

Assessing central bank communication through monetary policy statements: Results for Colombia, Chile and Peru

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Abstract

We build central-bank-specific dictionaries to obtain monetary policy tone indicators from published press releases about policy decisions. Tone indicators and their decomposition into different topical sources provide important information on monetary policy. We include the indicator in a number of structural VAR models to assess the effect of communication shocks on inflation expectations. We find some evidence on the effectiveness of communication.

Keywords: Monetary policy, communication, inflation expectations.

JEL codes: E52, E58, D83, D84.

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1 Introduction

Monetary policy communication has become ever more important at central banks. In fact, communication itself can be thought of as an additional monetary policy instrument (Blinder et al. 2008; Bholat et al. 2019). Through central bank communication, policy makers may enhance the effectiveness of monetary policy in affecting direct or indirect target variables. Even when the interest rate set by the monetary authority remains unchanged, variations in the way the central bank communicates the policy stance can affect relevant macroeconomic outcomes.

Communication strategies have become an important area of study to assess monetary policy. This paper takes on central bank communication in Colombia, Chile and Peru. Three countries in the South American region that run inflation targeting schemes. The research concentrates on press releases issued on scheduled monetary policy decision meetings. So, monetary policy surprises may come from two sources, interest rate or communication changes.

Changes in communication can be studied directly by performing textual analysis or indirectly by measuring changes of highly sensitive, financial market variables just after communication releases. In this paper we perform textual analysis on the sample of press releases in the three countries. The process hinges on building an indicator that measures the tone of communication that may swing between hawkish, neutral and dovish positions. To build the tone indicator, we first build a monetary policy lexicon based on phrases that convey hawkish or dovish meaning. Even though press releases are available in both Spanish and English, we assess the Spanish version only.

Related literature

An important number of papers perform textual analysis on monetary policy communication. There are many ways to perform textual analysis. One type of analysis relies on extracting topical information from text corpora using mixed-membership models borrowed from the field of computer science. These models assume that a text corpus can be decomposed into latent groups or topics (also known as topic models). Studies such as Park et al. (2019), Hansen et al. (2019), Hansen and McMahon (2016) or Rohlfs et al. (2016) follow this route.

Another type of analysis relies on extracting sentiment indicators based on pre-established dictionaries. This type of procedure is used for example in [Kazinnik \(2017\)](#), [Blix-Grimaldi \(2012\)](#), [Apel and Blix-Grimaldi \(2012\)](#) or [Kahveci and Odabaş \(2016\)](#). Other papers use alternative scoring techniques such as [Lucca and Trebbi \(2011\)](#).

Closest to our paper is [Picault and Renault \(2017\)](#) which manually constructs a dictionary to measure the monetary policy tone of the ECB and the state of the Eurozone economy from the content of ECB press conferences. [Picault and Renault \(2017\)](#) directly tackle the effect on stock markets to find that markets are more volatile on the day following a conference with a negative tone about the euro area economic outlook.

Tone or sentiment indicators obtained by textual analysis are used to measure the effects of communication. For example, [Lucca and Trebbi \(2011\)](#) measures the effects on longer-term nominal interest rates while [Kazinnik \(2017\)](#) studies the effect on short-term policy interest rate in Israel. On the other hand, [Picault and Renault \(2017\)](#) studies effects on stock markets. [Mazis and Tsekrekos \(2017\)](#) analyzes the effect on short and long-term treasury yields. [Hansen and McMahon \(2016\)](#) explore the relationship between FOMC information releases and real economic variables. Also, [Blix-Grimaldi \(2012\)](#) shows that press releases from ECB could be used to identify and measure financial stress beyond market data. [Rohlf's et al. \(2016\)](#) predicts the federal funds target rate.

