Inflation Targeting in the Developing World: A Case Study of India*

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Abstract

Since the Lucas Critique and the rational expectations revolution of the 1980s, inflation targeting has emerged as a dominant monetary strategy that is practiced in some form by 33 developed and developing countries. While there is no dearth of research on what the implications of the strategy are for developed countries, there is less evidence on its practicality for developing countries. In this paper, I use India as a case study to examine inflation targeting in the setting of an emerging economy, and use causal and non-causal estimation methods to show that conditional on certain economic and institutional properties, the strategy is associated with reduced inflation levels and volatility in an emerging market setting.

*I want to thank Professor Julie Cullen for helping me with every step of the process, whether it was model specification or professional guidance.

1 Introduction

Heightened, volatile inflation sparked by the 1973 Arab oil embargo and the collapse of the Bretton Woods agreement in the early 1970s, forced central banks and policymakers to reexamine their notions of growth and inflation. Botched policy responses (DiCecio and Nelson, 2013) across the developed world, which rested on faulty beliefs about the long run relationship between unemployment and inflation, exacerbated the deleterious economic fallout of exogenous inflation. It wasn't until the mid-1980s that inflation began to settle, due in large part to greater geopolitical stability as well as the growing consensus that there was no long-run trade off between unemployment and inflation.

By the late 1980s, policymakers became painfully familiar with the real economic costs of high inflation and looked towards new policy frameworks that prioritized price stability above all else. Monetary targeting, a strategy that focused on controlling monetary aggregates, caught traction during the mid-1970s though proved insufficient in taming high, persistent inflation. Two pressing critiques of monetary targeting were that policymakers failed to inspire public confidence in their commitment to stabilizing monetary bases, and that monetary targeting was "doomed to failure" since it relied on a tenuous relationship between monetary aggregates and inflation.

In 1990, the Reserve Bank of New Zealand became the first central bank to pioneer a new monetary strategy called inflation targeting (IT). By the end of the decade, thirteen countries had subscribed to the policy framework. Inflation targeting crucially avoided the primary pitfall of monetary targeting in that it didn't require policymakers to extrapolate from a weak relationship between inflation and monetary aggregates. By explicitly committing to an inflation target and using a host of relevant economic variables, rather than just one, to adjust policy instruments, inflation targeting emerged as a pragmatic successor to monetary targeting. With the advent of inflation targeting, policymakers began to internalize the necessity of frequent, transparent communication with the public to establish credibility. Fundamentally, inflation targeting serves as a necessary reminder of what central banks

could and can realistically do— control inflation— and does away with costly notions that delegate to them authority over long-run output growth and employment levels.

Today, inflation targeting has become a common monetary strategy, practiced in some form by 33 developed and developing countries. Even as its popularity has grown since 1990, inflation targeting has been the subject of intense controversy amongst macroeconomists. In the next section, I review some of these discussions, investigate their shortcomings, and introduce India as a case study of inflation targeting from the perspective of an emerging market economy.

2 Literature Review

Controversy around IT amongst macroeconomists concerns whether the strategy is actually responsible for reduced inflation. Ball and Sheridan (2004) find that IT confers no advantage to practicing countries and that any observed inflation reductions in these countries simply demonstrate regression to the mean. Despite some notable disagreement regarding the validity of this conclusion, it nevertheless has been supported by subsequent researchers, including Brito and Bystedt (2010) and Angeriz and Arestis (2006). That the strategy has prevailed, despite empirical evidence that suggests it has no causal impact on observed inflation, results from the observation that no extreme adverse inflationary episodes, aside from supply shocks, can be directly attributed to the policy framework. Therefore, the coincidence of inflation targeting and low inflation in the developed world over the past few decades might be the only justification policymakers need to continue IT.

