Inflation Expectations and Portfolio Rebalancing of Households: Evidence from Inflation Targeting in India

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Abstract

We use India's inflation targeting policy as a natural experiment to examine how a fall in inflation expectations impacts households' consumption and portfolio choices. Through regional variations in inflation expectations, we provide direct evidence of how the transmission of inflation expectations through different economic channels is influenced by the household balance sheet. Consistent with the consumption Euler equation, households with high liquid wealth decreased consumption, increased savings, and rebalanced their portfolio from risky investments toward bank deposits. In line with a decrease in precautionary savings, households with low liquid wealth consume more and save less as inflation expectations fall.

Keywords: Inflation Expectations, Inflation Targeting, Household Finance, Household Balance Sheet, Consumption, Savings

JEL Classification: D12, D84, D91, E21, E31, E52

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1. Introduction

Inflation expectations play a central role in shaping households' consumption-savings decisions and has been empirically shown to influence individuals' consumption choices in different directions[1]. This is attributed to various economic channels and sheds light on how inflation expectations guide households' choices in different circumstances. Nonetheless, empirical findings in the literature have predominately focused on consumption decisions, and direct evidence of savings and portfolio choices remains scarce. (D'Acunto et al. (2023)). In this paper, we add to the existing literature by studying how changes in inflation expectations influence both consumption and portfolio choice of households simultaneously. By further examining the pass-through of inflation expectations through household balance sheets, we present conditions that dictate the prevalence of different economic channels.

Despite its significance, little work has been done in dissecting the different channels and documenting the causal relationship between inflation expectations and portfolio rebalancing of households directly. One key challenge lies in generating exogenous changes in the inflation expectations of households. Moreover, there are information rigidities (Coibion and Gorodnichenko (2015)), behavioral inattention (Gabaix (2019)), and a lack of common knowledge (Angeletos and Lian (2018)) in the formation of inflation expectations. To overcome these concerns, we exploit a large-scale natural experiment in India: Inflation Targeting.[2] Inflation Targeting was unexpectedly introduced by the Reserve Bank of India (RBI) on 20 February 2015 as a new monetary policy strategy. For the first time, the central bank explicitly set a specific inflation target as its objective. A major policy change, it has been able to anchor the beliefs of inflation in India.

Another challenge lies in data availability. To study how households respond to changes in inflation expectations in different domains, we will require data on households' inflation expectations, as well as their consumption and portfolio decisions. We address the challenge by combining two different sets of data. The first set of data comes from the Inflation

[1] Consistent with the predictions of the consumption Euler equation with constant nominal interest rate, an increase in inflation expectations has been observed to increase consumption across different countries and population profiles (Burke and Ozdagli (2021), D'Acunto et al. (2021), Binder and Brunet (2020)). On the other hand, higher inflation expectations are also associated with lower consumption in other scenarios when households experienced higher uncertainty ((D'Acunto et al. (2020), Coibion et al. (2021)) or relate higher inflation with bad economic times (Andre et al. (2019), Coibion et al. (2020)).

[2] Historically, inflation targeting in many countries has been shown to be able to anchor the public's inflation expectations (See Blinder et al. (2008) for a comprehensive review).

Expectations Survey of Households conducted by RBI in different cities, while the second set of data is a comprehensive proprietary dataset from an Indian financial institution, which provides us with detailed information on monthly credit card, debit card, savings, and stock market investments. While we cannot map the subjects at the individual level, we can link them through the Postal Index Number code (pin code) based on the location of their home address. By putting the two datasets together, we have 217 pin codes in 6 cities that are common. They include Ahmedabad, Bhubaneshwar, Chennai, Delhi, Kolkata and Mumbai. As such, our identification strategy exploits the changes in inflation expectations across different pin codes due to the announcement of the Inflation Targeting policy. Particularly, we rely on the survey results of the RBI's Inflation Expectations Survey of Households in the fourth quarter of 2014 – which relates to households' most recent inflation expectations before the announcement of the Inflation Targeting policy in February 2015.

One potential concern with this specification is that our results could be driven by other common shocks within the same city (and not due to changes in inflation expectations). To address this concern, we tighten our specification further by exploring the cross-sectional variation of inflation expectations in each pin code by age group and gender. Here, we divide the age group into 2 categories (younger and older) based on the average age from the inflation expectations survey. Accordingly, we seek to examine changes in inflation expectations by pin code-age group-gender bins. For instance, in one bin, we have an older, male respondent in pin code 100001 (which is based in Delhi). Based on the overlapping groupings in the two datasets, we obtained 622 common bins. This is our preferred specification.

Using households' inflation expectations before the Inflation Targeting policy as a measure of treatment intensity, we then employ a difference-in-differences strategy by comparing the impacts of households in different pin code-age group-gender bins from the administrative dataset provided by the Indian financial institution. Consistent with evidence of falling and more stable inflation expectations post-policy change, our underlying assumption is that bank customers in different bins and pin codes would have evolved similarly, were it not for the adoption of Inflation Targeting policy.

Our baseline findings suggest that at the aggregate level, there is no evidence of an economically and statistically significant relationship between inflation expectations and households' choices. However, this aggregate result is masked by the heterogeneous response of households. We center our analysis on two possible economic channels. On the one hand, a decrease in inflation expectations with constant nominal interest rates will directly increase the perceived real interest rate (through the Fisher equation). From the consumption Euler

equation, there will thus be a higher incentive for individuals to save and reduce spending. This is particularly pertinent for households due to the nominal rigidities in the savings deposit rate (Neumark and Sharpe (1992), Driscoll and Judson (2013)). On the other hand, a decrease in inflation expectations could have the opposite effect, as the need for precautionary savings falls. As households experience a fall in inflation uncertainty, they become more confident. Hence, they are more willing to spend and save less (Weber et al. (2021)). Given the contrasting effects of these economic channels, it is crucial to understand the conditions that determine the dominance of a specific channel.

In our study, we find that households' liquidity position determines whether the consumption Euler equation or the precautionary channel dominates. The consumption Euler equation channel can be seen in households with high liquid savings, while the precautionary channel is evident in households with low liquid savings. For households with the highest savings quintile, consumption fell by 82 rupees[3] (0.3 percent), while bank deposits increased by 1,266 rupees (8 percent) when inflation expectations decreased by 1 percentage point. Evidence of these households decreasing their consumption and increasing savings is not surprising. As sticky bank deposit rates provide this group of households with their primary source of safe and liquid returns (Drechsler et al. (2017)), they are most likely to be swayed by the consumption Euler equation.

In contrast, households with the lowest savings increased their consumption by 54 rupees (0.5 percent) and reduced their bank deposits by 443 rupees (12 percent) when inflation expectations decreased by 1 percentage point. This suggests that the precautionary channel plays a more important role for households with low liquid savings. A likely reason is that households with low liquidity are more vulnerable to changes in the economic outlook, including inflation. As a result, when inflation uncertainty decreases, this group of households becomes more confident in the economy, which translates to higher spending and lower savings. To further validate the existence of the precautionary channel, we assess individuals' consumption uncertainty by computing their coefficient of variation in consumption spending, one year before the policy shock. We find that households in the lowest savings deciles exhibit the highest levels of consumption uncertainty before the policy change. This supports our hypothesis of the precautionary channel. Since this group of households has the highest consumption uncertainty, the precautionary channel is strongest among them. Moreover,

[3] To convert to USD, the exchange rate of 75 Indian Rupee to 1 USD (as of April 2021) can be used.

within the lowest savings deciles, we find that an increase in consumption uncertainty relates to higher spending, further validating the precautionary channel.

We also provide additional evidence supporting the consumption Euler equation among households with the highest savings. Here, we turn to another key variable: borrowing repayment. The consumption Euler equation reflects the relationship between current and future consumption decisions, which are driven by changes in real interest rates. Should an increase in real interest rates drive these households to consume less and save more, we would expect them to respond to other financial decisions, including loan repayments. Indeed, by focusing on the sub-sample of households holding existing loans with the financial institution in this study, we find that borrowers increase their loan repayments by 760 rupees when inflation expectations fall by 1 percentage point. This finding underscores the significance of real interest rates. A fall in inflation expectations, coupled with constant nominal interest rates, amplifies the cost of borrowing in real terms, prompting higher prepayments. Moreover, we demonstrate that changes in consumption-savings choices for this group of households are not attributable to alternative financial decisions, such as investments in risky assets. By separately households with and without any investments in risky assets, we find that our baseline results still hold. Households with the most liquid savings consume less and save more.

Next, we turn to portfolio choice. Our analysis reveals that households with the highest liquid savings decreased their investments in risky assets by 348 rupees (2.3 percent). In other words, they rebalanced their portfolio from risky investments to bank deposits. Since these households behave in line with the predictions of the consumption Euler equation channel, their behavior is most likely attributed to changes in interest rates. One possible explanation is related to the notion that changes in inflation expectations have an asymmetric impact on **nominal** returns, resulting in an asymmetric impact on the **real** returns of risky investments and bank deposit rates. Figure A1 Panel A in the online appendix presents the changes in interest rates in India during this period. While the RBI discount rate, treasury bill yields, and the term deposit rate offered by the financial institution have decreased over time, the savings deposit rate offered by the financial institution remained unchanged at 4 percent. Thus, the real savings deposit rate increases when there is a fall in inflation expectations. On the contrary, nominal returns of the equity markets are more responsive to changes in inflation expectations as the real returns are expected to be unchanged (Campbell and Vuolteenaho (2004)). This can be seen in Figure A1 Panel B, whereby there is a fall in nominal returns of the leading stock market index in India after the announcement of the inflation-targeting policy in February

2015. As such, due to the nominal rigidity of the savings deposit rate, households with high liquidity rebalanced their portfolio.

We further conducted additional heterogeneity tests by focusing on the role of information. Earlier studies have highlighted how media (Larsen et al. (2021)) and the presence of gas stations (Binder (2018)) could reduce information frictions for inflation expectations when prices become more salient. With decreased inflation expectations, we observe that an increase in television channels is associated with a fall in risky investments, and an increase in the number of gas stations is linked to a fall in consumption. Consequently, we find that households' behavior are more aligned with the consumption Euler equation when information frictions are being reduced.

Our findings have direct policy implications. Since inflation expectations have varying effects on different segments of the population, our findings are relevant for understanding the distributional impact of changes in inflation expectations. We further highlight the importance of the household balance sheet. Given the heterogeneous responses of households with different liquidity to changes in inflation expectations, we show that the aggregate impact of the inflation-targeting policy on households' consumption and savings choices is mitigated as the opposing channels offset each other. Hence, policies that seek to manage inflation expectations needs to be targeted and carefully considered.

Related Literature: This paper contributes to several strands of research. First, we speak directly to the literature examining the relationship between inflation expectations and economic decisions. Previous studies have highlighted the role of cognition and belief accuracy on household consumption choices (D'Acunto et al. (2022a), Bachmann et al. (2015)). Our paper adds to the discourse by demonstrating the direct impact of household balance sheets, particularly liquid savings, on various economic channels. More recently, work by Sasha et al. (2023) has shown that low-wage workers tend to save less when asked how they would adjust their savings if inflation increased. Earlier works such as Vellekoop and Wiederholt (2019), as well as Ichiue and Nishiguchi (2015), have also underscored the significance of household balance sheets and inflation expectations. The key difference between this paper and the existing literature is that we provide evidence for the prevalence of both the consumption Euler equation channel and precautionary savings channel under different conditions.

Another contribution of this paper is its emphasis on savings, the counterpart of consumption. While prior studies have documented how investors tend to invest more in real assets like housing as an inflation hedge (Malmendier and Nagel (2016), Brunnermeier and Julliard (2008)), we focus on bank deposits and risky assets, which form a sizable component

of the economy. In the US, bank deposits represent approximately 80 percent of the GDP. Furthermore, equity holdings amount to USD$32 trillion and form the largest proportion of financial assets on the households' balance sheet. This is comparable to the stock of housing wealth (Di Maggio et al. (2020)). By further investigating how households make portfolio choices through changes in their bank deposits and risky investments, we shed light on the households' portfolio rebalancing decisions, a channel that is relatively unexplored to date. Just like how households tend to "reach for yield" by rebalancing their portfolio from risk-free assets towards risky assets when real interest rates fall (Borio and Zhu (2012)), we find that for individuals where the consumption Euler equation takes precedence, they readjust their portfolio by moving away from risky assets towards risk-free assets when real interest rates increase. Consequently, changes in inflation expectations have the potential to impact households' willingness to take risks and the financial stability of an economy.

Accordingly, we add to the literature on inflation and investments in risky assets. Past research has primarily focused on the relationship between inflation and equities returns, which yielded mixed conclusions. While some studies indicate that inflation is positively correlated with stock returns (Boudoukh and Richardson (1993)), others revealed a negative relationship (Fama (1981), Barnes et al. (1999)). However, these findings provide only indirect evidence of investors' behavior. To directly assess households' response to inflation, it is pertinent to study investors' transactions. Recent work by Braggion et al. (2022) examined local inflation and security portfolios during the German Hyperinflation in the 1920s, revealing a negative relationship between inflation and stock holdings. We depart from the literature above by providing direct evidence of household inflation expectations, *ex-ante,* and not the actual inflation, *ex-post*. Hence, we can focus on the beliefs of individuals and how changes in inflation expectations impact their portfolio decisions.

Finally, we relate to the literature that examines the role of information in impacting households' inflation expectations and choices. Previous studies have shown that the communication of monetary policy can shape households' inflation expectations (Coibion et al. (2022)). Also, other research has focused on natural experiments such as the announcement of value-added tax in Germany (D'Acunto et al. (2022b), Bachman et al. (2021)) to explore the causal impact of inflation expectations. In this paper, we add to the literature by showing how the announcement of the inflation-targeting policy impacts household decisions. In addition, we find that having more information in the form of television channels and gas stations could influence households' decisions. This builds on the literature that underscores

how media could influence households' information expectations and choices (Conrad et al. (2022), Larsen et al. (2021)).

The remainder of the paper is organized as follows. Section 2 provides information about Inflation Targeting in India and the data used in this paper. Section 3 explains the empirical methodology and main results. Finally, Section 4 concludes.

2. Background and Data

2.1 Inflation Targeting in India

Inflation Targeting is a monetary policy strategy adopted by central banks to manage the general rise in the price level toward a targeted inflation rate. Over the years, Inflation Targeting has grown in popularity and has been adopted by many countries worldwide. 17 of the G20 countries, as well as 35 out of 36 OECD members have adopted Inflation Targeting. (Rose (2020)). Using cross-country analysis, earlier studies such as Johnson (2002) have shown that countries that employed Inflation Targeting experienced a fall and convergence in inflation expectations. In this paper, we focus on India's introduction of Inflation Targeting as its monetary policy strategy in February 2015. This led to the subsequent anchoring of inflation expectations (Eichengreen et al. (2020)).

