Central Banks' Monetary Policy Announcements and Firms' Inflation Expectations: Evidence from Mexico

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Abstract

Using novel data on firms' 12-month inflation expectations from Banco de Mexico's Monthly Survey of Regional Economic Activity, I investigate for the 02/2020 - 09/2024 period whether firms' inflation expectations respond or not to Banco de Mexico's monetary policy announcements. Based on the event-study approach, I isolate the effects of monetary policy announcements from other news and events taking place at the same time by considering a symmetric 5-day window around those announcements and by using the date and hour of firms' survey response submission to compare the responses of firms that were filed right before a *MPA* with those that were submitted right after it. I estimate an econometric specification that includes as explanatory variables an interaction term between a monetary policy surprise and a dummy that is equal to 1 if firms responded to the Survey right after a *MPA* (equal to zero if otherwise), both components of the interaction term included separately, an inflation gap, global uncertainty measures, a proxy of insecurity in Mexico, and firm characteristics. The main result shows that a surprise tightening of the monetary policy stance leads firms' inflation expectations to decline. The inflation gap, higher global uncertainty, and higher levels of insecurity in Mexico lead firms to revise their inflation expectations upwards. These findings are robust to different uncertainty indices, to different measures of monetary policy surprises, to different window-sizes in the identification strategy, and to different specifications. Moreover, this paper finds that the main driver of Mexican firms' 12-month inflation expectations is the inflation gap, followed by insecurity in Mexico.

Keywords: Monetary Policy, Central Bank Communication, Firms' Expectations, Inflation, Survey Data

JEL codes: E52, E58, D84, E31, C83.

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1 Introduction

This paper analyzes the effect of Banco de México's (Central Bank of Mexico, henceforth Banxico) monetary policy announcements (*MPA*) on firms' 12-month inflation expectations. Why is this topic important for researchers and policymakers? Because the effectiveness of monetary policy (i.e. a Central Bank (*CB*)'s ability to have an impact on expenditure and, henceforth, on prices (Woodford, 2005)) mainly depends on the degree to which a *CB* is able to shape (and anchor) the general public's inflation expectations. In this task, the role of *CB*'s communication with the general public is pivotal.[1] *CBs* have the duty to clearly explain their actions and intentions (Binder, 2017), since this will enhance trust and credibility in their policies and, in turn, shape the general public's expectations.[2] The following are some quotes that reflect this situation:

"If the public understands the central bank's view on the economy and monetary policy, then households and businesses will take those views into account in making their spending and investment plans; policy will be more effective as a result" (Jerome Powell).

"I believe these two features of Fed monetary policy - a systematic approach to policy and the steps towards more open communication and transparency - are particularly noteworthy in contributing to our policy success over the past two decades. They have helped strengthen public confidence in the Fed and thereby helped anchor inflation expectations to price stability. Additionally, by providing clear explanations of its policies to the public, greater transparency has also enhanced Fed accountability, a vital consideration for a government institution in a democracy" (Janet Yellen).

"The more guidance a central bank can provide the public about how policy is likely to evolve the greater the chance that market participants will make appropriate inferences" (Ben

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[1]Woodford (2005) argues *CBs* should communicate four broad classes of issues: their interpretation about economic conditions, policy decisions, strategies guiding their policy decisions, and the outlook for future policy

[2]Before mid-1990s, "central banking was shrouded in mystery, at the Fed as elsewhere...the FOMC made no public announcements regarding its target for the federal funds rate following the meetings at which the target was determined. Markets had to try and infer the target rate from the type and size of open market operations" Woodford (2005). Since 1994, the opposite has occurred: major central banks such as the Fed, the Reserve Bank of New Zealand, the Bank of England, and the European Central Bank, among others, have emphasized the relevance of *CB*'s communication in their policy goals.

Bernanke).

"A priority close to my heart is to bring the ECB closer to the people. We need to engage in a genuine dialogue to sustain and nurture trust in our institution. People gain a deeper trust in the ECB when they understand our decisions and appreciate their importance for their day-to-day lives" (Christine Lagarde).

Most empirical studies on the impact of CB's communication on economic agents' expectations have focused on professional forecasters or financial markets participants and only a few on firms (e.g. Enders et al. (2019) for the case of German firms and Bottone and Rosolia (2019) for the case of Italian firms). This has mainly occurred due to a lack of data availability (Buchheim and Link (2017), Bottone and Rosolia (2019) and Candia, Coibion and Gorodnichenko (2021)).[3] However, macroeconomic theory points out that monetary policy operates through firms' expectations since firms are price setters (Enders, Hünnekes and Müller (2019), Candia, Coibion and Gorodnichenko (2021), and Di Pace, Mangiante, and Masolo (2024)), as well as decision makers regarding hiring, wage setting, and investment (Coibion et al. (2020a)).[4] Hence, this paper contributes to the literature using novel data on firms' inflation expectations from the Monthly Survey of Regional Economic Activity conducted by Banxico (henceforth, Banxico's Regional Survey) to investigate for the period 02/2020 - 09/2024 whether firms' inflation expectations respond or not to *MPAs* that result in monetary policy surprises (*MPS*).

The econometric analysis follows Di Pace et al. (2024) and it is based on an event-study approach. I isolate the effects of Banxico's *MPAs* from other news and events taking place at the same time by considering a symmetric 5-day window around *MPAs* and by using the date and hour in which firms send their responses to Banxico's Regional Survey to compare,

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[3]The few surveys on firms' expectations that exist have mainly been conducted by advanced countries (e.g. United States, Germany, Italy, New Zealand, among others) and have generally been characterized for being non-representative and qualitative. Only in recent years, quantitative questions have started to be included in these surveys (Candia, Coibion, and Gorodnichenko (2021)).

[4]Candia, Coibion, and Gorodnichenko (2021) emphasize that the role of firms' inflation expectations is crucial "to understanding the link between the nominal and real sides of the economy". They add that such role is generally characterized by an expectations-augmented Phillips curve (i.e. a relationship that links inflation with the real side of the economy, conditional on firms' inflation expectations) and, therefore, considered in different frameworks such as the sticky price models, noisy information models, rational inattention models, behavioral models, among others.

within the symmetric 5-day window, the responses of firms that were filed right before a *MPA* with those that were submitted right after it. I estimate an econometric specification that includes as main explanatory variables an interaction term between *MPS*[5] and a dummy that is equal to 1 if firms responded to Banxico's Regional Survey right after a *MPA* (equal to zero if otherwise); both components of the interaction term (they are included separately); an inflation gap;[6] global uncertainty measures (e.g. the Global Economic-Policy Uncertainty (EPU) Index, the World Trade Uncertainty Index, and the VIX); a proxy of insecurity in Mexico. and firm characteristics (e.g. dummies of size, sector, and region).

As an alternative exercise, I estimate a specification that controls for every single event that occurs around *MPAs* and not just for specific global and domestic economic factors. This specification includes a Trend variable as an explanatory variable instead of the global uncertainty measures and the proxy of insecurity in Mexico mentioned before.[7]

Driscoll-Kray clustered standard errors by firm and month are used to control for heteroskedasticity, as well as for temporal and cross-sectional correlation in the error term. The survey design, as it will be explain in Section 3, allows to obtain three different dependent variables, each corresponding to a different group of firms. Hence, in order to further exploit the data, I conduct the analyses previously described considering each of these three groups.

The main findings show that Banxico's *MPAs* do have an impact on firms' inflation expectations. In particular, a surprise tightening of the monetary policy stance leads firms' 12-month inflation expectations to decline, while a higher inflation gap, higher global uncertainty (particulary, economic and political uncertainty and trade uncertainty), and higher levels of insecurity in Mexico lead firms' 12-month inflation expectations to increase. These results are in line with macroeconomic theory and can be observed when considering the three dependent variables. The specification that controls for the Trend variable, instead of specific global and domestic economic factors, confirms that firms' inflation expectations do

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[5]*MPS* are calculated as the change in 3-month swap rates in 30 minutes windows around Banxico's *MPAs*, i.e. 10 minutes before and 20 minutes after the *MPAs*. See Section 3 for more details.

[6]The inflation gap is measured as the difference between the observed inflation and Banxico's inflation target. See Section 3 for more details.

[7]The Trend variable is built as follows: it is equal to 1 when the first *MPA* in the sample period occurs; it is equal to 2 when the second *MPA* in the sample period occurs, and so on. See Section 3 for more details.

respond to Banxico's *MPAs*.

In order to test for the robustness of the findings, I conduct four additional exercises. In the first one, the news-paper based Infectious Disease Equity Market Volatility (EMV) Tracker is included in the estimated specification in order to control for the Coronavirus Pandemic that occurred at the beginning of the sample period. In the second exercise, I re-estimate the specification previously described using the EPU Index for Mexico and the Trade Uncertainty Index for Mexico, instead of their global counterparts. In the third one, I use an alternative measure of *MPS*, calculated as the change in 3-month swap rates in 50-minutes window around Banxico's *MPAs*, instead of the initial measure calculated using a 30-minutes window. In the fourth one, I consider both a symmetric 3-day window around *MPAs* and a symmetric 7-day window around *MPA* to compare the responses of firms that were filed right before a *MPA* with those that were submitted right after it. The findings are robust in all the cases.

Finally, I calculate beta coefficients to investigate the relative contribution of each explanatory variable to firms' 12-month inflation expectations. I mainly find that the main drivers of firms' inflation expectations is the inflation gap, followed by insecurity in Mexico.

The paper proceeds as follows. Section 2 surveys the literature on the effect of monetary policy announcements on firms' inflation expectations. Section 3 presents the empirical model and the data used to estimate it. Section 4 describes the main results; while Section 5, two robustness tests. Section 6 analyzes the relative contribution of each explanatory variable to firms' 12-month inflation expectations. Section 7 concludes.

2   Literature Review

This paper is related to three strands of the empirical literature on the impact of *MPAs* on firms' inflation expectations. In what follows, I briefly present each of them.

2.1 Literature on Firms' Inattention to the Objectives and Actions of Monetary Policy Authorities, and to Inflation Dynamics

Three main stylized facts have been found in this literature: 1)firms' beliefs about recent inflation are disconnected from actual values;[8] 2)firms' inflation expectations differ considerably from those of professional forecasters, but are similar to those of households;[9] and 3) there is disagreement across firms regarding inflation dynamics (i.e. there is as much disagreement about recent inflation values than about future inflation), despite inflation data being publicly available (Kumar et al. (2015); Coibion, Gorodnichenko and Kumar (2018); Lamla and Vinogradov (2019); Coibion, et al. (2020a); Candia, Coibion, and Gorodnichenko (2021); Candia, Coibion and Gorodnichenko (2022)). Together, these stylized facts reflect a lack of firms' inflation expectations anchoring (Candia, Coibion and Gorodnichenko (2021)) and suggest there is inattention to monetary policy and inflation dynamics by firms (Coibion et al. (2020a); Coibion, Gorodnichenko and Weber (2022); and Candia, Coibion and Gorodnichenko (2021)).[10]

However, Coibion et al. (2020a) and Candia, Coibion and Gorodnichenko (2022) point out firms' inattention to monetary issues vary across countries: those with low and stable inflation, which is in part the result of a successful monetary policy, provide no incentives to firms to pay attention to macroeconomic conditions (e.g. United States (US) and New Zealand), while those with high and volatile inflation (e.g. Argentina and Uruguay, among others) induce firms to be better informed.[11] The case of Ukraine is peculiar since Coibion

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[8]Firms' inflation forecasts are also disconnected from inflation dynamics (Candia, Coibion and Gorodnichenko (2021)).

[9]Professional forecasters and financial markets participants are continuously tracking macroeconomic conditions and, therefore, are better informed about macroeconomic indicators than the general public (Coibion et al. (2020a)).

[10]Kumar et al. (2015) claim that firms' inflation expectations in New Zealand are unanchored "despite 25 years of inflation targeting and relatively stable inflation". They mention this is not due to a lack of credibility on the Central Bank, but to the fact that managers are generally uninformed about the objectives and actions of this Central Bank.

[11]For the specific case of New Zealand, Kumar et al. (2015) and Coibion, Gorodnichenko and Kumar (2018) find that observable firms' characteristics may also account for the existing differences in inattentiveness: those with more educated managers, those with a larger number of competitors, those selling a larger share of their products abroad, and those planning to change prices sooner tend to be more informed about monetary policy and inflation dynamics than the rest. However, most of these differences remain unexplained.

and Gorodnichenko (2015) find that the number of firms tracking the Central Bank's actions and announcements tend to increase in times of crisis, but inflation expectations of those who track this information and those who remain inattentive do not differ. The authors suggest that this may be due to the following: either Ukraine Central Bank's communications are of very poor quality or, there is a lack of credibility on this Central Institute, both of which could lead firms tracking the information not to revise their inflation expectations.

2.2 Literature on the Expectations Formation Process

This paper is also related to the literature on the expectations formation process of firms. The existing evidence shows firms form their inflation expectations based primarily on two sources of information: media coverage of inflation dynamics and firms' shopping experience (i.e. food and gasoline prices) (Kumar et al. (2015) and Coibion et al. (2020a)). Those relying particularly on the first source of information tend to know more about inflation dynamics and, hence, have lower inflation backcast and forecast errors (Kumar et al. (2015); while those relying more on the second source "extrapolate their own experiences to the aggregate economy" (Coibion et al. (2020a)) and have higher errors. This is relevant since firms use their inflation expectations to take price-setting decisions, wage-setting decisions, investment decisions and hiring decisions, though some managers even use them for personal decision-making (Kumar et al. (2015), Coibion et al. (2020a), Coibion, Gorodnichenko and Ropele (2020b), and Candia, Coibion and Gorodnichenko (2022)).

