Policy rules versus discretion

Dr Robert Gay | Fenwick Advisers | 03 July 2017

Critics of central banks have long recommended various operational rules for setting monetary policy instead of allowing the governing boards free reign in making those decisions. Milton Freidman, for example, after an exhaustive study of the Fed's policy actions during the Great Depression, came to the conclusion that policymakers should adopt a simple rule of steady growth in the monetary base and let interest rates go where they might.[1]

More recently, central banks have targeted some combination of price stability and full employment, however defined. Those two goals were set out in the Full Employment and Balanced Growth Act of 1978 (informally known as the Humphrey-Hawkins Act) and have become the underlying rationale for most, but not all, US Federal Reserve policy decisions ever since. Indeed, the Fed only deviated from its dual mandate during four periods over the past forty years - during the early 1990s, briefly in 1998-99, in the early 2000s, and after the onset of the Global Financial Crisis in 2008. These episodes provide a glimpse into how the Fed assesses potential risks associated with financial instability, ranging from banking crises and dysfunctional financial markets that disrupt financing to contagion from some other nonfinancial disturbance. Whatever the source of financial instability, the Fed on those occasions felt free to use discretion in setting policy, for better or worse.

With perfect hindsight, the Fed's decisions to ease policy beyond what was implied by their dual mandate during the Greenspan years probably were overkill - although in real time, all indications pointed to heightened systemic risk. They were "honest" mistakes and would not have been troublesome if the Fed had reversed course sooner.

By contrast, exceptional monetary measures clearly were critical in containing the financial meltdown during the Global Financial Crisis and its aftermath. Only the Fed could play that role.

In sum, the use of discretion in setting monetary policy has had a somewhat checkered history that may hold some lessons for the future. Ironically, the debate about rules versus discretion is just heating up now that the FOMC has set a steady course for unwinding the extraordinary policy measures of the past seven years and is openly discussing new norms for old rules of thumb.

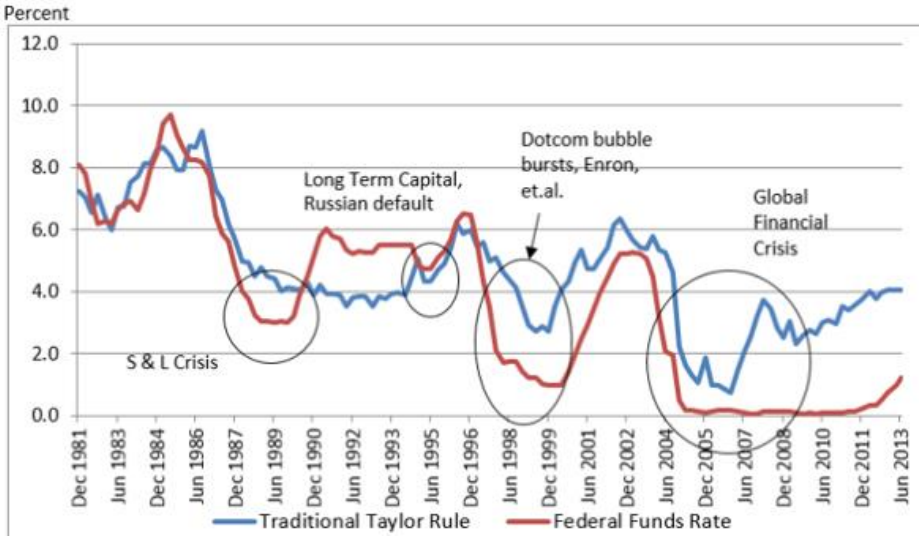
THE TRADITIONAL TAYLOR RULE

Most discussions of Fed policy begin and end with legislated dual mandate of price stability and full employment. In 1993, John Taylor published his seminal paper in which he embodied those two objectives in an empirical model that now bears his name.[2]

The key to estimating the model was to define norms for inflation and real GDP to which the economy was presumed to revert if the Fed followed the appropriate policy. Taylor presumed the Fed's target or norm for inflation was 2% and that for full employment was the level consistent with trend growth in real GDP. Indeed, these objectives were the actual, albeit unspoken targets, as understood by the staff and Board, ever since the early years of Paul Volcker's chairmanship – with the caveat that the staff used core inflation as measured by the CPI excluding food and energy prices, and empirical estimates of potential real GDP based on staff studies. Only later during Ben Bernanke's term as Chair did the Board formalise those targets, and it finally published a formal statement to that effect in 2012.

