 84, 233-249.

Lubik, T. and F. Schorfheide (2007). Do central banks respond to exchange rate movements? A structural investigation. *Journal of Monetary Economics*, 54, 1069-1087.

Lucas, R. (1976). Econometric policy evaluation: A critique. *Carnegie-Rochester Conference Series on Public Policy.* 1, 19-46.

Lucca, D. and F. Trebbi (2009). *Measuring central bank communication: An automated approach with application to FOMC statements.* NBER Working Paper Series, n. 15367.

Lunsford, K.G. (2020). Policy language and information effects in the early days of Federal Reserve forward guidance. *American Economic Review*, 110(9), 2899-2934.

Lusardi, A. and O.S. Mitchell (2023). The importance of financial literacy: Opening a new field. *Journal of Economic Perspectives*, 37(4), 137-154.

Lybek, T. and J.A. Morris (2004). Central bank governance: A survey of boards and management. *IMF Working Paper Series*, n.226.

Ma, W., Zhang, R., Han, L. and W. Lei (2025). Divergent relationships between exchange rate pass-through and policy rates across economies: An extension of the Taylor rule. *Finance Research Letters*, 106456.

Madeira, C. (2025). *The life experience of central bankers and monetary policy decisions: A cross country dataset*. Bank for International Settlements, BIS Working Papers, n. 1304.

Madeira, C., Madeira, J. and P.S. Monteiro (2023). The origins of monetary policy disagreements: The role of supply and demand shocks. *Review of Economics and Statistics*, 105, 01383.

Malmendier, U., Nagel, S. and Z. Yan (2021). The making of hawks and doves: Inflation experiences on the FOMC. *Journal of Monetary Economics*, 117, 19-42.

Martin, C. and C. Milas (2004). Modelling monetary policy: Inflation targeting in practice. *Economica*, 71, 209-221.

Masciandaro, D. (1995). Designing a central bank: Social player, monetary agent, or banking agent?. *Open Economy Review*, 6, 399-410.

Masciandaro, D. (2005). E pluribus unum? Authorities design in financial supervision: Trends and determinants. *Open Economies Review,* 17(1), 73-102.

Masciandaro, D. (2007). Divide et impera: Financial supervision unification and central bank fragmentation effect. *European Journal of Political Economy*, 23(2), 285-315.

Masciandaro, D. (2009). Politicians and financial supervision outside the central bank: Why do they do it?. *Journal of Financial Stability*, 5(2), 124-147.

Masciandaro, D. (2022). Independence, conservatism, and beyond: Monetary policy, central bank governance and central bank preferences (1981-2021). *Journal of International Money and Finance*, 122, 102579.

Masciandaro, D. (2023). How elastic money should be: Flexible monetary policy rules from the Great Moderation to the New Normal Times (1993-2023). In P. Savona and R.S. Masera, (eds.) *One Hundred Years After Keynes' Tract on Monetary Reform*, Switzerland, Springer Nature, 61-82.

Masciandaro, D., O. Peia and D. Romelli (2024). Central bank communication and social media: From silence to twitter. *Journal of Economic Surveys*, 38(2), 365-388.

Masciandaro, D. and F. Passarelli (2020). Populism, political pressure and central bank (in) dependence. *Open Economies Review*, 31, 691–705.

Masciandaro, D., Profeta, P. and D. Romelli (2023*).* Gender and monetary policymaking: Trends, drivers and effects. *American Law and Economic Review*, 2023, forthcoming.

Masciandaro, D. and D. Romelli (2015). Ups and downs of central bank independence from the great inflation to the great recession: Theory, institutions and empirics. *Financial History Review*, 22(3), 259-289.

Masciandaro, D. and D. Romelli (2018). Central bankers as supervisors: Do crises matter?. *European Journal of Political Economy*, 52, 120-140.

Masciandaro, D. and R. Russo (2024). Monetary and macroprudential policies: How to be green? A political economy approach. *Economic Modelling,* 141, 106931.

Masciandaro, D. and A. Volpicella (2016). Macro prudential governance and central banks: Facts and drivers. *Journal of International Money and Finance*, 61, 101-119.

Mavroeidis, S. (2010). Monetary policy rules and macroeconomic stability: Some new evidence. *American Economic Review*, 100(1), 491-503.

Maxfield, S. (1997). *Gatekeepers of growth. The international political economy of central banking in developing countries.* Princeton, Princeton University Press.

Mayordomo, S., Abascal, M., Alonso, T. and M. Rodriguez-Moreno (2015). Fragmentation in the European interbank market: Measures, determinants, and policy solutions. *Journal of Financial Stability*, 16, 1-12.

McCallum, B.T. (1987). The case for rules in the conduct of monetary policy: A concrete example. *Review of World Economics*, 123(3), 415-429.

