Effectiveness of Expectation Channel of Monetary Policy Transmission: Evidence from Pakistan

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Key Messages

- Global Financial Crises (GFC) 2007-08 highlighted the importance of incorporating expectations while making economic decisions, monetary policy is no exception.
- This study examined the effectiveness of expectations channel of monetary policy transmission mechanism in the case of Pakistan which is pertinent to curb the menace of inflation.
- The main objectives are to lessen the gap between inflation and inflation expectations, then to figure out how macroeconomic indicators feed into the formation of expectations and then to estimate the effective working of expectations channel.
- The influence of household inflation expectations over the core inflation is naïve and needs a policy intervention.
- The responses of monetary policy shocks (SBP projections) are influential in the formation of expectations.
- Findings backed by empirical analysis further confirm that expectations channel works better via discount rate than via SBP projections in case of Pakistan.

Expectations Channel of Monetary Policy Transmission

A country's central bank has the crucial task of developing a comprehensive and dynamic set of principles and guidelines, known as monetary policy. This arduous process is undertaken to achieve its ultimate goal i.e., ensuring stability within the national economy. Amongst all other objectives that drive monetary policy formulation, preserving price stability remains at the forefront for any nation striving towards economic prosperity.

In order to achieve its policy objectives, the central bank often resorts to altering either their short-term interest rate or monetary aggregates through various instruments. These measures operate in distinct ways and impact the economy differently via transmission mechanisms. Among them, there are five channels of monetary policy transmission mechanism identified. In Pakistan's context, a study [1] have investigated the credit (balance sheet) channel, asset price channel, exchange rate channel and interest rate channel using an extended VAR model. However, little research has been conducted on the expectations channel which remains a relatively unexplored area across both developed and developing economies alike.

The successful transmission of monetary policy hinges on the expectations channel, which can have far-reaching effects. As inflation expectations rise, real prices inevitably follow

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suit. The Standard New Keynesian Phillips Curve (NKPC) supports this notion by highlighting how expected inflation may impact current core inflation levels.

To achieve its objectives, it is vital for the central bank to anchor public expectations accurately. By doing so, monetary policymakers stand a greater chance of meeting their desired outcomes effectively. A study conducted by [2] found that market movements often converge towards underlying price trends following unexpected shocks to public expectations. This research also reveals that negative expectation shocks lead markets towards rational equilibrium but not vice versa, underscoring the importance of carefully managing and regulating market expectations when making crucial decisions affecting economic policies and regulations at large. Similarly, another study [3] investigated that incorporating inflation expectations can improve the inflation forecast which is imperative for the effective conduct of monetary policy in case of Pakistan.

According to NKPC[2], Where actual inflation is considered as the function of inflation expectations of one period ahead and current output gap with random white noise error term. It can be observed through the timeline (from January 2012 to December 2021) in the case of Pakistan where the inflation expectations of the Pakistani households and core inflation goes in the same way for some of the periods of sample data. Gap is wider in some of the periods of sample timeline i.e., especially in the start of the sample period and onward from 2015 to 2019. Whereas gap is relatively minimum in recent periods of the sample data. There is a need of policy implications to minimize the gap between inflation and inflation expectations which is

the first and foremost objective of present study. This phenomenon is explained in the following figure 1.

Figure 1: Relationship between core inflation and expected inflation.
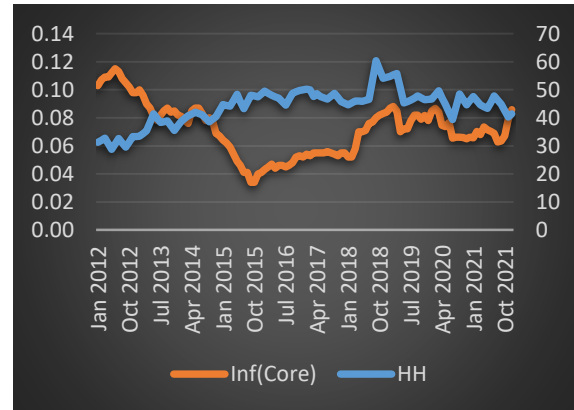
Note: figures are as of December 2021
Source: Authors Own Estimations

The core inflation and inflation expectations of Pakistani households are shown in Figure 1.2. Both are not increasing in the same direction, demonstrating that core inflation does not rise in tandem with rising household expectations and having gaps in some of the periods. The core objective of the present study is to minimize this gap to handle the core inflation in the economy.

When we delve into the intricacies of this topic, it becomes evident that there exists a plethora of studies that unequivocally showcase its immense significance. Despite the widespread nature of research in this field, one aspect remains elusive i.e., the expectations channel within monetary policy's transmission mechanism. To effectively tackle core inflation concerns in both conventional and unconventional monetary policy settings, it is imperative to anchor this channel soundly [4]. Put succinctly, there lies an extensive terrain yet to be explored when it comes to understanding and harnessing the full

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[2] $\pi_t = \beta \, \pi_{t+1}^e + \delta x_t + \mu_t$

potential of this crucial component within monetary policymaking.