Figure 1 below shows the federal funds rate along with values based on the original Taylor Rule. Taylor intended his policy rule to be normative – that is, to guide policymakers in their deliberations – rather than a tool for forecasting the actual decisions of the FOMC. In particular, it directed the Fed to raise (lower) the federal funds rate 1.5 percentage points for every 1 percentage increase (decrease) in inflation that was deemed to be enduring. In practice, the rule proved to be fairly accurate in gauging what the Fed eventually would do during much of the 1990s and into the 2000s, apart from some notable overshooting and undershooting along the way. In retrospect, those episodes of discretionary deviations in policy from the fixed rule appear to have been clear blunders – usually erring on the side of excessive easing – that the Fed was compelled to reverse, hence providing ammunition to advocates of sticking to rigid policy rules.

Figure 1: The Taylor Rule versus the Federal Funds Rate
(1986 to 2017)



Source: Bloomberg and Fenwick Advisers estimate based on source in footnote 2

THE FEDERAL RESERVE'S PRIORITIES

In the real world, and in real time, monetary policy decisions are not so simple. There always are extraneous circumstances and untoward events that cloud the picture and confound the risks. To get a sense of how policy decisions are made in real time, it is useful to reframe the Fed's priorities in terms of both their long-term objectives of price stability and full employment and the more immediate risks that might undermine the central bank's ability to achieve its goals. In that context, the Fed's priorities are quite clear and rank as follows:

1. Safety and soundness of the financial system;
2. Price stability;
3. Full employment; and,
4. Currency stability.

The first priority, which is often overlooked or even ignored by pundits and critics, was the underlying rationale for creating a central bank in the first place, as is clear in the Federal Reserve Act of 1913. It is unlike the other legislated priorities in several respects.

First, safety and soundness is not binding priority unless there are signs of systemic risk. It is a conditional priority that supersedes all others only when the financial system, broadly defined to include both the banking system and capital markets, is under siege on whatever front. If so, the FOMC has the mandate, and indeed the obligation, to take whatever measures are needed to stabilise the financial system. Granted, this overarching priority is

not often relevant – banking oversight and capital market regulations are meant to preclude crises.

The question is when, if ever, should central bankers use their main policy tool, i.e. short term interest rates, or other measures to mitigate or even preempt the risks of a financial instability? In general, central bankers tend to err on the side of cleaning up the mess after the fact rather than acting in anticipation of crises. Until one sees the whites of the eyes of a brewing calamity, it is difficult to know the appropriate remedy. Preemptive action tends to be confined to macro-prudential policies, stress tests, oversight and audits for the banking system. Most protections against risk in financial markets are the purview of other regulatory bodies, not the Federal Reserve.

A second difference is that measures to ensure safety and soundness during periods of stress are viewed as temporary expedients. Any extraordinary measures are not meant to be permanent fixtures or rules of thumb for future policy. Financial crises may be recurring but they are not the same, either in cause or effects. Hence, the Fed in general will feel the need to unwind any emergency measures in a timely manner. On both counts, emergency measures require discretionary decisions that may fall outside the rules book for longer term priorities two and three.

DISCRETIONARY POLICY AND BANK RISK

In this context, the deviations from Taylor's policy rule over the past 30 years are instructive of how the Fed tends to perceive systemic risk and hence react to signs of stress.

Note that the Fed did not play the systemic risk card during the tenure of Paul Volcker as Chairman, despite the economy sinking into one of the longest and deepest recessions that the US has ever experienced.[3] By contrast, the Fed seemed to use discretion in setting policy fairly often during the Greenspan years, notably during the savings and loan crisis of the early 1990s, again briefly in 1998 and in the wake of the mild recession of the early 2000s when many overextended US companies and their banks sank under their heavy debt burdens. In each case, the Fed lowered its policy rate more than the Taylor Rule would have implied – and in each case, the Fed reversed course, usually after lingering too long, and subsequently overshot on the high side as the economy and its banks weathered the storms.