McCallum, B.T. (1993). Specification and analysis of a monetary policy rule for Japan. Bank of Japan, *Monetary and Economic Studies*, 11, 1-45.

McCallum, B.T. (1995). Two fallacies concerning central bank independence. *American Economic Review*, Papers and Proceedings, 85, 207-211.

McCallum, B.T. (1999). Issues in the design of monetary policy rules. In J.B. Taylor and M. Woodford, (eds.), *Handbook of Macroeconomics*, 1 (C), 1483-1530. Amsterdam, North-Holland Elsevier.

Meade, E.E. and D.N. Sheets (2005). Regional influences on FOMC voting patterns. *Journal of Money, Credit and Banking*, 37(4), 661-677.

Meade, E.E. and D. Stasavage (2008). Publicity of Debate and the incentive to dissent: Evidence from the US Federal Reserve. *Economic Journal*, 118(528), 695-717.

Meade, E.E. and D. L. Thornton (2012). The Phillips curve and US monetary policy: What the FOMC transcripts tell us. *Oxford Economic Papers*, 64(2), 197-216.

Melecki, M. and A.M. Podpiera (2013). Institutional structures of financial sector supervision, their drivers and historical benchmarks. *Journal of Financial Stability*, 9(3), 428-444.

Milesi-Ferretti, G. M. (1995). The disadvantage of tying their hands: On the political economy of policy commitments. *Economic Journal,* 105(433), 1381–1402.

Miller, G. P. (1998). An interest-group theory of central bank independence. *Journal of Legal Studies*, 27(2), 433–53.

Miranda-Agrippino, S. and G. Ricco (2021). The transmission of monetary policy shocks. *American Economic Journal: Macroeconomics*, 13(3), 74-107.

Mishkin, F.S. (2017). *Making discretion in monetary policy more rule – like*. NBER Working Paper Series, n. 24135.

Mishkin, F.S. (2018). Improving the use of discretion in monetary policy. *International Finance*, 21(3), 224-238.

Mishra, P. and A. Reshef (2019). How do central bank governors matter? Regulation and the financial sector. *Journal of Money, Credit and Banking*, 51(2-3), 369-402.

Mitchell, K. and D.K. Pearce (2010). Do Wall Street economists believe in Okun's law and the Taylor rule?. *Journal of Economics and Finance*, 34, 196-217.

Moessner, R. (2015). Reactions of US government bond yields to explicit FOMC forward guidance. *North American Journal of Economics and Finance*, 33, 217-233.

Moessner, R. and P. Rungcharoenkitful (2019). The zero lower bound, forward guidance and how markets respond to news. *BIS Quarterly Review*, March, 83-94.

Molodtsova, T., Nikolsko-Rzhevskyy, A. and D.H. Papell. Taylor rules with real-time data: A tale of two countries and one exchange rate. *Journal of Monetary Economics*, 55, S63-S79.

Molnar, K. and S. Santoro (2014). Optimal monetary policy when agents are learning. *European Economic Review*, 66, 39-62.

Moreira, R.R. (2013). The central bank's endogenous and non-linear credibility in a dynamic stochastic general equilibrium model: Theory and a small computational simulation. *International Journal of Computational Economics and Econometrics*, 3(1-2),2-13.

Moreira, R.R. and E.Z. Monte (2020). Reviewing monetary policy inertia and its effects: The fractional integration approach for an emerging economy. *Quarterly Review of Economics and Finance*, 78, 34-41.

Morelli, P., Pittaluga, G.B. and E. Seghezza (2024). The myth of Federal Reserve de facto independence. *Economics and Politics*, 3, 1675-1702.

Moser, P. (1999). Checks and balances, and the supply of central bank independence. *European Economic Review*, 43(8), 1569–1593.

Muth J. (1961). Rational expectations and the theory of price movements. *Econometrica*, 29(6), 315-335.

Nakamura, E., Riblier, V. and J. Steinsson (2025). *Beyond the Taylor rule*. NBER Working Paper Series, n.34200.

Nakamura, E. and J. Steinsson (2018). High-frequency identification of monetary non-neutrality: The information effect. *Quarterly Journal of Economics*, 133, 1283-1330.

Nakamura, E. and J. Steinsson (2019). *Monetary economics at the NBER*. University of California, Berkeley, December, mimeograph.

Nebot, C. A., Garcia-Solanes, J. and A. Beyaert (2019). New insights into the non-linearity of the ECB Taylor rule. *Applied Economics Letters*, 26(12), 1044-1048.

Nelson, E. (2005). Why money growth determines inflation in the long run: Answering the Woodford critique. *Journal of Money, Credit and Banking*, 40, 1791-1814.

Nelson, E. (2007). Friedman and Taylor on monetary policy rules. Federal Reserve Bank of St. Louis, Review, 90(1), 95-116.