It's important to recognize that most of the studies that conclude IT has no statistical significance in the context of low inflation, fail to incorporate developing countries into their analysis. In fact, IT seems to show greater promise in reducing inflation in developing countries than in developed ones, when comparing treatment groups against their own pre-IT experiences, as well as against other non-IT developing economies (Schmidt-Hebbel and

Carrasco, 2016). One proposed reason for this difference is that inflation in developing countries tends to be much higher than in developed countries, making the switch to IT a credible signal to the public that a central bank is committed to keeping inflation low and stable. As such, IT can introduce some financial regularity to countries where high, volatile inflation, resulting from rapid fiscal expansion and low central bank independence, is the norm. In another study that focuses exclusively on IT in developing countries, Gonçalves and Salles (2008) apply the same difference-in-differences approach used by Ball and Sheridan to show that IT has statistical and economic significance in developing countries, reducing inflation between 2-2.5%. Once again, however, some notable critiques of IT in developing countries should be considered. As a follow-up to the Gonçalvas and Salles study, Thornton (2016) shows that once we control for monetary regimes comparable to the ones in question, IT leads to no greater reductions in inflation than exchange-rate targeting.

The target, or target range itself is a sensitive objective and deserves close scrutiny, especially for developing countries. While most developed countries pursue inflation targets between 2 and 4%, growth and monetary literature suggests that the target range for developing countries ought to be considerably higher. Low target ranges come at the high cost of economic growth, which for most developing countries is unaffordable from a development perspective. Pollin and Zhu (2006) find that the low, narrow target range used by many high-income countries may significantly inhibit economic growth in low- and middle-income countries. Pollin and Zhu's findings are especially relevant to our case study because they stand in stark contrast to the the Reserve Bank of India's (RBI) 4% target.

These conflicting perspectives between the developed and the developing world's experiences with IT suggest that the verdict on whether IT can be used to lower inflation in the medium-run, remains unclear. To provide clarity to these questions, I look to India as a case study for the implications of IT in emerging market economies.

3 Inflation in India

In developed economies, inflation is typically generated by increases in consumer expenditures, business investment, and asset prices. Emerging economies, on the other hand, experience inflation as a result of more exogenous forces such as supply shocks and of endogenous policy decisions such as loose fiscal policy; India is no exception. I detail three primary determinants of inflation in India— food and energy prices, fiscal policy, and monetary policy— as identified by Mohanty and John (2015)[1].

As in other developing countries, inflation in India is largely driven by exogenous forces that are far more consequential than they'd be in developed countries, with food and energy prices being the primary culprits. Recent research shows that global oil prices Granger cause inflation in India (Zakaria et al., 2021), and that consistent, volatile food price inflation gets embedded into inflationary expectations (Anand et al., 2014). These observations explain why even though core inflation in India has been relatively low over the past 40 years, unpredictable spikes in headline inflation, which is the sum of core inflation and energy and food price growth, have seeped into core inflation by modifying inflationary expectations.

Loose fiscal policy can also induce inflation, especially when it stimulates aggregate demand without simultaneously augmenting aggregate supply. Fiscal deficits have been theorized to move laterally with inflation since the 1980s, (Sargent, 1982); empirically, this claim has held for India, as (Khundrakpam and Pattanaik, 2010) find that a one percentage point increase in the fiscal deficit may cause a quarter percentage point increase in the Wholesale Price Index. It should be noted that government deficits are unlikely to cause inflation in and of themselves, especially in the Indian context where fiscal expenditures still have the ability to shrink unemployment gaps and generate Keynesian multiplier effects. The timeline over which the government chooses to fill expenditure gaps, as well as the methods of financing are crucial in determining the magnitude and temporal onset of inflation. Though India had once struggled to manage its fiscal deficit, since the early 2000s, it has implemented

[1]Mohanty and John (2015) identify the output gap as a fourth determinant.

fiscally prudent policy measures such as the Fiscal Responsibility and Management Act, and consolidated tax schemes, such as with the Goods and Services Tax, to boost tax revenue collection. Monetary policy is a third major determinant of inflation in India, though I leave its discussion for the next section. For now, I emphasize that interest rates in India have become increasingly relevant in influencing inflation (Mohanty, 2012).

