

Commentary: Monetary Policy Strategy and its Communication

Frank Smets

The question of this session is: “What does it mean to be a data-dependent central banker?” At one level this has a trivial answer: It means that when incoming data suggest that the assessment of the economic and inflation outlook changes, monetary policy changes. And that’s what we have seen in action over the past quarters: As the outlook for global growth and trade has become more subdued, the policy normalization process has stopped and monetary policy across the world is changing direction.

At a deeper level though, this question is about the longstanding “rules versus discretion” debate. Does being a data-dependent central banker mean that she makes decisions from meeting to meeting depending on the incoming data in a discretionary way? Or does it mean that she commits to a well-specified policy rule that systematically links incoming data to her policy instruments? The trade-offs in this decades-long debate are pretty clear. And they were very nicely discussed at a Boston Fed conference two years ago by John Taylor and Rick Mishkin and others.¹ Discretion allows the central banker to more easily adjust to the changing world, but may hamper economic agents’ (including financial markets’) understanding of the central bank’s reaction function and the automatic stabilization that comes with such understanding, and may be more susceptible to political

pressures and time inconsistency. Committing to a policy rule on the other hand is easy to explain, will boost automatic stabilisation of the economy and may help fend off political pressure, but may not be very robust when the structure of the economy is changing.

As is always the case when you face trade-offs, the answer is likely to be somewhere in between. And this was very nicely captured by the notion of “constrained discretion,” which was coined by Ben Bernanke and Rick Mishkin in 1997 to describe flexible inflation targeting regimes (Bernanke and Mishkin 1997). It captures the notion that discretion is a necessity in an ever-changing world, but needs to be constrained by a clear price stability objective (typically a symmetric 2% inflation target) and a transparent communication strategy to explain the central bank’s actions to achieve this objective (e.g., by publishing forecasts of economic growth, inflation and the interest rate path that underlines these forecasts).

This is where Athanasios Orphanides’ paper comes in. He provides an assessment of recent changes in the Fed’s monetary policy strategy and its communication and makes a number of proposals to make the discretionary policy actions even more rule-like (to paraphrase the title of Mishkin’s recent 2017 paper).

And the core of Orphanides’ proposal to “improve the Fed’s monetary policy strategy is to publish a simple policy rule, which would facilitate the communication of policy decisions in the light of its dual mandate and clarify their relation to the evolution of data and the economy’s outlook.” So, Orphanides tries to bring us closer to the “rules camp.” The key is of course to have a rule that is relatively robust. He has his favorite rule, which I will call the Orphanides rule, as I believe he was the first to note that such a rule fitted very well the Volcker-Greenspan Fed in a JME paper published in 2003 (Orphanides 2003b). But he also proposes to have a periodic review and adaptation of such a benchmark rule to take into account a changing world.

My comments will focus mostly on the Orphanides rule. I have some sympathy for it. I will show that it fits remarkably well the European Central Bank’s (ECB) interest rate decisions over the past 20 years. At the same time, I will argue that it is not a panacea and

in particular I will raise two doubts. First, while the rule does not depend on unobservable and uncertain “star” variables like the natural unemployment rate or the natural real rate, it still depends on the unobservable growth rate of potential output which has varied quite a bit over time. Second, the Orphanides rule does not deal with episodes when the policy rate is at its effective lower bound (ELB), and in which a different more backward-looking or history-dependent policy prescription may be appropriate. Part of the analysis I refer to is based on a recent Brookings Paper with Philipp Hartmann on “The ECB’s Monetary Policy During Its First 20 Years” (Hartmann and Smets 2019).