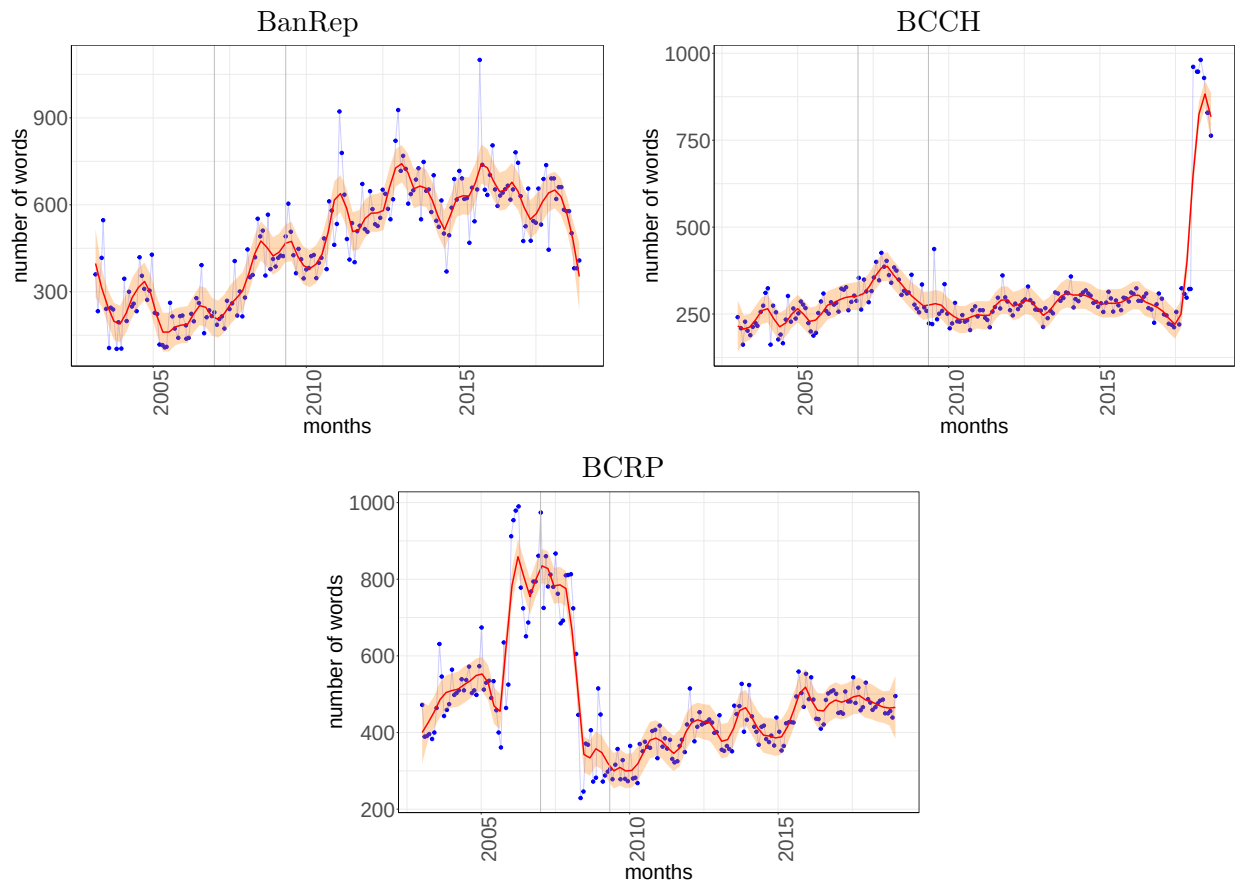
Different from the above studies, our paper focuses on the effects on inflation expectations. [Carrière-Swallow et al. \(2018\)](#) argues that stronger transparency frameworks and communication strategies are found to be associated with more predictable policy decisions and a better anchoring of inflation expectations.

In section [2](#), we describe the construction of the three distinct dictionaries, in section [3](#) we show the constructed tones, in section [4](#) we perform the quantitative evaluation to measure the effect of tone shocks and section [5](#) concludes.