On 20 February 2015, India's Central Bank, the Reserve Bank of India (RBI) announced that it was formally adopting Inflation Targeting as its monetary policy strategy. Under the Monetary Policy Framework Agreement signed between the Reserve Bank of India and the Government of India, it was specified that the central bank would seek to bring inflation below 6 percent by January 2016. Thereafter, it will adopt a central target of 4 % for the inflation rate with bands of +/- 2 percent. Before that, they adopted a 'Multiple Indicators Approach', focusing on a range of macroeconomic indicators. While Inflation Targeting has been suggested previously, there was no consensus about its desirability between the Government and the Central Bank until the announcement. The policy change was unexpected as highlighted in the local media. (See Mohan and Ray (2019) for a history of Indian Monetary Policy). As the policy change was unexpected and large in scale, this allowed us to overcome the key challenge of generating exogenous changes in the inflation expectations of households.

The announcement of the Inflation Targeting policy managed to provide clarity and reduce inflation volatility in India. Figure 1 presents the monthly inflation rate between January 2013 to January 2017 for 6 different cities that we will be focusing on in this paper:

Ahmedabad, Bhubaneshwar, Chennai, Delhi, Kolkata, and Mumbai. Evidently, there is a wide dispersion in the actual inflation rate experienced by different cities, and the actual inflation rate has become more stabilized after the introduction of the Inflation Targeting policy.

[Insert Figure 1]

Regional inflation disparities in different countries have been well-documented. (See Beck et al. (2009) for a comparison of regional inflation differentials between the euro-zone and the US, Nagayasu (2011) for a study of regional inflation in Japan, Brown et al. (2018) for a study of variational inflation across seventy-one Russian regions). In India, Kundum et al. (2018) highlighted in the RBI Bulletin that there is a large dispersion in inflation across different states in India. This can be attributed to different economic, geographic, and structural reasons. Consequently, we seek to explore changes in regional inflation expectations due to the policy change regionally.

2.2 RBI Inflation Expectations Survey of Households

We use the RBI Inflation Expectations Survey of Households to measure changes in the inflation expectations of households in India. The inflation survey is conducted quarterly in 18 major cities across India. Around 900 representative households are interviewed in each city every quarter. To ensure random sampling, each city is separated into three major areas. Each major area is further divided into three sub-areas. 100 respondents are selected randomly from each sub-round. In each survey, households are asked about their inflation expectations as well as product-wise expectations of prices for different types of goods in different periods. These include the 1-year, 3-month, and current inflation expectations. Besides inflation expectations, we also obtain information on their age group, gender, city, and pin code (based on their home location). Also known as the Postal Index Number code, the pin code is a six-digit code used in the Indian postal code system. This identifies the post office where the address is located.

Inflation expectations can be affected by many factors. These include consumer's priors and perceptions of inflation (Malmendier and Nagel (2016), Cavallo et al. (2017)), personal experiences (D'Acunto et al. (2021a), Agarwal et al. (2022)), media (Carroll (2003), Pfajfar and Santoro (2013)) and knowledge about monetary policy (Christelis et al. (2020)). In addition, studies have shown that females and older households tend to report higher inflation expectations and that gender roles play a role in inflation expectations ((D'Acunto et al.

(2021b)). Consequently, the inflation expectations of households in different cities, genders, and ages could respond differently to the inflation targeting policy.

We now turn to our main specification. As we would like to focus on the economic choices of households with varying inflation expectations, we center our analysis on those households that we can link with their financial choices. After mapping with our proprietary dataset from the Indian financial institution, we have 219 pin codes in 6 cities that are common. The cities include Ahmedabad, Bhubaneshwar, Chennai, Delhi, Kolkata and Mumbai. These are large cities and are considered to be good comparison groups. Here, we follow the literature that focuses on regional heterogeneity. Figure 2 presents changes in inflation expectations across these cities from the first quarter of 2013 to the first quarter of 2017. It is clear that there is a fall in average inflation expectations after the announcement of the policy change, and that inflation expectations have become more stabilized. This is further exemplified in Figure A2 which presents the variance of inflation expectations across time.

[Insert Figure 2]

To tighten our mapping with the administrative bank data, we further explore cross-sectional variation based on gender and age groups. We define the age group as an indicator variable for older households (which is larger than the average age of 43 years old from the inflation expectations survey). Together, we have 622 bins.

Since the inflation targeting policy was unexpectedly announced on 20 February 2015, we focus on households' last inflation expectations (prior to the policy change) in the 4th quarter of 2014. Table 1 Panel A and B report the average inflation expectations by pin code and by bin respectively. At the pin code level, the current, 3-month, and 1-year inflation expectations stand at 10.15, 9.76, and 11.25 percent respectively. At the bin level, the current, 3-month, and 1-year inflation expectations are at 10.72, 10.26, and 11.79 percent respectively. These numbers are larger than India's actual inflation rate of 6.67 percent in 2014, which is consistent with the inflation expectations literature that underscores households having higher inflation expectations than the actual inflation rate.

[Insert Table 1]

In the Online Appendix, we delve deeper into the RBI Inflation Expectations Survey of Households at the individual level. Table A1 first presents summary statistics of the survey from 2010 to 2019, as well as our sample in 2014Q4. Table A2 shows that after the Inflation Targeting policy was announced, there was a fall in inflation expectations across all different horizons by around 2.4 to 3.4 percentage points. This offers evidence supporting the notion that inflation expectations were influenced by the policy change.

To further address concerns that our benchmark results could be driven by outliers, we examine the distribution of respondents and inflation expectations at the pin code and bin level. The distribution of the number of respondents across different pin codes and bins is shown in Figure A3. On average, there are around 15 respondents in each pin code and 5 respondents in each bin. Less than 10 percent of the pin codes and bins have only 1 respondent. Subsequently, we present the distribution of the inflation expectations at the pin code level and bin level in Figures A4 and A5 respectively. This illustrates the dispersion of inflation expectations (which is our underlying *Treat* variable) when collapsed to pin code and bin level respectively. From the histogram and kernel density in these figures, there is little evidence that extreme values could drive our baseline results, as they constitute a relatively small proportion.

2.3 Administrative Bank Data

To study the impact of households' consumption and portfolio rebalancing decisions, we use a unique, proprietary dataset obtained from a major bank in India. It is one of the top four banks in India by assets and market capitalization. The bank has more than 18,000 branches and ATMs across India, offering a wide variety of banking products and financial services. This includes credit and debit cards, savings accounts, term deposit accounts, and mutual funds. As highlighted in the previous section, we center our analysis on households with pin codes in 6 cities: Ahmedabad, Bhubaneshwar, Chennai, Delhi, Kolkata, and Mumbai (that are common with the RBI Inflation Expectations Survey of Households).

From this dataset, we have information on both monthly transaction level data and account balances. To measure transaction flows, we classify them into three main categories, consumption, change in bank deposits, and risky investment. Consumption includes credit and debit card spending, as well as cash withdrawals through the bank or ATM. Change in bank deposits is the month-on-month change in bank deposits, whereby bank deposits relate to account balances for both savings and term deposits. Finally, we turn to risky assets. Here,

investments in risky assets involve both mutual fund flows as well as direct purchase or sale of stocks. We also have demographic information of individual households, such as their occupation, age, and gender, as well as the pin code and city in which they stay. This allows us to map directly to the RBI Inflation Expectations Survey of Households.

In this paper, we focus on the period of October 2014 to June 2015 (i.e. 4th quarter of 2014 to the 2nd quarter of 2015). This includes the quarter before, during, and after the inflation-targeting policy was announced. Table 1 Panels C to E shows basic descriptive statistics of our sample. To prevent outliers from driving our results, we winsorized the sample at 1% and 99% based on the size of consumption, changes in savings, and risky investments. Based on the mapped sample, there are a total of 43,393 households. The average age is 47, with 63 percent of them married, and 22 percent of them being females.[4]

For transaction level data, the average monthly consumption stands at 18,910 rupees (252 USD), changes in bank deposits around 2,486 rupees (33 USD), and investments in risky assets at 3,076 rupees (41 USD). In terms of account balances, bank deposits are around 399,472 rupees (5,326 USD), and demat balances (which relate to the shareholdings) at 312,346 rupees (4,164 USD). The share of risky assets stands at 0.1. It is noteworthy that during this time, there were no changes in the interest rate offered in the regular savings account, remaining constant at 4%.

One key consideration in this paper relates to households' liquidity. Figure A6 illustrates the distribution of households' savings as of October 2014, where we divide the savings into 5 different quintiles. Here, we note that the quintiles can help to capture the range of variation in the amount of liquid savings[5]. In Table A4, we first present the summary statistics of the average savings balances in the different quintiles from October 2014 to June 2015. We find that the average savings balances are fairly spread out. The amount of savings in each quintile are as follows: Quintile 1 (23,000 rupees), Quintile 2 (50,000 rupees), Quintile 3 (102,000 rupees), Quintile 4 (220, 000 rupees), Quintile 5 (624,000 rupees). Thereafter, we present the summary statistics of our key outcome variables: consumption, changes in bank deposits, and risky investments in the different quintiles during the same period.

[4] Table A3 compares key demographics of the RBI survey data and the administrative bank data.
[5] To ensure the robustness of our findings, we demonstrate that our regression estimates remain consistent when using deciles instead of quintiles.

3. Empirical Methodology and Results

3.1 Benchmark Results

In this paper, we compare the outcomes of households with different changes in their inflation expectations (treatment intensities) using a difference-in-differences strategy from October 2014 to June 2015. As highlighted by Coibion et al. (2020), inflation expectations of households could be influenced by priors and perceptions of inflation, shopping experience, media, and understanding of economic policies. Since households in the same pin code (location) are most likely to be exposed to the same information and experiences, our underlying assumption is that they have similar inflation expectations before the announcement of the inflation targeting policy. Consequently, these households face a similar fall in inflation expectations (relative to the inflation target rate of 4 percent). The key assumption is that households in both datasets are representative of each pin code in each city. Formally, we run the following regression:

$$Y_{it} = \gamma_i + \lambda_t + \beta_1 Treat_j * Post + \epsilon_{it} \qquad (2)$$

Our underlying assumption is that households experienced an unanticipated change in inflation expectations (to the target level) before the announcement of the inflation-targeting policy in February 2015. Consequently, we define $Treat_j$ to be the inflation expectations of households from the RBI Inflation Expectations Survey of Households during the 4th quarter of 2014 (as that is their latest reported inflation expectations before the policy announcement date). Put differently, households with higher prior inflation expectations have a larger change in inflation expectations relative to the inflation target of 4 percent. In the same vein, those with lower prior inflation expectations experienced a smaller change in inflation expectations.

In our baseline results, we will focus on 1-year inflation expectations and include 3 months and current inflation expectations as our robustness tests in the online appendix. We first focus on the inflation expectations at the pin code level. Subsequently, to allay concerns that the mapping of city-level inflation expectations into the households' outcomes could be driven only by common shocks at the city level, we further explore cross-sectional variation based on gender and age group. This allows us to rely on the inflation expectations according to pin code-age group-gender bins and is our preferred specification.

$Post$ refers to the period after the Inflation Targeting Policy in February 2015. The dependent variables include consumption, changes in bank deposits, as well as investment in risky assets. We abstract from taking logarithms as the outcome variables could potentially be negative. γ_i is the individual dummy variable to absorb differences in individual preferences while λ_t is the month dummy variable to control for time-fixed effects.

Table 2 presents the benchmark results based on the average treatment effect for 1-year inflation expectations, with Panel A displaying results by pin code, and Panel B by pin code-age group-gender bins.

[Insert Table 2]

In Panel A, we find that as inflation expectations fall by 1 percentage point, there is an increase in consumption by 7 rupees, an increase in bank deposits by 40 rupees, and an increase in risky investments by 16 rupees. Panel B reports that as inflation expectations fall by 1 percentage point, there is an increase in consumption by 1 rupee, a fall in bank deposits by 38 rupees, and a fall in risky investments by 7 rupees. The results are all not statistically significant at the 10 percent level. Hence, we do not find evidence supporting the view that 1-year inflation expectations impact households' decisions at the aggregate level.

This can also be seen in the distributed lag model. Building on Equation (2), we include the lead and lag variables relative to the announcement of the inflation-targeting policy.

$$Y_{it} = \gamma_i + \lambda_t + \sum_{\tau=-3}^{3} \beta_\tau I_{jt+\tau} + \epsilon_{it} \quad (3)$$

$I_{jt+\tau}$ refers to the inflation expectations of households ($Treat_j$) that we have defined earlier in Equation (2) on periods before and after the policy change. The lead variables, variable $\beta_{-1}, \beta_{-2}, \beta_{-3}$, measure the impact of inflation expectations on households before the announcement of the policy, while the lag variables, $\beta_1, \beta_2, \beta_3$, focus on the marginal response after the policy announcement date. Like Equation (2), γ_i is the individual dummy variable to absorb differences in individual preferences while λ_t is the month dummy variable to control for time-fixed effects.

In Figure 3, we present the results of the distributed lag model due to changes in 1-year inflation expectations. These graphs can be considered as difference-in-differences coefficients

from an event-study point of view, 3 months before and 3 months after the policy announcement. The x-axis represents the months before the announcement (-3 to -1), the announcement (period 0), and the months after the announcement (1 to 3) of the term deposits.

[Insert Figure 3]

Evidently, there are no economically and statistically significant differences in consumption, changes in bank deposits, and risky investments during this period. This result might not be surprising. There has been no consensus on the causal effect of inflation expectations on consumption empirically, and studies such as Burke and Ozdagli (2021) have documented that inflation expectations generally have little impact on spending. Moreover, there are many possible ways that households can respond to changes in inflation expectations. To explore what drives the different channels, we turn to the household balance sheet.

3.2 Economic Mechanisms

Inflation expectations shape households' consumption-savings choices in different directions. In what follows, we focus on two possible mechanisms: the consumption Euler equation channel and the precautionary channel which gives rise to contrasting decisions of households.

The consumption Euler equation channel suggests that a decrease in inflation expectations will increase savings and reduce consumption when nominal interest rates are held constant. Since there is a rise in real interest rates through the Fisher equation, the opportunity cost of consumption has risen, inducing households to save more. In contrast, the precautionary channel indicates that a decrease in inflation expectations results in households reducing savings and increasing consumption. This is attributed to the need to have lower precautionary savings. As inflation expectations fall and become more stabilized, households become more confident, translating to a decrease in precautionary savings. Hence, the precautionary channel suggests that consumption tends to increase, while savings decrease.

One key determining factor that drives the consumption Euler equation channel or precautionary channel lies in the household balance sheet. This includes their liquidity position. For households with low liquidity, they are more concerned about precautionary savings. Hence, we will expect the precautionary channel to play a more important role for these individuals. In contrast, for households with more liquidity, the consumption Euler equation

channel is expected to play a more dominant role as they stand to gain more from the expected increase in real interest rate.