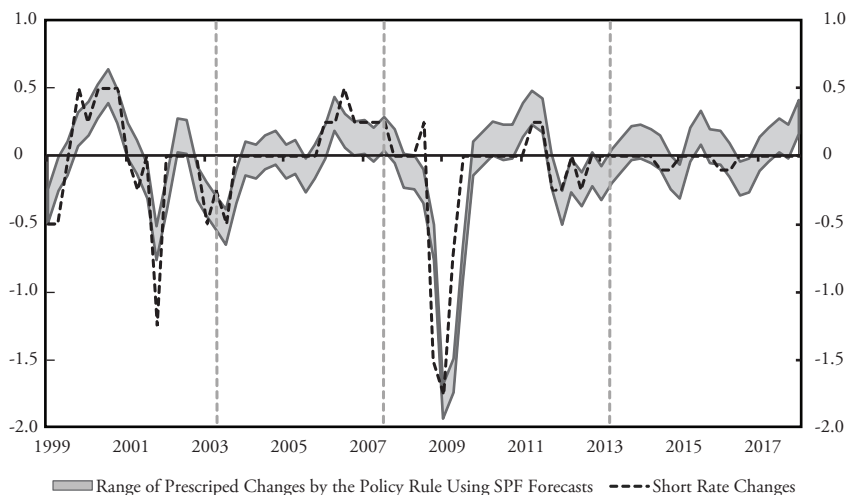
As you can see in Chart 1, the Orphanides rule indeed fits remarkably well with the ECB’s interest rate decisions over the past 20 years. This chart replicates for the euro area Chart 6 in his paper. I noted this first 10 years ago (Smets 2010) and this has not changed very much since the financial crisis at least until the ELB was approached. In the Brookings paper we show that this good fit is true whether one uses one-year ahead private forecasts from our Survey of Professional Forecasters (SPF) as in Chart 1 or the ECB’s own macroeconomic projections, which is not surprising given that there is a high correlation between both forecasts.

In Table 1 we go beyond “ocular” regression and report estimates of a number of versions of the Orphanides rule for the euro area. Let me highlight a number of the more striking findings.

First, one cannot reject the hypothesis that the coefficients are equal to 0.5 on both the inflation forecast and the growth forecast. So, approximating the Orphanides rule by a simple near-term expected nominal growth rule seems appropriate. The implicit estimated inflation aim for the ECB over the past 20 years is 1.8%, arguably in line with the ECB’s inflation aim of below, but close to 2%, (although it is slightly below the 1.9% that we typically use in our internal model simulations).

Second, the SPF forecasts have no additional explanatory power once we include the ECB’s own staff projections (column 3). That’s good news for us staff that produce the forecasts! The Governing

Chart 1
The Orphanides Rule for the Euro Area



Notes: This rule uses the SPF forecasts as in Orphanides (2019). The short rate changes combine the time series of the changes in the main refinancing operations rate up to Q3:2008 with the changes in the deposit facility rate from Q4:2008 onward. Changes are mid-quarter-on-quarter changes. The most recent observation is for Q1:2018.

Sources: Hartmann and Smets (2019); ECB data; ECB Survey of Professional Forecasters (SPF); European Commission.

Council seems to respond to the way ECB/Eurosystem staff summarizes the outlook of the economy in our near-term projections for growth and inflation.

Third, what matters for explaining ECB interest rate decisions is the one-year ahead *headline* inflation forecast rather than the *core* inflation forecast (column 4). This is in line with the ECB's definition of price stability which is in terms of year-on-year headline HICP inflation, but may be different from the typical Fed reaction where core PCE inflation developments are likely to be more important.

Fourth, when testing for symmetry we do not find significant evidence that the ECB responds more aggressively to positive deviations of inflation from 1.8% than to negative deviations (column 5), in line with the Governing Council's commitment to symmetry as also expressed in the recent June 2019 policy meeting. But interestingly, when we test for asymmetry around the two components of nominal growth, real growth and inflation, together (column 6), we find that the ECB typically lowers interest rates when growth is expected to fall below its estimated potential, whereas it typically raises rates

Table 1
Regression Results For the Orphanides Rule

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Y = Short Rate							
ECB Inflation Projections	0.34*** (0.09)	0.30*** (0.13)	0.20 (0.19)	0.37*** (0.14)	0.33** (0.14)	0.17 (0.13)	0.36*** (0.09)
ECB Growth Projections	0.37*** (0.08)	0.43*** (0.09)	0.54*** (0.20)	0.36*** (0.08)	0.37*** (0.08)	0.52*** (0.14)	0.40*** (0.09)
SPF Inflation Projections			0.27 (0.22)				
SPF Growth Projections			-0.17 (0.19)				
ECB Core Inflation Projections				-0.073 (0.16)			
Interaction Positive Inflation Deviation					0.27 (0.17)	0.50*** (0.18)	
Interaction Positive Growth Deviation						-0.46*** (0.17)	
Change in Credit Growth							-0.07 (0.07)
Positive Inflation Deviation					-0.10 (0.08)	-0.15** (0.07)	