2 Monetary policy lexicon

We focus on press releases following monetary policy decisions. These communiqués are published on central bank web pages on the day of the monetary policy meeting. For Colombia we include releases from February 2003 to December 2018 (187 press releases). For Chile we consider September 1999 to September 2018 (226 releases) and for Peru we take February 2001 to December 2018 (215 releases) into account. Since 2018, the Colombian and Chilean central banks switched from 12 to 8 monetary policy meetings per year.

Figure 1. *Press release sizes*



The average word number of each of these press releases is depicted in Figure (1). The Central Bank of Colombia (BanRep) moved from less than 300 words to about 500-600 words. The Central Bank of Chile (BCCH) press release, which had a stable size of about 250 words per release swiftly changed to more than 750 words in recent times. The central bank of Peru

(BCRP) had a press release with increasing size until the global financial crisis reaching up to about 800 words. The size of BCRP press release fell sharply during the crisis to 300 words and has now stabilized to a little more than 400 words.

We read all the press releases in our sample set and extract phrases conveying information about hawkish, dovish or neutral stance. Appendix A shows the first hawkish, dovish and neutral phrases in each central bank lexicon. It is important to consider entire phrases or sentences that qualify monetary policy stance. Isolated words do not have a meaning per se as would be the case in standard sentiment analysis. A word like inflation needs further qualification with adjectives or adjectival clauses, for example, “descending inflation” or “ascending inflation”. The phrase “descending inflation” is a dovish word while the phrase “ascending inflation” is a hawkish one.

In general, hawkish phrases or sentences are related to inflationary information or good news on the economic activity side. “higher inflation”, “lower unemployment”, “higher output gap”, “heightening consumption” and the like represent a hawkish situation. Conversely, a “lowering inflation”, “higher unemployment”, “lower output gap”, “weak investment” and so forth, represent dovish information. Hawkish sentences are related to current or possible future increases in the monetary policy rate while dovish sentences are linked to likely reductions in the policy interest rate. There are also neutral phrases which are more akin to maintaining the current level of the policy stance. For example terms such as “inflation is around the target”, “inflation expectations remain anchored”, “absence of inflationary pressures” can be regarded as neutral.

In the construction of the lexicon, we take special care of avoiding nested phrases. For example, we do not use the phrase “inflationary pressures” as a hawkish term because the entire phrase may appear within the larger phrase “absence of inflationary pressures” which is a neutral term. Instead, to capture instances where the phrase “inflationary pressures” appear, we qualify those pressures, for example “mounting inflationary pressures” which is clearly hawkish or “inflationary pressures diminishing” which is a dovish phrase.

Also, we take attention of possible supply shock situations. For example, a domestic currency depreciation is inflationary but, depending on its degree and persistence, it can be contractionary

or expansionary. Unless explicitly stated we consider a domestic currency depreciation as a hawkish information for its closer association with inflation rather than its effect of output.

When assessing the foreign outlook, we separate real foreign activity phrases from financial markets. An increased volatility in global financial markets are related to emerging market economies weakening currencies and thus to a hawkish situation. Instead, an increased volatility in the outlook of world GDP is linked to a dovish foreign phrase.

Topics. Also we classify each phrase or sentence in the lexicon as belonging to six different topics. Table 1 contains the summary of the lexicon across topics and stance for press releases in the three countries. Topics considered are activity, credit, foreign, exchange rate, monetary policy, inflation. Furthermore, we also classify each sentences as describing the current state or reflecting either future actions or outcomes. We also assess whether each sentence is related to a supply shock event and whether each sentences talks about expectations.

We captured a total 2029, 881 and 420 relevant phrases in the BanRep, BCCH and BCRP statements respectively. On average, BanRep statements have been the most wordy statements across the sample. It is possible to merge all the three lexicons in just one larger dictionary. In doing so, we can further classify our lexicon into common or general terms and idiosyncratic terms. For the moment, we keep the three dictionaries separated.