To test our predictions, we examine the heterogeneous effects of liquid wealth position. We do so by dividing the sample into 5 quintiles based on their savings balance on September 2014, before re-estimating the following difference-in-differences equation from October 2014 to June 2015:

$$Y_{it} = \gamma_i + \lambda_t + \sum_{k=1}^{5} \beta_k \, Treat_j * Post * Z_k + \delta_k Z_k * Post + \varepsilon_{it} \quad (4)$$

Building on Equation (2), Z_k is a binary variable that is equal to 1 if the household belongs to the kth quintile. For instance, Z_5 refers to households in the 5th quintile (highest amount of savings). We then estimate the coefficients from each quintile and examine their differential responses.

In this specification, the underlying assumption is that across savings quintiles, there are equal baseline inflation expectations in each pin code and bin and that low and high-wealth households update their expectations identically. To validate that our inflation expectations, (i.e. Treat variable) are independent of households' liquidity, we run the regression between inflation expectations and different savings quintiles. Here, we find that there is no statistically significant relationship between inflation expectations and the savings quintiles (Table A5).

Table 3 presents the heterogeneous effects of liquidity by pin code-age group-gender bins. We begin by examining households with the least and most liquidity. For households in the lowest savings quintile, a fall in 1-year inflation expectations by 1 percentage point led to an increase in consumption of 54 rupees (significant at 10 percent), fall in bank deposits of 443 rupees (significant at 5 percent), and an increase in investments by 86 rupees (not significant at 10 percent). This corresponds to an increase in consumption of 0.5 percent and a decrease in savings of 12 percent. In contrast, households in the highest savings quintiles experienced a decrease in consumption by 82 rupees, an increase in bank deposits by 1266 rupees, and a decrease in risky investments by 348 rupees when 1-year inflation expectations fell by 1 percentage point. All the coefficients are statistically significant at the 1 percent level. This corresponds to a decrease in consumption of 0.3 percent, an increase in savings of 8 percent, and a fall in risky investments of 2.3 percent.

[Insert Table 3]

Our findings indicate that households exhibit varied responses to changes in inflation expectations, reflecting differences in their financial positions. While households with lower levels of liquid savings spend more and save less in bank deposits, those with higher liquid savings spend less and save more in bank deposits. Moreover, households with high liquid savings invest less in risky assets. Due to the offsetting effects across different types of households, it masks the impact of households' decisions at the aggregate level. To ensure the robustness of our findings, we conducted additional analyses examining the influence of liquidity based on changes in 3-month inflation expectations (see Table A6) or current inflation expectations (see Table A7). In addition, we demonstrate that our results remain consistent regardless of the number of savings bins. In Table A8, we present the results discussed in this section using deciles (10 bins), instead of quintiles (5 bins). In all the robustness checks, our key results remained unchanged.

To provide better visualization and clarity, we present our findings graphically. In Figure 4, we plot the coefficients in Table 3 that is based on changes in 1-year inflation expectations at the pin code-age group-gender levels [6]. Panel A shows that across the liquid savings quintiles, there is a negative slope in consumption spending. There is a consistent decrease in spending as liquidity increases. While households in the lowest savings quintiles increased their consumption, households in the highest quintiles decreased their spending. In contrast, Panel B illustrates that there is a positive slope for liquid savings quintiles and changes in bank deposits. In other words, households tend to save more when they have higher liquidity. Finally, Panel C reports that risky investment falls only for households at the highest savings quintiles. For households at the rest of the savings quintiles, investments in risky investments remain relatively unchanged.

[Insert Figure 4]

These results are consistent with our predictions based on the two economic channels discussed earlier. As the consumption Euler equation is expected to dominate for households with high liquid savings, they end up consuming more and saving less. In comparison,

[6] In Figure A3, we present the heterogenous effects of liquidity across the savings quintiles at the pin code levels. We obtain similar results.

households with lower liquid savings are more vulnerable to changes in the economic outlook, including inflation. Thus, as inflation uncertainty decreases, they become more assured about the economy, resulting in a higher inclination to spend more and save less.

To provide evidence of the precautionary channel, we focus on the consumption uncertainty of households. Formally, we define consumption uncertainty by the coefficient of variation (standard deviation/mean) of individual households 1 year before the announcement of the policy. Based on changes in consumption from February 2014 to January 2015, we calculate the coefficient of variation for each individual. Figure 5 presents the consumption uncertainty across different savings quintiles. We find that households in the lowest savings quintiles exhibit the highest levels of consumption uncertainty, prior to the policy change. Given that they have the highest consumption uncertainty before the policy change, the precautionary channel dominates for this group of individuals.

[Insert Figure 5]

We then test whether consumption uncertainty drives the consumption behavior for households in the lowest savings deciles. Building on Equation (2), we include the interaction term between households' prior 1-year inflation expectations ($Treat_j$), period after the inflation-targeting policy ($Post$), and the consumption volatility experienced by individual i (CV_i) into the following equation:

$$Y_{it} = \gamma_i + \lambda_t + \beta_1 Treat_j * Post + \beta_1 Treat_j * Post * CV_i + \epsilon_{it} \qquad (5)$$

Here, our main coefficient of interest is in β_1. If households with the largest consumption uncertainty tend to consume more after the policy change, we should expect β_1 to be positive. Table 4 presents our results with consumption, change in savings, and risky investments, as dependent variables for households in the lowest savings deciles. Indeed, we find that an increase in consumption uncertainty relates to an increase in consumption by 59 rupees (statistically significant at 5 percent). In contrast, higher consumption uncertainty relates to lower savings of 59 rupees and higher investments of 21 rupees (both not statistically significant). This lends support to our hypothesis of the precautionary channel.

[Insert Table 4]

Next, we seek to provide additional evidence of the consumption Euler equation for households with the most liquid savings. At the heart of the consumption Euler equation lies the interplay between current and future consumption choices, as well as changes in the real interest rates. If changes in the real interest rates drive the behavior of these households, we should expect them to respond to changes in other domains of their financial decisions too. One way is to look at borrowing repayments. When real interest rates increase due to a fall in inflation expectations and constant nominal interest rates, real costs of borrowing will increase. In this case, we should expect loan prepayments to increase too. To study the impact of borrowers, we focus on households that hold existing loans with the financial institution in this study[7]. We then re-run equation (4), with the inclusion of loan repayments as an additional outcome variable. Table 5 presents our results.

[Insert Table 5]

From Table 5, we find that for households in the highest savings quintiles, there is an increase in loan repayments by 760 rupees (statistically significant at 5 percent), when there is a fall in inflation expectations by 1 percentage point. This is consistent with the notion that these households are responding to changes in real interest rates. It is most likely that borrowers are prepaying their loans with higher loan repayments. For those with fixed interest rates, the nominal interest rates should remain unchanged. Conversely, for individuals with floating interest rates, the nominal interest rates should decrease as the RBI discount rate and treasury bills have fallen (Figure A1). Thus, we should expect loan repayments to remain unchanged or decrease if there are no prepayments. For borrowers in the highest savings quintiles, we also observe that they consume less by 7 rupees (not statistically significant at 10 percent), increase bank deposits by 1506 rupees (statistically significant at 5 percent), and decrease their investments in risky investments by 422 rupees (statistically significant at 5 percent), which is consistent with our baseline results of portfolio rebalancing.

To show that our results are not driven by the presence of risky assets, we divide our sample into 2 distinct groups: those with and without exposure to such investments. The first group comprises individuals holding stock brokerage accounts (referred to as demat accounts in India) or have previously invested in mutual funds. Conversely, the second group comprises

[7] This corresponds to around 14 percent of the entire sample.

individuals who have not engaged in any transactions involving risky investments. We then re-run equation (4) for each sub-group separately. The regression results for individuals with and without exposure to risky investments are presented in Table A9 and A10 respectively. In both cases, we observe the same benchmark results for consumption and changes in bank deposits. Households in the highest savings deciles do consume less and save more, regardless of whether they invest in risky assets. The only difference is that households with risky investments have an additional option available to them, which is to invest less in risky assets. Together, our findings provide evidence supporting the consumption Euler equation for households in the highest savings quintiles.

3.3 Portfolio Choices

We now turn to portfolio choices. Why do households with high liquid savings rebalance their portfolios from risky assets to risk-free assets when there is a fall in inflation expectations? We reconcile this with the classical Merton (1969) portfolio choice model. In Merton's model, the fraction of wealth (W_t) allocated to the risky assets can be presented in the following closed-form solution: $W_t = \frac{\mu - r}{\sigma^2 \gamma}$. Here, γ refers to the constant relative risk aversion, while r refers to the constant real interest rate for the risk-free rate. Given a risky asset, S_t that evolves according to the stochastic differential equation: $dS_t = \mu . S_t . dt + \sigma . S_t . dz_t$, μ and σ relates to the expected real return and standard deviation of the risky asset respectively. Subsequently, any policy change that affects μ, the real returns of risky assets and r, the real returns of the risk-free rate asymmetrically will change W_t, the fraction of wealth allocated to risky assets.

For households, the risk-free rate can be determined from the savings deposit rate. Unlike institutional investors, they do not have access to bond markets. Furthermore, government securities are highly inaccessible to households in India due to the competitive bidding processes. In India, the majority of households save directly through bank deposits (which are liquid) and are insured up to a maximum of 500,000 rupees in a bank. Worldwide, there is low participation by household investors in the bond markets. Even in a developed country like the US, direct household participation in the bond markets is approximately 1.3 percent according to the 2016 Survey of Consumer Finances.

Changes in inflation expectations are expected to affect the nominal returns of risky assets and the risk-free rate (savings deposit rate) asymmetrically. This is attributed to the

rigidity of the savings deposit rate (Neumark and Sharpe (1992), Driscoll and Judson (2013)). From our administrative bank dataset, there are no changes in the nominal interest rate offered by the bank (risk-free rate), remaining unchanged at 4 percent. Despite changes in the RBI discount rate, treasury yield, changes in the actual inflation rate, and inflation expectations, the nominal interest rate offered by the commercial bank to savings account holders remains unchanged (Figure A1). Only the term deposit rate changes with the bank rate. Hence, due to the nominal rigidity of the savings deposit rate, the nominal return of households' risk-free assets does not change 1 to 1 with changes in inflation expectations. In terms of real returns, a decrease in inflation expectations (with a constant nominal interest rate) would lead to an increase in the real interest rate of the risk-free assets directly from the Fisher equation.

On the other hand, the impact on the real returns on the stock market is expected to remain unchanged since equities are claims to the productive capital of the real economy (Campbell and Vuolteenaho (2004)) and inflation risk is often priced in stock returns (Boons et al. (2020)). Consequently, a fall in inflation expectations will lead to a corresponding fall in the nominal rate of return for the risky asset, *ceteris paribus*. In sum, we will expect households to rebalance their portfolios from risky assets to safe assets when faced with a fall in inflation expectations due to the asymmetric impact of inflation expectations on the real returns of risk-free assets and risky assets. As households with the most liquid savings have the most to gain from a higher real interest rate, they are found to rebalance their portfolio.

Our results have policy implications. Recent studies have shown that when there is a fall in nominal interest rate, investors "reach for income" by increasing their demand towards income-generating assets (Daniel et al. (2021), Jiang and Sun (2020)) and that term depositors rebalanced their portfolio towards risky investments (Agarwal et al. (2023)). As inflation expectations remained unchanged in the settings above, this highlights that households tend to be more willing to take risks when faced with a falling real interest rate Here, we present evidence of the opposite effect – when real interest rate increases due to a fall in inflation expectations, households are less likely to take risks. This makes it particularly relevant for households with high liquid assets.

3.3 Heterogeneity Analysis

We have documented that the household balance sheet plays an important role in determining the prevalence of the consumption Euler equation or the precautionary channel. Overall, we

have shown that as the consumption Euler equation and precautionary channel counteract one another, it could then reconcile the overall (null) results at the aggregate level. We now conduct additional heterogeneity tests, involving availability of information, household types, as well as transaction costs.

It is widely recognized that information frictions play a pivotal role in shaping the transmission of inflation expectations (Coibion et al. (2022)). One key aspect that can reduce information frictions in the passthrough of inflation expectations is related to media (Larsen et al. (2021)). To account for the role of media, we rely on the number of television channels that are being broadcast in each city. In India, there is much variation in the number of television channels across cities as different languages are being spoken in different regions. [8] Considering that each television channel corresponds to a specific language, the exposure to information varies across different cities, based on the number of television channels provided. Specifically, areas with a higher number of television channels are most likely to experience reduced information frictions. Therefore, we can examine how having more television channels could influence households' choices to increase our understanding of information and inflation expectations.

To validate the first stage specification, we conducted a regression analysis examining the correlation between inflation expectations and the quantity of television channels. The results, as shown in Table A11, reveal a negative relationship between inflation expectations and number of television channels. This implies that as information flows increase through the media, inflation expectations tend to decrease. We then turn to our second-stage estimates of consumption and savings choices. Formally, we add the interaction term of households' prior 1-year inflation expectations ($Treat_j$), period after the inflation-targeting policy ($Post$) and the number of television channels made available in each city (through the languages spoken) to Equation (2). Table 6 Panel A reports the results. Here, we find that with an additional increase in the number of television channels, a fall in inflation expectations by 1 percentage point translates to a decrease in risky investments by 3 rupees (significant at 1 percent), a fall in consumption by 0.4 rupees (not statistically significant at 10 percent), and increase in bank deposits by 3.6 rupees (not statistically significant at 10 percent). This suggests that when information frictions are being reduced through more television channels, households tend to decrease their investments in risky assets.

[8] Being a diverse nation, India has 22 separate official languages, together with more than 200 mother tongues.

[Insert Table 6]

Another indicator for information is the presence of gas stations. Gas is a commonly purchased item for households, making gas prices highly salient to most households and influencing the passthrough of inflation expectations (Binder (2018)). Within this context, an increase in the number of gas stations near one's residence corresponds to reductions in information frictions, as one would have greater access to price changes. In line with our earlier discussion on television channels, we find that the number of gas stations is negatively correlated with inflation expectations (refer to Table A11, Panel B). This underscores the significance of information in shaping inflation expectations.

In Table 6 Panel B, we present the results when we include the interaction term of households' prior 1-year inflation expectations ($Treat_j$), period after the inflation-targeting policy ($Post$) and the number of gas stations within the same pin code to Equation (2). Here, we find that with an additional increase in the number of gas stations, a fall in inflation expectations by 1 percentage point translates to a decrease in consumption by 11 rupees (significant at 5 percent). Moreover, there is a decrease in bank deposits by 22 rupees and an increase in risky investments by 13 rupees, which are not statistically significant at the 10 percent level. Consequently, when there are more gas stations and when prices are more salient, we find that households end up decreasing their consumption. Together with the previous result from the heterogenous impacts of the television channels, our findings show that when information frictions are being reduced, households decrease their consumption and investments in risky investments. As this is consistent with the predictions of the consumption Euler equation channel, it is suggestive that when information frictions are reduced, the consumption Euler equation channel becomes stronger.