Working of Expectations Channel

The expectations channel holds significant importance in the transmission mechanism of monetary policy. It encompasses the influence that future decisions regarding monetary policy have on various economic agents such as consumers, businesses, and financial markets. This dynamic relationship between expectations and behaviour has a direct impact on the effectiveness of monetary policy in achieving its objectives.

By considering how individuals and entities anticipate changes in policy rates or other key aspects of monetary policy, policymakers gain insights into how these expectations shape their decision-making processes. For instance, if stakeholders expect an imminent increase in policy rates by central banks to curb inflationary pressures, they may adjust their spending habits or investment strategies accordingly. Consequently, these behavioural shifts can either reinforce or dampen the desired effects of implemented policies.

Similarly, expectations about monetary policy can influence exchange rates. If the central bank is expected to tighten the monetary policy, such as raising interest rates, it can attract capital inflows, leading to an appreciation of the domestic currency. On the other hand, expectations of loose monetary policy can lead to capital outflows and depreciation of the domestic currency. Changes in the exchange rates can have an impact on various economic indicators like export competitiveness, import costs and inflation.

Likewise, the expectations about future policy rates can influence asset prices such as stock prices, bond prices and real estate prices. Lower expected policy rates can lead to an increase in asset prices, as investors anticipate higher returns on their investments. On the other hand, higher expected policy rates can cause a decrease in asset prices as investors anticipate lower returns. Changes in assets prices not only impact the wealth and financial stability of individuals and businesses, but they can also have broader implications for the overall economy.

In short, the expectations channel operates through the interaction of central bank communications, policy rate expectations, consumption and investment decisions, asset prices, exchange rates and inflation expectations. Understanding and managing these expectations is vital for the central bank to ensure the effective transmission of monetary policy and to achieve their macroeconomic objectives.

Traditionally, the expectations channel works in the following two ways [5]:

(a) Via Policy Rate:

$$r_t \downarrow \rightarrow \pi^e_{t,....t+s} \uparrow \rightarrow$$

$$\pi_t, i^e_{t,....t+s}, W^e_{t,.....t+s} \uparrow \rightarrow \pi^e_{t+1}$$

(b) Via Central Bank Projections:

$$\pi^{e,SBP}_{t,...t+s} \rightarrow \{\pi^e_{t,....t+s}\} \uparrow \rightarrow$$

$$\pi_t, i^e_{t,....t+s}, W^e_{t,.....t+s} \uparrow \rightarrow \pi^e_{t+1}$$

r_t Stands for SBP Discount Rate, $\pi^e_{t,....t+s}$ means current inflation expectations over the time $t,....t+s$, $i^e_{t,....t+s}$ refers to perceptions about interest rate variations over the time $t,....t+s$, $W^e_{t,....t+s}$ means the expectations regarding the nominal wages over the time $t,....t+s$, whereas π^e_{t+1} stands for expected inflation in one time period ahead

from t, π_t is the actual current inflation while $\pi_{t,...t+s}^{e,SBP}$ refers to SBP's inflation projections.

Inflation perceptions are directly impacted by policy rates. Such perceptions affect the nominal interest rate variations, wage management and expected future inflation, which in turn, can impact the macroeconomic aggregates. The same channel can work through the SBP projections about future inflation expectations.

Empirical Analysis

Working of these channels can be observed through the empirical analysis stated in the following impulse response functions. Figure 2 implies that the positive one standard deviation response of discount rate to the inflation expectations of the households remained negative till the 5th time period and showed significant response. It shows that the working of expectations channel is relatively better via discount rate than the SBP projections. A decrease in the discount rate would make it more profitable for the banks to borrow from SBP, which will increase the money supply in the economy and households shall expect more inflation in the country.

Figure 2: Relationship between discount rate and household's inflation expectations

Response of D(R) to D(HH)
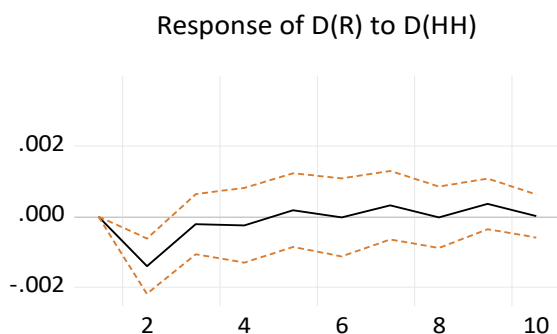
The response of SBP projections to the household's inflation expectations is given in figure 3 which states that the one standard deviation positive response of SBP projections to the inflation expectations of households is negative and insignificant till the 7th month and then it became positive. It shows that the working of expectations channel via SBP projections is weak as economic theory suggests us that the increase in the inflation expectations may increase the one-time ahead core inflation (See NKPC).

The FEVD of discount rate with respect to inflation expectations of households is about 8 percent in the long run which shows that variations in the discount rate is explained by the inflation expectations of households relatively better than the SBP projections as the percentage for the latter is 5 only in long run.