In terms of the topics considered, sentences about **activity** have to do with domestic variables that reflect the strength of economic activity: GDP, output gap, consumption, employment. The topic labeled **credit** has to do with the state of overall financing conditions in the country which mostly have to do with the volume of banking credit or financing costs. The topic **foreign** conveys broad issues such as the state of foreign economic activity, foreign inflation, foreign monetary policy, global financial markets, commodity prices and so on. They mostly have to do with USA, Europe, China or trading partners in the region. The topic **exchange rate** has to do with the strength of the domestic currency which, in turn, may affect inflation or economic activity. The topic **monetary policy** arises when the press releases mention monetary policy actions (policy rate setting). The topic **inflation** describes phrases about prices and inflation at the domestic level.

In Figure 2 we show the proportion of each topic within dovish or hawkish sentence categories

Table 1. *Number of phrases / sentences in lexicon*

topic	dovish	hawkish	neutral	total
Colombia				
activity	236	288	10	534
credit	34	51	1	86
foreign	297	278	18	593
exchange rate	15	52	1	68
monetary policy	67	87	76	230
inflation	224	226	68	518
total	873	982	174	
Chile				
activity	104	123	3	230
credit	11	21	2	34
foreign	135	151	4	290
exchange rate	2	5	1	8
monetary policy	37	41	5	83
inflation	115	115	6	236
total	404	456	21	
Peru				
activity	52	108	2	162
credit	3	7	1	11
foreign	21	47	3	71
exchange rate	10	5	1	16
monetary policy	16	23	1	40
inflation	81	36	3	120
total	183	226	11	

in the lexicon. The three most popular categories across dictionaries are activity, foreign and inflation (prices) topics. Hawkish sentences are mostly about activity or foreign outlook while dovish sentences are more heterogenous. BanRep and BCCH have dovish phrases related more to the foreign outlook. BCRP have dovish words that are more related to inflation and prices.