In terms of demographics, we find that while older households have a higher tendency to reduce their investments in risky assets as compared to their younger counterpart, females tend to reduce their consumption relative to males (See Table A12). Finally, we examine transaction costs in the use of formal financial services. Since a fall in inflation expectations would reduce the opportunity cost of holding money, households with lower transaction costs are expected to be more responsive, influencing the economic channels at play. As an indicator of transaction costs, we rely on the number of bank branches located within the households' pin codes. Earlier studies have highlighted that the distance of a bank branch to one's location

is a good predictor of households' usage of financial services (Dupas et. al. (2018)) and can account for transaction costs (Bachas et. al. (2018)). Hence, the larger the number of bank branches in the pin code, the lower the transaction costs. Table A13 shows that an additional increase in bank branches results in a fall in consumption by 0.6 rupees (significant at 5 percent) and a fall in inflation expectations by 1 percentage point, but there are no statistically and economically significant impact on bank deposits and risky investments. This highlights that transaction costs could account for changes in consumption.

3.4 Discussion

In this section, we further acknowledge and address several possible concerns. First, we show that our results are robust across inflation expectations at both pin code and bin levels, and of different periods. In Figure A7, we present the heterogeneous effects of liquidity across the savings quintiles at the pin code levels. At the pin code-age group-gender bin level, results for 3 months and current inflation expectations can be seen in Figure A8 and Figure A9 respectively.

Next, we note that there are potential confounding factors that could be driving households' decisions in this paper. They include changes in concurrent macroeconomic and financial conditions such as interest rates, foreign currency, or stock market fluctuations. As shown in Figure A1, nominal interest rates and stock market indexes in India fell upon the announcement of the inflation-targeting policy. While this is arguably a consequence of falling inflation expectations, one alternative explanation is that households respond to changes in these nominal variables instead. As a result of the money illusion (Shafir et al. (1997)), households make decisions by focusing on nominal values rather than real terms. For example, households tend to reduce their demand for stocks when they observe a decline in the stock market nominally.

Nonetheless, this is unlikely to explain our results as we have conducted our analysis using the difference-in-differences methodology based on changes in inflation expectations, which is orthogonal to the stock holdings. To the extent that the impact on the different households based on changes in inflation expectations is constant during this time, it is unlikely to bias our results. This is further exemplified in Table A14, where we regress inflation expectations on stock holdings, and find no statistically significant relationship between these variables.

Another concern is that we are unable to track households' purchases of real assets (such as gold or real estate), or international portfolio rebalancing. For example, it is possible that households with high liquid savings are not rebalancing their portfolios but transferring their savings from foreign countries back to India (when faced with a higher real interest rate). Nonetheless, we found that there is a fall in investments in risky assets for these individuals. This suggests that there is evidence of households shifting their assets from one form to another. Moreover, evidence of the economic mechanisms – consumption Euler equation and precautionary savings channel are robust across different specifications. Our results are also robust across different lengths of inflation expectations (1 year, 3 months, and current), and by pin code and pin code-age group-gender bins.

4 Conclusion

This paper seeks to contribute to the growing body of literature in examining the impact of inflation expectations on household behavior. Although we observe that inflation expectations do not appear to shape households' choices at the aggregate level, changes in households' consumption and portfolio decisions are taking place beneath the surface. By exploiting a natural experiment in India – Inflation Targeting, we document two opposing channels: the consumption Euler equation channel and the precautionary channel for households with different liquid savings. These findings underscore the importance of the household balance sheet in the study of inflation expectations.

Moreover, we show that households decreased their investments in risky assets when faced with lower inflation expectations and sticky nominal interest rates. Through our direct evidence of inflation expectations and portfolio choices, we seek to further increase our understanding of households' savings choices. This holds particular relevance in an environment with rising inflation rates and when more policymakers explore the potential use of inflation expectations as a policy tool. As our findings document that risky investments are highly sensitive to changes in inflation expectations, it has the potential to impact risk-taking among different individuals. Thus, our results also serve as a cautionary note for monetary policymakers.

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Table 1. Summary Statistics

	Number	Mean	SD
	(1)	(2)	(3)
Panel A: Inflation Expectations (by pin code)			
Current inflation expectations	219	10.15	6.18
3 Months inflation expectations	219	9.76	5.78
1 Year inflation expectations	219	11.25	7.38
Panel B: Inflation Expectations (by bin)			
Current inflation expectations	622	10.72	8.04
3 Months inflation expectations	622	10.26	7.71
1 Year inflation expectations	622	11.79	9.15
Panel C: Demographics			
Age	43,272	47.4	14.7
Married	43,272	0.63	0.48
Female	43,272	0.22	0.42
Panel D: Transactions			
Consumption	389,448	18,910	50,184
Change in Bank Deposits	389,448	2,486	273,962
Investments in Risky Assets	389,448	3,076	95,562
Panel E: Account Balances			
Bank Deposits	389,448	399,472	1,210,682
Demat Balance	389,448	312,346	3,997,848
Risky Asset Share	389,448	0.10	0.27

Notes: This table reports the summary statistics used in our regression analysis. Panels A and B first highlight descriptive statistics of the Inflation Expectations Survey of Households conducted by the Reserve Bank of India in the fourth quarter of 2014. Panel A is based on the average inflation expectations at the pin code level, while Panel B relates to the average inflation expectations at the pin code-age group-gender bins. Next, Panels C, D and E provide an overview of the summary statistics of households in the administrative dataset from October 2014 to June 2015. In Panel C, we show the basic demographic information of individual households. Thereafter, average transactions (flows) and average account balances (stocks) are presented in Panels D and E respectively. To convert to USD, the exchange rate of 70 Indian rupees to 1 USD (as of January 2020) can be used.

Table 2. DID Regression Estimates

Panel A: By pin code			
Dep. Var.:	Consumption	Δ Bank Deposits	Risky Investments
	(1)	(2)	(3)
1 Year Inflation Expectations * Post	7.178	39.90	16.42
	(22.33)	(147.7)	(50.19)
Obs.	389,448	389,448	389,448
R Square	0.332	0.018	0.069
Individual Fixed Effects	Y	Y	Y
Month Fixed Effects	Y	Y	Y
Panel B: By bin			
Dep. Var.:	Consumption	Δ Bank Deposits	Risky Investments
	(1)	(2)	(3)
1 Year Inflation Expectations * Post	1.085	-38.30	-6.571
	(18.99)	(125.6)	(42.69)
Obs.	389,448	389,448	389,448
R Square	0.332	0.018	0.069
Individual Fixed Effects	Y	Y	Y
Month Fixed Effects	Y	Y	Y

Notes: This table reports the impact of prior 1 year inflation expectations (before the announcement of inflation targeting) on consumption, changes in bank deposits, and investments in risky assets. Panel A depicts inflation expectations categorized by pin code-age group-gender bins, whereas Panel B focuses on inflation expectations at the pin code level. The results presented in this table are obtained using monthly data from October 2014 to June 2015, with Post being an indicator variable that depicts the time period after February 2015. Each column represents the estimation of its corresponding dependent variable that is indicated in the first row. For all the regressions, individual fixed effects and month fixed effects are imposed. Standard errors are clustered at the bin level. The robust standard errors are reported in parentheses. *,**,*** denote statistically significant levels at 10%, 5% and 1% respectively.

Table 3. Regression Estimates based on Savings Quintiles

Dep. Var.:	Consumption	Δ Bank Deposits	Risky Investments
	(1)	(2)	(3)
1 Year Inflation Expectations * Post * Quintile 1	53.60*	-443.3**	86.05
	(28.86)	(190.9)	(64.88)
1 Year Inflation Expectations * Post * Quintile 2	65.44**	-490.1***	66.81
	(28.55)	(188.9)	(64.19)
1 Year Inflation Expectations * Post * Quintile 3	29.74	-322.9*	92.34
	(28.84)	(190.8)	(64.82)
1 Year Inflation Expectations * Post * Quintile 4	-31.24	-89.37	74.16
	(28.72)	(190.0)	(64.56)
1 Year Inflation Expectations * Post * Quintile 5	-81.97***	1,266***	-347.8***
	(29.05)	(192.2)	(65.30)
Obs.	389,448	389,448	389,448
R Square	0.332	0.019	0.069
Individual Fixed Effects	Y	Y	Y
Month Fixed Effects	Y	Y	Y

Notes: This table reports the heterogeneous effects of prior 1 year inflation expectations (before the announcement of inflation targeting) by individuals' savings quintiles. Based on individuals' liquid wealth position in October 2014, we separated them into 5 different groups. Quintile 1 refers to those with the least liquid savings, while Quintile 5 refers to those with the highest liquid savings. In this specification, inflation expectations are categorized by pin code-age group-gender bins. The results presented in this table are obtained using monthly data from October 2014 to June 2015, with Post being an indicator variable that depicts the time period after February 2015. Each column represents the estimation of its corresponding dependent variable which is indicated in the first row. For all the regressions, individual fixed effects and month fixed effects are imposed. Standard errors are clustered at the bin level. The robust standard errors are reported in parentheses. *,**,*** denote statistically significant levels at 10%, 5% and 1% respectively.

Table 4. Regression Estimates by Consumption Volatility (Lowest Savings Quintiles)

Dep. Var.:	Consumption	Δ Bank Deposits	Risky Investments
	(1)	(2)	(3)
1 Year Inflation Expectations * Post	-64.26	89.40	-9.560
	(52.67)	(159.0)	(47.55)
1 Year Inflation Expectations * Post * Consumption Volatility	59.26**	-59.41	20.51
	(26.01)	(78.52)	(23.48)
Obs.	78,255	78,255	78,255
R Square	0.239	0.010	0.084
Individual Fixed Effects	Y	Y	Y
Month Fixed Effects	Y	Y	Y

Notes: This table reports the heterogeneous effects of prior 1 year inflation expectations (before the announcement of inflation targeting) for households in the lowest savings quintiles. Consumption volatility refers to the coefficient of variation (standard deviation/mean) of individuals' consumption 1 year prior to the announcement (i.e. February 2014 to January 2015). In this specification, inflation expectations are being categorized by pin code-age group-gender bins. The results presented in this table are obtained using monthly data from October 2014 to June 2015, with Post being an indicator variable that depicts the time period after February 2015. Each column represents the estimation of its corresponding dependent variable which is indicated in the first row. For all the regressions, individual fixed effects and month fixed effects are imposed. Standard errors are clustered at the bin level. The robust standard errors are reported in parentheses. *,**,*** denote statistically significant levels at 10%, 5% and 1% respectively.

Table 5. Regression Estimates for borrowers

Dep. Var.:	Consumption	Δ Bank Deposits	Risky Investments	Loan Repayment
	(1)	(2)	(3)	(4)
1 Year Inflation Expectations * Post * Quintile 1	62.43	-1,075	162.4	-324.3
	(115.5)	(724.1)	(205.9)	(401.1)
1 Year Inflation Expectations * Post * Quintile 2	45.30	-1,269**	211.0	-79.50
	(102.4)	(641.9)	(182.5)	(355.6)
1 Year Inflation Expectations * Post * Quintile 3	83.38	-1,004	234.3	-297.5
	(97.83)	(613.5)	(174.4)	(339.8)
1 Year Inflation Expectations * Post * Quintile 4	-24.10	-139.5	66.12	-195.5
	(97.09)	(608.8)	(173.1)	(337.3)
1 Year Inflation Expectations * Post * Quintile 5	-6.689	1,506**	-422.2**	760.0**
	(106.1)	(665.3)	(189.2)	(368.6)
Obs.	57,807	57,807	57,807	57,807
R Square	0.334	0.015	0.076	0.144
Individual Fixed Effects	Y	Y	Y	Y
Month Fixed Effects	Y	Y	Y	Y

Notes: This table reports the heterogeneous effects of prior 1 year inflation expectations (before the announcement of inflation targeting) by individuals' savings quintiles for the sub-sample: borrowers. Borrowers refer to individuals with an existing loan with the bank. Based on individuals' liquid wealth position in October 2014, we separated them into 5 different groups. Quintile 1 refers to those with the least liquid savings, while Quintile 5 refers to those with the highest liquid savings. In this specification, inflation expectations are categorized by pin code-age group-gender bins. The results presented in this table are obtained using monthly data from October 2014 to June 2015, with Post being an indicator variable that depicts the time period after February 2015. Each column represents the estimation of its corresponding dependent variable which is indicated in the first row. For all the regressions, individual fixed effects and month fixed effects are imposed. Standard errors are clustered at the bin level. The robust standard errors are reported in parentheses. *,**,*** denote statistically significant levels at 10%, 5% and 1% respectively.

Table 6. Heterogenous Effects based on the role of information

Panel A: Television Channels

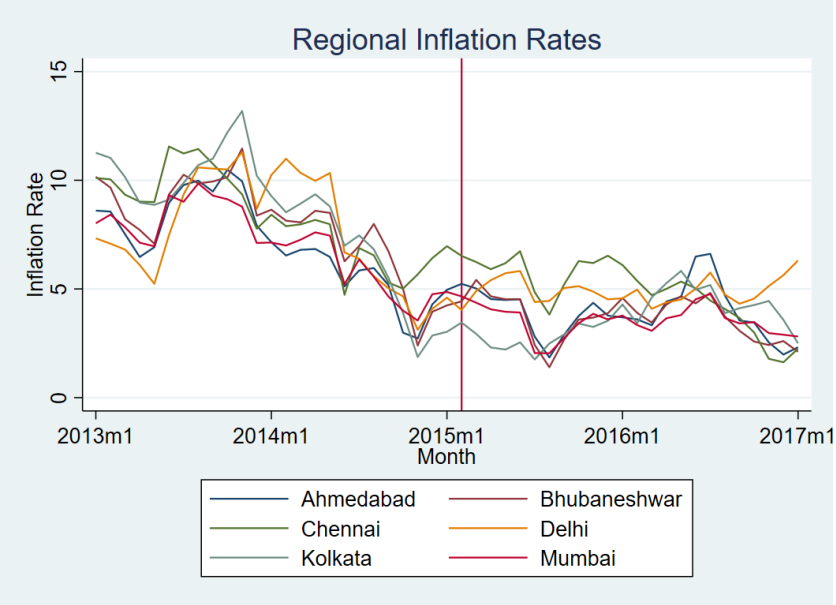
Dep. Var.:	Consumption	Δ Bank Deposits	Risky Investments
	(1)	(2)	(3)
1 Year Inflation Expectations * Post	40.24	-378.7	307.4**
	(57.21)	(378.5)	(128.6)
1 Year Inflation Expectations * Post * Television Channels	-0.414	3.596	-3.318***
	(0.570)	(3.773)	(1.282)
Obs.	389,448	389,448	389,448
R Square	0.332	0.018	0.069
Individual Fixed Effects	Y	Y	Y
Month Fixed Effects	Y	Y	Y