Nelson, E. (2026). *The practice of U.S. monetary policy independence from Martin to Greenspan*. Federal Reserve Board, Finance and Economics Discussion Series, n.14.

Nessen, M. and J. Williams (2005). Average inflation targeting. *Journal of Money, Credit and Banking*, 37, 837-863.

Neuenkirch, S. M. and F. Neumeier (2015). Party affiliation rather than former occupation: The background of central bank governors and its effect on monetary policy. *Applied Economics Letters,* 22 (17), 1424–1429.

Neuenkirch, M. and P. Siklos (2013). What's in a second opinion? Shadowing the ECB and the Bank of England. *European Journal of Political Economy*, 32, 135-148.

Neuenkirch, M. and P. Siklos (2015). How monetary policy is made: Two Canadian tales. *International Journal of Central Banking*, 11(1), 225-250.

Neuenkirch M. and P. Tillmann (2014). Inflation targeting, credibility, and non-linear Taylor rules. *Journal of International Money and Finance*, 41, 30-45.

Nikolsko-Rzhevskyy, A., Prodan, R. and D. Papell (2014). Deviations from rules-based policy and their effects. *Journal of Economic Dynamics and Control*, 49, 4-18.

Nikolsko-Rzhevskyy, A., Prodan, R. and D. Papell (2021). Policy rules and economic performance. *Journal of Macroeconomics*, 68, 103291.

Nitoi, M. and M.M. Pochea (2024). Trust in the central bank, financial literacy, and personal beliefs. *Journal of International Money and Finance*, 143, 103066.

Obstfeld, M. and K. Rogoff (1983).Speculative hyperinflations in maximizing models: Can we rule them out?. *Journal of Political Economy*, 91, 675-687.

Obstfeld, M. and K. Rogoff (1986). Ruling out divergent speculative bubbles. *Journal of Monetary Economics*, 17, 349-362.

Obstfeld, M. and K. Rogoff (2021). Revising speculative hyperinflations in monetary models. *Review of Economic Dynamics*, 40, 1-11-

Oda, N. and K. Ueda (2007). The effects of the Bank of Japan's zero interest rate commitment and quantitative monetary easing on the yield curve: A macro-finance approach. *Japanese Economic Review*, 58(3), 303-328.

Orphanides, A. (2001). Monetary policy rules based on real-time data. *American Economic Review*,91(4), 964-985.

Orphanides, A. (2003). Historical monetary policy analysis and the Taylor rule. *Journal of Monetary Economics,* 50(5), 983-1022.

Orphanides, A. (2008). Taylor rules. In: *The New Palgrave Dictionary of Economics*. London, Palgrave Macmillan, 1-7.

Orphanides, A. (2015). Fear of lift-off: Uncertainty, rules, and discretion in monetary policy normalization. Federal Reserve Bank of St. Louis, *Review*, 98, 173-196.

Orphanides, A. (2023). *The forward guidance trap*. Goethe University Frankfurt, Institute for Monetary and Financial Stability, IMFS Working Paper Series, n.213.

Orphanides, A. (2024). *The Federal Reserve's evolving interpretation and implementation of its mandate*. Goethe University Frankfurt, Institute for Monetary and Financial Stability, IMFS Working Paper Series, n.213.

Orphanides, A. (2025a). *Improving the ECB's policy strategy*. Goethe University Frankfurt, Institute for Monetary and Financial Stability, IMFS Working Paper Series, n.220.

Orphanides, A. (2025b). *Challenges for monetary policy and its communication*. Goethe University Frankfurt, Institute for Monetary and Financial Stability, IMFS Working Paper Series, n.221.

Orphanides, A. and V. Wieland (2013). Complexity and monetary policy. *International Journal of Central Banking*, 9(1), 167-204.

Orphanides, A. and D.W. Wicox (2002). The opportunist approach to disinflation. *International Finance*, 5(1), 47-71.

Ouerk, S., Boucher, C. and C. Lubochinsky (2020). Unconventional monetary policy in the euro area: Shadow rate and light effects. *Journal of Macroeconomics*, 65, 103219.

Ozlale, U. (2003). Price stability versus output stability: Tales of Federal Reserve administrations. *Journal of Economic Dynamics and Control*, 27(9), 1595-1610.

Owusu, B.K. (2020). Estimating monetary policy reaction functions: Comparison between the ECB and Swedish central bank. *Journal of Economic Integration*, 33(3), 396-425.

Owyang, M. and G. Ramey (2004). Regime switching and monetary policy measurement. *Journal of Monetary Economics*, 51(8), 1577-1597.

Panetta, F. (2022). *Normalizing monetary policy in non-normal times*. May, 25, ECB website.

Panetta, F. (2023). *Interview with Handelsblatt*. January, 24, ECB website.

Panetta, F. (2024). *Back to the future: Forward looking considerations on monetary policy normalization*. Bocconi Lecture, November, 19th.