Figure 2. *Phrases by category in the monetary polic lexicon*

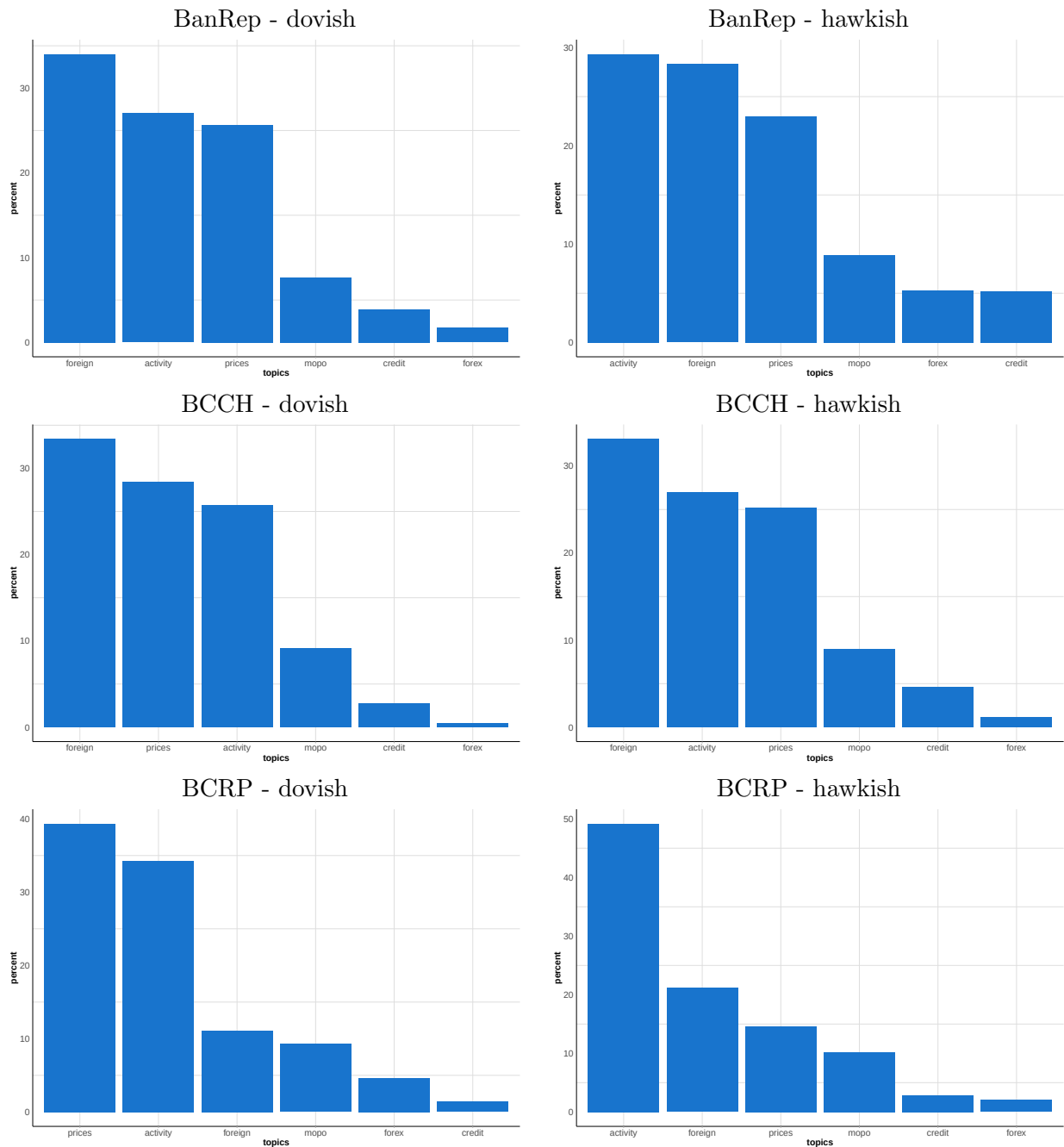


Figure 3 describes how often the lexicon phrases appear in the press releases. In the computations, what matters now is how intense is the use of the lexicon phrases in the press releases. In almost all the cases, the most popular category is now the prices and inflation topic. Dovish phrases related to prices and inflation are the most important in terms of intensity. Hawkish phrases in BanRep statements also feature prices as the most important. In the BCCH hawkish phrases, the foreign outlook appear to be the most relevant. In the case of the BCRP hawkish phrases, phrases in the activity topic are the most popular.

3 A monetary policy tone indicator

Once we have the set of lexicon phrases relevant for each country and having counted the appearance of each phrase in every policy statement, we can balance all dovish, hawkish and neutral phrases appearing in eachn press releases. This approach is similar to that of [Picault and Renault \(2017\)](#).

For each press release in month t and country c , we count the number of hawkish, dovish and neutral phrases to build a policy tone indicator following