Panel B: Gas Stations

Dep. Var.:	Consumption	Δ Bank Deposits	Risky Investments
	(1)	(2)	(3)
1 Year Inflation Expectations * Post	20.29	2.170	-30.38
	(21.16)	(140.0)	(47.57)
1 Year Inflation Expectations * Post * Gas Stations	-10.51**	-22.15	13.03
	(5.110)	(33.81)	(11.49)
Obs.	389,448	389,448	389,448
R Square	0.332	0.018	0.069
Individual Fixed Effects	Y	Y	Y
Month Fixed Effects	Y	Y	Y

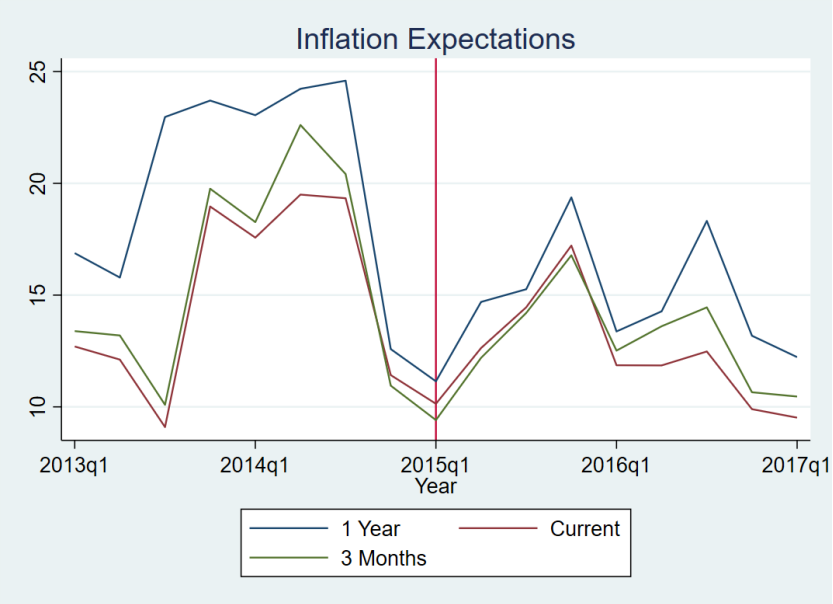
Notes: This table reports the heterogeneous effects of prior 1 year inflation expectations (before the announcement of inflation targeting) based on the role of information. In Panel A, Television Channels relate to the number of television channels at the city level In Panel B, Petrol Stations refer to the number of Petrol Stations at the pin code level. In this specification, inflation expectations are categorized by pin code-age group-gender bins. The results presented in this table are obtained using monthly data from October 2014 to June 2015, with Post being an indicator variable that depicts the time period after February 2015. Each column represents the estimation of its corresponding dependent variable which is indicated in the first row. For all the regressions, individual fixed effects and month fixed effects are imposed. Standard errors are clustered at the bin level. The robust standard errors are reported in parentheses. *,**,*** denote statistically significant levels at 10%, 5% and 1% respectively.

Figure 1. Inflation Rate Across Cities in India



Notes: This figure shows the regional monthly inflation rates in 6 different cities: Ahmedabad, Bhubaneshwar, Chennai, Delhi, Kolkata, and Mumbai between January 2013 to January 2017. This is calculated based on the state-level (Urban) Consumer Price Index.

Figure 2. Inflation Expectations Across Cities in India

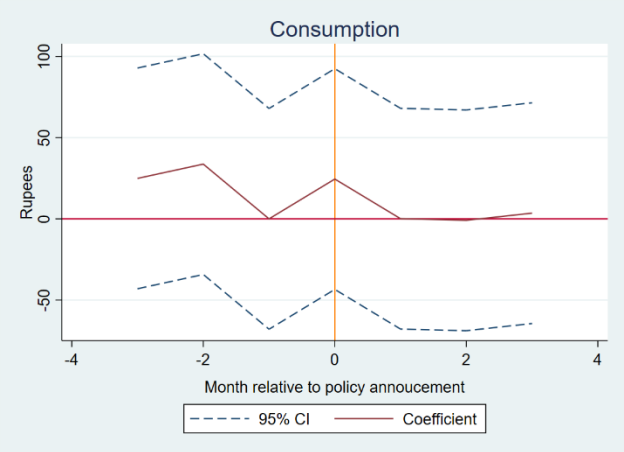


Notes: This figure shows the average quarterly inflation expectations in 6 different cities: Ahmedabad, Bhubaneshwar, Chennai, Delhi, Kolkata, and Mumbai between the first quarter of 2013 to the first quarter of 2017. We include 1 Year, 3 Months, and current Inflation Expectations.

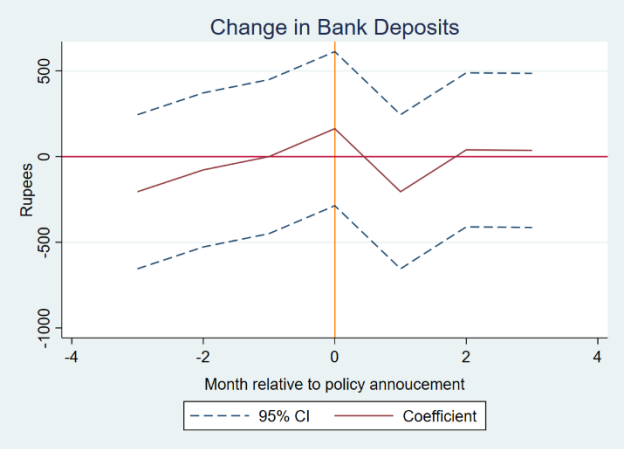
Figure 3. Event Study Graphs of Average Treatment Effect

(by pin code-age group-gender bins)

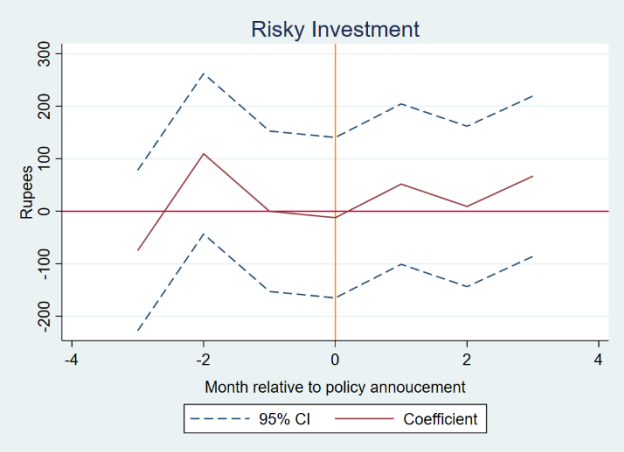
Panel A:



Panel B:



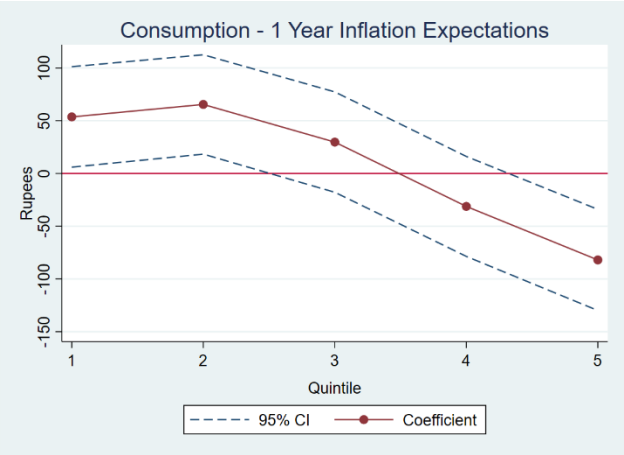
Panel C:



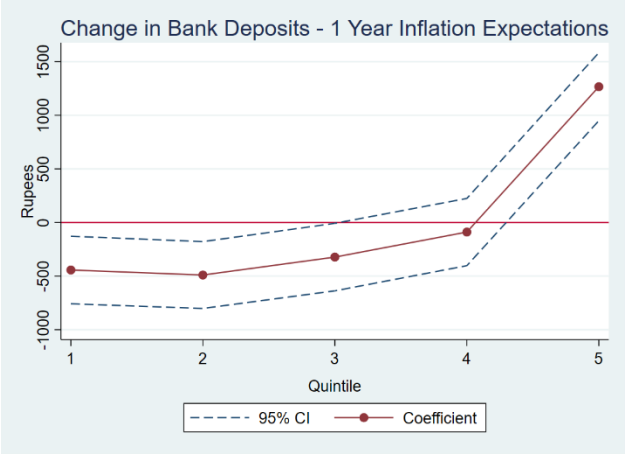
Note: This figure shows the dynamics of the average treatment effect on consumption (Panel A), changes in bank deposits (Panel B), and risky investment (Panel C). In this specification, inflation expectations are categorized by pin code-age group-gender bins. The x-axis denotes the month after the announcement of the inflation-targeting policy.

Figure 4: Heterogenous Effects for 1 Year Inflation Expectations based on Savings Quintiles (by pin code-age group-gender bins)

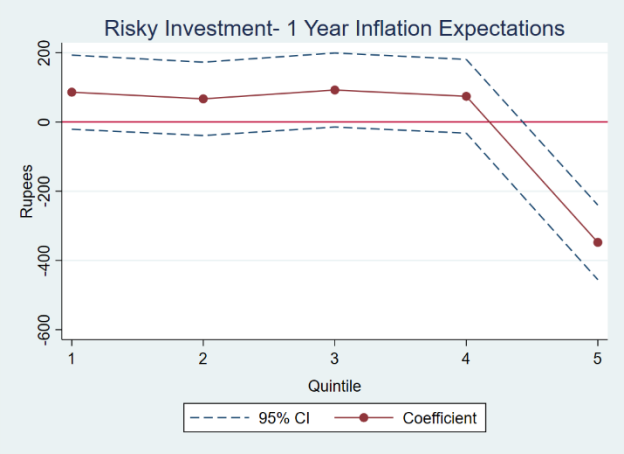
Panel A:



Panel B:

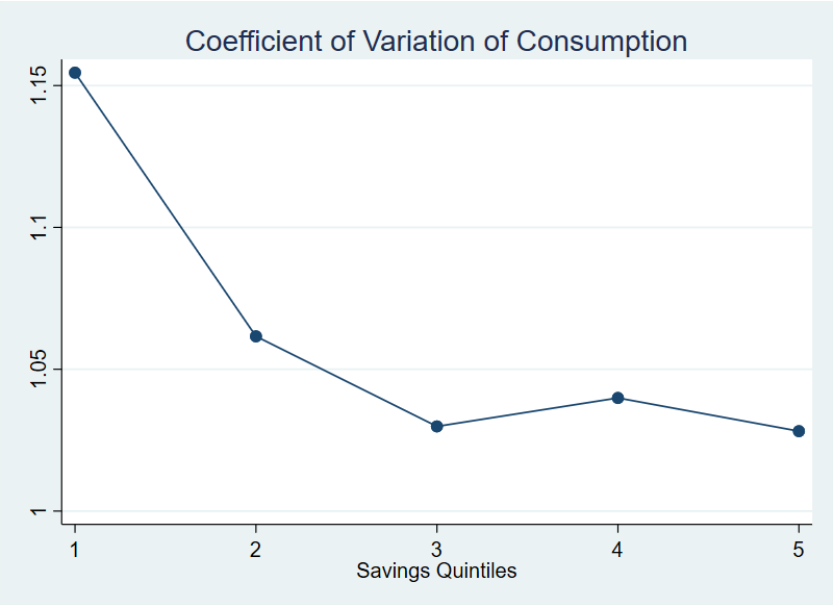


Panel C:



Notes: This figure shows the heterogenous impact of 1 year inflation expectations on consumption (Panel A), changes in bank deposits (Panel B), and investments in risky assets (Panel C) by liquid savings quintiles. In this specification, inflation expectations are being categorized by pin code-age group-gender bins.

Figure 5. Consumption Uncertainty

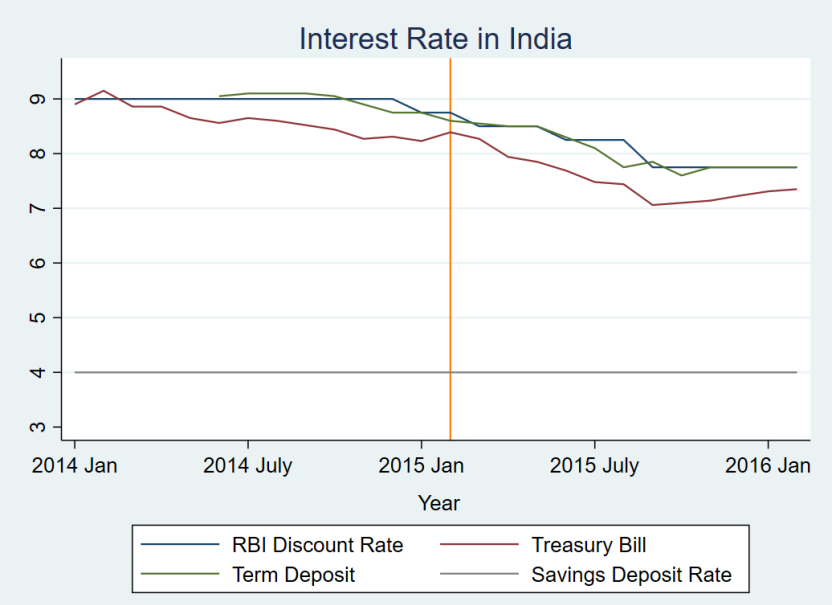


Note: This figure illustrates the coefficient of variation (standard deviation/mean) of individuals' consumption 1 year prior to the announcement (i.e. February 2014 to January 2015) across savings quintiles.