Despite firms' "veil of inattention" (Coibion et al. (2020a)) regarding monetary policy issues, a growing body of literature (Candia, Coibion, and Gorodnichenko, 2021 and 2022; Coibion, Gorodnichenko and Ropele, 2019; Coibion, et al., 2020; and Hunziker, et al.,2022) has shown that policymakers can still shape these agents' inflation expectations and beliefs. These studies use randomized control trial methods to provide additional information about inflation to a randomly selected group of firms or households and find that, relative to agents that did not receive any information (control group), treated agents tend to adjust their inflation expectations and, as a consequence, their behavioral choices. For the case of Italian firms, Coibion, Gorodnichenko and Ropele (2020b) find that the provision of information

about recent inflation to a selected group of firms led them to revise their inflation expectations upwards (particularly at shorter horizons) and, consequently, to increase prices and their demand for credit lines, while to reduce employment and capital. For New Zealand, Coibion, Gorodnichenko, and Kumar (2018) randomly assign 700 firms to 1 of 7 groups (each group had 100 firms) and treat them with either information on unemployment rates and GDP growth or with information on inflation (i.e. professional forecasters' inflation expectations for the next 12 months, central bank's inflation target, most recent value of annual inflation, etc.). The rest of the sample was given no information at all. Their findings show that treated firms with above average beliefs revised them downwards, while those with below average beliefs revised them upwards. This mainly occurred with firms treated with additional information on inflation. The authors also find that changes in firms' beliefs and expectations had an impact on their decisions regarding quantities of inputs (e.g. employment and investment), but not regarding prices, wages or unit costs. Hunziker, et al. (2022) conduct a randomized control trial on Swiss companies covering all industries and regions and find that those that receive additional information on the central bank's objective, its past performance, and long-term average inflation adjusted their long-term inflation expectations to a certain extent. They also find that short-term inflation expectations, factors related to prices, and a shock to the exchange rate determine these companies' long term inflation expectations.

2.3 Literature on the Causal Effect of MPAs on firms' inflation expectations

This paper mostly contributes to the scant literature on the causal effect of monetary policy announcements on the general public's (i.e. firms and households) inflation expectations. Enders, Hünnekes, and Müller (2019) investigate the impact of three different measures of monetary policy announcements on German firms' price and production expectations from 2004 to 2018. First, they find that unconventional policy announcements by the European Central Bank (ECB) in the wake of the Global Financial Crisis have a limited and negative effect on both production and price expectations. Then, they find that monetary policy surprises, measured as "high-frequency changes in overnight-index swap (OIS) interest rates around monetary policy events", do have an impact on firms' price and production expec-

tations, but in a non-linear way: a surprise increase in the OIS interest rate reduces firms' expectations, while a surprise decrease raise them. These effects only occur with moderate surprises; large surprises have no effect at all. Finally, they find that a positive *CB* information shock (which reflects favorable news about the economy) induces firms to revise their price expectations upward, but not their production expectations. Similarly, Bottone and Rosolia (2019) study the case of Italian firms and find that an unexpected 1 percentage point increase in the 3-month OIS interest rate on an ECB Governing Council meeting day reduces 0.5 percentage points firms' expected inflation 1 year ahead. This effect becomes stronger after 2012, once unconventional monetary policy tools became more widely used. For the case of the United Kingdom, Di Pace, Mangiante, and Masolo (2024) analyze the response of firms' price expectations to both a Monetary Policy Committee (MPC)'s announcement of an interest rate change and a monetary policy surprise. Their surprise measure is built as the "change in the price of 3-month Sterling future contracts expiring 2 quarters ahead in a 30 minutes window around the announcement of the MPC of the Bank of England". Their main results show that firms do not revise their price expectations when there is a monetary policy surprise, but they do revise them when there is a MPC announcement of interest rate change. In particular, an announced interest rate hike leads firms to reduce both their price expectations and uncertainty about their business.

This paper follows the analysis presented in Di Pace et al. (2024) in order to investigate if firms' 12-month inflation expectations respond or not to *MPAs*. However, it differs from Di Pace et al. (2024) in the following: 1) it incorporates additional explanatory variables to the estimated specification such as an inflation gap, different uncertainty measures (e.g.the Global EPU Index, the World Trade Uncertainty Index, the VIX, a variable that controls for the Covid-19 Pandemic, among others), a proxy of insecurity in Mexico, and firm characteristics (i.e. dummies for size, sector, and region). These regressors permit to control for different dimensions of uncertainty (i.e. not only economic and political uncertainty, but also trade uncertainty, and financial markets volatility) and, for both, global and domestic economic factors. 2) I also present an exercise that includes *MPCM* fixed effects in the specification, instead of uncertainty measures and the insecurity proxy for Mexico, in order to

control for ever single event that occurs around *MPCM* and not just for specific global and domestic economic factors. 3) This paper presents two exercises to test for the robustness of the results. In the first one, the estimated specification considers an alternative measure of *MPS*, calculated as the change in 3-month swap rates in 50 minutes windows around Banxico's *MPAs*. In the second exercise, I consider a symmetric 3-day window around *MPAs* and a symmetric 7-day window around *MPAs* to isolate the effects of Banxico's *MPAs*. 4) Beta coefficients are also estimated in order to analyze the relative contribution of each explanatory variable to firms' 12-month inflation expectations. This is important since it allows to identify which explanatory variable is the main driver of Mexican firms' 12-month inflation expectations during the sample period. 5) The survey design allows to obtain data from three different groups of firms (as it is explain in detail in Section 3), so I perform the analyses previously described considering each of them.

3 Empirical Model and Data

This paper uses an event-study approach to analyze whether Banxico's *MPAs* that resulted in *MPSs* during the February 2020 - September 2024 period had an effect on 12-month inflation expectations of Mexican firms.[12] Following Di Pace et al. (2024), I consider a symmetric 5-day window around *MPAs* and I use the date and hour in which firms send their responses to Banxico's Regional Survey to compare, within the symmetric 5-day window, the responses of firms that were filed right before a *MPA* with those that were submitted right after it.[13] By considering this tight time window, I can isolate the effects of *MPAs* from other news and events occurring at the same time and, hence, assume that the results will be causal (Yotzov

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[12]The event-study approach has been amply used in Economics, Finance, and Accounting to measure the effect of an event (e.g. mergers and acquisitions, announcements of macroeconomic variables, issues related to new debt or equity, among others) on the value of firms or other economic variable. It consists on defining the event of interest and the time window surrounding such event over which the affected variable will be analyzed (MacKinlay, 1997). The time window or event window should contain the day of the event and some days prior and after such event so that the analyzed variable can be compared in these two sub-periods. In this paper, the event of interest is Banxico's *MPAs* and the variable that changes or that is affected due to this event is Mexican firms' inflation expectations.

[13]Firms responding to Banxico's Regional Survey at a day and hour outside the symmetric 5-day window are not considered in the empirical analysis.

et al., 2024). In Section 5, I present some robustness tests considering a symmetric 3-day window and a symmetric 7-day window.

More clearly, a month is divided into two sub-periods due to the occurrence of *MPA*. Firms filing survey responses during the sub-period that precedes the *MPA* are considered the control group; while firms submitting responses during the sub-period following the *MPA*, the treatment group. This classification permits to empirically test whether inflation expectations of firms in the treatment group differ from those in the control group (Di Pace et al. (2024). The test is performed considering only those firms that responded within the symmetric 5-day window around *MPAs*. If an *MPA* occurs at the end of the month, the event is not considered in the empirical analysis due to the small number of responses that may be submitted within the 5-day window around that *MPA*. See Figure 1.

Figure 1: Estimation Strategy Diagram
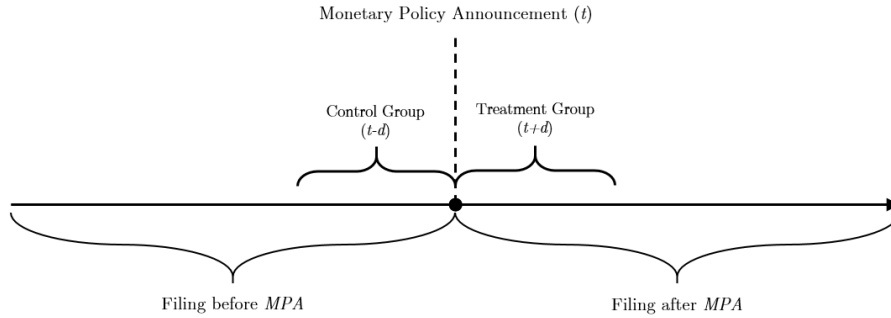
Note: This Figure is adopted from Di Pace et al. (2024). It shows that a month can be divided in two sub-periods due to the occurrence of *MPAs* and that survey responses are collected from within the symmetric 5-day window around the *MPA* in order to compare those that were filed right before it with those that were filed right after it.

The effect of Banxico's *MPAs* on firms' 12-month inflation expectations is investigated by estimating the following specification:

$$y_{i,t} = \beta_0 + \beta_1 MPS_t * D_{i,t} + \beta_2 MPS_t + \beta_3 D_{i,t} + \beta_4 InflationGap_t + \beta_5 X_t + \beta_6 FirmCharacteristics_i + \varepsilon_{i,t}$$

(1)

Where:

i, t are sub-indexes for firm and month, respectively.

Firms' 12-month Inflation Expectations

$y_{i,t}$ is the dependent variable and stands for firm's i 12-month inflation expectations in time t. The data come from Banxico's Regional Survey.[14]

In February 2020, Banxico added a new module to its Regional Survey to start collecting data on firms' 12-month inflation expectations. The questions in this module follow international standards and consider some aspects of the empirical literature that are worth mentioning: 1) they refer to the annual variation of the National Consumer Price Index and not to sales prices or costs; 2) only 12-month firms' inflation expectations are collected through Banxico's Regional Survey; 3) in contrast to treated firms described in the literature review, no previous information on the current inflation rate, Banxico's inflation target, or professional forecasters' 12-month inflation expectations is provided to the participants; and, 4) to guarantee the representativeness of indicators, only firms with more than a 100 employees that belong either to the manufacturing or non-manufacturing sectors are taken into consideration.

Regarding the design of the questions in the module, three different types of questions and three randomly selected groups of firms are considered. This allows assigning each group of firms only one type of question. Neither the groups of firms selected nor the question assigned to each of them has changed since the module was incorporated into the Regional Survey. The three types of questions considered are the following:

Question 1. For the next 12 months, what is your forecast for the headline inflation rate as measured by the annual change in the National Consumer Price Index?

Table 1: Point Estimate

	Forecast
Headline inflation rate for the next 12-months	_____ %

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[14]This monthly survey is conducted from the first business day of each month and closes on the penultimate business day.

Question 2. For the next 12 months, what is the headline inflation rate, measured by the annual variation in the National Consumer Price Index, that you would assign to each of the following scenarios and the probability that they occur?

Table 2: Three Scenarios

Ranges	Headline Inflation Rate	Probability that the Scenario Occurs
Lowest Possible	_____ %	_____ %
Moderately Possible	_____ %	_____ %
Highest Possible	_____ %	_____ %

Question 3. For the next 12 months, what is the headline inflation rate, measured by the annual variation in the National Consumer Price Index, that you would assign to each of the following scenarios and the probability that they occur?

Table 3: Five Scenarios

Ranges	Headline Inflation Rate	Probability that the Scenario Occurs
Lowest Possible	_____ %	_____ %
Low	_____ %	_____ %
Moderately Possible	_____ %	_____ %
High	_____ %	_____ %
Highest Possible	_____ %	_____ %

As it can be seen, Question (1) asks firms to provide point estimates of the headline inflation rate, while Questions (2) and (3) ask them to provide for three and five scenarios, respectively, both forecasts of the headline inflation rate and the probabilities with which they will occur.[15] I perform the empirical analysis using data derived from each of these questions;

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[15]The expected value (i.e. the mean) and the standard deviation of 12-month inflation expectations derived from Questions (2) and (3) are obtained according to the formulas presented in the Notes included in Figures (2) and (3).

i.e. using three different dependent variables.[16]

Figures 2 and 3 present the mean and the standard deviation (which can be considered a measure of disagreement about inflation among firms or among professional forecasters), respectively, of 12-month inflation expectations of firms (in green, firms that respond Question 1 regarding point estimates; in red, firms that respond Question 2 regarding 3 scenarios; and in blue, firms that respond Question 3 regarding 5 scenarios) and professional forecasters (in yellow), both surveyed by Banxico.[17] As a reference, Banxico's inflation target, which is 3.0% (in black), is also included in Figure 2.

Figure 2 shows that the mean of firms' 12-month inflation expectations is above that of professional forecasters and well above Banxico's inflation target. This confirms one stylized fact described in the literature review: 1) firms inflation expectations differ considerably from those of professional forecasters.

Figure 3 shows that, regardless of which question we focus on (Questions 1, 2 or 3 from Banxico's Regional Survey), disagreement about inflation is greater among firms than among professional forecasters. This confirms another stylized fact described in the literature review.

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[16]Question (1) was introduced in the module of Banxico's Regional Survey one year later, so the estimated results using data coming from this particular Question have less observations compared to those obtained using data from Questions (2) and (3).