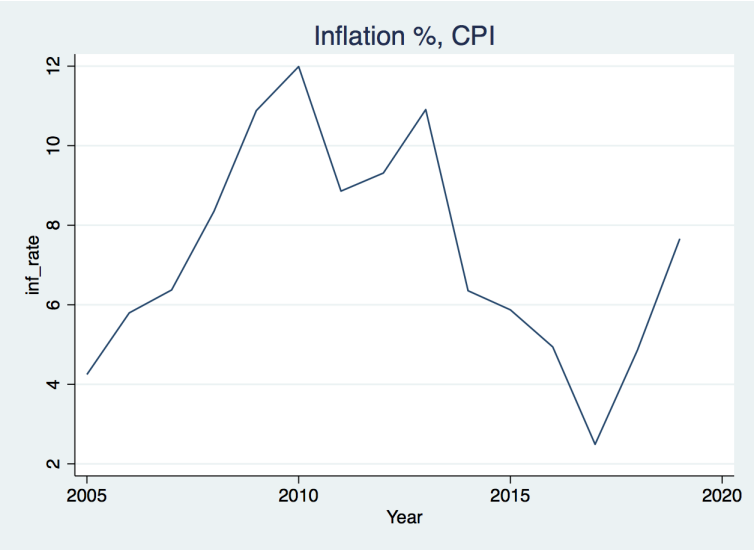

Figure 1: Inflation in India, CPI

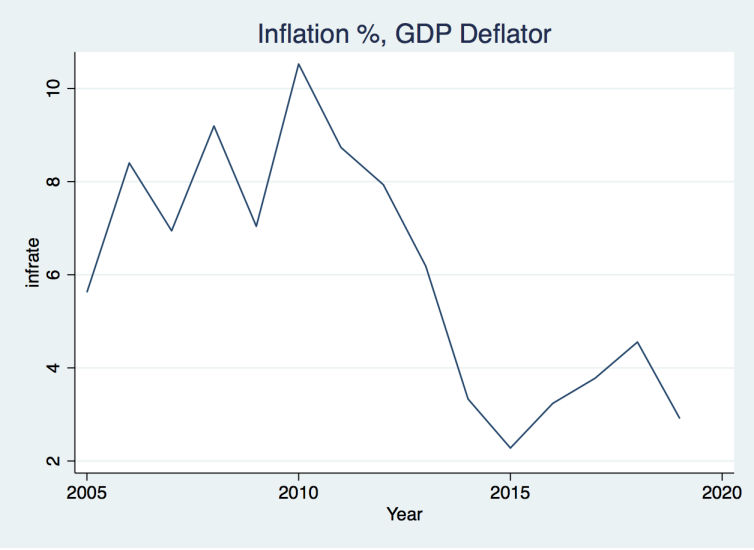

Figure 2: Inflation in India, GDP Deflator

4 Indian Monetary Policy and the Transmission Mechanism

Since its inception, the Reserve Bank of India (RBI) had seen its main objective as regulating credit supply to promote development goals. In the early-1980s, after a prolonged stint of high and volatile inflation resulting from exogenous supply shocks, frequent debt monetizations, and cheap, easy credit, the RBI turned its focus to managing inflation. Following the Chakravarty Report of 1985, India gradually became a monetary targeter, in line with the rest of the developed and developing world. In the coming decade, the RBI throttled inflation by increasing requirements on its primary instruments— the cash reserve ratio (CRR) and the statutory-liquidity ratio (SLR)— and liberalizing interest and exchange rates. A more formal monetary framework was accompanied by fiscal deregulation and the two spurred rapid economic growth throughout the ultimate decade of the 20th century. By 1998, as many countries had abandoned monetary targeting in favor of price-level or inflation targeting, the RBI similarly revised its policy framework and adopted a multiple indicators approach which would track a broad range of other macroeconomic variables aside from the money supply, in order to promote price stability and economic growth. The creation of the Liquidity Adjustment Facility in 2000 was also a crucial addition to the RBI's monetary arsenal as it allowed the RBI to use repo and reverse repo rates to influence overnight money market rates (Mohan and Ray, 2019). Under the multiple indicators framework, inflation in India remained in the single digits throughout the first decade of the 21st century. What prompted policymakers to once again revise their monetary strategy was the period of moderately higher inflation following the Great Financial Crisis. In 2016, the RBI under the guidance of RBI governor Raghuram Rajan, asserted inflation targeting as its primary objective, using CPI inflation as a nominal anchor.