Papadamou, S., Sidiropoulos, M. and A. Vidra (2018). A Taylor rule for EU members. Does one rule fit to all EU member needs?, *Journal of Economic Asymmetries*, 18, e00104.

Papell, D.H. and R. Prodan (2020). Policy rule forward guidance following the Covid-19 recession. *Journal of Financial Stability*, 74, 101321.

Parkin, M. (2012). C*entral bank laws and monetary policy outcomes: A three decade perspective*. University of Western Ontario, Economic Policy Research Institute, EPRI Working Paper Series, n. 1.

Passarelli, F. and A. Del Ponte (2020). Prospect theory, loss aversion, and political behavior. *Oxford Research Encyclopedia of Politics*, https://doi.org/ 10.1093/acrefore/9780190228637.013.947.

Peersman, G. and F. Smets (1999). The Taylor rule: A useful monetary policy benchmark for the Euro area?. *International Finance*, 2(1), 85-116.

Pereira, M. and J. Tavares (2019). *Extracting implicit country weights in ECB's monetary policy*. CEPR Discussion Paper Series, n. 14090.

Persson, T. and G. Tabellini (1993). Designing institutions for monetary stability. *Carnegie – Rochester Series on Public Policy*, 39, 53-84.

Petersen, K. (2007). *Does the Federal Reserve follow a non-linear Taylor rule?.* University of Connecticut, Department of Economics, Working Paper Series, n.37.

Peskoff, D., Visokay, A., Schulhoff, S., Wachpress, B., Blinder, A. and B.M. Stewart (2023). *Findings of the Association for Computational Linguistics*, EMNLP, 6529-6539.

Pittaluga, G.B. and E. Seghezza (2026). Revisiting Burns' chairmanship of the Fed: When politics and policies clash. *Journal of Policy Modeling*, 48, 101016.

Pollard, P. (2004). *Monetary policymaking around the world.* Presentation, Federal Reserve Bank of St Louis, February, 25.

Poli, R. and G.C. Venturi (2025). *Macroeconomic surprises and financial market reactions: Insights into euro-area interest rates*. Bank of Italy, Occasional Papers, n.959.

Polillo, S. and M.F Guillén (2005). Globalization pressures and the state: The worldwide spread of central bank independence. *American Journal of Sociology*, 110(6), 1764-1802.

Poloz, S.S. (2021). Technological progress and monetary policy: Managing the fourth industrial revolution. *Journal of International Money and Finance*, 114, 102373.

Poole, W. (1970). Optimal choice of monetary policy instruments in a simple stochastic macro model. *Quarterly Journal of Economics*, 84, 197-216.

Pond, A. (2021). Biased politicians and independent agencies. *Journal of Theoretical Politics*, 1-21.

Posen, A. (1995). Declaration are not enough: Financial sectors sources of central bank independence. In: B.S. Bernanke and J. Rotemberg, (eds.)*, NBER Macroeconomics Annual 1995*, The MIT Press, Cambridge MA.

Primiceri, G. (2006). Why inflation rose and fell: Policymakers' beliefs and US post war stabilization policy*. Quarterly Journal of Economics*, 121(3), 867-901.

Qvigstad, J.F. (2006). *When does an interest rate path "look good"? Criteria for an appropriate future interest rate path*. Norges Bank, Working Paper Series, n.5.

Rajan R. (2017). *Central banks' year of reckoning.* Project Syndicate, December 21st, mimeograph.

Ramey, V.A. (2016). *Macroeconomic shocks and their propagation*. NBER Working Paper Series, n.21978.

Ramlall, I. (2024). Should central banks manage climate change risk via a CO2 emission augmented Taylor rule? Evidence using a DSGE approach. *Journal of Environmental Management*, 343, 117989.

Rechard, K. and N.R. Regmi (2023). Greenspan's adherence to the Taylor rule: examining Federal Reserve chairmen policy regimes and deviations from the Taylor rule. *Cogent Economics & Finance*, 11(1), 2209951.

Reifschneider, D. (2024).*US monetary policy and the recent surge in inflation*. Peterson Institute for International Economics, PIIE Working Paper Series, n.13.

Reis, R. (2013). Central bank design. *Journal of Economic Perspectives*, 27(4), 17-44.

Reis, R. (2022). The burst of high inflation in 2021-22: How and why did we get here?. In: M.D. Bordo, J.H. Cochrane and J.B. Taylor, (eds.*), Monetary Policy Got Behind the Curve and How to Get Back*, Stanford, Hoover Institution Press, 203-252.

Rholes, R. and L. Petersen (2021). Should central banks communicate uncertainty in their projections?. *Journal of Economic Behavior and Organization*, 183, 320-341.

Riboni A. and F.J. Ruge-Murcia (2010). Monetary policy by committee: Consensus, chairman dominance, or simple majority?. *Quarterly Journal of Economics*, 125(1), 363-416.