Table 1 continued

Y = Short Rate	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Positive Growth Deviation							
Constant	-0.62*** (0.164)	-0.52** (0.26)	-0.85*** (0.14)	-0.56*** (0.16)	-0.60** (0.22)	0.02 (0.08)	-0.65*** (0.16)
Inflation Target	1.81	1.75	1.78	1.85			1.82
Observations	77	54	77	77	77	77	77
Adjusted R ²	0.52	0.58	0.54	0.52	0.53	0.57	0.53

*Significant at the 10 percent level

**Significant at the 5 percent level

***Significant at the 1 percent level

Notes: Robust standard errors are in parentheses. Coefficients are rounded to the second decimal. The dependent variable, short rate changes, combines the time series of the changes in Main Refinancing Operations Rate up to 2008:Q3 with the changes in the Deposit Facility Rate from 2008:Q4 onward. Changes are quarter-on-quarter changes of the implementation dates of monetary policy decision falling in the last month of the quarter. The sample is 1999:Q1 to 2018:Q1. For column (2) the sample is shortened to end in 2012:Q2. The variable Inflation target is equal to minus the constant over the estimated inflation coefficient(s). The variables ECB inflation projections, ECB core inflation projections, and ECB growth projections refer to One-year-ahead inflation projections for the Harmonised Index of Consumer Prices (HICP), the One-year-ahead HICP inflation excluding food and energy projections, and the one-year-ahead GDP growth projections in deviation from potential growth of the ECB/Eurosystem staff projections, respectively. The variables SPF inflation projections and SPF growth projections refer to one-year-ahead HICP inflation projections and one-year-ahead GDP growth projections in deviation from potential growth of the ECB Survey of Professional Forecasters, respectively. Positive inflation deviation and Positive growth deviation refer to dummies equal to one if projected inflation is greater than the predicted inflation target of 1.81, and if projected GDP growth is greater than potential output, respectively. Interaction positive inflation deviation and Interaction positive growth deviation are terms interacting ECB inflation projections and ECB growth projections with the dummy variables Positive inflation deviation and Positive growth deviations, respectively. Change in credit growth is the change in the year-on-year growth rate of credit to households and nonfinancial corporations.

Sources: Hartmann and Smets (2019)

when inflation is expected to rise above 1.8%. So, the real side seems to be a better indicator of when the economy is moving into slack, whereas the nominal side is a better indicator of emerging overcapacity. This is an interesting form of data dependence and I believe consistent with some of the work by Stock and Watson on nonlinearities in the Phillips curve presented at the Jackson Hole conference in 2010 (Stock and Watson 2010).

Fifth, (and this cannot be seen in the table), we tested for what is the best forecast horizon for explaining ECB interest rate decisions and found that indeed the three-quarters ahead forecasts dominate more backward-looking or more forward-looking horizons. This suggests that this near-term forward-looking horizon provides a good balance between on the one hand being anchored in the data we actually observe (which enhances verifiability) and on the other hand being forward-looking enough to take into account possible measurement error, the nature of shocks and their propagation which requires models and judgement. Data dependence means finding the right balance between hard data, models needed to interpret those data and judgement which is informed by anecdotes, non-structural data, historical experience, etc. (see Clarida 2018).

Finally, while we did not do an exhaustive search in our paper, our impression is that there is little else that is very important in explaining the ECB's interest rate decisions. In other words, the one-year-ahead growth and inflation forecasts appear to be good sufficient statistics. For example, various indicators capturing the ECB's monetary analysis (like credit or money growth) do not provide additional explanatory power (as illustrated in column 7). This does not mean they do not matter; it just means that the information in those data is already captured by the near-term growth and inflation forecasts.