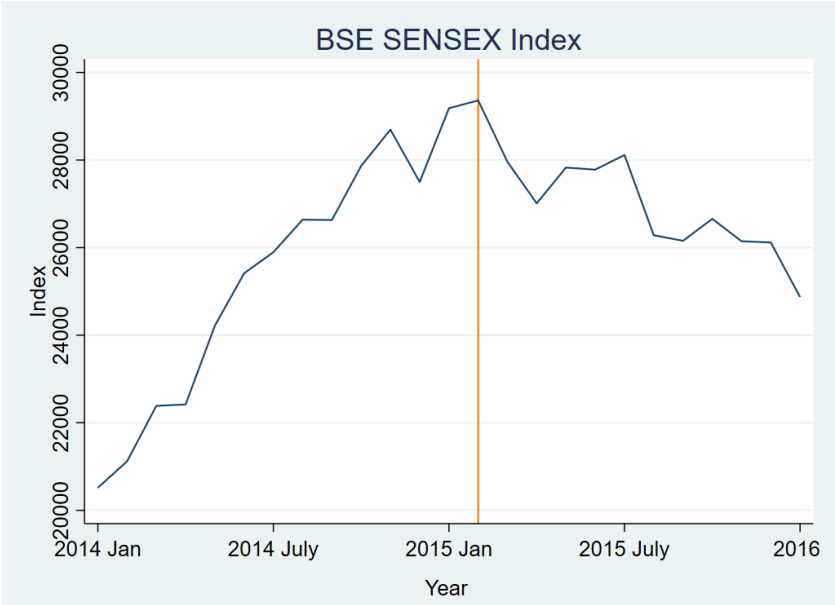
Internet Appendix
Not Intended for Publication

Figure A1. Interest Rate in India

Panel A:



Panel B:



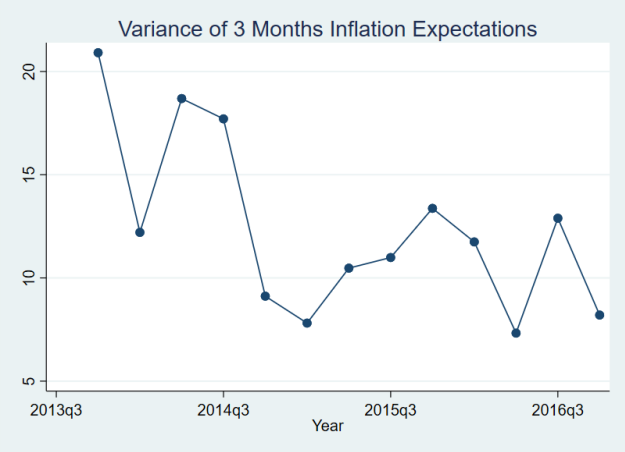
Note: Panel A shows the Reserve Bank of India (RBI) Discount Rate, India Treasury Bill 91-day yield, as well as the 1-year term deposit rate and savings deposit rate offered by the commercial bank described in this paper. Panel B presents changes in the BSE SENSEX, India's most tracked bellwether index over the same time period.

Figure A2. Variance of inflation expectations across time

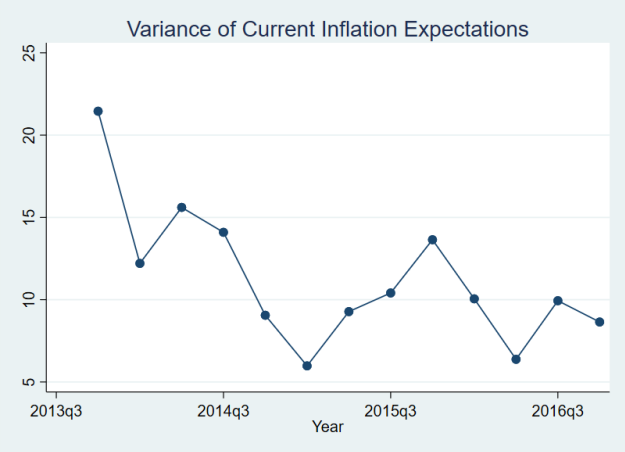
Panel A:



Panel B:



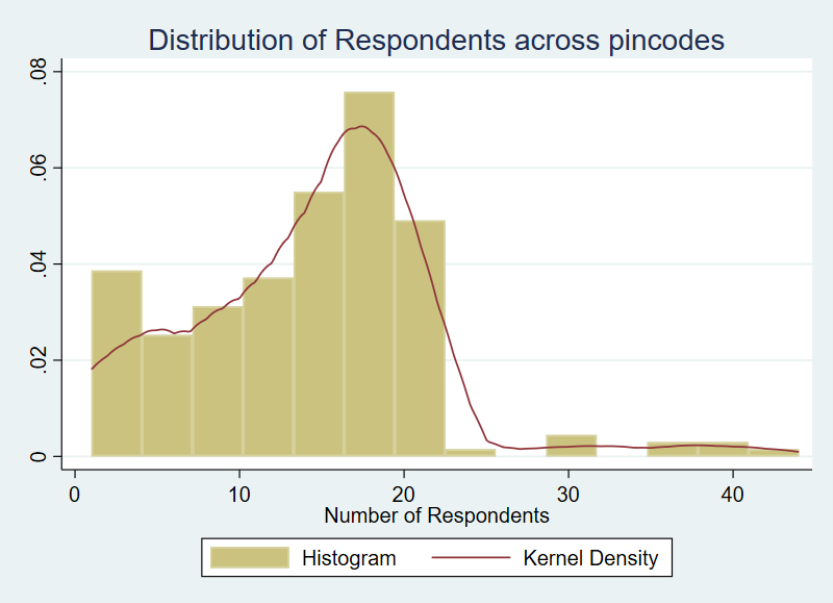
Panel C:



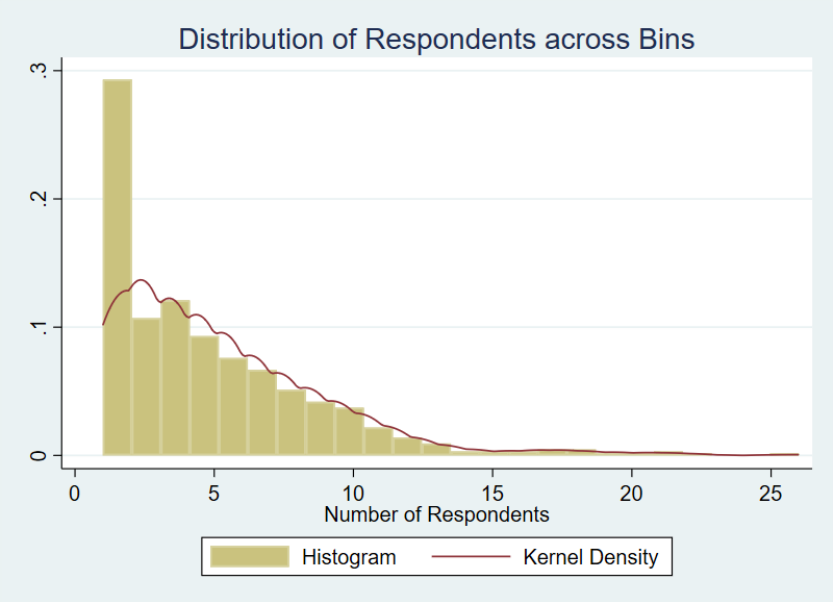
Note: This figure presents changes in the variance of inflation expectations among all households from the fourth quarter of 2013 to the fourth quarter of 2016. Panel A reports the variance of 1 year inflation expectations, Panel B displays the variance of 3 months inflation expectations, while Panel C depicts the variance of current inflation expectations.

Figure A3. Number of Respondents across pin codes and pin code-age group-gender bins

Panel A:



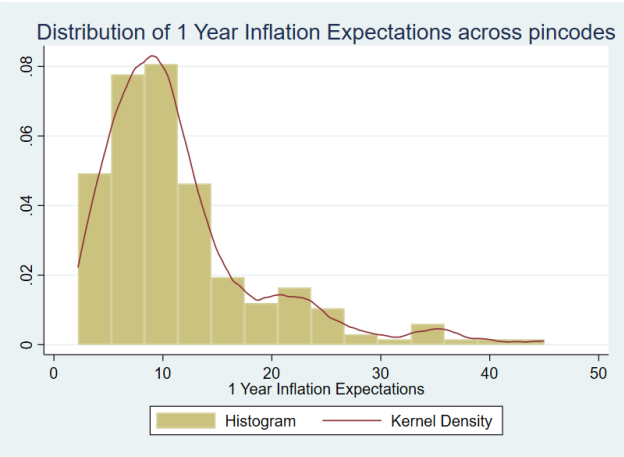
Panel B:



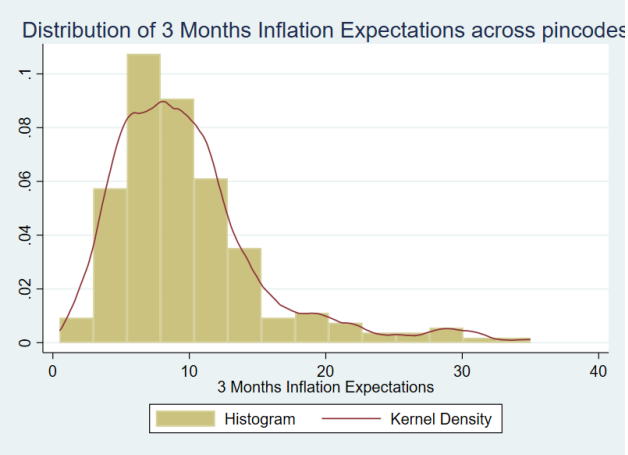
Note: This figure presents the distribution of the number of respondents across each pin code (Panel A) and bins (Panel B). The data is based on inflation expectations for our main specification in the fourth quarter of 2014.

Figure A4. Distribution of inflation expectations across pin codes

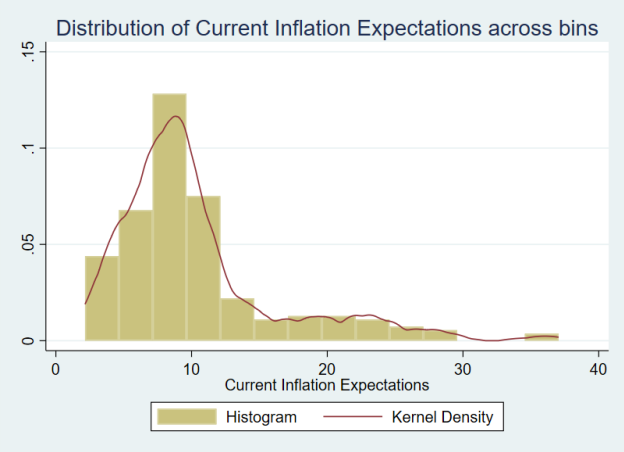
Panel A:



Panel B:



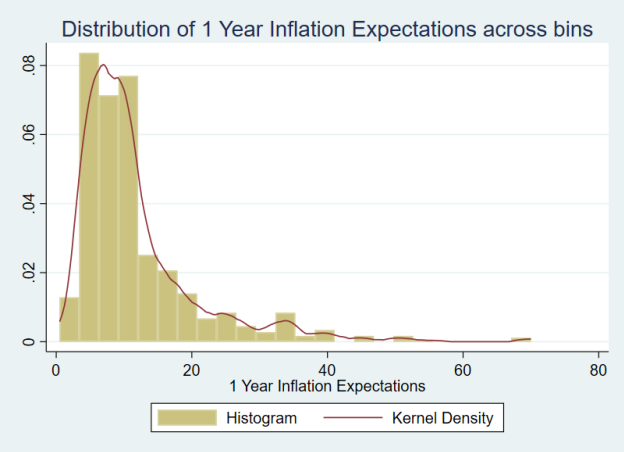
Panel C:



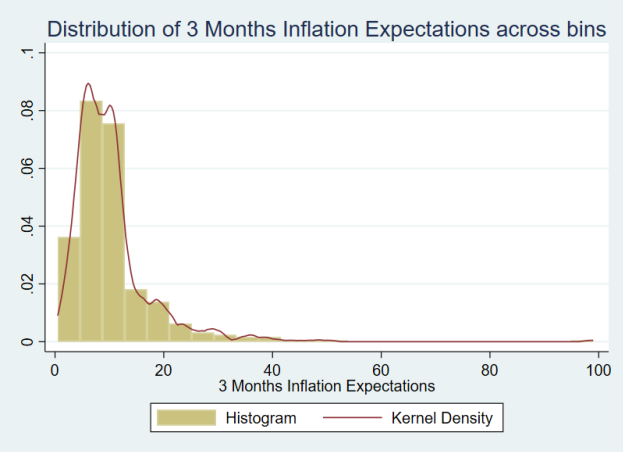
Note: This figure illustrates the distribution of inflation expectations across pin codes. Panels A, B, and C report the distribution of 1 year, 3 months and current inflation expectations, respectively. The data is based on inflation expectations for our main specification in the fourth quarter of 2014.

Figure A5. Distribution of inflation expectations across pin code-age group-gender bins

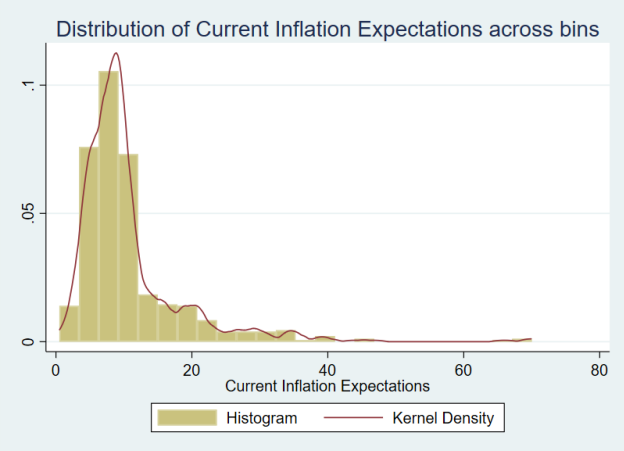
Panel A:



Panel B:

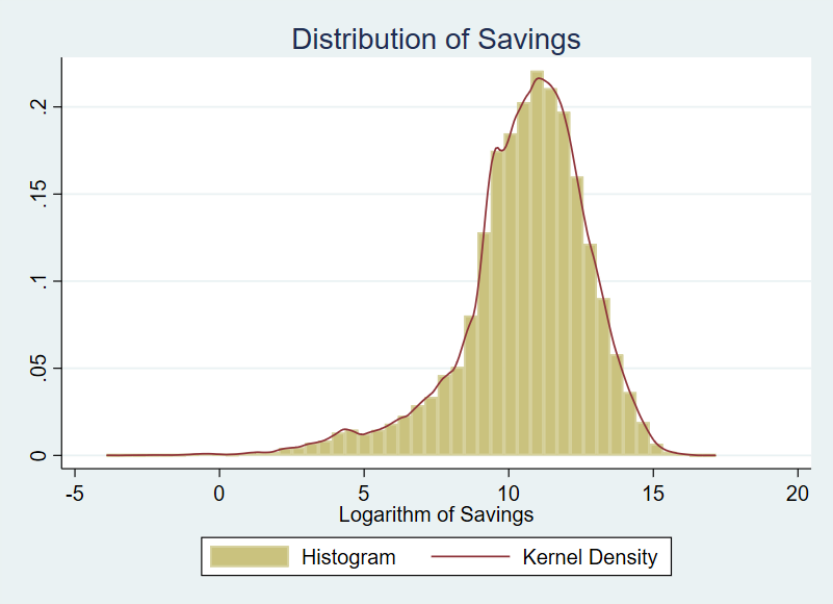


Panel C:



Note: This figure illustrates the distribution of inflation expectations across bins. Panels A, B, and C report the distribution of 1 year, 3 months, and current inflation expectations, respectively. The data is based on inflation expectations for our main specification in the fourth quarter of 2014.