Rieder, K. (2021). Monetary policy decision-making by committee: Why, when and how it can work. *European Journal of Political Economy*, 72, 102091.

Rivot, S. (2015). Rule-based frameworks in historical perspective: Keynes' and Friedman's monetary policies versus contemporary policy-rules. *European Journal of the History of Economic Thought*, 22, 601-633.

Rodriguez, G., Castillo B., P. and H. Hasegawa (2021). *Does the central bank of Perú respond to exchange rate movements? A Bayesian estimation of New Keynesian DSGE model with FX interventions*. PUCP Working Paper Series, n.504.

Rodriguez, R., Garzon A.J. and L.A. Ierro (2024). FED and ECB reaction functions during quantitative easing. *Journal of Policy Modelling*, 46(5), 928-945.

Rodrik D. (2018). *In defence of economic populism.* Project Syndicate, January, 8th.

Rogoff, K. (1985). The optimal degree of commitment to an intermediate monetary target. *Quarterly Journal of Economics*, 100(4),1169-1189.

Rogoff, K. (2017). Dealing with monetary paralysis at the zero bound. *Journal of Economic Perspectives*, 31(3), 47-66.

Rogoff, K. (2025). Foreword. In E. Farvaque and P. Stanek, (eds), *Are central banks still conservative? framework, monetary policy and inflation after Rogoff*. Cheltenham, UK, Edward Elgar Publishing, 10-13.

Romelli, D. (2022). The political economy of reforms in central bank design: Evidence from a new dataset. *Economic Policy*, 37(112), 641-688.

Romelli, D. (2025). Trends in central bank independence: a de–jure perspective. In E. Farvaque and P. Stanek, (eds.), *Are central banks still conservative? framework, monetary policy and inflation after Rogoff*. Cheltenham, UK, Edward Elgar Publishing, 59-94.

Romer, C.D. and D.H. Romer (1997). Institutions for monetary stability, in C.D. Romer and D.H. Romer, (eds.), *Reducing inflation: Motivation and strategy*. NBER, Chicago, Chicago University Press.

Romer, C.D. and D.H. Romer (2000). Federal Reserve information and the behavior of interest rates. *American Economic Review*, 90(3), 429-457.

Romer, C.D. and D.H. Romer (2002). A rehabilitation of monetary policy in the 1950's. *American Economic Review*, 92(2), 121-127.

Romer, C.D. and D.H. Romer (2004a). A new measure of monetary shocks: Derivation and implications. *American Economic Review*, 94(4), 1055-1084.

Romer, C.D. and D.H. Romer (2004b). Choosing the Federal Reserve chair: Lessons from history. *Journal of Economic Perspectives*, 18(1), 129-162.

Rosas, G. (2006). Bagehot or bailout? An analysis of government responses to banking crises. *American Journal of Political Sciences*, 50(1), 175-191.

Rossi, B. (2021). Identifying and estimating the effects of unconventional monetary policy: How to do and what have learned?. *Econometric Journal*, 24(1), 1-32.

Rostagno, M., Altavilla, C., Carboni, G., Lemke, W., Motto, R. and A. Saint-Guilhem (2025). An options-based impact study of the negative interest rate policy and forward guidance. *Journal of Monetary Economics*, 152, 103776.

Rudebush, G.D. and L.E.O. Svensson (1999). Policy rules for inflation targeting. In J.B. Taylor (ed.), *Monetary Policy Rules*. Chicago, University of Chicago Press, 203-262.

Ruge-Murcia, F.J. (2003). Does the Barro-Gordon model explain the behavior of US inflation? A reexamination of the empirical evidence. *Journal of Monetary Economics*, 50, 1375-1390.

Ruhl, T. R. (2015). Taylor rules revisited: ECB and Bundesbank in comparison. *Empirical Economics*, 48(3), 951-967.

Rungcharoenkitkul, P. and F. Winkler (2026). The natural rate of interest through a hall of mirrors. *Journal of Monetary Economics*, 157, 103858.

Ruscher, E. and B. Vasicek (2016). Revising the real interest rate mechanism. *Quarterly Report on the Euro Area,* 14(4), Institutional Paper n.16, Brussels.

Sablik, T. (2022). The future of forward guidance. Federal Reserve Bank of Richmond, *Econ Focus*, 22(4), 18-21.

Sam, C.Y., McNown, R., Goh, K.L. and S.K. Goh (2023). Methodological problems in studies on the Taylor rule. *Studies in Economics and Econometrics*, 47(2), 127-143.

Sapienza, P. and L. Zingales (2012). A trust crisis. *International Review of Finance*, 12(2), 123-131.

Sargent, T.J. and N. Wallace (1975). “Rational” expectations, the optimal monetary instrument, and the optimal money supply rule. *Journal of Political Economy*, 83, 241-254.