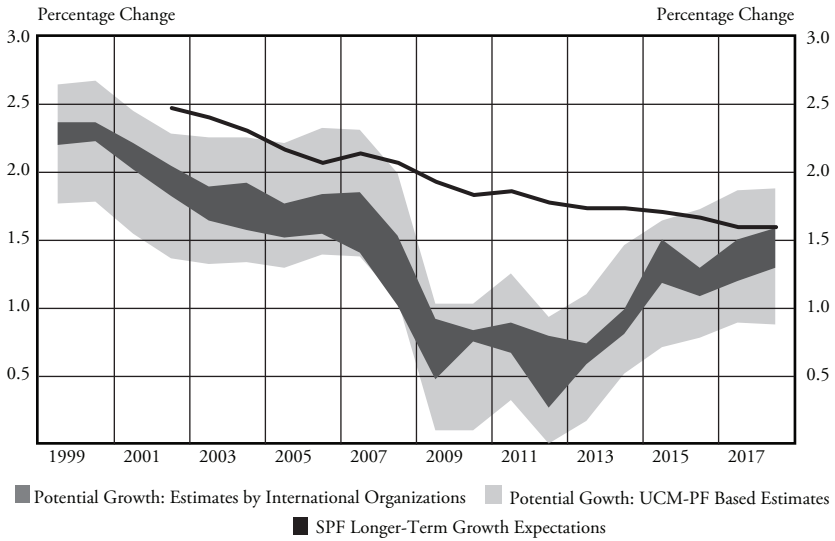
As I mentioned earlier, I am quite sympathetic to the Orphanides rule for the reasons that Athanasios mentions in his paper. Not only does it describe the behavior of two of the world's major central banks quite well, it's simple and easy to explain, it's something that you can quickly check in real-time, and it has been shown to be quite robust in stabilizing inflation and the economy in a variety of models and importantly

with respect to uncertainty of important “star” variables such as r^* (the natural real rate) and u^* (the natural unemployment rate).

Having said this, I am not sure this justifies elevating its status to being the sole official benchmark rule for Fed and ECB policy? Let me raise two specific doubts.

The first doubt is on its robustness with respect to changes in another star variable, g^* , the potential growth rate. There is quite a lot of uncertainty around g^* as illustrated in Chart 2. Chart 2 depicts a range of estimates of potential output growth for the euro area by three international institutions (International Monetary Fund, Organisation for Economic Co-operation and Development and the European Commission) and a confidence set around it based on an ECB internal Unobserved Components model (Andersson et al. 2018). These estimates vary over time and as shown by Coibon, Gorodnichenko and Ulate (2018) for the United States are quite pro-cyclical. This contrasts with the longer-run growth forecasts, as, for example given by the SPF, which fell in a more secular, non-cyclical way as productivity and population growth came down over the past 20 years. There are different views on the sources of the pro-cyclicality of real-time potential growth estimates. Coibon et al. (2018) argue that this pro-cyclicality is spurious and the result of mismeasurement. Others argue that this is the result of hysteresis whereby recessions have a negative impact on both physical and human capital accumulation. Still others note that the financial crisis may have temporarily but persistently lowered productivity by contributing to a misallocation of resources. What I want to argue here is that this uncertainty matters for the policy recommendations of the rule. For example, if I had taken the longer-run SPF growth forecast as best real-time estimate of potential growth, the rule would have suggested a much more expansionary monetary policy since the start of the financial crisis. And maybe this also explains why we have systematically overestimated inflation over the past five years. Athanasios argued in the past that overreliance on uncertain estimates of potential output could explain the 1970s great inflation (Orphanides 2003a). I guess my main point here is that overreliance on estimates of g^* may also lead to policy mistakes.

Chart 2
Estimates of Potential Growth in the Euro Area



Notes: The dark gray area refers to the range of estimates by international institutions, the light gray area to uncertainty bands of an internal estimate based on the UCM-PF model presented in the 2018/03 *ECB Economic Bulletin*. The UCM-PF estimates for 2018 only incorporate data up to the second quarter.
Sources: ECB staff, European Commission, IMF, OECD, ECB Survey of Professional Forecasters.

The second more critical comment is how to deal with ELB episodes. The simple rule is not very useful when central banks hit the ELB and the central bank needs to resort to unconventional monetary policy measures. The deviation of expected nominal growth from its target can of course be used as an indicator to decide on whether further unconventional measures are needed or not, but it will not say how to calibrate those policies.