Chairman Greenspan was often criticised for using monetary policy to prop up equity prices during times of volatility – the so-called "Greenspan put". I doubt he ever thought in those terms. In the Fed's framework, volatile capital markets or banking crises only require aggressive intervention when they impair the ability of households and businesses to obtain credit. Indeed, the availability of credit, not its cost, is what enables the economy to function properly and to recover from adverse shocks. In simplistic terms, a market economy runs on credit, and when the spigot is turned off for whatever reason, the Fed needs to become the lender of last resort and the provider of liquidity to lenders and market participants.

In its mildest action, the Fed lowers the funds rate, which is the cost of capital for banks whose margins thus improve thereby providing wherewithal to mend their balance sheets. And that is exactly what the Fed is inclined to do whenever bad loans, defaults or counterparty risks threaten to pervade the banking system. When these risks reach a tipping point, the Fed can revert to priority one, its mandate to ensure the safety and soundness of the financial system. Whether or not those risks have reached a critical juncture is a judgment call, and any subsequent discretionary stimulus is supposed to be temporary. It only is intended to last as long as a crisis or its aftershocks continue to take a toll on the real economy and hence thwart the Fed from achieving its other goals.

MODELING SYSTEMIC RISK

The preceding discussion provides a basis for incorporating the Fed's response to systemic risk, and hence the probability of discretionary policy actions, into a Taylor-form model. The challenge is to identify a measure that deviates from its norm when the financial system is experiencing heightened stress. A prime candidate for trouble is the banking system, which is the Achilles Heel of market economies. Despite oversight from regulators and internal models, bankers tend to take on too much risk with too little due diligence, especially during protracted expansions. When their clients cannot repay their debts, financial conditions begin to snowball downhill as banks tighten lending standards and refuse to rollover maturing loans. In the extreme, banks begin to question if their counterparty institutions can pay, which then begets a full blown crisis.

As a proxy for potential financial instability, I use quarterly data from Moody's on the number of credit rating upgrades and downgrades for businesses and financial institutions. These data are shown in Figure 2 as the logarithm of the ratio of upgrades to downgrades for 1986 to date. This construct has several advantages.

First, changes in credit ratings can be an early indicator of festering financial problems – a three-quarter moving average of the number of upgrades and downgrades allows enough time to discern a trend and hence to sense that banks may need to tighten lending standards.

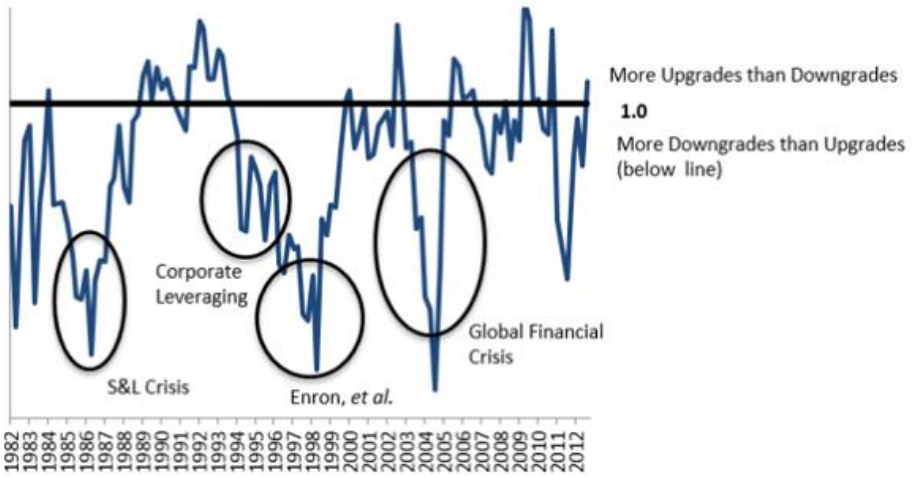
Second, the ratio of upgrades to downgrades has a sustainable norm – namely, unity – so deviations in the ratio from unity parallel the construction of the other target variables in the Taylor model.