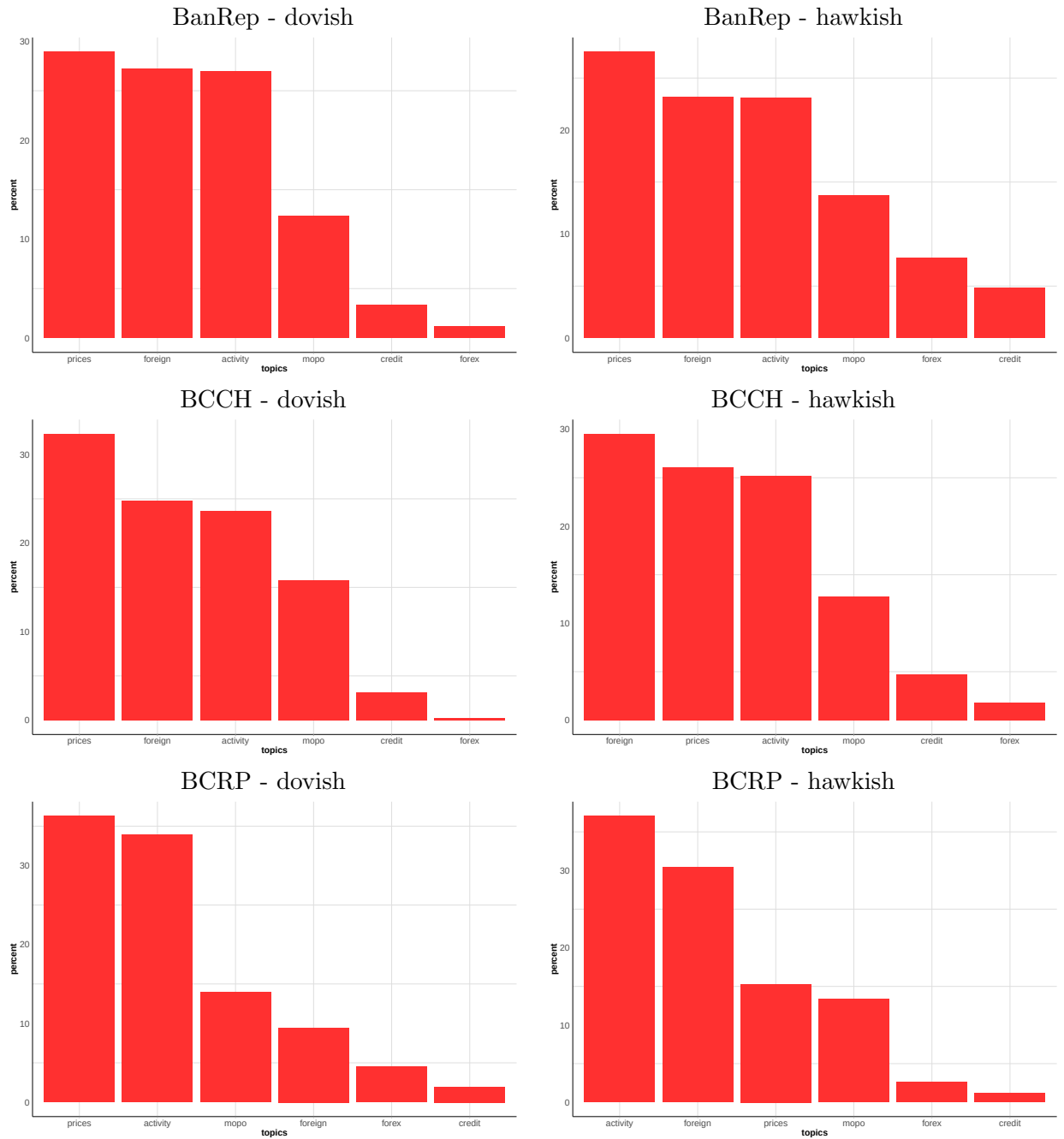
$$tone_{t,c} = \frac{H_{t,c} - D_{t,c}}{H_{t,c} + D_{t,c} + N_{t,c}} \quad (1)$$

Where $tone_i$ is the monetary policy tone indicator of the policy decision taken in month t in country c , $H_{t,c}$, $D_{t,c}$ and $N_{t,c}$ are the count of hawkish, dovish and neutral phrases respectively¹. The tone indicators lies between 1 and -1. A positive value is an indication of a hawkish position while a negative tone is an indication of a dovish stance.