More importantly, the rule may be misleading in the normalization process following an ELB period. In such a period it may be optimal to commit to keep policy rates low for longer than implied by the simple policy benchmark. This is consistent with the optimality of so-called catch-up strategies as, for example, argued early on by Reifschneider and Williams (2000), who found that a policy rule that delays a rise in the policy rate until the cumulative forgone accommodation due to the lower bound has disappeared had good stabilisation properties. This is also consistent with the more recent literature such as Kiley and Roberts (2017), Bernanke, Kiley and

Roberts (2018) and Coenen, Montes-Galdon and Smets (2019). For example, Bernanke et al (2018) find that a policy that keeps the policy rate low until average inflation over the past one to three years is on target has excellent stabilisation properties. So, one would have to think of a switching strategy whereby the central bank would switch to a new rule whenever the ELB binds. The new rule is likely to be more history-dependent and backward-looking than the Orphanides rule, so as to embrace a state-dependent “low for longer” strategy and help overcome the ELB constraint.

So, let me conclude. I focused on Athanasios’ proposal to publish a simple policy rule. I have shown some sympathy to the specific rule he proposes, but I also argued that such a rule will not be a panacea and therefore no substitute for a constrained discretion regime whereby clarity about the goal is combined with a transparent communication strategy that explains how the central bank’s actions are geared at achieving this goal. He has a number of other interesting proposals to strengthen the transparency (e.g., on how to communicate risks better) which are certainly worth further exploring. One innovation that Athanasios does not comment on is the introduction of a press conference after each policy decision, which in the case of the ECB has been key to get the main narrative out in a timely way.

Endnote

¹See Mishkin (2017) and Taylor (2017).

References

- Andersson, M., B. Szörfi, M. Tóth and N. Zorell. 2018. "Potential Output in the Post-Crisis Period," *ECB Economic Bulletin*, Issue 7/2018.
- Bernanke, B., and F. Mishkin. 1997. "Inflation Targeting: A New Framework for Monetary Policy," *Journal of Economic Perspectives*, vol. 11, #2 (Spring): 97-116.
- _____, M. Kiley and J. Roberts. 2019. "Monetary Policy Strategies for a Low-Rate Environment," Finance and Economics Discussion Series 2019-009. Washington: Board of Governors of the Federal Reserve System (<https://doi.org/10.17016/FEDS.2019.009>)
- Clarida, R. 2018. "Data Dependence and U.S. Monetary Policy," remarks at The Clearing House and the Bank Policy Institute Annual Conference, New York, Nov. 27, 2018.
- Coenen, G., C. Montes Galdon and F. Smets. 2019. "Effects of State-Dependent Forward Guidance, Large-Scale Asset Purchases and Fiscal Stimulus in a Low-Interest-Rate Environment," ECB mimeo, Sept. 13, 2019.
- Coibon, O., Y. Gorodnichenko and M. Ulate. 2018. "The Cyclical Sensitivity in Estimates of Potential Output," forthcoming in *Brookings Papers on Economic Activity*, Fall 2018.
- Hartmann, P., and F. Smets. 2019. "The European Central Bank's Monetary Policy During Its First 20 years," *Brookings Papers on Economic Activity*, Fall 2018.
- Kiley, M., and J. Roberts. 2017. "Monetary Policy in a Low Interest Rate World," *Brookings Papers on Economic Activity*, Spring 2017.
- Mishkin, F. 2017. "Making Discretion in Monetary Policy More Rule-Like," NBER Working Paper 24135, (<https://www.nber.org/papers/w24135.pdf>)
- Orphanides, A. 2003a. "The Quest for Prosperity Without Inflation," *Journal of Monetary Economics*, 50:3 (2003a): 633-663.
- _____. 2003b. "Historical Monetary Policy Analysis and the Taylor Rule," *Journal of Monetary Economics*, 50:5 (2003): 983-1022.
- Reifschneider, D., and J. Williams. 2000. "Three Lessons for Monetary Policy in a Low-Inflation Era," *Journal of Money, Credit and Banking*, 32:4, pt. 2: 936-966.
- Smets, F. 2010. "Comment on Chapters 6 and 7," in: *The Euro: the First Decade*, edited by Marco Buti, Servaas Deroose, Vitor Gaspar and Joao Nogueira Martins. Cambridge University Press.

Stock, J., and M. Watson. 2010. "Modeling Inflation After the Crisis," in *Macroeconomic Challenges: The Decade Ahead*, Federal Reserve Bank of Kansas City, Economic Policy Symposium, Jackson Hole, Wyoming, Aug. 26-28.

Taylor, J. 2017. "Rules Versus Discretion: Assessing the Debate over the Conduct of Monetary Policy," NBER Working Paper 24149, (<https://www.nber.org/papers/w24149>)