Third, the ratio tends to sink like a stone toward zero when financial conditions take a sudden turn for the worse, yet tend to hover in a narrow range above unity during favorable economic conditions when systemic risk is low.

Most important, this lopsided range for the ratio of upgrades to downgrade is consistent with how the Fed reacts to financial instability. As long as financial markets are quiescent and banks are healthy, the Fed gives little weight to the possibility of an imminent crisis in

their policy deliberations, whereas signs of financial distress quickly translate into caution and then action. Similarly, the model attributes little weight in explaining the fed funds rate when the Moody's ratio is above unity, yet makes a large contribution to explaining the fed funds rate when the upgrade/downgrade ratio falls sharply.[4] That lopsided distribution of the data tends to parallel the conditional nature of the Fed's mandate on safety and soundness and hence its use of discretion in policy decisions.

Figure 2: Moody's orporate Credit Ratings – Ratio of upgrades to downgrades (log scale)



Source: Bloomberg

THE ROLLER COASTER OF CORPORATE CREDIT QUALITY

During the past 30 years, there were four major episodes of wholesale downgrades of credit ratings that caused the credit ratio to plummet. In real time, all these episodes appeared to have the potential for generating systemic dysfunction. In retrospect, only one – the Global Financial Crisis – was severe enough to warrant proactive and protracted policy intervention.

The first three episodes, which occurred during the Greenspan era, preceded recessions by several years and tended to crescendo at the trough of recessions. During the mid-1980s, downgrades were concentrated among industrial companies in the Midwest. Later in the decade, deregulation begat aggressive practices to attract deposits at savings and loan institutions that subsequently degenerated until thousands of institutions failed or were merged. In the 1990s, corporate leverage soared during the euphoria of a strong expansion, low interest rates and resurgence in productivity that seemingly stemmed from applications of information technology. The mild recession of 2000-2001 sent leveraged companies into a tailspin, especially the dotcom startups whose cash flows failed to live up to either their

hype or their equity valuations. High profile defaults of WorldCom, Enron and Southern California's electric utility left banks scrambling to tighten credit standards.

To Federal Reserve officials, it must have felt as if systemic risk was brewing in all these episodes, all of which were accompanied by a surge in credit rating downgrades. By contrast, there was no ambiguity about the systemic meltdown that followed the collapse of Lehman Brothers in 2008. Without the Fed's discretionary use of emergency measures to provide first liquidity and then to obviate counterparty risk, the US and global economy would have suffered much more than it did.

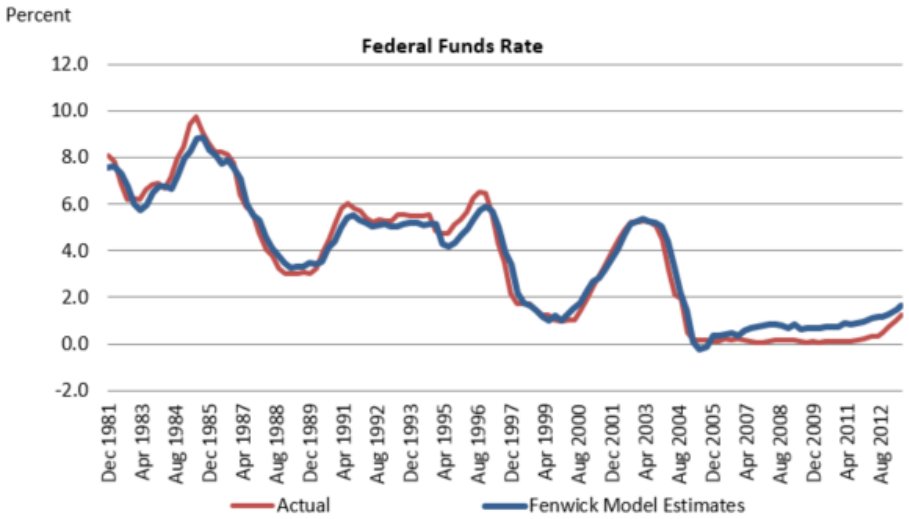
A MODIFIED TAYLOR-FORM MODEL WITH DISCRETION

Inclusion of our proxy for systemic risk in a traditional Taylor model leads to striking results for estimating the federal funds rate, as shown in Figure 3. What is remarkable is that our model picks up all the peaks and valleys in the funds rate and even the Fed's brief intra-cycle misdirection and reversal in 1998-99.