Today, the RBI is a highly independent central bank that uses modern policy instruments (e.g. repo rates, reserve requirements, and open market operations) alongside qualitative

tools (e.g. forward guidance and transparent communication) to manage inflation. As a developing country however, it must also track exchange rate fluctuations and foreign capital reserves to minimize the economic instability caused by financial triggers. The expansion of financial services and security markets has enabled the RBI to monitor and stabilize wide, persistent output gaps more effectively.

At a high level, monetary policy influences inflation and the broader economy via two major channels— an interest rate channel and an expectations channel. It is well accepted that transmission mechanisms in developing countries are weaker than they are in developed countries. This results from underdeveloped financial markets, lower credibility, and vulnerabilities to exchange rate fluctuations. Though India can be characterized as a developing economy, it does exceedingly well on all measures. Its banking sector is developed and diverse, with a healthy mix of public sector, private sector, and foreign owned banks that are all influenced to some extent by interest rates set by the RBI. The RBI has similarly put huge emphasis on transparency and its shift to IT reflects a willingness to commit to targets they can be held accountable for, which represents efforts to bolster credibility. Finally, India is unusually well insulated from exchange rate shocks (Mohanty and Bhanumurthy, 2014), partially as a result of the RBI's managed float exchange rate regime by which it conducts extensive open market operations to stabilize exchange rate volatility.

India's relatively strong performance on these measures suggests that monetary policy has some influence over the real economy, through both the expectations channel and through the interest rate channel. Empirical evidence supports this claim. Kapur and Behera (2012) find that the interest rate channel in India has similar potency as it does in developed and emerging economies, though monetary policy actions have modest, lagged impacts on inflation. To confirm this hypothesis, I perform a simple regression of the long term bond yield in India on the short term interest rate set by the RBI; a statistically significant relationship between the two implies the interest rate mechanism is a reliable channel and

that RBI policy actions have influence over market rates.

	(1)
	bond_yield10yr
st_int_rate	0.562
	(8.47)
Constant	-48.80
	(-7.34)
Observations	108

t statistics in parentheses

Table 1: Interest Rate Transmission Mechanism

As shown, there exists a highly significant, robust relationship between short term interest rates and long term bond yields in India, an observation which confirms my hypothesis that the RBI has a non-trivial impact on financial markets and establishes foundations for my primary analysis.

5 Data and Methodology

I use two approaches to understand the consequences of IT on inflation and inflation volatility in India— the first attempts a causal explanation, while the second attempts a more relaxed comparative analysis of pre-IT India with post-IT India.

My data are sourced from the Federal Reserve at St. Louis and the World Bank, and track the CPI for India and CPI inflation, GDP deflator inflation, and the unemployment rate for 23 countries from across the developed and developing world, between 2005 and 2019. Of the 23 countries, 16 (including India) are inflation targeters and 7 are not. India is the entity of interest, and the treatment starts in 2015. While most analyses of IT use non-ITers as a control group for evaluating IT, my goal is not to compare ITers and non-ITers but to

assess whether IT has been successful in India as opposed to its previous multiple indicators framework. Therefore, my control group exists to simulate average inflation outside of India and use it as a benchmark to evaluate whether IT has had any discernible impact on lowering inflation in India since 2015.

For my estimation strategy, I start with a standard difference-in-differences regression and add varying levels of complexity to it. Following a minimally specified model, as practiced by Barbosa et. al (2018), I use the lagged unemployment rate as the only explanatory variable for inflation. While similar analyses include additional regressors such as lagged inflation, exchange rate flexibility, and fiscal balance, Ang et al. (2007) report that no other variable can reliably forecast future inflation. In line with a standard fixed-effects model, I include country and time fixed effects. Finally, to test for pre-trend differences between India and the control sample, I include a placebo term. The model is as follows:

$$\text{infrate}_{it} = \beta_0 + \beta_1 \cdot \text{unemprate}_{it-1} + \beta_2 \cdot \text{int\_term} + \beta_3 \cdot \rho_i + \gamma_i + \lambda_t + \varepsilon_{it} \tag{1}$$

where int_term indicates our treatment effect, γ_i acts as the country fixed effect, λ_t acts as the time fixed effect, and ρ_i acts as a placebo test term.