Figure 3: Relationship between central banks projections and household's inflation expectations
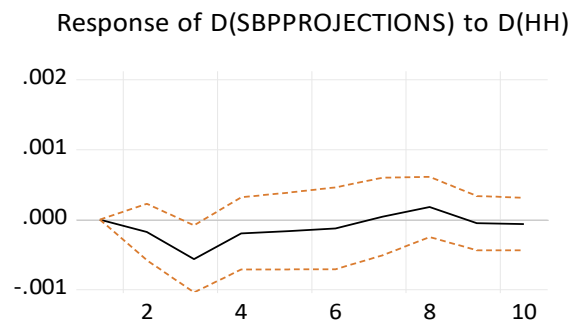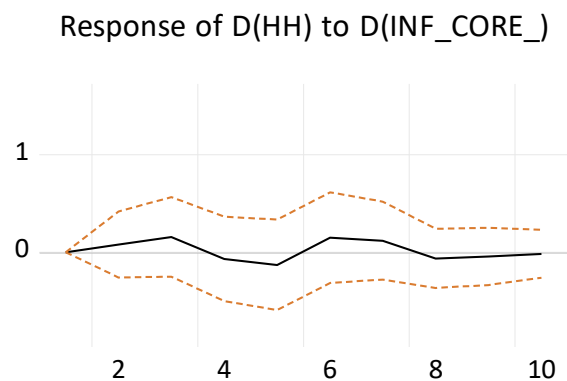
Response of D(SBPPROJECTIONS) to D(HH)

Figure 4 illustrates the response of household's inflation expectations to the core inflation.

Figure 4: Relationship between household's inflation expectations and core inflation.

Response of D(HH) to D(INF_CORE_)

The response of household inflation expectations does not show any significant

variations to the core inflation. The possible reason behind it might the concern of the households about the food and energy prices which are not the part of core inflation. Another possible explanation of such behaviour could be that less educated Pakistani households with low knowledge of economics do not form their expectations rationally. There is a need of policy intervention in this regard as the core objective of this study to minimize the gap of inflation and inflation expectations.

In short, it is proven through the impulse response functions (IRFs) and forecasting error of the variance decomposition (FEVD) [3]. The increase in inflation expectations by the households can cause of increase in the expected increase in the nominal interest rate and expected nominal wages. Which in turn increases the inflation expectation in time t to one period ahead.

Likewise, the other channel works out through the SBP projections which too can increase the future expected inflation leading the actual inflation increase. SBP projections have significant impact over the long run inflation expectations having impact (significant in some of the variables, whereas insignificant in some others) over the other macroeconomic aggregates. The variations explained by the SBP projections in the shock of the inflation expectations of the households go up to 5 percent in the long run which in turn increase the inflation expectation in future period and causing the rise in actual inflation, expected nominal interest rate, and expected wages. This argument is supported by the study [6] in which authors referred to the central bank's projections as policy tool. Hence, it can be stated that the responses of monetary policy

shocks are influential in the formation of expectations.

Policy Recommendations

This study can be used as a policy instrument for the monetary policy wing of the central bank as expectations channel is one of the transmission mechanism tools of monetary policy. Fewer studies are available on the subject matter. As in the post COVID world, there is need of curbing the menace of inflation with more rigor because whole world is observing higher inflation paths both in developed and developing arena. In the meantime, when this study was completed in Pakistan, the inflation in Pakistan was at its peak due to rise in the petrol prices and exchange rate. One of our research objectives is to lessen the gap between the expected inflation and core inflation through which we can manage the inflation in a right way. Expectations channel of monetary policy transmission mechanism in the case of Pakistan has been explored through the policy discount rate and SBP projections.

In the context of the present study, some policy suggestions are as follows:

- This study is relevant to forming a policy to stabilize the actual inflation path. The government should form some real expectations index (at national level, good in quantity and quality) for both inflation expectations of households and SBP projections. So, the impact of the inflation expectations by households and SBP projections can go in the right way to control the macroeconomic aggregates.

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[3] IRFs and FEVD of all the variables are available on request.

- SBP should disseminate some stable path of projections so that the households may manage their expectations accordingly. Normally historical data of SBP projections is not available as SBP does not publish such data. But in recent reports, the data of SBP projections is available. Our results are not in concurrence with the theory in the terms of SBP projections because of data issues.

- Data of Survey of Professional Forecasters is not available in the case of Pakistan. We collected the data through the questionnaire filled in by experts on the subject which is limited due to time bound. It is available in the case of India. Royal Bank of India publishes the survey of professional forecasters. The government of Pakistan should compile and publish such type of data.

- The government should make the SBP independent of political influence. So, it may set the policies and projections in the favour of the economy.

- As per digital requirements, the government should make an app to conduct survey and public opinion regarding inflation expectations to anchor the inflation expectations in a better way as data is considered as king in the modern-day world of artificial intelligence.

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