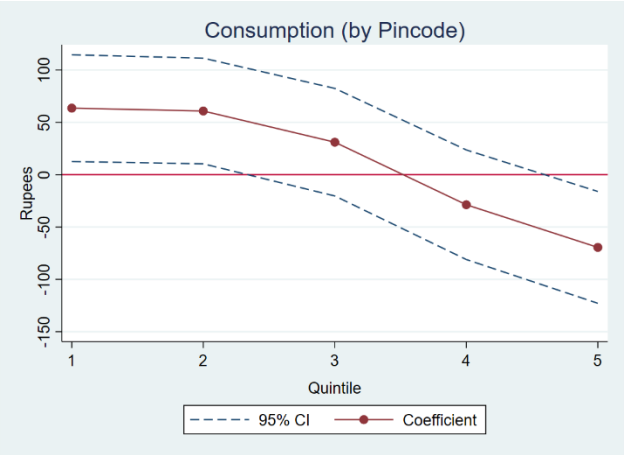
Figure A6. Distribution of Savings



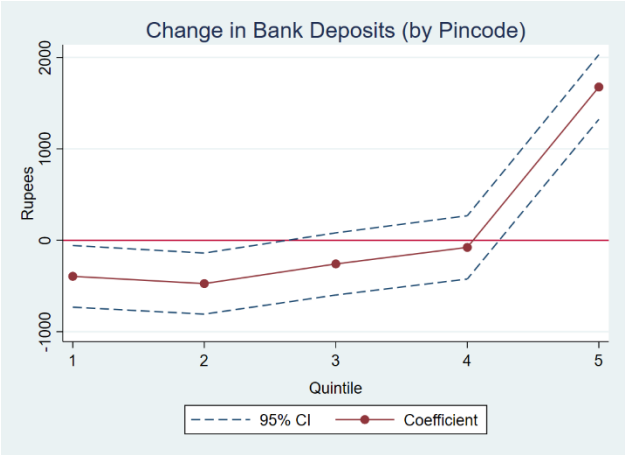
Note: This figure illustrates the distribution of savings across all households. The x-axis reports the logarithm of savings. The data is based on the administrative bank data in the fourth quarter of 2014.

Figure A7: Heterogenous Effects for 1 Year inflation expectations based on Savings Quintiles (by pin code)

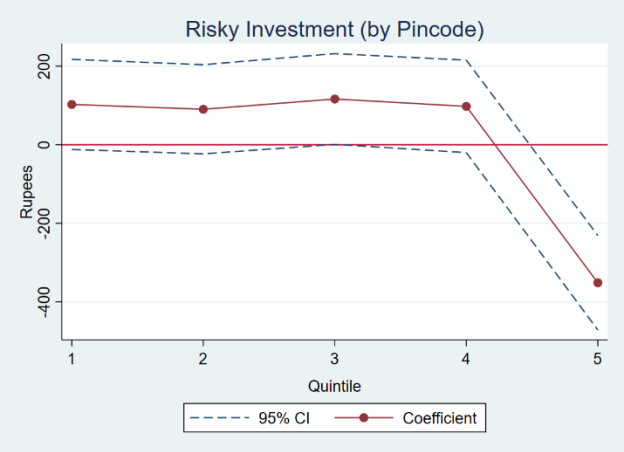
Panel A:



Panel B:



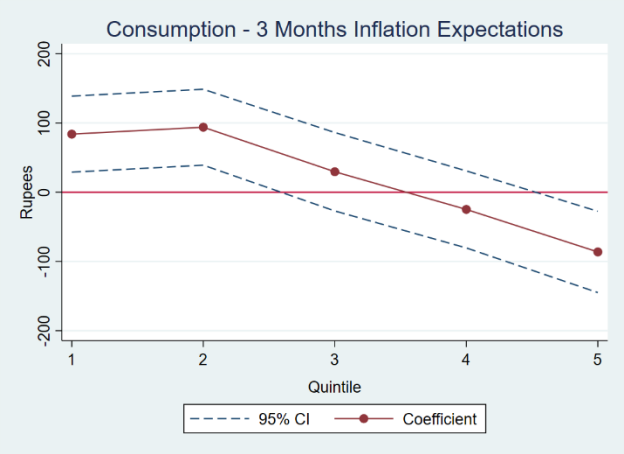
Panel C:



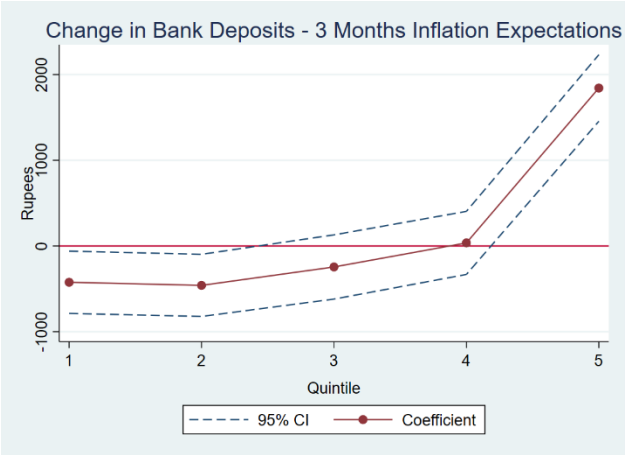
Notes: This figure shows the heterogenous impact of 1 year inflation expectations on consumption (Panel A), changes in bank deposits (Panel B) and investments in risky assets (Panel C) by liquid savings quintiles. In this specification, inflation expectations are being grouped at the pin code levels.

Figure A8: Heterogenous Effects for 3-month inflation expectations based on Savings Quintiles (by pin code-age group-gender bins)

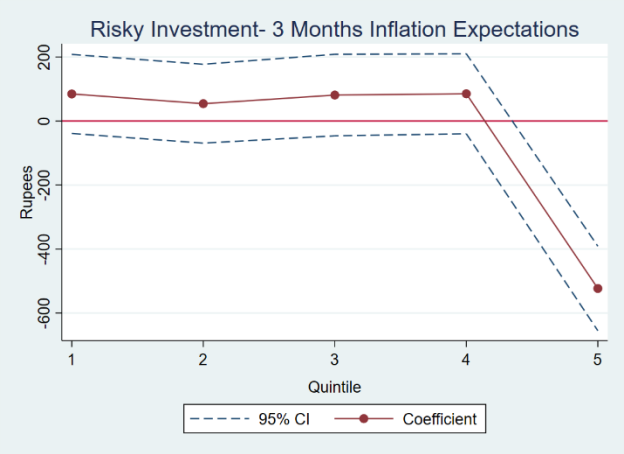
Panel A:



Panel B:



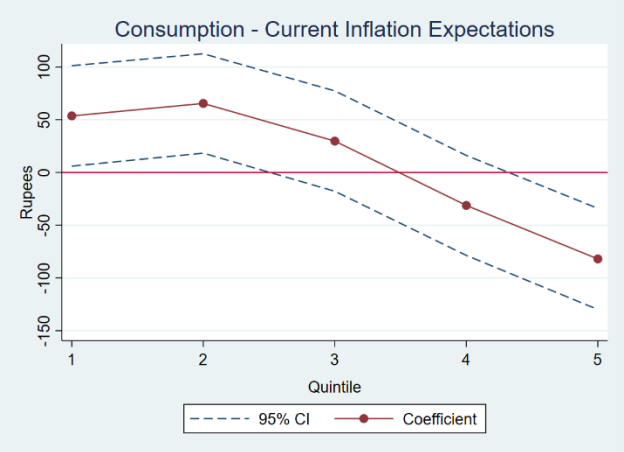
Panel C:



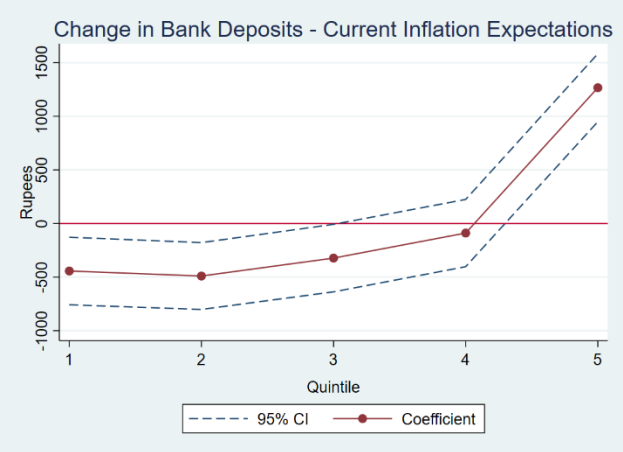
Notes: This figure shows the heterogenous impact of 3 months inflation expectations on consumption (Panel A), changes in bank deposits (Panel B) and investments in risky assets (Panel C) by liquid savings quintiles. In this specification, inflation expectations are being categorized by pin code-age group-gender bins.

Figure A9: Heterogenous Effects for current inflation expectations based on Savings Quintiles (by pin code-age group-gender bins)

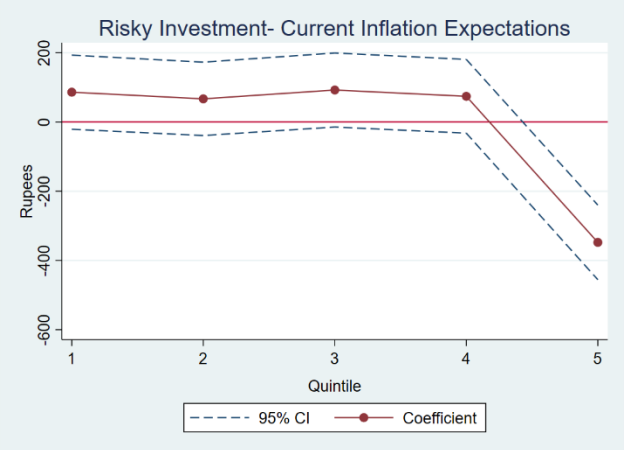
Panel A:



Panel B:



Panel C:



Notes: This figure shows the heterogenous impact of current inflation expectations on consumption (Panel A), changes in bank deposits (Panel B) and investments in risky assets (Panel C) by liquid savings quintiles. In this specification, inflation expectations are being categorized by pin code-age group-gender bins.

Table A1. Summary Statistics of Household-Level Inflation Expectations

	Number	Mean	SD
	(1)	(2)	(3)
Panel A: Entire RBI Survey Data from 2010Q1 to 2019Q4			
Current inflation expectations	199,402	13.48	12.98
3 Months inflation expectations	199,402	12.07	11.02
1 Year inflation expectations	199,402	11.16	10.13
Panel A: Entire RBI Survey Data at 2014Q4			
Current inflation expectations	4,629	11.60	11.53
3 Months inflation expectations	4,629	10.31	9.37
1 Year inflation expectations	4,629	10.57	9.91
Panel A: Our Sample at 2014Q4			
Current inflation expectations	2,487	11.49	11.59
3 Months inflation expectations	2,487	10.12	9.57
1 Year inflation expectations	2,487	10.44	9.35

Notes: This table reports the summary statistics of the Inflation Expectations Survey of Households conducted by the Reserve Bank of India at the household level. In Panel A, we examine the inflation expectations data from the first quarter of 2010 to the last quarter of 2019 for the entire sample. In Panel B, we present inflation expectations data for the entire sample in the fourth quarter of 2014. In Panel C, we focus on inflation expectations data for households in the fourth quarter of 2014, which is utilized in our analysis (after mapping with the bank data).

Table A2. Changes in Inflation Expectations post policy

Dep. Var.:	1 Year	1 Year	3 Months	3 Months	3 Current	Current
	(1)	(2)	(3)	(4)	(5)	(6)
Post	-3.414***	-3.437***	-2.377***	-2.387***	-2.381***	-2.383***
	(0.0601)	(0.0601)	(0.0511)	(0.0512)	(0.0470)	(0.0470)
Bin Fixed Effects	N	Y	N	Y	N	Y
Obs.	199,402	199,402	199,402	199,402	199,402	199,402
R Square	0.016	0.018	0.011	0.012	0.013	0.015

Notes: This table reports changes in inflation expectations post inflation targeting policy. The results presented in this table are obtained using the inflation expectations data from the first quarter of 2010 to the last quarter of 2019, with Post being an indicator variable that depicts the time period after the fourth quarter of 2014. Each column represents the estimation of its corresponding dependent variable (inflation expectations of varying period) that is indicated in the first row. Bin Fixed Effects refer to pin code-age group-gender bins. Robust standard errors are reported in parenthesis. *,**,*** denote statistically significant levels at 10%, 5% and 1% respectively.

Table A3. Summary Statistics of Household-Level Demographics

	RBI Survey Data			Bank Data		
Dep. Var.:	Number	Mean	SD	Number	Mean	SD
	(1)	(2)	(3)	(4)	(5)	(6)
Age	2,487	42.8	15.9	43,272	47.4	14.7
Gender	2,487	0.43	0.49	43,272	0.22	0.42

Notes: This table compares the demographics of households from the Inflation Expectations Survey of Households conducted by the Reserve Bank of India and the administrative bank data. Data is at household-level.

Table A4. Summary Statistics by Liquid Savings Quintiles

	Number	Mean	SD
	(1)	(2)	(3)
Panel A: Savings			
Group 1	78,255	22,899	102,759
Group 2	78,237	50,479	120,972
Group 3	75,726	101,686	169,959
Group 4	76,284	220,440	293,069
Group 5	64,431	623,595	910,663
Panel B: Consumption			
Group 1	78,255	11,141	44,614
Group 2	78,237	14,547	45,802
Group 3	75,726	20,729	46,760
Group 4	76,284	25,146	53,140
Group 5	64,431	28,154	61,266
Panel C: Change in Bank Deposits			
Group 1	78,255	2,674	118,091
Group 2	78,237	3.326	114,992
Group 3	75,726	4,337	172,531
Group 4	76,284	3,963	284,213
Group 5	64,431	-2,910	531,506
Panel D: Risky Investments			
Group 1	78,255	-116	36,725
Group 2	78,237	149	47,304
Group 3	75,726	1,001	74,105
Group 4	76,284	3,427	100,995
Group 5	64,431	12,712	175,906

Notes: This table reports the summary statistics of Savings balances, as well as the main outcome variables: Consumption, Change in Bank Deposits, Risky Investments across different savings quintiles. The summary statistics is based on the administrative dataset from October 2014 to June 2015. Group i relates to the savings quintiles; with Group 1 having the lowest savings, and Group 5 having the highest savings. We divide the groups into 5 different bins based on the amount of savings in October 2014.

Table A5. Relationship of inflation expectations and savings quintiles in October 2014

Dep. Var.:	1 Year	3 Months	Current
	(1)	(2)	(3)
Group 1	0.117	0.0149	-0.0695
	(0.190)	(0.156)	(0.168)
Group 2	0.199	0.0224	0.125
	(0.190)	(0.156)	(0.168)
Group 3	0.0553	-0.135	0.0726
	(0.190)	(0.156)	(0.168)
Group 4	-0.0392	-0.184	0.0463
	(0.190)	(0.156)	(0.168)
Group 5	0.204	-0.0895	0.258
	(0.193)	(0.159)	(0.171)
Obs.	43,272	43,272	43,272
R Square	0.000	0.000	0.000

Notes: This table illustrates the relationship between inflation expectations among households across various savings quintiles in October 2014. Group i relates to the savings quintiles; with Group 1 having the lowest savings, and Group 5 having the highest savings. Each column represents the estimation of its corresponding dependent variable that is indicated in the first row. The robust standard errors are reported in parenthesis. *,**,*** denote statistically significant levels at 10%, 5% and 1% respectively.