[17]Banxico conducts a Survey of macroeconomic forecasts every month since January 1999, among a sample of around 40 analysis groups and private sector economic consulting, both national and foreign. It is known as Banxico's Survey of Professional Forecasters (SPF). Its main aim is to collect forecasts of informed agents regarding various economic indicators of interest such as inflation, the peso-dollar exchange rate, interest rates, and real GDP growth, among others.

Figure 2: Firms' 12-Month Inflation Expectations: Mean
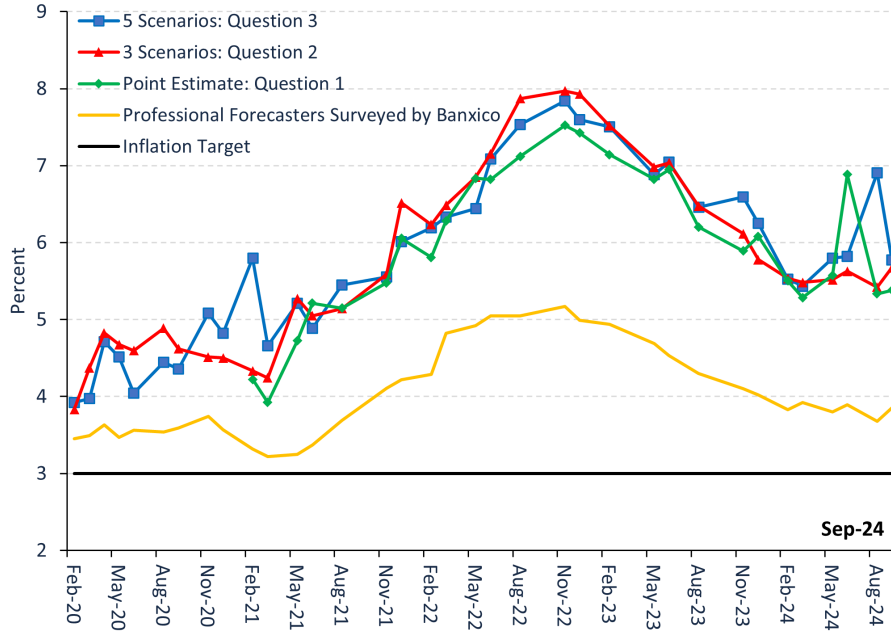
Note: In the case of firms that were assigned Questions 2 and 3 (i.e. those of 3 and 5 scenarios), the mean of 12-month inflation expectation is first calculated per firm using the following formula:

$$\mu_{j,t}(\Pi^e) = \sum_{i=1}^{n} p_{i,j,t} \Pi^e_{i,j,t}$$

where:

$p_{i,j,t}$ is the probability assigned to scenario i by firm j in month t; $\Pi^e_{i,j,t}$ is the response of firm j for scenario i in month t regarding its 12-month inflation expectation and; n stands for the number of scenarios, either 3 or 5; while e, for expectations. Once these calculations per firm are obtained, I then use STATA's command aweights to derive the mean of 12-month inflation expectations for these two groups of firms.

Source: Data from Banxico's Regional Survey and author's calculations.

Figure 3: Disagreement among Firms and Professional Forecasters about Future Inflation

Note: In the case of firms that were assigned Questions 2 and 3, the standard deviation of 12-month inflation expectations is first calculated per firm, using the following formula:

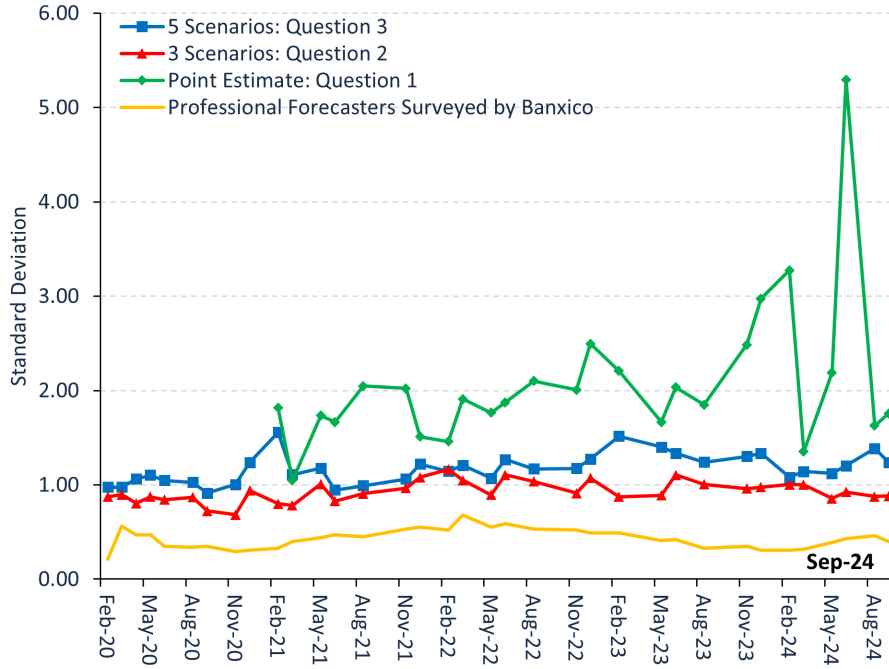$$\sigma_{j,t}(\Pi^e) = \sum_{i=1}^{n} p_{i,j,t}(\Pi^e_{i,j,t} - \mu_{j,t}(\Pi^e))^2$$

where:

$p_{i,j,t}$ is the probability assigned to scenario i by firm j in month t; $\Pi^e_{i,j,t}$ is the response of firm j for scenario i in month t regarding its 12-month inflation expectation; $\mu_{j,t}$ corresponds to the mean described in equation (1); and n stands for the number of scenarios, either 3 or 5; while e, for expectations. Once these calculations per firm are obtained, I then use STATA's command known as aweights to derive the standard deviation of 12-month inflation expectations for these two groups of firms.

Source: Data from Banxico's Regional Survey and author's calculations.

Figure 4 shows the composition (by region, sector, and by size of firms) of the three groups of firms that were randomly selected to answer either Question 1, 2, or 3 from Banxico's Regional Survey. It can be observed that the group of firms that responds Question 1 (and that therefore provided Banxico with point estimates of the annual headline inflation rate) is the one that has the largest number of firms in the non-manufacturing sector; the one that has the largest number of firms located in the Centre and North-Centre of Mexico; and the one that has the largest number of medium size firms.

Figure 4: Composition of the Group of Firms that Responded Questions 1, 2, and 3 from Banxico's *MSREA*

Question 1
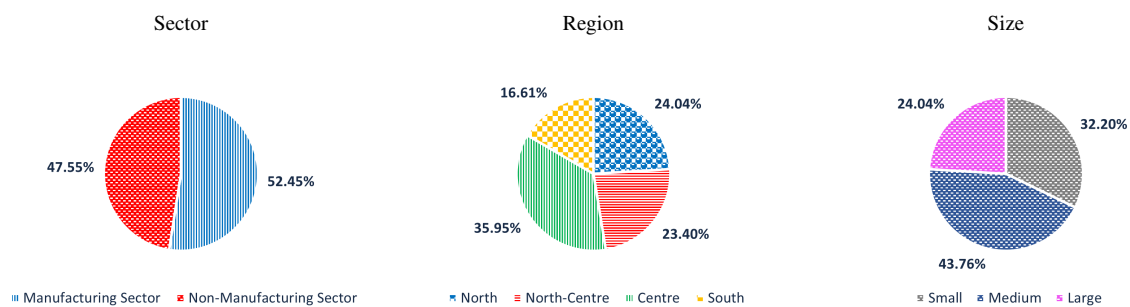
Sector

Region

Size

Question 2

Sector

Region

Size

Question 3

Sector

Region

Size
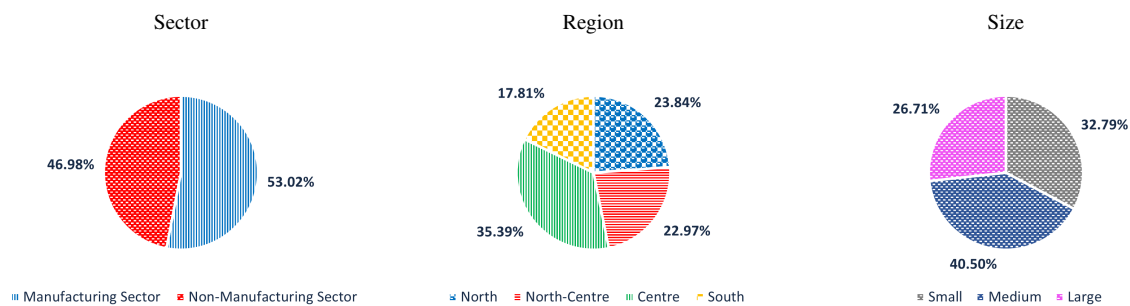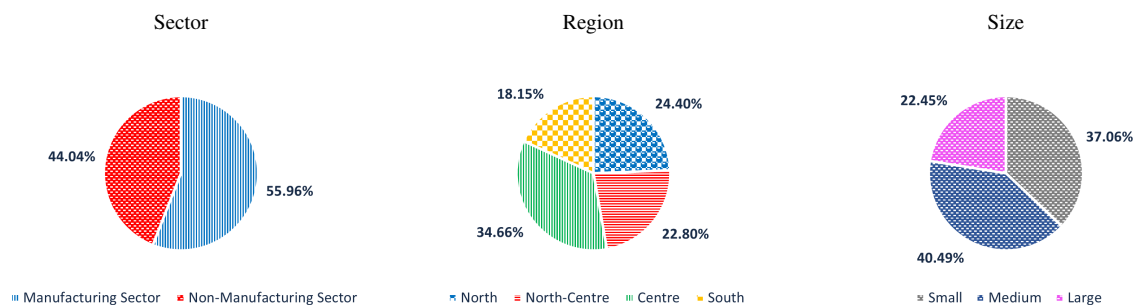
Source: Data from Banxico's Regional Survey and author's calculations.

Once the data on the dependent variable have been described, it is important to present Figure 5, which shows, for the period February 2020 - September 2024, the number of firms that file their responses to Banxico's Regional Survey per day of the month, both within and outside the symmetric 5-day window considered. Outside the symmetric 5-day window, most firms file their responses to the Survey on the first 9 days of the month and some on the 13th, 17th, 18th, 19th, 20th, 21st, 22nd, 23rd, 24th, and 27th days of the month. Within the symmetric 5-day window, most firms file their responses to the Survey from the 7th to the 17th day of the month and some on the 22nd, 23rd, and 24th days of the month. This suggests firms file their responses to the Survey randomly, and not based on information about Mexico's macroeconomic conditions or on firms' characteristics, as expected.

Figure 5: Number of Firms that File their Responses to Banxico's Regional Survey per Day of the Month
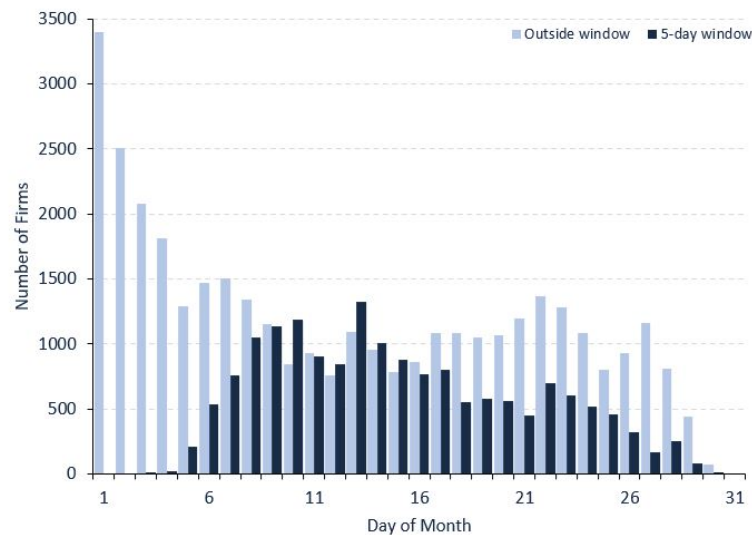
Source: Data from Banxico's Regional Survey and author's calculations.

Furthermore, the average number of firms that file their responses to the Survey per month outside the symmetric 5-day window is 1357 and, within the symmetric 5-day window is 477.

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Interaction Term

I introduce an interaction term between MPS_t and a dummy $D_{i,t}$ that is equal to 1 if firm i answers Banxico's Regional Survey right after a *MPA* and, equal to zero if otherwise. This interaction term permits to investigate whether *MPAs* have or not an effect on firms' 12-month inflation expectations. The two components of the interaction term are also introduced separately in the estimated specification.

MPSs are calculated by Solís (2023a, b) with data from Bloomberg, as the change in 3-month swap rates in 30-minute windows around Banxico's *MPAs*. These windows start 10 minutes before the *MPA* and end 20 minutes after.

MPS are based on 3-months swap rates given they are the most liquid swaps referencing the 28-day inter-bank interest rate (known as TIIE28D) in Mexico's derivatives market. While swaps in other countries reference the monetary policy rate, swaps in Mexico reference the TIIE28D, which follows Banxico's monetary policy rate very closely (Solis, 2023a). In addition, due to the time horizon they cover, 3-month swaps can consider information on more than one meeting of monetary policy and, hence, capture not only surprises about the current level of the policy rate, but also about its future path (Solís (2023a, b)).[18]

MPSs are considered exogenous. The reason for this is that *MPSs* are calculated in a 30-minute window around *MPAs* and it is very unlikely that in this period of time "other variables influence asset prices ... or that monetary policy reacts to events minutes before the release of *MPAs*" (Solís (2023a, b)).