To be clear, the Moody's data are not an infallible sign to pending financial distress, nor do Fed officials base their decisions to take exceptional measures on one piece of information. Our model results do indicate, however, the Moody's ratio is exceptionally well-suited to capturing abrupt changes in financial conditions that do influence Fed policy decisions and hence explain when the FOMC is likely to use precautionary discretion in setting policy.

Our framework confirms that the Fed has followed a consistent pattern of preemptive risk management in the face of repeated financial shocks over the past 30 years, which explains their short-term deviations from their long-term goals. Whether those shocks would degenerate into a full-blown crisis and hence validate the need for discretionary action is always a judgment call - and not a simple one. Sometimes, the Fed's risk management proved to be overly cautious. And, the Fed has tended to linger too long before reverting to the longer-term objectives, in my opinion. That conclusion does not imply, however, that the Fed should abandon the use of discretion.

Figure 3: Augmented Taylor Model with proxy for systemic risk



Source: Bloomberg and estimates from Fenwick Advisers' proprietary model

LESSONS FOR CURRENT POLICY

Our model and past behavior suggests three lessons for the Fed's current resolve to normalize policy.

First, consistent with past episodes of discretionary policy actions, the Fed is committed to symmetry in unwinding extraordinary policies. Namely, when systemic risks in the financial system have been mitigated, as seems to be the current state of affairs, then extraordinary policies should be unwound in a timely manner lest they create future distortions. In essence, that is what the Fed is now doing. Recent rate hikes have brought the policy rate within about 40 basis point of our model estimate.[5] Similarly, the Fed's oversized balance sheet is an most obvious remnant of past discretion and hence is on the chopping block now that priority one – safety and soundness of the financial system – has been attenuated. Consistent with that view, our model now gives no weight to discretionary policy.

Second, now that the policy rate is "on track" toward normalisation, we can see why Fed officials have shifted focus to unwinding the bloated balance sheet, which clearly was intended to be a temporary expedient designed to stabilise financial conditions and to facilitate borrowing. At full employment, those measures no longer serve their original purpose and, with time, become increasingly risky.

A third lesson from past use of discretion is that staying too long with discretionary policy can introduce new financial risks. We see those concerns are weighing on current deliberations – FOMC members fret over elevated asset prices and growing debt burdens

both at home and abroad. Crises do not need to be home-grown to unravel financial markets.

BACK TO THE FUTURE: NEW NORMS FOR OLD RULES

As the Fed weans itself from past discretionary actions, in effect it is shifting back towards the rules-based framework for decision-making.

The problem is that the old norms embedded in the Taylor Rule are no longer relevant. Two structural changes are of great importance.

First, the implied neutral policy rate, at which monetary policy is providing neither stimulus nor restraint, is 4% in the Taylor Rule - or 2% in real terms, given the 2% inflation target. A growing body of evidence indicates the neutral real policy rate is much lower, in the range of zero to 0.75%.[6] Note that our model estimates in Figure 3 are converging on a nominal neutral rate of 2% to 2.5%, which is consistent with the new evidence.

Second, inflation no longer is as sensitive to tight labor and product markets as it was during the latter half of the 20th century. The Fed will need new models, or at least, minimum new norms, if they wish to rely more on monetary rules for guidance in the future.

Figure 1 above clearly shows the widening discrepancy between the traditional Taylor Rule predictions and the actual policy rate after 2000. Some observers highlight the gaping disparity since the Global Financial Crisis, suggesting some cause and effect - or, worse yet, a permanent "regime change" around 2007. In reality, the old interest rate models began to go off-track much sooner. In my opinion, the likely candidates for this steady structural shift to lower real rates have evolved from a combination of demographics (as cited in the Fed staff study), Asia's saving glut (a by-product of China's rapid industrialisation) and increasing concentrations of private wealth. Together, these factors have accounted for a huge shift in the concentration of saving into the hands of a relatively small slice of wealthy individuals and companies, thereby tipping the usual balance with investment. If this assessment is correct, real interest rates will stay low for quite some time.

