# Deconstructing Indian Monetary Policy through the Taylor Rule

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It is meaningful to evaluate the Reserve Bank of India's monetary stance through the prism of the Taylor Rule, even if it is inadvisable to apply it mechanically.

How does the current policy (repo) rate of 7.25% announced by the Reserve Bank of India (RBI) on 2 June 2015, and left unchanged in its subsequent review of 4 August, stack up, and what could be the central bank's rationale? The Governor of the RBI. Raghuram Rajan, had to field questions in every fora in June regarding a supposedly hawkish stance on monetary policy that was damaging the recovery. Even the Chief Economic Adviser to the Government of India seemed unsure whether the policy rate was appropriate (*Indian Express*, 12 June 2015).

If one were to simply go by the Taylor Rule, a commonly used central banking monetary thumb rule for setting benchmark policy rates, the policy rate was consistent with the May 2015 consumer price index (CPI) inflation of 5%, an inflation target of 4%, and an output gap of 0.5%.[1] The June CPI inched up slightly higher to 5.4%, vindicating RBI's hawkish stance on inflation, as the revised policy rate now works out to 7.85% on these parameters.

Are these assumptions correct? It is not clear what, if any, monetary policy rule is used by the RBI. It has indicated that it follows a regime of inflation targeting. It is however likely that internally it puts its policies to the Taylor Rule test that considers both growth and inflation, as it has made clear from time to time that it is sensitive to growth concerns.

Be it as it may, it is meaningful to evaluate RBI's monetary stance through the prism of the Taylor Rule, even if it is inadvisable to apply it mechanically. This is not easy. The mathematical precision of the Taylor Rule notwithstanding, it is unclear what numbers should go into the equation to generate the prescriptive policy rate. There are multiple problems with each of the three variables of the

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Taylor Rule equation, namely, growth, inflation and the constant.

### Variable One: Growth

First, growth. There are two separate issues here. First, it is notoriously difficult to estimate growth potential in the best of circumstances. Second, this problem is compounded by the Central Statistics Office's (CSO) revised growth estimates that are out of sync with every other high frequency data. There is understandable scepticism about the new numbers even in the RBI and the Ministry of Finance.

There is however a way out of this imbroglio. It is not absolute numbers but the output gap that matters for the Taylor Rule. Earlier India was thought to be growing at 5%–5.5%, and potential GDP growth was estimated at 6.5% to 7%, having declined from pre-crisis levels as elsewhere in the world. The new CSO data shows growth higher by about 2 percentage points at 7%–7.5%. If the new CSO numbers are read with other high frequency data, we can assume that the output gap has not narrowed. Potential growth has simply moved up by 2 percentage points. If the output gap is unchanged at 1.5%, then the policy rate should be 6.75% instead of 7.25%. The central bank's scepticism regarding the new growth rates, and overall concerns regarding growth, also indicates that it seems to consider the output gap nearer 1.5% than 0.5%.

### Variable Two: Inflation

Second, inflation. There are again two separate problems here. First, should one use CPI inflation data or wholesale price index (WPI) inflation? The divergence between CPI and WPI is currently very wide. But this is nothing new, as these are known to diverge significantly from time to time. Inflationary pressures in India emanate from food prices. These comprise about half the weight in CPI, but only about a quarter in WPI. The May WPI rate of minus 2.36% (June -2.4%), an output gap of 1.5% and an inflation target of 4% yields a policy rate of 0.5%. This may seem somewhat startling. But the WPI indicates a deflationary situation, a fit case for zero bound policy rates as in Western countries currently. RBI has however made it quite clear in recent times that it has switched from using a mix of CPI and WPI to relying exclusively on CPI as input into monetary policy, in line with central banks elsewhere.

The bigger problem with inflation data is RBI's "glide path." While RBI's long-term CPI target is 4%, its interim target is 6%. It seems to be working towards the long-term target of 4% rather than simply using the interim target of 6%. If the latter were used, the policy rate would be 5.75% (6.35% with the June CPI data) with a 1.5% output gap, and 6.25% (6.85% with the June CPI data) with a 0.5% output gap. If indeed RBI is working with the higher inflation target, it must be using a higher constant.

### Variable Three: The Constant

Third, the Taylor Rule constant. This is the most intriguing part of the Taylor Rule. The constant of two used in the Taylor Rule equation is historical rather than analytical, and therefore US-specific. It was derived from data that captured past episodes of successful US Federal Reserve interventions. To the best of my knowledge such a study has not been done for India, although RBI may well have done some work internally.

It is possible that the RBI may be using a higher constant because, first, underlying growth and inflation trends in India are higher, and second, while Indian savings rates are high, there is a need to wean savers away from non-productive assets like gold to financial savings. Higher real returns of 50–100 basis points is likely to sway savers much more than investors who have a longer term time horizon. Demand prospects, the investment environment, retained profits and external borrowing costs (currently at historic lows) matter much more for investors than a 50–100 basis points difference in borrowing costs.

With so many possible combinations and permutations of the three variables that go as inputs into the Taylor equation it is difficult to second-guess RBI's rationale in setting the policy rate at 7.25% at this juncture. My best guess is that it used an output gap of 1.5%, an interim inflation target of 5%, and a higher (3%) constant than the 2% stipulated in the Taylor Rule, and for good reasons, in its June policy rate adjustment. With these parameters the June CPI number yields a policy rate of 7.85%. But central banks generally avoid changing rates with the announcement of each successive high frequency data unless they expect the new numbers to be maintained going forward.

The RBI was circumspect while lowering the policy rate in June. The June CPI numbers vindicated its caution. The other possible reason why it may have been so circumspect is that although its official stance is one of inflation targeting, there is a lurking fear of being overwhelmed by the impossible trinity as the US Federal Reserve is poised to pivot on its zero-bound interest rates. This is expected to see capital flowing out of emerging markets, including India.

NOTE

1 See http://www.aloksheel.com/taylor_rule.htm to use the rule calculator.