Sargent, T.J. and N. Wallace (1981). Some unpleasant monetarist arithmetic. *Quarterly Review*, Federal Reserve Bank of Minneapolis, Fall, 1-17.

Sargent, T.J., Noah, W. and T. Zha (2006). Shocks and government beliefs: The rise and fall of American inflation. *American Economic Review*, 96(4), 1193-1224.

Sastry, K.A. (2026). Disagreement about monetary policy. *American Economic Journal: Macroeconomics*, 18(2), 486-522.

Sauer, S. and J.E. Sturm (2007). Using Taylor rules to understand ECB monetary policy. *German Economic Review*, 8(3), 375-398.

Schaumburg, E. and A. Tambalotti (2007). An investigation of the gains from commitment in monetary policy. *Journal of Monetary Policy*, 54(2), 302-324.

Schellekens, P. (2002). Caution and conservatism in the making of monetary policy. *Journal of Money, Credit and Banking*, 34(1), 160-177.

Schmeling, M., Schrimpf, A. and S.A.M. Steffensen (2022). Monetary policy expectation errors. *Journal of Financial Economics*, 146, 841-858.

Schnellenbach, J. and C. Schubert (2015). Behavioral political economy: A survey. *European Journal of Political Economy*, 40, 395-417.

Schularick, M., and A.M. Taylor (2009). *Credit booms gone bust: Monetary policy, leverage cycles and financial crises, 1870–2008*. NBER Working Paper Series, n. 11512.

Schonhardt-Bailey, C. (2013). *Deliberating American monetary policy: A textual analysis*. Cambridge MA, MIT Press.

Scheurer, A., Sturm, J.E. and J. de Haan (2026). Does populism erode central bank independence?. *Open Economy Review*, https://doi.org/10.1007/s11079-026-09863-7.

Shiratsuka, S. (2025). Monetary policy effectiveness under the ultra-low interest rate environment: Evidence from yield curve dynamics in Japan. *Oxford Bulletin of Economics and Statistics*, 87(1), 98-121.

Sibert, A. (2003). Monetary policy committees: Individual and collective reputations. *Review of Economic Studies*, 70(3), 649-665.

Sieg, G. (1997). A model of partisan central banks and opportunistic political business cycles. *European Journal of Political Economy,* 13(3), 503–516.

Siklos, P. L. and M.T. Bohl (2009). Asset prices as indicators of euro area monetary policy: An empirical assessment of their role in a Taylor rule. *Open Economies Review*, 20(1), 39-59.

Sims, E. and J.C. Wu (2020). Evaluating central banks’ tool kit: Past, present, and future. *Journal of Monetary Economics*, 118, 135-160.

Smets, F. (2014). Financial stability and monetary policy: How closely interlinked?. *International Journal of Central Banking*, 10(2), 263–300.

Smets, F. and R. Wouters (2003). An estimated dynamic stochastic general equilibrium model of the Euro area. *Journal of the European Economic Association*, 1(5), 1123-1175.

Strong, C.O. (2025). Central bank independence, inflation, and growth in Africa. In E. Farvaque and P. Stanek, (eds.), *Are central banks still conservative? Framework, monetary policy and inflation after Rogoff*. Cheltenham, UK, Edward Elgar Publishing, 59-94.

Sturm, J.E. and J. de Haan (2011). Does central bank communication really lead to better forecasts of policy decisions? New evidence based on a Taylor rule model for the ECB. *Review of World Economics*, 147(1), 41-58.

Sun, S., Gan, C. and B. Hu (2012). Evaluating McCallum rule as a policy guideline for China. *Journal of the Asia Pacific Economy*, 17, 527-545.

Surico, P. (2007a). The monetary policy of the European Central Bank. *Scandinavian Journal of Economics*, 109, 115-135.

Surico, P. (2007b). The Fed's monetary policy rule and US inflation: The case of asymmetric preferences. *Journal of Economic Dynamics and Control*, 31, 305-324.

Sutherland, C.S. (2023). Forward guidance and expectation formation: A narrative approach. *Journal of Applied Econometrics*, 38(2), 222-241.

Svensson, L.E.O. (1995). Optimal inflation targets, "conservative" central banks, and linear inflation contracts. *American Economic Review*, 87, 98-114.

Svensson, L.E.O. (1997). Inflation forecast targeting: Implementing and monitoring inflation targets. *European Economic Review*, 41, 1111-1146.

Svensson, L.E.O. (1999). Inflation targeting. Some extensions. *Scandinavian Journal of Economics*, 101(3),337-361.

Svensson, L.E.O. (2000). Open-economy inflation targeting. *Journal of International Economics,* 50(1), 155-183.

Svensson, L.E.O. (2003). What is wrong with Taylor rules? Using judgment in monetary policy through targeting rules. *Journal of Economic Literature*, 41(2), 426-477.