The second structural shift in the sensitivity of wages and prices to the degree of slack in labor and product markets also has major implications not only for the practical operations of monetary policy but also for public perceptions of its efficacy. I suspect that many of the same tectonic shifts that have affected real interest rates also have caused a secular downshift in inflation - namely, China's industrialization added about 10 percentage points to world GDP just when the main driver of global demand - population growth - is slowing dramatically.

The implications are sobering. Central banks face a future in which monetary policy is much less potent in stimulating either output or inflation than was the case during the latter half of the past century. Even the Fed's 2% target may ambitious at times. Arguments for raising

the inflation target seem to be a convoluted rationale for sanctioning a debt bubble. In a structurally low inflation world over which the Fed has limited control, even a 3% inflation target favors borrowers at the expense of savers, which usually is characterised as financial repression.

A more sensible path. in my opinion, would be to reformulate Taylor's insightful model in the context of today's new norms and to focus research and attention on the causes of systemic failures both in the banking system and financial markets. The challenge of course is that every business cycle is different. Lessons from the past may not always apply to the future. Yet, there is no need to repeat the mistakes of the past. To paraphrase wisdom often attributed to Mark Twain, "History does not repeat itself, but it rhymes." The same is true for debt cycles.

ENDNOTES

1. Freidman presumed that the velocity of money was essentially constant and the employment tended to operate close to full employment, so the price level would rise only in concert with amount of money created. Interest rates supposedly would tend to be pro-cyclical because expansions would create strong demand for money and hence tend to push up interest rates, whereas recessions would reduce money demand and tend to depress interest rates. This simple rule undoubtedly would have led to better policymaking during the 1930s and even during the postwar period. By the early 1970s, however, it became clear that the velocity of money was declining dramatically for reasons that still are not entirely clear, and Freidman's constant-growth monetary rule would not have fared well as the sole monetary rule.

2. Taylor, John B. (December 1993). "Discretion versus policy rules in practice". Carnegie-Rochester Conference Series on Public Policy, Elsevier, 39: 195-214, http://www.stanford.edu/~johntayl/Papers/Discretion.PDF.

3. The FOMC did modify its tight policy stance in coordination with other G7 central banks after the Plaza Accord in September 1985. The coordinated currency intervention was intended to contain the strength in the US dollar, which had risen 50% against other major currencies in response to very high real US interest rates during the Volcker years. This was a rare instance when priority #4 took precedence over the other three objectives. Notwithstanding this slight tilt toward easing, US monetary policy did not deviate dramatically from what the Taylor Rule would have recommended if it had existed at the time (see Figure 1). The Bank of Japan, on the other hand, is thought to have paid a heavy price for allowing the yen to appreciate sharply after the Accord, which is thought to have exacerbated its asset price bubble.

4. The Fenwick model uses the logarithm of the ratio of upgrades to downgrades (three-quarter moving averages), which amplifies the downside readings and helps to keep the upside close to unity, thereby rendering readings above unity largely immaterial in the same way that the Fed gives little weight to systemic risk in their policy deliberations when banks and capital markets are functioning well.

5. Granted, our model would have recommended the first steps toward normalizing the policy rate as early as 2011 when inflation moved up close to the 2% target. Absent more inflation in subsequent years, though, our model would have left the policy rate at 75 basis points until early 2016 when the output gap began to close sharply. Adjustments over the past 12 months have brought the policy rate into much closer alignment with our model results.

6. A Fed study attributes 125 basis points, which is almost all, of the decline in real US GDP growth and real interest rates since 1980 to demographic factors. See Gagnon, Etienne, Benjamin K. Johannsen, and David Lopez-Salido (2016). "Understanding the New Normal: The Role of Demographics," Finance and Economics Discussion Series 2016-080. Washington: Board of Governors of the Federal Reserve System, http://dx.doi.org/10.17016/FEDS.2016.080.

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