Though the difference-in-differences model is a strong starting point, it faces some key limitations. To begin with, our control group likely differs in crucial ways from our treatment group due to country-specific inflationary determinants. These differences would be made evident by a non-zero coefficient on the placebo term, though as I show in the next section, the data reveals a statistically significant, negative coefficient. Instead, we'd like to create a more realistic counterfactual we can use to compare our treatment group to, post-intervention. This can be achieved using the synthetic control method, as pioneered by Abadie et al. (2010).

The synthetic control method is a powerful quasi-experimental tool that uses a matching technique to create a counterfactual control group that most closely resembles the treatment

group, pre-intervention. The goal of the synthetic control is to measure the treatment effect, $\tau_{1t} = Y_{1t}^I - Y_{1t}^N$, where Y_{1t}^I captures the post-intervention outcome for our treatment unit, conditional on treatment, and Y_{1t}^N captures the post-intervention outcome for our treatment unit, conditional on no intervention. This measurement requires the researcher to estimate the unobserved Y_{1t}^N. As opposed to difference-in-differences, which weighs all control units equally, the synthetic control method constructs an artificial control group that assigns different weights to different control units. This control group can be written as: $\widehat{Y}_{1t}^N = \sum_{j=2}^{J+1} \omega_j^* Y_{jt}$, where j refers to the entity, t refers to the time period, and ω_j is a vector that contains each control unit's respective weight. To avoid extrapolation, we impose two constraints on ω_j: (1) $\sum_{j=2}^{J+1} \omega_j = 1$ and (2) $\omega_j \geq 0$ for all j. Estimating $\widehat{Y}_{1t}^N$ now depends on the algorithm used to estimate $\mathbf{W} = (\omega_2, \omega_3, \ldots, \omega_{J+1})$. Abadie et al. (2010) suggest minimizing $\|X_1 - X_0 W\|$, where X_0 and X_1 are predictor variables for control and treatment post-intervention outcomes, respectively. Our weights then seek to minimize $\sum_{m=1}^{k} v_m \left(Y_{1t} - \sum_{j=2}^{J+1} \omega_j^*(V) Y_{jt}\right)^2$, where v_m is a weight that captures the relative importance of each m-th variable by measuring the discrepancy between the treated unit and the synthetic control (Cunningham, 2021). The symmetric, positive semidefinite matrix $\mathbf{V}$ that stores $v_1, v_2, \ldots, v_k$ on its diagonal, is generally chosen to minimize the mean squared prediction error of the synthetic control with respect to Y_{1t}^N.

Ex-ante, I believe the synthetic control method would be preferred to a difference-in-differences estimation because it puts more weight on countries that are similar to India, pre-intervention, giving us a more reliable control group. Because inflation and unemployment data for Bangladesh and Pakistan— two of India's neighbors that likely match India more closely than other countries in our sample— are publicly available, we can use both countries to construct our synthetic control. Luckily, we can still include countries that are dissimilar to India when constructing our synthetic control since the algorithm is designed to select only those units that most closely resemble our treatment unit.

To close out my empirical analysis, I pull back from a causal estimation of IT in India

and use simple regression models to compare pre-IT India with post-IT India.

6 Results

Starting with results for the difference-in-differences model, I omit country and year fixed effects from the regression table for brevity, although they are included in the regression itself.

	(1)
	inf_rate
lag_unemp	-0.212
	(-3.79)
int_term	-1.743
	(-4.44)
placebo	-1.527
	(-4.45)
Constant	4.001
	(6.89)
Observations	345
R^2	0.747

t statistics in parentheses

Table 2: Difference-in-Differences Estimation (Inflation, CPI)

We see that inflation in India is nearly 2% lower than the control group, post-2015, though our placebo term indicates that inflation was already lower than the control group, pre-intervention. Nevertheless, we do see some evidence of a reduction in inflation levels in India. Whether or not we can attribute this reduction to IT is unclear, since it's possible that

the reduction reflects mean reversion from heightened inflation in the years prior to 2015. I can test these results by running the same model on inflation, as measured by the GDP deflator. Inflation, measured by the GDP deflator, gives a broader view of how inflation in India has changed over time.