According to the literature, a positive *MPS* means the following: 1) the Central Bank raises the monetary policy rate more than expected by financial markets; 2) it is reduced less than expected; 3) it increases despite no change is expected; or 4) it remains constant despite a reduction is expected. A negative *MPS* means the following: 1) the Central Bank raises the monetary policy rate less than expected by financial markets; 2) it is reduced more than expected; 3) it decreases despite no change is expected; or 4) it remains constant despite

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[18]In contrast, 1-month swaps, which also reference the TIIE28D in Mexico's derivatives market, are less liquid and, due to the shorter time horizon they cover, they do not capture surprises about the future path of the policy rate. Nonetheless, according to Solís (2023a, b) the correlation between daily changes in 1 and 3-months swap rates is 0.7.

an increase is expected. A *MPS* equal to zero means that the policy rate decision has been correctly anticipated by financial markets and, therefore, it is not a surprise. In this paper, I consider both positive and negative *MPS*.

Main Estimated Regressor

β_1 from Equation (1) captures by how much inflation expectations of firms that submitted their responses to Banxico's Regional Survey right after a *MPA* that resulted in a *MPS* differ from those of firms that filed their responses right before it. The expected sign for the β_1 coefficient is negative since it is assumed that the *MPS* is positive and, hence, that firms will reduce their 12-month inflation expectations. There are positive and negative *MPS*, but for the specific case of Mexico positive *MPS* are the majority. This is the reason why I assume the *MPS* is positive.

Inflation Gap

This variable is included in Equation (1) because it could be the case that the interpretation of Banxico regarding the economy has suddenly changed due to inflationary pressures not forseen previously. For example, in its Minute of monetary policy decision of May 2020 Banxico mentioned that given the significant contraction in demand in 2020 (due, for example, to the COVID-19 pandemic), the expected moderate recovery in 2021, and the expectation of a wide negative output gap in both years, it was reasonable to think that the headline inflation rate would converge to its target in 2021. However, in its November 2020 Minute some decision makers in Banxico pointed out that convergence of inflation to its target in the second half of 2021 was not the most viable scenario. Some mentioned that forecasts regarding the headline and core inflation had increased and that this would delayed the convergence of inflation to its target from the fourth quarter of 2021 to the first one of 2022. The messages expressed in these two Minutes confirm that convergence of inflation to its target can in fact be more gradual and that this can be due to unexpected events occurring in a certain period. As a result of this delay in the convergence of inflation to its target, firms can revise their 12-month inflation expectations upwards. Why? Firms are price setters and

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decision makers regarding wages, hiring, and investments, so this is an issue that in principle should be considered in their information set. However, according to the literature, the level of attention firms give to monetary policy issues varies across countries (Coibion et al., (2020), Candia et al., 2022) and Yotzov et al., 2024). Those with low and stable inflation give no incentives to firms to pay attention to macroeconomic conditions (United States and New Zealand), while those with high and volatile inflation induce firms to be better informed (e.g. Argentina and Uruguay). Yotzov et al. (2024) find that British firms only responded (i.e. they adjusted their own price expectations) to Consumer Price Index releases when inflation was high (i.e. in the 2022-2024 period) (but not during the relatively low inflation years (e.g. 2017-2021)) and when media coverage was elevated. They also find firms associate a period of high inflation rates with a weaker economic performance: they expect lower sales and higher costs growth. They "adjust their price expectations if they interpret changes in CPI inflation as signals about supply-side or demand-side shocks to the economy" (Yotzov et al., 2024). They also find firms anticipate that higher inflation rates will lead the central bank to increase its monetary policy rate and, hence, that their borrowing costs will increase. Given this evidence, if convergence of inflation to its target is delayed, we should expect firms to adjust their inflation expectations upwards. In order to account for this effect, I introduce an inflation gap in the specification. It is built as the difference between the observed inflation and Banxico's inflation target, which is 3.0 percent. The data used to build it come from the National Institute of Statistics in Mexico (*INEGI* in Spanish) and Banxico.

Additional Independent Variables

X_t stands for additional control variables that may also affect firms' 12-month inflation expectations such as the Global *EPU* Index, the World Trade Uncertainty Index, the *VIX*, the Infectious Disease Equity Market Volatility (*EMV*) Tracker and insecurity in Mexico.

The Global *EPU* Index is a Gross Domestic Product (*GDP*)-weighted average of 21 national economic policy uncertainty indices (Australia, Brazil, Canada, Chile, China, Colombia, France, Germany, Greece, India, Ireland, Italy, Japan, Mexico, the Netherlands, Russia, South Korea, Spain, Sweden, the United Kingdom, and the United States) built by Bloom,

Davis, and Baker.[19] Each of these national indices reflects the relative frequency of each country's newspaper articles that contain terms related to the economy, policy, and uncertainty.[20]

The World Trade Uncertainty Index is a *GDP*-weighted average of 143 national trade uncertainty indices built by Ahir, Bloom, and Furceri. It measures trade uncertainty across the globe. The methodology employed to construct it is "to count the number of times uncertainty is mentioned within a proximity to a word related to trade in the Economist Intelligence Unit country reports" (Ahir, Bloom, and Furceri).[21,22]

The *VIX* stands for the Chicago Board Options Exchange Volatility Index. It is constructed using the implied volatilities of the S&P 500 index options. It is considered a measure of global financial market volatility.

Insecurity in Mexico is measured using data from Banxico's *SPF*. This survey has been conducted monthly since January 1999 and comprises the responses of an average of 40 analysts from the private sector, both national and foreign. In order to build this proxy I focus on the following question from the *SPF*:

> *Which are the three factors that you consider will most limit growth in economic activity in the following six months?*

To answer this question, the participants of the *SPF* choose three options out of a list of 32 factors related to inflation and monetary policy in Mexico; external conditions; domestic economic conditions; public finances; governance; and other. The topic of governance includes the following factors: domestic political uncertainty, corruption, impunity, lack of rule of law, and insecurity. Once this information is obtained from each participant, Banxico calculates the percentage distribution of the responses. The insecurity measure used in this analysis is, therefore, the percentage this factor obtains every month.

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[19]Mexico is included in this Global *EPU* Index, but according to Steven J. Davis this is not a problem since Mexico's weight in it is small, around 2.0 percent. Nonetheless, in Section 5 I present an exercise where I use the Mexican *EPU* Index instead.

[20]For more details see: https://www.policyuncertainty.com/global_monthly.html.

[21]For more details see: https://www.policyuncertainty.com/wui_quarterly.html.

[22]In Section 5, I present an exercise where I use the Mexican Trade Uncertainty Index instead of the global one.

As it can be seen, Equation (1) includes as additional explanatory variables both, survey-based (e.g. the insecurity proxy for Mexico) and media or newspaper-based (e.g. EPU Index and World Trade Uncertainty Index) variables. It also considers different dimensions of uncertainty, not only economic and political uncertainty, but also financial market volatility and trade uncertainty.

Trend Variable

In order to control for every single event that occurs around *MPAs* and not just for specific global and domestic economic factors, I re-estimate equation (1) with the Trend variable, instead of the uncertainty measures and the proxy of insecurity in Mexico, maintaining without change the rest of the independent variables. This Trend variable is built as follows: it is equal to 1 when the first *MPA* in the sample period occurs, it is equal to 2 when the second *MPA* in the sample period occurs, it is equal to 3 when the third *MPA* in the sample period occurs, and so on. This additional exercise permits to test if the results on the effect of *MPA* on firms' 12-month inflation expectations still hold with this new variable.

Firm Characteristics and Error Term

In order to control for the size of the firms (i.e. small, medium, and large), for the region where they are located (i.e. North, North-Centre, Centre, and South), and for the sector where they belong to (i.e. manufacturing or non-manufacturing sector), dummies for each of these categories are introduced. The omitted dummy variables are small, South, and non-

manufacturing sector.[23,24,25] These dummies stand for firm fixed effects.[26]

Time (i.e. month) fixed effects are not included in the specification since it already controls for factors that vary in time but not by firms, such as the inflation gap, uncertainty measures, and the insecurity variable.

$\varepsilon_{i,t}$ stands for the specification error term.

Equation (1) is therefore estimated by OLS using Driscoll-Kraay clustered standard errors by firm and month, which allows to control for heteroskedasticity, as well as for temporal and cross-sectional or "spatial" correlation in the residuals. Failing to do so would lead to biased statistical inference.

Table 4 presents summary statistics for the three dependent variables and the explanatory variables included in Equation (1).

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[23]The criterion used to classify firms into small, medium, and large is the following: small firms have between 101 - 250 workers (there is no firms with less than 101 workers); medium firms have between 251 - 1000 workers; and large firms have more than a 1000 workers. This criterion was adopted from Banxico's Regional Survey.

[24]The regions considered are those presented in Banxico's Quarterly Report of Regional Economies.

[25]The manufacturing sector includes the following sub-sectors: food industry; beverage and tobacco industry; manufacture of textile inputs and textile finishing; manufacture of textile products, except clothing; garment manufacturing; tanning and finishing of leather and fur, and manufacture of leather, fur and substitute material products; wood industry; paper industry; printing and related industries; manufacture of oil and coal products; chemical industry; plastic and rubber industry; manufacture of products based on non-metallic minerals; basic metal industries; manufacture of metal products; manufacture of machinery and equipment; manufacture of computer equipment, communication, measurement and other electronic equipment, components and accessories; manufacture of accessories, electrical appliances and electrical power generation equipment; manufacture of transport equipment; manufacture of furniture, mattresses and blinds; and other manufacturing industries. The non-manufacturing sector includes the following sub-sectors: construction; retail trade; and services.

[26]It is important to clarify that after some time these firms might grow or diminish in size or relocate in a different region. However, in this paper we are analyzing the February 2020 - September 2024 period, which seems a short period of time to have this type of changes. Hence, I assume that their size and the region where they are located are fixed in the analyzed period.

Table 4: Summary Statistics

		No. Months	Mean	Std. Deviation	Min	Max
Dependent Variables	Firms' 12-Month Inflation Expectations (Mean):					
	Point Estimate	44	6.591	0.919	4.391	8.510
	Three Scenarios	56	6.527	1.186	4.748	9.079
	Five Scenarios	56	6.746	1.169	4.552	8.841
Independent Variables	Monetary Policy Surprises (MPS)	56	0.500	4.524	-9.500	19.500
	Inflation Gap	56	2.540	1.724	-0.850	5.700
	Global Economic Policy Uncertainty Index	56	257.090	56.088	177.012	431.746
	Economic Policy Uncertainty Index for Mexico	56	73.063	28.831	29.665	155.529
	World Trade Uncertainty Index	56	7.315	18.929	0.019	100.824
	Trade Uncertainty Index for Mexico	56	0.792	1.695	0.000	6.756
	VIX	56	21.243	7.554	12.113	57.737
	Insecurity in Mexico	56	15.080	6.330	2.600	24.300

Note 1: the Inflation Gap is calculated as the difference between the observed inflation and Banxico's inflation target.

Note 2: for the dependent variable called "Point Estimate" there are less observations due to the fact that Banxico started collecting data for this specific variable one year later.

Source: data on firms' 12-month inflation expectations come from Banxico's Regional Survey; data on *MPS* come from Solís (2023a, b); data used to build the inflation gap come from *INEGI* and Banxico; data on the Global *EPU* Index, the *EPU* Index for Mexico, the World Trade Uncertainty Index, and the Trade Uncertainty Index for Mexico come from Baker, Bloom, and Davis' webpage: https://www.policyuncertainty.com/; data on the VIX come from the Chicago Board Options Exchange Volatiltiy Index https://www.finance.yahoo.com/quote/%5EVIX/; and data on insecurity in Mexico come from Banxico's Survey of Professional Forecasters.

4 Estimated Results

This section presents the main estimated results on the impact of *MPAs* on 12-month inflation expectations of Mexican firms.

Table 5 shows the results of estimating Equation (1) considering the three different dependent variables I obtain from Banxico's Regional Survey. In this Table and the following Tables presented in this document, Columns 1, 4, 7, and 10 refer to the dependent variable I obtain from Question 1 of Banxico's Regional Survey (i.e. it asks firms to provide point estimates of the headline inflation rate (for the next 12 months)); Columns 2, 5, 8, and 11 refer to the dependent variable I obtain from Question 2 of the Survey (i.e. it asks firms to provide three different forecasts of the headline inflation rate (for the next 12 months) and the probabilities with which they will occur); and Columns 3, 6, 9, 12 refer to the dependent variable I obtain from Question 3 of the Survey (i.e. it asks firms to provide five different forecasts of the headline inflation rate (for the next-12 months) and the probabilities with which they will occur).

The main findings show that β_1 from Equation (1), the coefficient of interest, is negative and statistically significant in most columns of Table 5, which is in line with economic theory.

It suggests, for example, that a surprise tightening of the monetary policy stance reduces firms' 12-month inflation expectations. In terms of its quantitative interpretation, β_1 from the ninth estimated specification in Table 5, which is negative and statistically significant and is equal to -0.0311, indicates that a change of 25 basis points in the *MPS* reduces firms' 12-month inflation expectations by 0.78 percentage points.

The results also show that the Inflation Gap (measured as the difference between the observed inflation and Banxico's inflation target) has a positive and a statistically significant effect on firms' 12-month inflation expectations. It suggests, as described in Section 3, that if convergence of inflation to its target is delayed due to unexpected inflationary pressures by Banxico, firms will increase their 12-month inflation expectations, as expected.