Table A6. Estimates of 3 months inflation expectations and Savings Quintiles

Dep. Var.:	Consumption	Δ Bank Deposits	Risky Investments
	(1)	(2)	(3)
3 months Inflation Expectations * Post * Quintile 1	83.90**	-423.3*	84.60
	(33.28)	(220.2)	(74.82)
3 months Inflation Expectations * Post * Quintile 2	93.89***	-459.7**	54.12
	(33.21)	(219.7)	(74.65)
3 months Inflation Expectations * Post * Quintile 3	29.57	-244.9	81.08
	(34.32)	(227.1)	(77.16)
3 months Inflation Expectations * Post * Quintile 4	-24.83	35.87	85.17
	(33.71)	(223.0)	(75.78)
3 months Inflation Expectations * Post * Quintile 5	-86.24**	1,843***	-523.2***
	(35.56)	(235.3)	(79.95)
Obs.	389,448	389,448	389,448
R Square	0.332	0.019	0.069
Individual Fixed Effects	Y	Y	Y
Month Fixed Effects	Y	Y	Y

Notes: This table reports the heterogeneous effects of prior 3 months inflation expectations (before the announcement of inflation targeting) by individuals' savings quintiles. Based on individuals' liquid wealth position in October 2014, we separate them into 5 different groups. Quintile 1 refers to those with the least liquid savings, while Quintile 5 are those with the highest liquid savings. In this specification, inflation expectations are being categorized by pin code-age group-gender bins. The results presented in this table are obtained using monthly data from October 2014 to June 2015, with Post being an indicator variable that depicts the time period after February 2015. Each column represents the estimation of its corresponding dependent variable that is indicated in the first row. For all the regressions, individual fixed effects and month fixed effects are imposed. Standard errors are clustered at the bin level. The robust standard errors are reported in parenthesis. *,**,*** denote statistically significant levels at 10%, 5% and 1% respectively.

Table A7. Estimates of current inflation expectations and Savings Quintiles

Dep. Var.:	Consumption	Δ Bank Deposits	Risky Investments
	(1)	(2)	(3)
Current Inflation Expectations * Post * Quintile 1	47.08	-522.0**	120.5*
	(32.28)	(213.6)	(72.57)
Current Inflation Expectations * Post * Quintile 2	73.00**	-581.1***	97.08
	(31.73)	(209.9)	(71.33)
Current Inflation Expectations * Post * Quintile 3	27.70	-368.9*	149.3**
	(31.88)	(210.9)	(71.66)
Current Inflation Expectations * Post * Quintile 4	-41.52	-125.4	131.1*
	(31.24)	(206.7)	(70.23)
Current Inflation Expectations * Post * Quintile 5	-87.83***	1,342***	-342.0***
	(31.35)	(207.4)	(70.47)
Obs.	389,448	389,448	389,448
R Square	0.332	0.019	0.069
Individual Fixed Effects	Y	Y	Y
Month Fixed Effects	Y	Y	Y

Notes: This table reports the heterogeneous effects of prior current inflation expectations (before the announcement of inflation targeting) by individuals' savings quintiles. Based on individuals' liquid wealth position in October 2014, we separate them into 5 different groups. Quintile 1 refers to those with the least liquid savings, while Quintile 5 are those with the highest liquid savings. In this specification, inflation expectations are being categorized by pin code-age group-gender bins. The results presented in this table are obtained using monthly data from October 2014 to June 2015, with Post being an indicator variable that depicts the time period after February 2015. Each column represents the estimation of its corresponding dependent variable that is indicated in the first row. For all the regressions, individual fixed effects and month fixed effects are imposed. Standard errors are clustered at the bin level. The robust standard errors are reported in parenthesis. *,**,*** denote statistically significant levels at 10%, 5% and 1% respectively.

Table A8. Regression Estimates by Savings Deciles

Dep. Var.:	Consumption	Δ Bank Deposits	Risky Investments
	(1)	(2)	(3)
1 Year Inflation Expectations * Post * Decile 1	54.51	-438.8*	81.24
	(38.66)	(255.8)	(86.90)
1 Year Inflation Expectations * Post * Decile 2	52.43	-448.4*	91.08
	(36.99)	(244.7)	(83.15)
1 Year Inflation Expectations * Post * Decile 3	83.65**	-520.2**	113.3
	(36.85)	(243.8)	(82.83)
1 Year Inflation Expectations * Post * Decile 4	45.61	-459.2*	17.75
	(37.99)	(251.4)	(85.41)
1 Year Inflation Expectations * Post * Decile 5	49.47	-448.2*	93.29
	(37.50)	(248.1)	(84.30)
1 Year Inflation Expectations * Post * Decile 6	8.855	-193.6	92.02
	(38.31)	(253.5)	(86.12)
1 Year Inflation Expectations * Post * Decile 7	-33.60	-118.7	55.20
	(37.44)	(247.7)	(84.18)
1 Year Inflation Expectations * Post * Decile 8	-29.17	-60.27	94.35
	(38.08)	(252.0)	(85.62)
1 Year Inflation Expectations * Post * Decile 9	-90.98**	599.7**	-161.0*
	(36.95)	(244.5)	(83.06)
1 Year Inflation Expectations * Post * Decile 10	-71.07*	2,099***	-580.7***
	(40.65)	(269.0)	(91.39)
Obs.	389,448	389,448	389,448
R Square	0.332	0.019	0.069
Individual Fixed Effects	Y	Y	Y
Month Fixed Effects	Y	Y	Y

Notes: This table reports the heterogeneous effects of prior 1 year inflation expectations (before the announcement of inflation targeting) by individuals' savings quintiles. Based on individuals' liquid wealth position in October 2014, we separate them into 10 different groups. Decile 1 refers to those with the least liquid savings, while Decile 10 are those with the highest liquid savings. In this specification, inflation expectations are being categorized by pin code-age group-gender bins. The results presented in this table are obtained using monthly data from October 2014 to June 2015, with Post being an indicator variable that depicts the time period after February 2015. Each column represents the estimation of its corresponding dependent variable that is indicated in the first row. For all the regressions, individual fixed effects and month fixed effects are imposed. Standard errors are clustered at the bin level. The robust standard errors are reported in parenthesis. *,**,*** denote statistically significant levels at 10%, 5% and 1% respectively.

Table A9. Regression Estimates by sub-sample with risky investments

Dep. Var.:	Consumption	Δ Bank Deposits	Risky Investments
	(1)	(2)	(3)
1 Year Inflation Expectations * Post * Quintile 1	19.54	-611.1*	184.3
	(47.22)	(344.4)	(145.2)
1 Year Inflation Expectations * Post * Quintile 2	74.28*	-604.6*	132.1
	(42.41)	(309.3)	(130.4)
1 Year Inflation Expectations * Post * Quintile 3	15.05	-490.1*	180.1
	(40.31)	(293.9)	(124.0)
1 Year Inflation Expectations * Post * Quintile 4	-33.74	-129.4	150.8
	(39.10)	(285.1)	(120.2)
1 Year Inflation Expectations * Post * Quintile 5	-83.29**	1,203***	-482.4***
	(37.44)	(273.0)	(115.1)
Obs.	199,782	199,782	199,782
R Square	0.351	0.020	0.068
Individual Fixed Effects	Y	Y	Y
Month Fixed Effects	Y	Y	Y

Notes: This table reports the heterogeneous effects of prior 1 year inflation expectations (before the announcement of inflation targeting) by individuals' savings quintiles for the sub-sample: households with risky investments. Based on individuals' liquid wealth position in October 2014, we separate them into 5 different groups. Quintile 1 refers to those with the least liquid savings, while Quintile 5 are those with the highest liquid savings. In this specification, inflation expectations are being categorized by pin code-age group-gender bins. The results presented in this table are obtained using monthly data from October 2014 to June 2015, with Post being an indicator variable that depicts the time period after February 2015. Each column represents the estimation of its corresponding dependent variable that is indicated in the first row. For all the regressions, individual fixed effects and month fixed effects are imposed. Standard errors are clustered at the bin level. The robust standard errors are reported in parenthesis. *,**,*** denote statistically significant levels at 10%, 5% and 1% respectively.

Table A10. Regression Estimates by sub-sample without risky investments

Dep. Var.:	Consumption	Δ Bank Deposits
	(1)	(2)
1 Year Inflation Expectations * Post * Quintile 1	82.98**	-343.9
	(36.56)	(210.0)
1 Year Inflation Expectations * Post * Quintile 2	61.99	-390.8*
	(38.50)	(221.1)
1 Year Inflation Expectations * Post * Quintile 3	44.25	-129.0
	(41.29)	(237.1)
1 Year Inflation Expectations * Post * Quintile 4	-39.15	-33.73
	(42.77)	(245.6)
1 Year Inflation Expectations * Post * Quintile 5	-101.6**	1,391***
	(47.76)	(274.3)
Obs.	189,666	189,666
R Square	0.306	0.017
Individual Fixed Effects	Y	Y
Month Fixed Effects	Y	Y

Notes: This table reports the heterogeneous effects of prior 1 year inflation expectations (before the announcement of inflation targeting) by individuals' savings quintiles for the sub-sample: households without any risky investments.. Based on individuals' liquid wealth position in October 2014, we separate them into 5 different groups. Quintile 1 refers to those with the least liquid savings, while Quintile 5 are those with the highest liquid savings. In this specification, inflation expectations are being categorized by pin code-age group-gender bins. The results presented in this table are obtained using monthly data from October 2014 to June 2015, with Post being an indicator variable that depicts the time period after February 2015. Each column represents the estimation of its corresponding dependent variable that is indicated in the first row. For all the regressions, individual fixed effects and month fixed effects are imposed. Standard errors are clustered at the bin level. The robust standard errors are reported in parenthesis. *,**,*** denote statistically significant levels at 10%, 5% and 1% respectively.

Table A11. Determinants of Inflation Expectations

	Television Channels			Gas Stations		
Dep. Var.:	1 Year	3 Months	Current	1 Year	3 Months	Current
	(1)	(2)	(3)	(4)	(5)	(6)
TV Channels	-0.0251***	-0.0168***	-0.0257***			
	(0.000633)	(0.000491)	(0.000585)			
Gas Stations				-0.411***	-0.338***	-0.386***
				(0.00282)	(0.00259)	(0.00250)
Obs.	389,448	389,448	389,448	389,448	389,448	389,448
R Square	0.004	0.003	0.005	0.035	0.035	0.039

Notes: This table reports the relationship between different timeframe of inflation expectations, as well as the number of TV channels and number of Gas stations. Each column represents the estimation of its corresponding dependent variable that is indicated in the first row. Standard errors are clustered at the bin level. The robust standard errors are reported in parenthesis. *,**,*** denote statistically significant levels at 10%, 5% and 1% respectively.

Table A12. Heterogenous Effects based on individual characteristics

Panel A: Old

Dep. Var.:	Consumption	Δ Bank Deposits	Risky Investments
	(1)	(2)	(3)
1 Year Inflation Expectations * Post	3.151	-96.18	87.83*
	(22.59)	(149.5)	(50.79)
1 Year Inflation Expectations * Post * Old	-3.658	102.5	-167.1***
	(21.67)	(143.4)	(48.72)
Obs.	389,448	389,448	389,448
R Square	0.332	0.018	0.069
Individual Fixed Effects	Y	Y	Y
Month Fixed Effects	Y	Y	Y

Panel B: Female

Dep. Var.:	Consumption	Δ Bank Deposits	Risky Investments
	(1)	(2)	(3)
1 Year Inflation Expectations * Post	19.66	-1.000	-6.912
	(21.84)	(144.5)	(49.10)
1 Year Inflation Expectations * Post * Female	-40.83*	-81.99	0.749
	(23.72)	(156.9)	(53.32)
Obs.	389,448	389,448	389,448
R Square	0.332	0.018	0.069
Individual Fixed Effects	Y	Y	Y
Month Fixed Effects	Y	Y	Y

Notes: This table reports the heterogeneous effects of prior 1 year inflation expectations (before the announcement of inflation targeting) by demographics. In Panel A, old is an indicator variable if the individual is above the age of 45. In Panel B, Female is an indicator variable if the individual is a female. In this specification, inflation expectations are being categorized by pin code-age group-gender bins. The results presented in this table are obtained using monthly data from October 2014 to June 2015, with Post being an indicator variable that depicts the time period after February 2015. Each column represents the estimation of its corresponding dependent variable that is indicated in the first row. For all the regressions, individual fixed effects and month fixed effects are imposed. Standard errors are clustered at the bin level. The robust standard errors are reported in parenthesis. *,**,*** denote statistically significant levels at 10%, 5% and 1% respectively.

Table A13. Heterogenous Effects by transaction costs

Dep. Var.:	Consumption	Δ Bank Deposits	Risky Investments
	(1)	(2)	(3)
1 Year Inflation Expectations * Post	20.93	47.29	-4.726
	(21.47)	(142.1)	(48.26)
1 Year Inflation Expectations * Post * Bank Branches	-0.614**	-2.647	-0.0570
	(0.310)	(2.050)	(0.697)
Obs.	389,448	389,448	389,448
R Square	0.332	0.018	0.069
Individual Fixed Effects	Y	Y	Y
Month Fixed Effects	Y	Y	Y

Notes: This table reports the heterogeneous effects of prior 1 year inflation expectations (before the announcement of inflation targeting) by transaction costs. Bank Branches refer to the number of Bank Branches at the pin code level. In this specification, inflation expectations are being categorized pin code-age group-gender bins. The results presented in this table are obtained using monthly data from October 2014 to June 2015, with Post being an indicator variable that depicts the time period after February 2015. Each column represents the estimation of its corresponding dependent variable that is indicated in the first row. For all the regressions, individual fixed effects and month fixed effects are imposed. Standard errors are clustered at the bin level. The robust standard errors are reported in parenthesis. *,**,*** denote statistically significant levels at 10%, 5% and 1% respectively

Table A14. Relationship of stock holdings and inflation expectations in October 2014

Dep. Var.:	Average Stock Holdings (1)	Average Stock Holdings (2)	Average Stock Holdings (3)
1 Year Inflation Expectations	2,392		
	(2,245)		
3 Months Inflation Expectations		794.2	
		(2,736)	
Current Inflation Expectations			3,818
			(2,539)
Obs.	43,272	43,272	43,272
R Square	0.000	0.000	0.000

Notes: This table reports the relationship between households' stock holdings (through their Demat account) and different timeframe of inflation expectations in October 2014. The robust standard errors are reported in parenthesis. *,**,*** denote statistically significant levels at 10%, 5% and 1% respectively.