	(1)
	infrate
lag_unemp	-0.220
	(-3.14)
int_term	-3.260
	(-7.51)
placebo	-3.902
	(-12.33)
Constant	4.681
	(7.88)
Observations	345
R^2	0.639

t statistics in parentheses

Table 3: Difference-in-Differences Estimation (Inflation, GDP Deflator)

We see an even more drastic differential between inflation in India, pre-treatment, and inflation in the control group. Still, inflation in India, post-2015, is lower than observed in our control group which provides preliminary support for IT as an effective means of reducing inflation levels.

While the difference-in-differences approach is a strong choice for policy analysis and has been used to evaluate the merit of IT, I compare it with the results from a synthetic control

estimation since its matching algorithm has the potential to provide a stronger control group than the aggregated control I use for the difference-in-differences estimation.

In a similar fashion, I use lagged unemployment as the predictor variable and inflation as the outcome variable. Additionally, I include three lags of the outcome variable as predictors— inflation in 2014, 2010, and 2007. As with the difference-in-differences estimation, I set 2015 as the intervention year.

The MSPE algorithm selects five countries for the synthetic control— Bangladesh, Brazil, Nepal, Pakistan, and Spain.

Country	Weight
Bangladesh	0.245
Brazil	0.311
Nepal	0.004
Pakistan	0.368
Spain	0.07

Table 4: Weighted Units for Synthetic Control

The synthetic control yields disappointing results, with large errors between observed and predicted inflation, pre-intervention. Due to no fault of the synthetic control technique, the poor pre-intervention fit likely arises from the oft volatile nature of inflation in emerging economies. As an aside, the synthetic control method is better suited for time series data that follow some linear time trend and are theoretically unbounded.

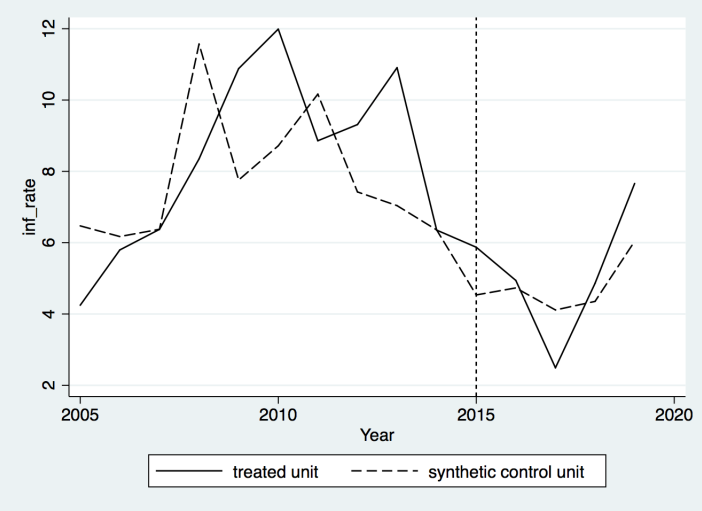

Figure 3: Synthetic Control Estimation

Our difference-in-differences analysis suggests that inflation levels in India were lower than in the "rest of the world"[2], though this takeaway comes with reservations about the pre-intervention trajectory of inflation in India. We can extend our policy evaluation analysis by performing self-analysis on India, which relieves us of the burden of proving causality.

To get a more granular view of how price levels in India have changed pre- and post-IT, I use monthly CPI data for India, as provided by the Federal Reserve Economic Database. I then construct a measure of inflation by annualizing the growth rate of the CPI.

[2]In a loose sense, reflecting the wide range of countries in the control group.