As regards global uncertainty measures (i.e. Global EPU Index; the World Trade Uncertainty Index, and the VIX), the findings show that their effect on firms's 12-month inflation expectations is positive and statistically significant in most of the cases, as expected. This suggests that higher global uncertainty, particularly global economic and political uncertainty as well as global trade uncertainty) leads firms to revise their 12-month inflation expectations upwards.

Finally, the findings shows that insecurity in Mexico does have a positive and a statistically significant effect on firms' 12-month inflation expectations: higher levels of insecurity in Mexico leads firms to revise their inflation expectations upwards.

In Columns 10. 11, and 12 of Table 5, I re-estimate Equation (1) using the Trend variable instead of the uncertainty measures and the insecurity proxy for Mexico. This variable permits to control for every single event that occurs around *MPAs* and not just for specific global and domestic factors. As it can be seen, the results for the interaction term and the Inflation Gap still hold (except for the coefficient of the interaction term in column 11) in this new specification, as expected.

Overall, the results show that firms in Mexico do react to *MPAs* that result in *MPS*. They suggest that firms in Mexico are not inattentive to the objectives and actions of monetary policy authorities. They respond to *MPAs* and the Inflation Gap as in Enders, Hünnekes, and Müller (2019) and Bottone and Rosolia (2019).

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Table 5: Response of Firms' Inflation Expectations to Banxico's *MPAs*

Dependent Variable: 12-Month Inflation Expectations

Independent Variables:	(1) Question 1 from Regional Survey	(2) Question 2 from Regional Survey	(3) Question 3 from Regional Survey	(4) Question 1 from Regional Survey	(5) Question 2 from Regional Survey	(6) Question 3 from Regional Survey	(7) Question 1 from Regional Survey	(8) Question 2 from Regional Survey	(9) Question 3 from Regional Survey	(10) Question 1 from Regional Survey	(11) Question 2 from Regional Survey	(12) Question 3 from Regional Survey
Monetary Policy Surprise (MPS_t) x Dummy = 1 if Firm Answers Regional Survey Right After MPA ($D_{i,t}$)	-0.0221*** (0.006)	-0.0112** (0.006)	-0.0543*** (0.009)	-0.0219*** (0.005)	-0.0129* (0.008)	-0.0550*** (0.008)	-0.0081 (0.005)	0.0100 (0.008)	-0.0311*** (0.006)	-0.0074 (0.005)	0.0140** (0.007)	-0.0230*** (0.006)
Dummy = 1 if Firm Answers Regional Survey Right After MPA ($D_{i,t}$)				-0.0243 (0.064)	0.1085 (0.116)	0.0462 (0.058)	-0.0337 (0.052)	0.0802 (0.107)	0.0182 (0.041)	-0.0133 (0.046)	0.0738 (0.103)	0.0252 (0.047)
Monetary Policy Surprise (MPS_t)							-0.0193*** (0.006)	-0.0299*** (0.006)	-0.0297*** (0.009)	0.0119 (0.013)	0.0144** (0.007)	0.0186*** (0.007)
Inflation Gap	0.3906*** (0.051)	0.4023*** (0.046)	0.4143*** (0.051)	0.3904*** (0.050)	0.4021*** (0.047)	0.4448*** (0.051)	0.4383*** (0.058)	0.4364*** (0.048)	0.4526*** (0.055)	0.5803*** (0.033)	0.4679*** (0.061)	0.4210*** (0.067)
Trend										0.0888*** (0.021)	0.0462*** (0.014)	0.0647*** (0.012)
Additional Control Variables												
Global Economic Policy Uncertainty Index	0.0058*** (0.001)	0.0054*** (0.002)	0.0066*** (0.001)	0.0057*** (0.001)	0.0054*** (0.002)	0.0066*** (0.001)	0.0057*** (0.001)	0.0067*** (0.001)	0.0078*** (0.001)			
World Trade Uncertainty Index	0.0265*** (0.005)	0.0214*** (0.005)	0.0391*** (0.011)	0.0264*** (0.005)	0.0216*** (0.005)	0.0392*** (0.010)	0.0301*** (0.004)	0.0285*** (0.005)	0.0440*** (0.009)			
VIX	0.0253 (0.019)	0.0356* (0.021)	0.0018 (0.021)	0.0252 (0.019)	0.0359* (0.022)	0.0016 (0.021)	0.0168 (0.019)	0.0271 (0.022)	-0.0091 (0.021)			
Insecurity in Mexico	0.1079*** (0.013)	0.1074*** (0.008)	0.0995*** (0.012)	0.1080*** (0.012)	0.1070*** (0.008)	0.0992*** (0.012)	0.1075*** (0.011)	0.1049*** (0.008)	0.0956*** (0.011)			
Firm's Size												
Large	-0.2242** (0.102)	-0.4436*** (0.112)	-0.5529*** (0.127)	-0.2238** (0.101)	-0.4437*** (0.113)	-0.5528*** (0.127)	-0.2230** (0.101)	-0.4379*** (0.111)	-0.5593*** (0.127)	-0.2244** (0.098)	-0.4598*** (0.111)	-0.5511*** (0.130)
Medium	-0.1657* (0.085)	-0.2330** (0.110)	-0.0736 (0.140)	-0.1656* (0.085)	-0.2316** (0.110)	-0.0737 (0.140)	-0.1669** (0.085)	-0.2295** (0.110)	-0.0748 (0.141)	-0.1557* (0.084)	-0.2582** (0.112)	-0.0710 (0.141)
Region												
North	0.0055 (0.101)	-0.4268*** (0.156)	-0.2100 (0.249)	0.0052 (0.101)	-0.4228*** (0.156)	-0.2111 (0.248)	0.0037 (0.101)	-0.4241*** (0.156)	-0.2252 (0.248)	0.0159 (0.101)	-0.4393*** (0.157)	-0.2055 (0.252)
North-Centre	0.1412 (0.108)	-0.6045*** (0.160)	-0.1923 (0.194)	0.1423 (0.107)	-0.6041*** (0.159)	-0.1926 (0.193)	0.1404 (0.108)	-0.6065*** (0.159)	-0.2010 (0.194)	0.1517 (0.106)	-0.6347*** (0.158)	-0.1646 (0.193)
Centre	-0.0118 (0.108)	-0.2839 (0.186)	-0.0782 (0.240)	-0.0101 (0.106)	-0.2806 (0.189)	-0.0796 (0.239)	-0.0131 (0.107)	-0.2846 (0.188)	-0.0905 (0.238)	0.0077 (0.101)	-0.2785 (0.193)	-0.0585 (0.237)
Sector												
Manufacturing	0.2054*** (0.064)	0.1521 (0.109)	0.1826 (0.148)	0.2061*** (0.065)	0.1523 (0.110)	0.1817 (0.148)	0.2078*** (0.065)	0.1541 (0.108)	0.1819 (0.153)	0.2158*** (0.065)	0.1805 (0.116)	0.2058 (0.153)
Constant	0.9936* (0.527)	1.5515*** (0.274)	1.7437*** (0.339)	1.0054* (0.548)	1.4924*** (0.299)	1.7250*** (0.360)	1.0507** (0.495)	1.2936*** (0.238)	1.6227*** (0.261)	2.6731*** (0.502)	4.4448*** (0.286)	4.0385*** (0.264)
Observations	3,374	4,272	3,948	3,374	4,272	3,948	3,374	4,272	3,948	3,374	4,272	3,948
Overall R-squared	0.223	0.211	0.113	0.223	0.212	0.113	0.224	0.215	0.115	0.198	0.181	0.099

Note: Driscoll-Kraay clustered standard errors in parentheses. Clusters by month and firm are used in the specification. Omitted dummy variables: Small, South, and Non-manufacturing.
*** p<0.01, ** p<0.05, * p<0.1

5 Robustness Tests

In this Section I perform some exercises to test for the robustness of the results.

5.1 Using a Measure to Control for the Coronavirus Pandemic

First, I re-estimate Equation (1) considering the Infectious Disease Equity Market Volatility (EMV) Tracker, built by Baker, Bloom, Davis, and Kost (2019), as an additional regressor. This variable is included in the specification in order to account for the role of infectious diseases, such as the Covid-19 Virus, as drivers of stock market volatility (Baker et al., 2020).[27]

Baker, Bloom, Davis, and Kost (2019) build this Index as follows. First, they consider four sets of terms: E: economic, economy, financial; M: "stock market", equity, equities, "Standard and Poors"; V: volatility, volatile, uncertain, uncertainty, risk, risky; and ID: epidemic, pandemic, virus, flu, disease, coronavirus, mers, sars, ebola, H5N1, H1N1. Second, they "obtain daily counts of newspapers articles that contain at least one term in each of E, M, V, and ID across approximately 3,000 United States newspapers. Third, they scale the raw EMV-ID counts by the count of all articles in the same way. In a final step, they match the level of the VIX between a certain period of time (1990-2016) using the overall EMV index and then scale this ID-EMV index to reflect the ratio of the ID-EMV articles to toal EMV articles" (Baker, Bloom. Davis, and Kost, 2019).

Due to the methodology used to construct the Infectious Disease EMV Tracker, it can be observed that it is also controlling for financial market volatility. Hence, the VIX is excluded from the estimated regression in order to avoid endogeneity problems.

The results of this exercise are presented in Table 6. It mainly shows the following: 1) firms' 12-month inflation expectations do react to Banxico's *MPAs* that result in *MPS*; 2) the Inflation Gap, the uncertainty variables (i.e. the Global EPU Index and the World Trade Uncertainty Index), and the proxy of insecurity in Mexico have a positive and a statistically significant effect on firms' 12-month inflation expectations; and 3) the Infectious Disease EMV Tracker is not statistically significant in most of the cases. This last finding corrobo-

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[27]According to Baker et al. (2020), Covid-19 developments started to dominate newspaper coverage of stock market volatility and newspaper discussions of economic policy uncertainty during and after its outbreak. This confirms its role as a driver of stock market volatility.

rates the result on the VIX presented in Table 5. Regarding the global and domestic factors included in the specification, the findings suggest firms pay attention to global economic and political uncertainty, to world trade uncertainty and to insecurity in Mexico, but not to financial market volatility.

5.2 Using the EPU Index for Mexico and the Trade Uncertainty Index for Mexico

Second, I re-estimate Equation (1) using the EPU Index for Mexico and the Trade Uncertainty Index for Mexico, instead of the Global versions of these two indices. They are built by Bloom, Baker and Davis and Ahir, Bloom, and Furceri, respectively, using the methodology employed to construct their global counterparts.[28]

The results are presented in Table 7. They mainly show that, regardless of which EPU Index and Trade Uncertainty Index is used, the key finding remains the same: Banxico's *MPAs* that result in *MPS* have a negative effect on firms' 12 month inflation expectations, as expected. It suggest that a surprise tightening of the monetary policy stance reduces firms' 12-month inflation expectations. As before, the Inflation Gap, the uncertainty variables, and the proxy of insecurity in Mexico have a positive effect on firms' 12-month inflation expectations, as expected. Most of these effects are statistically significant. It is important to mention that in this particular exercise where I use the EPU Index for Mexico and the Trade Uncertainty Index for Mexico the VIX has a positive and a statistically significant effect on firms' 12 month inflation expectations. This is in contrast with the results obtained in Tables 5 and 6, where financial market volatility is not statistically significant in most cases. This suggests that the Global version of both the EPU Index and the Trade Uncertainty Index in Table 5 and 6 take most of the effect.

5.3 Using a Different Measure of *MPS*

Third, I re-estimate Equation (1) using *MPSs* calculated as the change in 3-month swap rates in 50 minutes windows (not 30 minutes as before) around Banxico's *MPAs*. These

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[28]The Mexican version of the VIX is not available yet, so I control for global financial market volatility.

windows start 20 minutes before the *MPA* and end 30 minutes after (not 10 minutes before the *MPA* and 20 minutes after, as before).

The results are presented in Table 8 and they hold after this change is introduced.

5.4 Using Different Window-Sizes in the Identification Strategy

Fourth, I consider both a symmetric 3-day window around *MPAs* and a symmetric 7-day window around *MPAs* to compare, within those windows, the responses of firms that were filed right before a *MPA* with those that were submitted right after it.

The results of this exercise are presented in Tables 9 and 10 and they are robust to considering different window sizes.