Svensson L.E.O. (2015). *Forward guidance*. NBER Working Paper Series, n. 20796.

Svensson, L.E.O. (2017). Cost-benefit analysis of leaning against the wind. *Journal of Monetary Economics*, 90, 193-213.

Svensson, L.E.O. (2020). *Monetary policy strategies for the Federal Reserve*. NBER Working Paper Series, n. 26657.

Sveriges Riksbank (2022). *What is the interest rate path?*. Sveriges Riksbank website, June, 8.

Sveriges Riksbank (2023). *Monetary policy report*. Sveriges Riksbank website, February, 9.

Swanson, E.T. (2021). Measuring the effects of Federal Reserve forward guidance and asset purchases on financial markets. Journal of Monetary Economics, 118, 32-53.

Tabellini, G. (1987). Accommodative monetary policy and central bank reputation. *Giornale degli Economisti ed Annali di Economia*, 44, 389-525.

Tatar, B. and V. Wieland (2025). Policy rules and the inflation surge: The case of the ECB. *Economics Letters*, 252, 112338.

Tavlas, G.S. (2015). In old Chicago: Simon, Friedman and the development of monetary policy rules*. Journal of Money, Credit and Banking*, 47(1), 99-121.

Tavlas, G.S. (2021). A reconsideration of the doctrinal foundations of monetary policy rules: Fisher versus Chicago. *Journal of the History of Economic Thought*, 43(1), 55-82.

Tavlas, G. S. (2023). *The monetarists*. Chicago, Chicago University Press.

Taylor, J.B. (1993). Discretion versus policy rule in practice. *Carnegie-Rochester Conference Series on Public Policy*, 39, Elsevier, 195-214.

Taylor, J.B. (1999). A Historical Analysis of Monetary Policy Rules. In J.B. Taylor, (ed.), *Monetary Policy Rules*. Chicago, Chicago University Press, 319-348.

Taylor, J.B. (2000). Using monetary policy in emerging market economies. In: *Stabilization and monetary policy: The international experience*, Bank of Mexico, 441-457.

Taylor, J.B. (2001). The role of the exchange rate in monetary-policy rules. *American Economic Review*, 91(2), 263-267.

Taylor, J.B. (2011a). The cycle of rules and discretion in economic policy. *National Affairs*, Spring, 55-65.

Taylor, J.B. (2011b). Legislating a rule for monetary policy. *Cato Journal*, 31, 407-415.

Taylor, J.B. (2015). *Recent trends in Federal Reserve transparency and accountability*. Testimony before the Subcommittee on Oversight and Investigations Committee on Financial Services, U.S. House of Representatives, July 14.

Taylor, J.B. (2022). Interest rate policy. In: R.G. King and A.L. Wolman, (eds.), *Essays in Honor of Marvin Goodfriend: Economist and Central Banker*. Richmond, Va., Federal Reserve Bank of Richmond, 303-313.

Taylor, J.B. (2023). *There's still time to get back to rule-based monetary policy*. Testimony before the Subcommittee on Health Care and Financial Services, Committee on Oversight and Accountability, US House of Representatives, March 9.

Taylor, M. and E. Davradakis (2006). Interest rate setting and inflation targeting: Evidence of a nonlinear Taylor rule for the United Kingdom. *Studies in Nonlinear Dynamics and Econometrics*, 10(4), 1-18.

Thies, C.G. (2022). Populism and central bank independence: A conceptual and empirical reassessment. *Journal of Political Institutions and Political Economy*, 3(1), 87–105.

Thornton, D.L. and D.C. Wheelock (2014). Making sense of dissents: A history of FOMC dissents. Federal Reserve Bank of St. Louis, *Review*, 96(3), 213-228.

Tillmann, P. (2012). Cross-checking optimal monetary policy with information from the Taylor rule. *Economic Letters*, 117(1), 204-207.

Tillmann, P. (2020). Trump, twitter, and Treasuries. *Contemporary Economic Policy*, 38(3), 403–408.

Tirole, J. (2023). Socially responsible agencies. *Competition Law & Policy Debate*, 7(4), 171-177.

Traber, D., Schoonvelde, M. and G. Schumaker (2020). Errors have been made, others will be blamed: Issue engagement and blame shifting in prime minister speeches during the economic crisis in Europe. *European Journal of Political Research*, 59(1), 45–67.

Tsang, K.P. and Z. Yang (2025). Agree to disagree: Measuring hidden dissent in FOMC meetings. *Journal of Economic Dynamics and Control*, 180, 105197.

Ueda, K. and F. Valencia (2012). *Central bank independence and macroprudential regulation*. IMF Working Paper Series, n.101.

Ume, E.S. (2025). Racial disparities and monetary policy: Evidence from augmented Taylor rules. *Economic Letters*, 257, 112692.