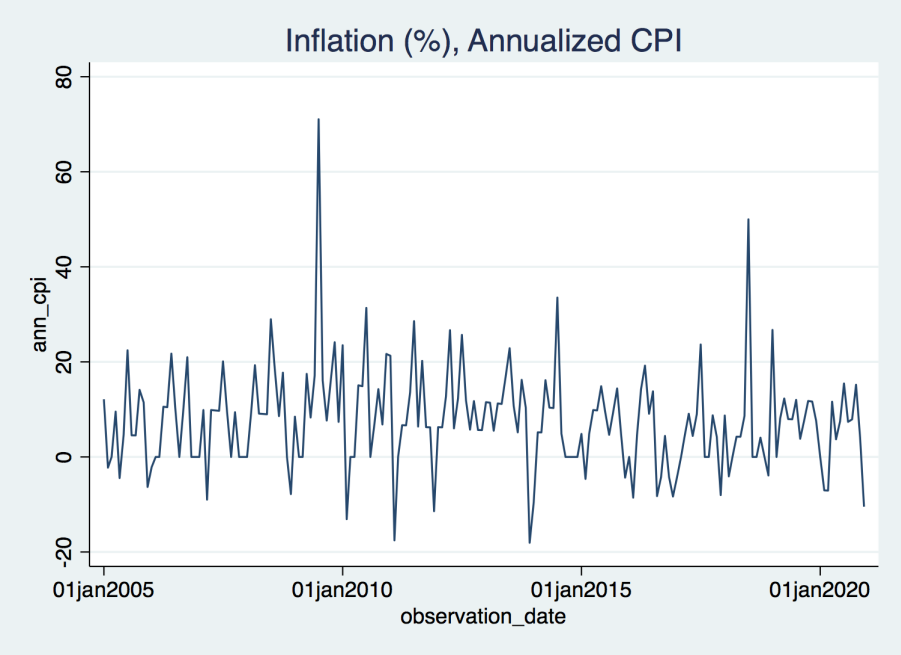

Figure 4: Inflation in India, Annualized CPI Growth

Visually, there seems to be some trend of lower price level growth post-2015. To test this hypothesis, I perform a simple regression of this new measure of inflation on a post-2015 dummy variable, conditional on the year being greater than or equal to 2015. The simple model is as follows:

$$\text{inf}_t = \beta_0 + \beta_1 \cdot \text{yr15} + \varepsilon_t \tag{2}$$

where $yr15$ indicates an observation is in a year greater than or equal to 2015.

This model indicates that annualized CPI inflation is lower post-2015, than in the years prior.

	(1)
	ann_cpi
yr15	-3.399
	(-2.27)
Constant	8.939
	(8.74)
Observations	192
R^2	0.024

t statistics in parentheses

Table 5: Regression Results of Inflation Post-2015

We can also look at how the volatility of annualized CPI inflation in India has changed pre- and post-IT. I define volatility as the 4 month rolling standard deviation of annualized CPI growth inflation.

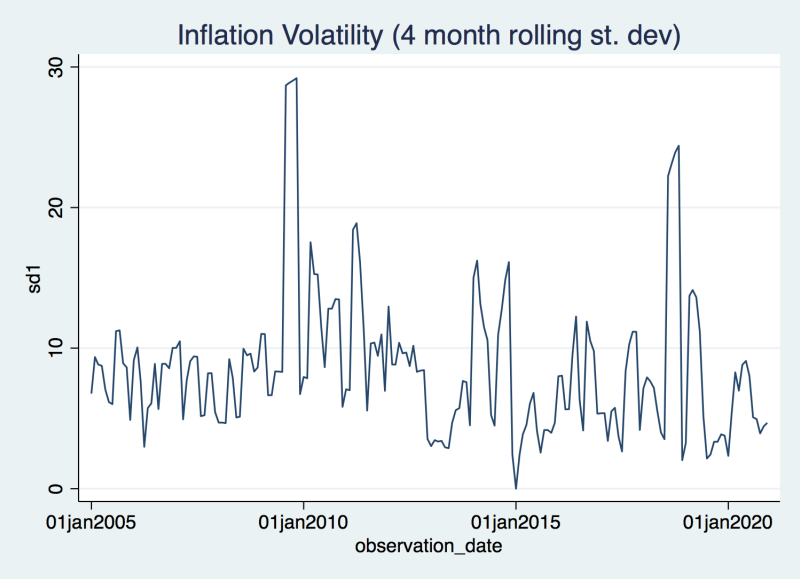

Figure 5: Inflation Volatility in India

Average inflation volatility seems visibly lower post-2015, though we can formally test

this hypothesis by conducting a simple regression of inflation volatility on a dummy term that captures changes in volatility post-2015. The model is as follows:

$$\text{inf\_vol}_t = \beta_0 + \beta_1 \cdot \text{yr15} + \varepsilon_t \tag{3}$$

This simple model suggests that inflation volatility is significantly lower post-2015.