Table 6: Response of Firms' Inflation Expectations to Banxico's *MPAs*
Robustness test: Using a Measure to Control for the Coronavirus Pandemic

	(1) Question 1 from Regional Survey	(2) Question 2 from Regional Survey	(3) Question 3 from Regional Survey	(4) Question 1 from Regional Survey	(5) Question 2 from Regional Survey	(6) Question 3 from Regional Survey	(7) Question 1 from Regional Survey	(8) Question 2 from Regional Survey	(9) Question 3 from Regional Survey
Independent Variables:									
Monetary Policy Suprise (MPS_t) x Dummy = 1 if Firm Answers Regional Survey Right After MPA ($D_{i,t}$)	-0.0239*** (0.005)	-0.0129** (0.007)	-0.0500*** (0.004)	-0.0236*** (0.005)	-0.0147* (0.009)	-0.0505*** (0.004)	-0.0081 (0.005)	0.0100 (0.008)	-0.0311*** (0.006)
Dummy = 1 if Firm Answers Regional Survey Right After MPA ($D_{i,t}$)				-0.0258 (0.065)	0.1053 (0.115)	0.0387 (0.058)	-0.0355 (0.050)	0.0779 (0.105)	0.0161 (0.040)
Monetary Policy Suprise (MPS_t)							-0.0208*** (0.004)	-0.0322*** (0.005)	-0.0242*** (0.005)
Inflation Gap	0.4437*** (0.035)	0.4610*** (0.018)	0.4137*** (0.013)	0.434*** (0.034)	0.4613*** (0.017)	0.4138*** (0.012)	0.4762*** (0.035)	0.4829*** (0.016)	0.4308*** (0.014)
Additional Control Variables									
Global Economic Policy Uncertainty Index	0.0064*** (0.001)	0.0069*** (0.001)	0.0081*** (0.001)	0.0064*** (0.001)	0.0069*** (0.001)	0.0081*** (0.001)	0.0061*** (0.001)	0.0077*** (0.001)	0.0086*** (0.001)
World Trade Uncertainty Index	0.0282*** (0.005)	0.0241*** (0.006)	0.0415*** (0.005)	0.0281*** (0.006)	0.0243*** (0.006)	0.0415*** (0.005)	0.0315*** (0.004)	0.0307*** (0.005)	0.0446*** (0.004)
Infectious Disease EMV TRACKER	-0.0095 (0.013)	-0.0054 (0.011)	-0.0538*** (0.017)	-0.0096 (0.013)	-0.0041 (0.012)	-0.0537*** (0.017)	-0.0070 (0.011)	0.0033 (0.014)	-0.0473*** (0.015)
Insecurity in Mexico	0.0904*** (0.012)	0.0851*** (0.008)	0.0639*** (0.011)	0.0905*** (0.012)	0.0854*** (0.008)	0.0639*** (0.011)	0.0958*** (0.009)	0.0930*** (0.007)	0.0696*** (0.008)
Firm's Size									
Large	-0.2242** (0.101)	-0.4447*** (0.111)	-0.5547*** (0.128)	-0.2238** (0.101)	-0.4449*** (0.112)	-0.5546*** (0.128)	-0.2228** (0.100)	-0.4391*** (0.111)	-0.5592*** (0.128)
Medium	-0.1703** (0.083)	-0.2334** (0.110)	-0.0772 (0.141)	-0.1702** (0.083)	-0.2320* (0.110)	-0.0772 (0.141)	-0.1699** (0.084)	-0.2298** (0.110)	-0.0771 (0.141)
Region									
North	0.0038 (0.101)	-0.4312*** (0.156)	-0.2217 (0.249)	0.0036 (0.101)	-0.4272*** (0.155)	-0.2226 (0.248)	0.0025 (0.102)	-0.4269*** (0.155)	-0.2321 (0.248)
North-Centre	0.1412 (0.108)	-0.6103*** (0.160)	-0.1883 (0.195)	0.1424 (0.107)	-0.6097*** (0.159)	-0.1886 (0.194)	0.1403 (0.108)	-0.6095*** (0.159)	-0.1970 (0.194)
Centre	-0.0133 (0.107)	-0.2860 (0.186)	-0.0834 (0.240)	-0.0115 (0.105)	-0.2826 (0.188)	-0.0846 (0.240)	-0.0141 (0.107)	-0.2858 (0.188)	-0.0921 (0.238)
Sector									
Manufacturing	0.2069*** (0.064)	0.1535 (0.109)	0.1818 (0.150)	0.2077*** (0.065)	0.1536 (0.109)	0.1811 (0.150)	0.2090*** (0.065)	0.1548 (0.108)	0.1818 (0.154)
Constant	1.5587*** (0.534)	2.1463*** (0.273)	2.5870*** (0.273)	1.5724*** (0.560)	2.0752*** (0.301)	2.5659*** (0.306)	1.4313*** (0.466)	1.6137*** (0.247)	2.2604*** (0.210)
Observations	3,374	4,272	3,948	3,374	4,272	3,948	3,374	4,272	3,948
Overall R-squared	0.222	0.210	0.116	0.222	0.211	0.116	0.224	0.214	0.117

Dependent Variable: 12-Month Inflation Expectations

Note: Driscoll-Kraay clustered standard errors in parentheses. Clusters by month and firm are used in the specification. Omitted dummy variables: Small, South, and Non-manufacturing.
*** p<0.001, ** p<0.05, * p<0.1

Table 7: Response of Firms' Inflation Expectations to Banxico's *MPAs*
Robustness test: Using the EPU Index for Mexico and the Trade Uncertainty Index for Mexico

	Dependent Variable: 12-Month Inflation Expectations								
Independent Variables:	(1) Question 1 from Regional Survey	(2) Question 2 from Regional Survey	(3) Question 3 from Regional Survey	(4) Question 1 from Regional Survey	(5) Question 2 from Regional Survey	(6) Question 3 from Regional Survey	(7) Question 1 from Regional Survey	(8) Question 2 from Regional Survey	(9) Question 3 from Regional Survey
Monetary Policy Suprise (MPS_t) x Dummy = 1 if Firm Answers Regional Survey Right After MPA ($D_{1,t}$)	-0.0263*** (0.004)	-0.0063 (0.005)	-0.0452*** (0.010)	-0.0260*** (0.004)	-0.0081 (0.007)	-0.0457*** (0.010)	-0.0086 (0.006)	0.0087 (0.007)	-0.0297*** (0.007)
Dummy = 1 if Firm Answers Regional Survey Right After MPA ($D_{1,t}$)				-0.0244 (0.072)	0.1090 (0.123)	0.0375 (0.066)	-0.0362 (0.056)	0.0896 (0.115)	0.0184 (0.053)
Monetary Policy Suprise (MPS_t)							-0.0257*** (0.006)	-0.0226*** (0.005)	-0.0209*** (0.006)
Inflation Gap	0.3440*** (0.071)	0.2760*** (0.049)	0.2572*** (0.065)	0.3439*** (0.070)	0.2745*** (0.050)	0.2571*** (0.065)	0.3958*** (0.076)	0.2743*** (0.051)	0.2616*** (0.063)
Additional Control Variables									
Economic Policy Uncertainty Index for Mexico	0.0042* (0.002)	0.0047 (0.003)	0.0081** (0.003)	0.0042* (0.002)	0.0046 (0.003)	0.0081** (0.003)	0.0036 (0.003)	0.0052* (0.003)	0.0083*** (0.002)
Trade Uncertainty Index for Mexico	0.1325*** (0.033)	0.1240*** (0.037)	0.1490*** (0.051)	0.1323*** (0.033)	0.1270*** (0.037)	0.1498*** (0.051)	0.1632*** (0.029)	0.1663*** (0.036)	0.1841*** (0.057)
VIX	0.0762*** (0.025)	0.1024*** (0.013)	0.0860*** (0.019)	0.0761*** (0.025)	0.1032*** (0.013)	0.0861*** (0.019)	0.0668** (0.027)	0.1094*** (0.013)	0.0896*** (0.019)
Insecurity in Mexico	0.1429*** (0.020)	0.1375*** (0.011)	0.1440*** (0.013)	0.1430*** (0.019)	0.1371*** (0.011)	0.1438*** (0.012)	0.1410*** (0.020)	0.1404*** (0.011)	0.1448*** (0.012)
Firm's Size									
Large	-0.2262** (0.103)	-0.4508*** (0.114)	-0.5371*** (0.126)	-0.2258** (0.102)	-0.4508*** (0.115)	-0.5369*** (0.126)	-0.2249** (0.101)	-0.4477*** (0.114)	-0.5887*** (0.126)
Medium	-0.1650* (0.085)	-0.2365** (0.109)	-0.0652 (0.139)	-0.1649* (0.085)	-0.2350** (0.109)	-0.0652 (0.139)	-0.1674** (0.085)	-0.2336** (0.109)	-0.0651 (0.139)
Region									
North	0.0004 (0.100)	-0.4229*** (0.156)	-0.1927 (0.250)	0.0001 (0.100)	-0.4188*** (0.156)	-0.1935 (0.250)	-0.0027 (0.100)	-0.4187*** (0.156)	-0.2013 (0.249)
North-Centre	0.1429 (0.110)	-0.6014*** (0.160)	-0.1927 (0.193)	0.1440 (0.109)	-0.6010*** (0.159)	-0.1929 (0.193)	0.1409 (0.109)	-0.6022*** (0.159)	-0.1980 (0.194)
Centre	-0.0133 (0.109)	-0.2752 (0.189)	-0.0570 (0.242)	-0.0117 (0.107)	-0.2717 (0.192)	-0.0581 (0.241)	-0.0171 (0.108)	-0.2728 (0.192)	-0.0634 (0.240)
Sector									
Manufacturing	0.1961*** (0.064)	0.1616 (0.110)	0.1899 (0.152)	0.1969*** (0.064)	0.1618 (0.110)	0.1893 (0.152)	0.1980*** (0.065)	0.1645 (0.109)	0.1897 (0.157)
Constant	0.6845 (0.749)	1.1305*** (0.422)	0.9636** (0.464)	0.6973 (0.776)	1.0740** (0.456)	0.9480* (0.489)	0.7906 (0.856)	0.8668* (0.505)	0.8479* (0.502)
Observations	3,374	4,272	3,948	3,374	4,272	3,948	3,374	4,272	3,948
Overall R-squared	0.220	0.207	0.109	0.220	0.207	0.109	0.223	0.209	0.110

Note: Driscoll-Kraay clustered standard errors in parentheses. Clusters by month and firm are used in the specification. Omitted dummy variables: Small, South, and Non-manufacturing.
*** p<0.01, ** p<0.05, * p<0.1

Table 8: Response of Firms' Inflation Expectations to Banxico's *MPAs*
Robustness test: Using a Different Measure of *MPS* (Change in 3-Month Swap Rates in 50 Min. Windows around *MPAs*)

Independent Variables:	(1) Question 1 from Regional Survey	(2) Question 2 from Regional Survey	(3) Question 3 from Regional Survey	(4) Question 1 from Regional Survey	(5) Question 2 from Regional Survey	(6) Question 3 from Regional Survey	(7) Question 1 from Regional Survey	(8) Question 2 from Regional Survey	(9) Question 3 from Regional Survey	(10) Question 1 from Regional Survey	(11) Question 2 from Regional Survey	(12) Question 3 from Regional Survey
Monetary Policy Suprise (MPS_t) x Dummy = 1 if Firm Answers Regional Survey Right After MPA ($D_{i,t}$)	-0.0308*** (0.011)	-0.0167*** (0.006)	-0.0642*** (0.012)	-0.0308*** (0.011)	-0.0184** (0.007)	-0.0643*** (0.011)	-0.0098* (0.005)	0.0115 (0.008)	-0.0328*** (0.007)	-0.0086* (0.005)	0.0152** (0.007)	-0.0255*** (0.007)
Dummy = 1 if Firm Answers Regional Survey Right After MPA ($D_{i,t}$)				-0.0030 (0.070)	0.1330 (0.116)	0.0120 (0.050)	-0.0141 (0.054)	0.1020 (0.106)	-0.0197 (0.032)	0.0038 (0.043)	0.1011 (0.106)	-0.0093 (0.044)
Monetary Policy Suprise (MPS_t)							-0.0298*** (0.013)	-0.0398*** (0.010)	-0.0397*** (0.014)	0.0028 (0.012)	0.0077 (0.009)	0.0121 (0.009)
Inflation Gap	0.4837*** (0.087)	0.4830*** (0.064)	0.4864*** (0.069)	0.4837*** (0.087)	0.4820*** (0.065)	0.4865*** (0.069)	0.5591*** (0.115)	0.5308*** (0.076)	0.5383*** (0.084)	0.6554*** (0.019)	0.5243*** (0.068)	0.4701*** (0.072)
Trend										0.0932*** (0.019)	0.0415*** (0.014)	0.0630*** (0.012)
Additional Control Variables												
Global Economic Policy Uncertainty Index	0.0084*** (0.001)	0.0074*** (0.002)	0.0087*** (0.002)	0.0084*** (0.001)	0.0074*** (0.002)	0.0087*** (0.002)	0.0084*** (0.001)	0.0095*** (0.002)	0.0105*** (0.002)			
World Trade Uncertainty Index	0.0343*** (0.007)	0.0262*** (0.006)	0.0470*** (0.011)	0.0343*** (0.006)	0.0265*** (0.006)	0.0470*** (0.011)	0.0423*** (0.006)	0.0390*** (0.009)	0.0566*** (0.013)			
VIX	-0.0211 (0.023)	0.0013 (0.030)	-0.0364 (0.030)	-0.0211 (0.024)	0.0017 (0.030)	-0.0365 (0.030)	-0.0401 (0.032)	-0.0197 (0.037)	-0.0587 (0.037)			
Insecurity in Mexico	0.0817*** (0.013)	0.0881*** (0.011)	0.0795*** (0.017)	0.0818*** (0.013)	0.0876*** (0.010)	0.0794*** (0.017)	0.0764*** (0.013)	0.0796*** (0.013)	0.0699*** (0.019)			
Firm's Size												
Large	-0.2423** (0.098)	-0.3942*** (0.125)	-0.5703*** (0.122)	-0.2423** (0.098)	-0.3937*** (0.126)	-0.5703*** (0.122)	-0.2444** (0.097)	-0.3838*** (0.125)	-0.5773*** (0.123)	-0.2313** (0.096)	-0.4047*** (0.128)	-0.5688*** (0.124)
Medium	-0.1780** (0.088)	-0.2052* (0.108)	-0.0954 (0.138)	-0.1780** (0.088)	-0.2026* (0.108)	-0.0953 (0.138)	-0.1784** (0.089)	-0.2006* (0.107)	-0.0968 (0.140)	-0.1578* (0.087)	-0.2229* (0.109)	-0.0853 (0.139)
Region												
North	0.0249 (0.104)	-0.3773** (0.158)	-0.2123 (0.240)	0.0250 (0.104)	-0.3725** (0.157)	-0.2127 (0.240)	0.0239 (0.104)	-0.3741** (0.157)	-0.2320 (0.241)	0.0329 (0.102)	-0.3781** (0.157)	-0.2063 (0.242)
North-Centre	0.1718 (0.115)	-0.5880*** (0.164)	-0.1659 (0.198)	0.1720 (0.113)	-0.5870*** (0.163)	-0.1660 (0.198)	0.1702 (0.114)	-0.5908*** (0.162)	-0.1766 (0.197)	0.1677 (0.112)	-0.6164*** (0.160)	-0.1449 (0.195)
Centre	0.0196 (0.112)	-0.2438 (0.177)	-0.1279 (0.237)	0.0199 (0.110)	-0.2391 (0.179)	-0.1284 (0.236)	0.0156 (0.112)	-0.2453 (0.179)	-0.1449 (0.235)	0.0283 (0.103)	-0.2363 (0.184)	-0.1044 (0.233)
Sector												
Manufacturing	0.2302*** (0.063)	0.1542 (0.115)	0.2401 (0.153)	0.2303*** (0.064)	0.1539 (0.115)	0.2399 (0.153)	0.2322*** (0.064)	0.1561 (0.113)	0.2404 (0.160)	0.2378*** (0.066)	0.1866 (0.122)	0.2707* (0.162)
Constant	1.3460* (0.747)	1.7380*** (0.309)	2.0545*** (0.410)	1.3475* (0.771)	1.6700*** (0.344)	2.0501*** (0.428)	1.5566** (0.755)	1.5564*** (0.287)	2.0500*** (0.333)	2.3961*** (0.413)	4.3357*** (0.279)	4.0000*** (0.266)
Observations	3,187	4,085	3,764	3,187	4,085	3,764	3,187	4,085	3,764	3,187	4,085	3,764
Overall R-squared	0.251	0.239	0.127	0.251	0.239	0.127	0.254	0.244	0.130	0.233	0.209	0.112