Van der Cruijsen, C., de Haan, J. and R. Roerink (2021a). Financial knowledge and trust in financial institutions. *Journal of Consumer Affairs*, 55(2), 680-714.

Van der Cruijsen, C., de Haan, J. and R. Roerink (2021b). Trust in financial institutions: A survey. *Journal of Economic Surveys*, 10.1111.

Vaubel, R. (1997). The bureaucratic and partisan behaviour of independent central banks: German and international evidence. *European Journal of Political Economy*, 13(4), 823-827.

Verona F., Martins, M.M.F. and I. Drumond (2017). Financial shocks, financial stability, and optimal Taylor rules. *Journal of Macroeconomics*, 54, 187-207.

Vinci, F. and O. Licandro (2021). *Potential output, the Taylor rule and the Fed*. Centre for Finance, Credit and Macroeconomics School of Economics, University of Nottingham, Nottingham.

von Hagen, J. and R. Suppel (1994). Central bank constitutions for federal monetary unions. *European Economic Review*, 38(3-4), 774-782.

Waller, C.J. (1992). A bargaining model of partisan appointments to the central bank. *Journal of Monetary Economics*, 29(3), 411-428.

Waller, C.J. (2022). *Lessons learned on normalizing monetary policy*. Speech, June, 18, FED website.

Walsh, C. E. (1995a). Optimal contracts for central bankers. *American Economic Review*, 85, 150-176.

Walsh, C. E. (1995b). Is New Zealand's Reserve Bank Act of 1989 an optimal central bank contract?. *Journal of Money, Credit and Banking*, 27(4), 1179–1191.

Walsh, C.E. (2000). Monetary policy design: Institutional development from a contractual perspective. *International Finance*, 3(3), 375-389.

Walsh, C. E. (2010). Central bank independence. In S.N. Durlauf and L. Blume, (eds.), *Monetary Economics*. London, The New Palgrave Economics Collection, Palgrave Macmillan, 21 –26.

Walsh, C.E. (2015). Goals and rules in central bank design. *International Journal of Central Banking*, 11(1), 295-352.

Wang, G. and K. Hausken (2023). Modelling which factors impact interest rates. *Journal of Central Banking Theory and Practice*, 12(2), 211-237.

Wang, R., Morley, B. and M.P. Stamatogiannis (2019). Forecasting the exchange rate using nonlinear Taylor rule based models. *International Journal of Forecasting*, 35, 429-442.

Waters, G.A. (2022). The many faces of the Taylor rule for advanced undergraduate macroeconomics. *International Review of Economics Education*, 41, 100242.

Wilson, L. (2014). *A dove to hawk ranking of the Martin to Yellen Federal Reserves*. Department of Finance, University of Louisiana at Lafayette, SSRN: https://ssrn.com/abstract=2529195.

Wojtyna, A. (2025). How to save central bank's independence from the unconservative governor: The alarming case of the National Bank of Poland. In E. Farvaque and P. Stanek, (eds.), *Are central banks still conservative? framework, monetary policy and inflation after Rogoff*. Cheltenham, UK, Edward Elgar Publishing, 59-94.

Wolswijk, G. (2026). *A monetary policy perspective on the euro area fiscal reaction function*. ECB Working Paper Series, n. 3172.

Woodford, M. (1999). *Optimal Monetary Policy Inertia*. NBER Working Paper Series, n.7261.

Woodford, M. (2001). The Taylor rule and optimal monetary policy. *American Economic Review*, 91(2), 232-237.

Woodford, M. (2003a). *Interests and prices: Foundations of a theory of monetary policy*. Princeton, Princeton University Press.

Woodford, M. (2003b). Optimal interest rate smoothing. *Review of Economic Studies*, 70, 861-886.

Woodford, M. (2012). *Inflation targeting and financial stability*. NBER Working Paper Series, n. 17967.

Woodford, M. (2013). *Forward guidance by inflation-targeting central banks*. Sverige Riksbank, Economic Review, 3, 81-120.

Wu, J.C. and F.D. Xia (2016). Measuring the macroeconomic impact of monetary policy and the zero lower bound. *Journal of Money, Credit and Banking*, 48(2-3), 253-291.

Wu, J.C. and J. Zhang (2019). A shadow rate New Keynesian model. *Journal of Economic Dynamics and Control,* 48(2-3), 103728.

Yellen, J. (2015). *Letter to the Honorable Paul Ryan and the Honorable Nancy Pelosi*. Board of Governors of the Federal Reserve System, November 16.

Yu, E. (2016). *Did quantitative easing work?*. Federal Reserve Bank of Philadelphia, *Economic Insights*, First Quarter, 5-13.

Zhu, S., Kavanagh E. and N. O'Sullivan (2021). Inflation targeting and financial conditions: UK monetary policy during the Great Moderation and financial crisis. *Journal of Financial Stability*, 53.