	(1)
	sd1
yr15	-2.081
	(-3.34)
Constant	9.194
	(46.53)
Observations	727
R^2	0.015

t statistics in parentheses

Table 6: Regression Results of Inflation Volatility

7 Discussion

While my analysis does not provide space to make causal claims about the impact of IT on inflation levels in India, it does provide evidence for reductions in inflation levels and inflation volatility in post-IT India as compared to pre-IT India. The RBI has no reason to abandon the strategy, which, as my analysis shows, is associated with lower inflation levels and volatility, and is characterized by a high degree of flexibility even amidst economic challenges such as those presented by the demonetization episode of 2016 and by COVID-19. In contrast to a commonly voiced ex-post critique of practicing IT in India, the RBI has not imposed and does not intend to impose any Volcker-style disinflationary policies to neutralize

inflation, at the potential cost of output growth (Rajan, 2014).

In the near future, India is likely to see an increase in inflation and inflation volatility, especially as consumer expenditures and business investment picks up with the gradual easing of COVID-19 restrictions. These are endogenous changes that monetary policy can effectively respond to, so inflation doesn't rise too quickly. At the same time however, India is bound to see exogenous shocks to food and energy prices, which as earlier discussed, may get absorbed into core inflation and therefore into households' inflation expectations. Though monetary policy isn't powerless to these transitory components of inflation, it has diminished capacity in assuaging their contribution to heightened inflation and must be conducted sensitively so as to not exacerbate economic strains that come with higher prices.

Given that structural factors in India likely play an equal, if not greater, role in determining inflation than monetary ones, researchers ought to rigorously differentiate trend inflation, or the steady state level of inflation which tends to be more amenable to monetary policy, from transitory inflation, or the stochastic component of inflation that captures exogenous shocks to price levels, most frequently of food and energy. Attributing monetary policy, especially as it concerns the RBI's inflation target, with spikes in transitory inflation is not only unwarranted, it has the ruinous consequence of eroding confidence in the RBI's ability to manage inflation, which has potential to destabilize inflation expectations.

What can other emerging economies learn from India's experience with IT? Most importantly, India demonstrates how IT can be practiced as a flexible monetary strategy that considers a broad range of economic indicators in pursuit of the inflation target, or target range. Most ITers, including India, do not subscribe to a rigid rules-based approach to conducting monetary policy and avoid time inconsistency problems through frequent communication with the public on how policy is expected to change in response to a dynamic economic environment.

Furthermore, India shows that IT can still play a central role in minimizing monetary

sources of inflation, even with a relatively weak transmission mechanism[3]. Even if structural components of inflation preponderate over monetary components, both the inflation target and the associated improvements in forward guidance, can prevent structural price shocks from becoming entrenched into inflation expectations, even after price levels stabilize.

Some cautions associated with the implementation of IT, most of which that India has avoided, should also be mentioned. It is imperative for new ITers to commit to the inflation target or target range, without modification. Revising the target, ex-post, to allow for higher inflation would severely undermine the credibility of monetary authorities. The RBI has heeded this advice well, by refusing government pressure to modify the target in response to actual inflation that has deviated from the target range due to COVID-19. As a corollary of the first point, a precise determination of the target is worth careful deliberation, since the optimal target likely varies from country to country.

It's important to recognize that IT, or any monetary strategy for that matter, is not a singularly sufficient means to ensure price stability, especially for developing economies. Monetary policy's ability to tame high inflation is constrained by fiscal policy in the sense that fiscal deficits and expansionary fiscal policy are both associated with increased inflation (Domaç and Yücel, 2005). Understanding the constraints on monetary policy before actually implementing IT is critical so increases in inflation aren't misconstrued as failures of IT.

Finally, IT may not be suitable for all emerging economies. I find that its strength in India is contingent on some key conditions— that the RBI is fully independent, financial markets have attained a minimum level of development, and transmission channels are moderately effective at influencing secondary market rates. Additionally, countries that already suffer from high levels of inflation will likely see little to no success by adopting IT, without fiscal consolidation and high-level monetary tightening (Masson et al., 1998).

[3]Weak, as compared to developed economies.

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