(Dependent Variable: 12-Month Inflation Expectations)

Note: Driscoll-Kraay clustered standard errors in parentheses. Clusters by month and firm are used in the specification. Omitted dummy variables: Small, South, and Non-manufacturing.
*** p<0.01, ** p<0.05, * p<0.1

Table 9: Response of Firms' Inflation Expectations to Banxico's *MPAs*
Robustness test: Using a 3-Day Window around *MPAs* to Compare Firms' Responses

	(1) Question 1 from Regional Survey	(2) Question 2 from Regional Survey	(3) Question 3 from Regional Survey	(4) Question 1 from Regional Survey	(5) Question 2 from Regional Survey	(6) Question 3 from Regional Survey	(7) Question 1 from Regional Survey	(8) Question 2 from Regional Survey	(9) Question 3 from Regional Survey	(10) Question 1 from Regional Survey	(11) Question 2 from Regional Survey	(12) Question 3 from Regional Survey
Dependent Variable: 12-Month Inflation Expectations												
Independent Variables:												
Monetary Policy Suprise (MPS_t) x Dummy = 1 if Firm Answers Regional Survey Right After MPA ($D_{i,t}$)	-0.0199*** (0.006)	-0.0204*** (0.008)	-0.0772*** (0.009)	-0.0181*** (0.005)	-0.0207** (0.009)	-0.0789*** (0.009)	-0.0061 (0.006)	0.0042 (0.010)	-0.0573*** (0.012)	-0.0039 (0.006)	0.0004 (0.012)	-0.0573*** (0.011)
Dummy = 1 if Firm Answers Regional Survey Right After MPA ($D_{i,t}$)				-0.1161 (0.115)	0.0181 (0.106)	0.0734 (0.113)	-0.1220 (0.106)	-0.0043 (0.107)	0.0579 (0.105)	-0.1071 (0.098)	-0.0039 (0.106)	0.0576 (0.118)
Monetary Policy Suprise (MPS_t)							-0.0188* (0.011)	-0.0326*** (0.011)	-0.0281*** (0.008)	0.0128 (0.013)	0.0152* (0.009)	0.0185 (0.014)
Inflation Gap	0.3771*** (0.063)	0.3756*** (0.069)	0.3755*** (0.082)	0.3754*** (0.063)	0.3759*** (0.069)	0.3781*** (0.082)	0.4343*** (0.071)	0.4256*** (0.066)	0.4267*** (0.076)	0.5734*** (0.053)	0.4635*** (0.069)	0.4153*** (0.076)
Trend										0.0885*** (0.021)	0.0509*** (0.019)	0.0633*** (0.014)
Additional Control Variables												
Global Economic Policy Uncertainty Index	0.0055** (0.003)	0.0052*** (0.002)	0.0060*** (0.002)	0.0054** (0.003)	0.0052*** (0.002)	0.0061*** (0.002)	0.0054** (0.003)	0.0070*** (0.002)	0.0076*** (0.002)			
World Trade Uncertainty Index	0.0297*** (0.010)	0.0226* (0.013)	0.0290*** (0.012)	0.0295*** (0.010)	0.0226* (0.013)	0.0292*** (0.012)	0.0344*** (0.008)	0.0326*** (0.007)	0.0349*** (0.007)			
VIX	0.0282 (0.032)	0.0422 (0.030)	0.0181 (0.031)	0.0287 (0.032)	0.0421 (0.030)	0.0170 (0.031)	0.0183 (0.032)	0.0296 (0.030)	0.0034 (0.029)			
Insecurity in Mexico	0.1073*** (0.019)	0.1187*** (0.018)	0.1112*** (0.017)	0.1081*** (0.019)	0.1185*** (0.017)	0.1104*** (0.017)	0.1070*** (0.018)	0.1153*** (0.015)	0.1054*** (0.015)			
Firm's Size												
Large	-0.2107 (0.187)	-0.3087** (0.140)	-0.4612* (0.214)	-0.2048 (0.182)	-0.3093** (0.141)	-0.4615** (0.214)	-0.2019 (0.184)	-0.3020* (0.140)	-0.4698** (0.212)	-0.1999 (0.183)	-0.3028** (0.138)	-0.4727** (0.209)
Medium	-0.1268 (0.130)	-0.0624 (0.140)	0.0171 (0.235)	-0.1214 (0.128)	-0.0626 (0.140)	0.0174 (0.236)	-0.1201 (0.129)	-0.0593 (0.140)	0.0167 (0.236)	-0.1065 (0.128)	-0.0824 (0.140)	0.0135 (0.231)
Region												
North	-0.0553 (0.197)	-0.3953** (0.196)	-0.3542 (0.369)	-0.0563 (0.198)	-0.3951** (0.196)	-0.3573 (0.369)	-0.0607 (0.198)	-0.3951** (0.195)	-0.3773 (0.367)	-0.0035 (0.201)	-0.4331** (0.199)	-0.3673 (0.372)
North-Centre	0.1453 (0.211)	-0.5516*** (0.197)	-0.2288 (0.295)	0.1539 (0.209)	-0.5518*** (0.197)	-0.2312 (0.295)	0.1461 (0.207)	-0.5512*** (0.196)	-0.2438 (0.294)	0.2058 (0.207)	-0.6083*** (0.196)	-0.2008 (0.292)
Centre	-0.0525 (0.148)	-0.2372 (0.203)	-0.1226 (0.303)	-0.0454 (0.147)	-0.2369 (0.203)	-0.1255 (0.304)	-0.0506 (0.147)	-0.2388 (0.202)	-0.1424 (0.305)	0.0061 (0.145)	-0.2649 (0.206)	-0.1255 (0.303)
Sector												
Manufacturing	0.1712 (0.122)	0.1556 (0.116)	0.1975 (0.165)	0.1729 (0.122)	0.1538 (0.116)	0.1970 (0.165)	0.1756 (0.122)	0.1588 (0.115)	0.1974 (0.169)	0.1750 (0.124)	0.1773 (0.119)	0.2244 (0.171)
Constant	1.0450* (0.590)	1.1604** (0.562)	1.5006*** (0.507)	1.0630* (0.599)	1.1570** (0.570)	1.5007*** (0.569)	1.1238** (0.557)	0.8734** (0.431)	1.3756*** (0.413)	2.6896*** (0.432)	4.2625*** (0.361)	4.0832*** (0.329)
Observations	2,246	2,932	2,670	2,246	2,932	2,670	2,246	2,932	2,670	2,246	2,932	2,670
Overall R-squared	0.220	0.236	0.115	0.220	0.236	0.115	0.222	0.242	0.117	0.197	0.197	0.099

Note: Driscoll-Kraay clustered standard errors in parentheses. Clusters by month and firm are used in the specification. Omitted dummy variables.: Small, South, and Non-manufacturing.
*** p<0.01, ** p<0.05, * p<0.1

Table 10: Response of Firms' Inflation Expectations to Banxico's *MPAs*
Robustness test: Using a 7-Day Window around *MPAs* to Compare Firms' Responses

	(1) Question 1 from Regional Survey	(2) Question 2 from Regional Survey	(3) Question 3 from Regional Survey	(4) Question 1 from Regional Survey	(5) Question 2 from Regional Survey	(6) Question 3 from Regional Survey	(7) Question 1 from Regional Survey	(8) Question 2 from Regional Survey	(9) Question 3 from Regional Survey	(10) Question 1 from Regional Survey	(11) Question 2 from Regional Survey	(12) Question 3 from Regional Survey
						Dependent Variable: 12-Month Inflation Expectations						
Independent Variables:												
Monetary Policy Suprise (MPS_t) x Dummy = 1 if Firm Answers Regional Survey Right After MPA ($D_{t,i}$)	-0.0227*** (0.005)	-0.0105** (0.005)	-0.0358*** (0.007)	-0.0218*** (0.003)	-0.0111* (0.006)	-0.0364*** (0.007)	-0.00088* (0.004)	0.0097 (0.007)	-0.0178* (0.011)	-0.0090* (0.005)	0.0144*** (0.005)	-0.0128 (0.009)
Dummy = 1 if Firm Answers Regional Survey Right After MPA ($D_{t,i}$)							-0.1152 (0.083)	0.0162 (0.095)	0.0211 (0.066)	-0.0789 (0.061)	0.0167 (0.085)	0.0427 (0.064)
Monetary Policy Suprise (MPS_t)							-0.0195*** (0.006)	-0.0277*** (0.004)	-0.0245*** (0.010)	0.0138** (0.007)	0.0160*** (0.005)	0.0222*** (0.006)
Inflation Gap	0.3558*** (0.045)	0.4029*** (0.047)	0.3678*** (0.035)	0.3569*** (0.044)	0.4021*** (0.049)	0.3676*** (0.035)	0.4082*** (0.060)	0.4358*** (0.048)	0.4012*** (0.042)	0.5744*** (0.028)	0.4670*** (0.062)	0.4097*** (0.057)
Trend										0.0713*** (0.09)	0.0438*** (0.011)	0.0567*** (0.011)
Additional Control Variables												
Global Economic Policy Uncertainty Index	0.0052*** (0.001)	0.0056*** (0.001)	0.0057*** (0.001)	0.0051*** (0.001)	0.0056*** (0.001)	0.0058*** (0.001)	0.0050*** (0.001)	0.0068*** (0.001)	0.0068*** (0.001)			
World Trade Uncertainty Index	0.0273*** (0.005)	0.0157** (0.007)	0.0245*** (0.007)	0.0267*** (0.005)	0.0160** (0.007)	0.0249*** (0.007)	0.0312*** (0.004)	0.0229*** (0.004)	0.0305*** (0.006)			
VIX	0.0361** (0.018)	0.0247 (0.022)	0.0043 (0.015)	0.0365** (0.018)	0.0248 (0.022)	0.0041 (0.014)	0.0280 (0.019)	0.0166 (0.021)	-0.0045 (0.015)			
Insecurity in Mexico	0.1099*** (0.014)	0.1030*** (0.011)	0.1061*** (0.009)	0.1104*** (0.013)	0.1030*** (0.011)	0.1060*** (0.009)	0.1105*** (0.011)	0.1011*** (0.010)	0.1034*** (0.008)			
Firm's Size												
Large	-0.1372 (0.089)	-0.4269*** (0.119)	-0.5740*** (0.146)	-0.1366 (0.088)	-0.4269*** (0.119)	-0.5725*** (0.147)	-0.1358 (0.089)	-0.4214*** (0.118)	-0.5737*** (0.147)	-0.1333 (0.087)	-0.4289*** (0.117)	-0.5854*** (0.151)
Medium	-0.1306 (0.090)	-0.2999** (0.117)	-0.1261 (0.162)	-0.1307 (0.089)	-0.2988** (0.118)	-0.1260 (0.162)	-0.1314 (0.089)	-0.2942* (0.117)	-0.1268 (0.163)	-0.1215 (0.087)	-0.3060** (0.119)	-0.1253 (0.164)
Region												
North	0.0628 (0.132)	-0.3735** (0.162)	-0.1717 (0.228)	0.0631 (0.130)	-0.3715** (0.161)	-0.1717 (0.228)	0.0620 (0.132)	-0.3674** (0.162)	-0.1768 (0.227)	0.0625 (0.136)	-0.3777** (0.161)	-0.1670 (0.231)
North-Centre	0.2458* (0.131)	-0.5532*** (0.158)	-0.2531 (0.176)	0.2498* (0.129)	-0.5532*** (0.157)	-0.2534 (0.176)	0.2479* (0.129)	-0.5529*** (0.157)	-0.2571 (0.176)	0.2462* (0.132)	-0.5705*** (0.156)	-0.2327 (0.176)
Centre	0.0277 (0.103)	-0.2002 (0.174)	-0.0697 (0.210)	0.0357 (0.099)	-0.1988 (0.176)	-0.0700 (0.210)	0.0329 (0.100)	-0.1998 (0.175)	-0.0760 (0.209)	0.0417 (0.100)	-0.1981 (0.178)	-0.0510 (0.211)
Sector												
Manufacturing	0.1919*** (0.064)	0.1151 (0.106)	0.2350 (0.172)	0.1937*** (0.065)	0.1153 (0.106)	0.2344 (0.172)	0.1966*** (0.066)	0.1159 (0.105)	0.2358 (0.175)	0.1923*** (0.064)	0.1332 (0.109)	0.2441 (0.172)
Constant	0.9369* (0.499)	1.7876*** (0.388)	1.9950*** (0.293)	0.9790* (0.514)	1.7635*** (0.432)	1.9753*** (0.319)	1.0213*** (0.467)	1.5772*** (0.367)	1.8611*** (0.228)	2.8689*** (0.469)	4.4211*** (0.276)	4.1327*** (0.250)
Observations	4,761	5,885	5,581	4,761	5,885	5,581	4,761	5,885	5,581	4,761	5,885	5,581
Overall R-squared	0.190	0.208	0.107	0.191	0.208	0.107	0.192	0.211	0.108	0.164	0.182	0.093

Note: Driscoll-Kraay clustered standard errors in parentheses. Clusters by month and firm are used in the specification. Omitted dummy variables: Small, South, and Non-manufacturing.
*** p<0.01, ** p<0.05, * p<0.1

6 Relative Contribution of Explanatory Variables to Firms' 12-Month Inflation Expectations

In this Section, I analyze the relative contribution of each independent variable to firms' 12-month inflation expectations. In order to do it, I obtained the beta coefficients from specifications 7, 8, and 9 of Tables 5 (which shows the main results), 8 (where a different measure of *MPS* is used in the interaction term), 9 (where a 3-day window around *MPAs* is considered), and 10 (where a 7-day window around *MPAs* is considered), using the Stata command esttab, beta. I chose to analyze these specifications because they control for the same regressors, including the two components of the interaction term but separately.

The results are presented in Table 11. In columns 1-3, 4, 7, 10 and 11 of Table 11, it can be observed that the Inflation Gap is the variable that contributes the most to firms' 12-month inflation expectations, followed by the insecurity in Mexico and the Global EPU Index, in that order. However, in columns 5 and 6, it can be observed that the Inflation Gap is the variable that contributes the most to firms' 12-month inflation expectations, followed by the Global EPU Index and the insecurity in Mexico, in that order, respectively. In column 9, both the Inflation Gap and the insecurity level in Mexico contribute in the same percentage to firms' 12-month inflation expectation, followed by the Global EPU Index. Finally, in columns 8 and 12, insecurity in Mexico contributes the most to firms' 12-month inflation expectations, followed by the Inflation Gap and the Global EPU Index, in that order, respectively.

Overall, I can conclude that the Inflation Gap is the variable that contributes the most to firms' 12-month inflation expectations (I get these result in 9 of 12 specifications shown in Table 11), followed by insecurity in Mexico .

Table 11: Beta Coefficients

Dependent Variable: 12-Month Inflation Expectations

Independent Variables:	Specifications coming from Table 5			Specifications coming from Table 8			Specifications coming from Table 9			Specifications coming from Table 10		
	(1) Question 1 from Regional Survey	(2) Question 2 from Regional Survey	(3) Question 3 from Regional Survey	(4) Question 1 from Regional Survey	(5) Question 2 from Regional Survey	(6) Question 3 from Regional Survey	(7) Question 1 from Regional Survey	(8) Question 2 from Regional Survey	(9) Question 3 from Regional Survey	(10) Question 1 from Regional Survey	(11) Question 2 from Regional Survey	(12) Question 3 from Regional Survey
Monetary Policy Surprise MPSt x Dummy = 1 if Firm Answers Regional Survey Right After MPA (Dit)	-0.019 (-1.60)	0.020 (1.27)	-0.048*** (-5.33)	-0.022 (-1.82)	0.022 (1.39)	-0.048*** (-4.88)	-0.010 (-1.08)	0.006 (0.44)	-0.058*** (-4.95)	-0.019* (-1.99)	0.019 (1.42)	-0.026 (-1.68)
Dummy = 1 if Firm Answers Regional Survey Right After MPA (Dit)	-0.009 (-0.65)	0.017 (0.75)	0.003 (0.44)	-0.004 (-0.26)	0.022 (0.97)	-0.003 (-0.63)	-0.026 (-1.15)	-0.001 (-0.04)	0.008 (0.55)	-0.028 (-1.39)	0.004 (0.17)	0.003 (0.32)
Monetary Policy Surprise (MPSt)	-0.065*** (-3.50)	-0.084*** (-4.74)	-0.065*** (-3.36)	-0.095* (-2.26)	-0.109*** (-3.80)	-0.084* (-2.81)	-0.062 (-1.78)	-0.096** (-3.06)	-0.060*** (-3.32)	-0.064** (-3.08)	-0.080*** (-6.36)	-0.054* (-2.41)
Inflation Gap	0.330*** (7.55)	0.311*** (9.16)	0.244*** (8.19)	0.417*** (4.88)	0.387*** (6.99)	0.295*** (6.44)	0.321*** (6.15)	0.318*** (6.43)	0.229*** (5.61)	0.287*** (6.80)	0.310*** (9.17)	0.212*** (9.54)
Additional Control Variables												
Global Economic Policy Uncertainty Index	0.112*** (6.23)	0.173*** (4.64)	0.151*** (5.43)	0.162*** (6.96)	0.240*** (4.01)	0.198*** (4.42)	0.104* (2.11)	0.195*** (3.47)	0.150*** (3.82)	0.091*** (4.59)	0.172*** (5.65)	0.126*** (6.66)
World Trade Uncertainty Index	0.078*** (8.15)	0.062*** (5.29)	0.072*** (4.85)	0.108*** (6.54)	0.085*** (4.17)	0.093*** (4.28)	0.085*** (4.55)	0.070*** (4.66)	0.053*** (4.97)	0.085*** (8.22)	0.053*** (5.84)	0.055*** (5.46)
VIX	0.042 (0.86)	0.062 (1.23)	-0.016 (-0.44)	-0.095 (-1.26)	-0.044 (-0.54)	-0.099 (-1.57)	0.045 (0.57)	0.072 (1.00)	0.006 (0.12)	0.064 (1.46)	0.037 (0.79)	-0.008 (-0.30)
Insecurity in Mexico	0.288*** (10.04)	0.300*** (13.57)	0.208*** (8.92)	0.194*** (6.07)	0.224*** (6.21)	0.148*** (3.72)	0.283*** (5.96)	0.350*** (7.75)	0.229*** (7.21)	0.278*** (10.24)	0.288*** (9.90)	0.219*** (13.73)
Firm's Size												
Large	-0.049* (-2.21)	-0.086*** (-3.93)	-0.082*** (-4.39)	-0.051* (-2.49)	-0.075** (-3.08)	-0.083*** (-4.69)	-0.044 (-1.10)	-0.063* (-2.15)	-0.068* (-2.21)	-0.028 (-1.53)	-0.084*** (-3.58)	-0.082*** (-3.91)
Medium	-0.042* (-1.96)	-0.048* (-2.10)	-0.013 (-0.53)	-0.044* (-2.00)	-0.042 (-1.87)	-0.016 (-0.69)	-0.030 (-0.93)	-0.013 (-0.42)	0.003 (0.07)	-0.031 (-1.48)	-0.062* (-2.51)	-0.021 (-0.78)
Region												
North	0.001 (0.04)	-0.077** (-2.73)	-0.033 (-0.91)	0.005 (0.23)	-0.068* (-2.38)	-0.033 (-0.96)	-0.013 (-0.31)	-0.077* (-2.03)	-0.055 (-1.03)	0.013 (0.47)	-0.068* (-2.27)	-0.026 (-0.78)
North-Centre	0.031 (1.30)	-0.113*** (-3.81)	-0.029 (-1.04)	0.036 (1.49)	-0.109*** (-3.64)	-0.025 (-0.90)	0.032 (0.71)	-0.108** (-2.81)	-0.035 (-0.83)	0.052 (1.92)	-0.103*** (-3.52)	-0.035 (-1.46)
Centre	-0.003 (-0.12)	-0.059 (-1.51)	-0.015 (-0.38)	0.004 (0.14)	-0.050 (-1.37)	-0.023 (-0.62)	-0.012 (-0.34)	-0.052 (-1.18)	-0.023 (-0.47)	0.008 (0.33)	-0.042 (-1.14)	-0.012 (-0.36)
Sector												
Manufacturing	0.054** (3.20)	0.033 (1.43)	0.031 (1.19)	0.058*** (3.62)	0.034 (1.38)	0.040 (1.50)	0.044 (1.44)	0.036 (1.39)	0.033 (1.17)	0.048** (2.99)	0.025 (1.10)	0.039 (1.35)
Observations	3374	4272	3948	3187	4085	3764	2246	2932	2670	4761	5885	5581

Note: Standardized beta coefficients; t statistics in parentheses.
* p<0.05, ** p<0.01, *** p<0.001
Source: from author's own calculations using Stata's command "estab, beta".

7 Conclusions

This paper uses novel data on firms' 12-month inflation expectations from Banxico's Regional Survey to investigate for the February 2020 - September 2024 period whether firms' inflation expectations respond or not to Banxico's *MPAs* that result in *MPS*. The econometric analysis is based on an event-study approach. Hence, I isolate the effects of *MPAs* from other news and events taking place at the same time by considering a symmetric 5-day window around *MPAs* and by using the date and hour in which firms send their responses to Banxico's Regional Survey to compare (within the symmetric 5-day window) the responses of firms that were filed right before a *MPA* with those that were submitted right after it.

The effect of Banxico's *MPAs* on firms' 12-month inflation expectations is investigated by estimating an econometric specification that includes as explanatory variables an interaction term between *MPSs* and a dummy that is equal to 1 if firms responded to Banxico's Regional Survey right after a *MPA* (and equal to zero if otherwise); the two components of this interaction term (they are included separately); an inflation gap; global uncertainty measures (i.e. Global EPU Index, World Trade Uncertainty Index, and VIX); a proxy of insecurity in Mexico; and firm characteristics (e.g. dummies of size, sector, and region). This specification is estimated by OLS, using Driscoll-Kray clustered standard errors by firm and month. This permits to control for heteroskedasticity, as well as for temporal and cross-sectional correlation in the residuals.

In order to control for every single event that occurs around *MPAs* and not just for specific global and domestic economic factors, I re-estimate this equation with a Trend variable, instead of the uncertainty measures and the proxy of insecurity in Mexico.

The survey design also allows to obtain three different dependent variables, so I conduct the analysis considering each of them.

The main findings show that Banxico's *MPAs* that result in *MPS* do have a negative and a statistically significant effect on firms' 12-month inflation expectations during the sample period. This suggests, for example, that a surprise tightening of the monetary policy stance, leads firms' 12-month inflation expectations to decline, as expected.

The results also show that the inflation gap has a positive and a statistically significant effect on firms' 12-month inflation expectations. This suggest that if convergence of inflation to its target is delayed due to unexpected inflationary pressures by Banxico, firms will increase their 12-month inflation expectations, as expected.

Higher global uncertainty (particularly economic and political uncertainty and trade uncertainty, but not financial market instability) and higher levels of insecurity in Mexico lead firms to revise their 12-month inflation expectations upwards.

When the Trend variable is considered in the specification, instead of the global uncertainty measures and the proxy of insecurity in Mexico, the findings for the interaction term and the Inflation Gap still hold.

Four additional exercises were conducted to test for the robustness of the results. In the first one, the news-paper based Infectious Disease Equity Market Volatility (EMV) Tracker is included in the estimated specification in order to control for the Coronavirus Pandemic that occurred at the beginning of the sample period. In the second exercise, I re-estimate the specification previously described using the EPU Index for Mexico and the Trade Uncertainty Index for Mexico, instead of their global counterparts. In the third one, I use a measure of *MPS* calculated as the change in 3-month swap rates in 50-minutes window around Banxico's *MPAs*, instead of the initial measure calculated using a 30-minutes window. In the fourth one, I consider both a symmetric 3-day window around *MPAs* and a symmetric 7-day window around *MPA* to compare the responses of firms that were filed right before a *MPA* with those that were submitted right after it. The findings are robust in all the cases.

Finally, I calculate beta coefficients to investigate the relative contribution of each explanatory variable to firms' 12-month inflation expectations and, find that the main driver of Mexican firms' 12-month inflation expectations is the Inflation Gap, followed by the insecurity in Mexico and the Global EPU Index.

Overall, the main results show that Banxico's *MPAs* do have an impact on Mexican firms' 12-month inflation expectations. This suggests the following: 1) Banxico's efforts to clearly explain their actions and intentions are paying off and, 2) Mexican firms seem to be using all the information about the macro-economy they have at hand to adjust their inflation expec-

tations: they don't seem to be inattentive to the objectives and actions of Banxico. Hence, understanding how firms learn about the objectives and actions of monetary policy authorities, how they perceive this information, and how they translate it into their price-setting decisions is crucial for policymakers in order to shape this agents' inflation expectations.

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