Figure 4 shows the behaviour of the tone in the three countries considered. The first shaded area in all graphs denotes the great financial crisis episode from September 2008 to September 2009. The second shaded area shows the turbulence in financial markets starting with the taper tantrum episode. Both episodes denote an outflow of foreign capital and domestic currency depreciation. In all three cases we see that tones were in the hawkish position just

¹An alternative tone indicator is $tone'_{t,c} = \frac{H_{t,c} - D_{t,c} - N_{t,c}}{H_{t,c} + D_{t,c} + N_{t,c}}$

Figure 3. *Phrases by category in the monetary polic statements*

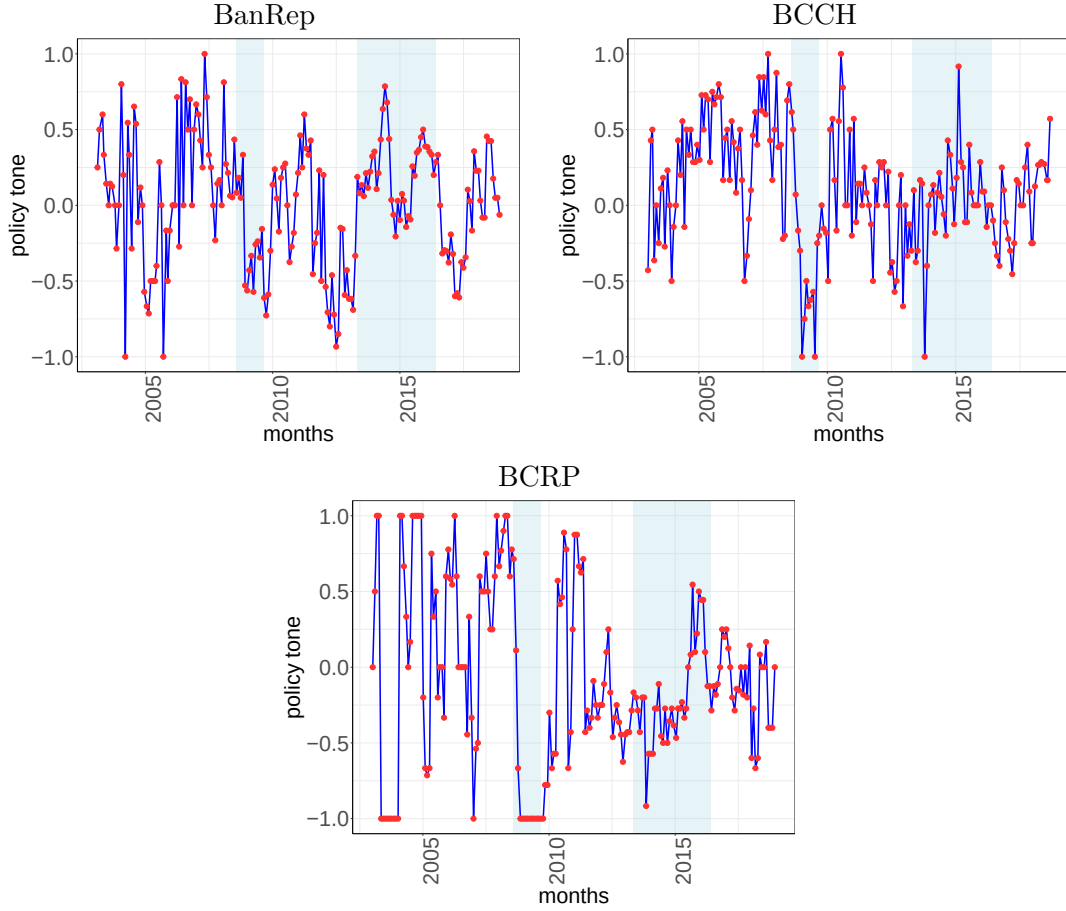


before the great financial crisis.

After September 2009, all central banks switch quickly to dovish tones. Then, the quick recovery of these countries following the GFC implies a switch back to hawkish position circa 2010. As Figure A-1 in the appendix shows. Movements in policy tones and movements in the

interest rate are correlated. A fact that can also be seen in Figure A-2.

Figure 4. *Evolution of tones in press releases*

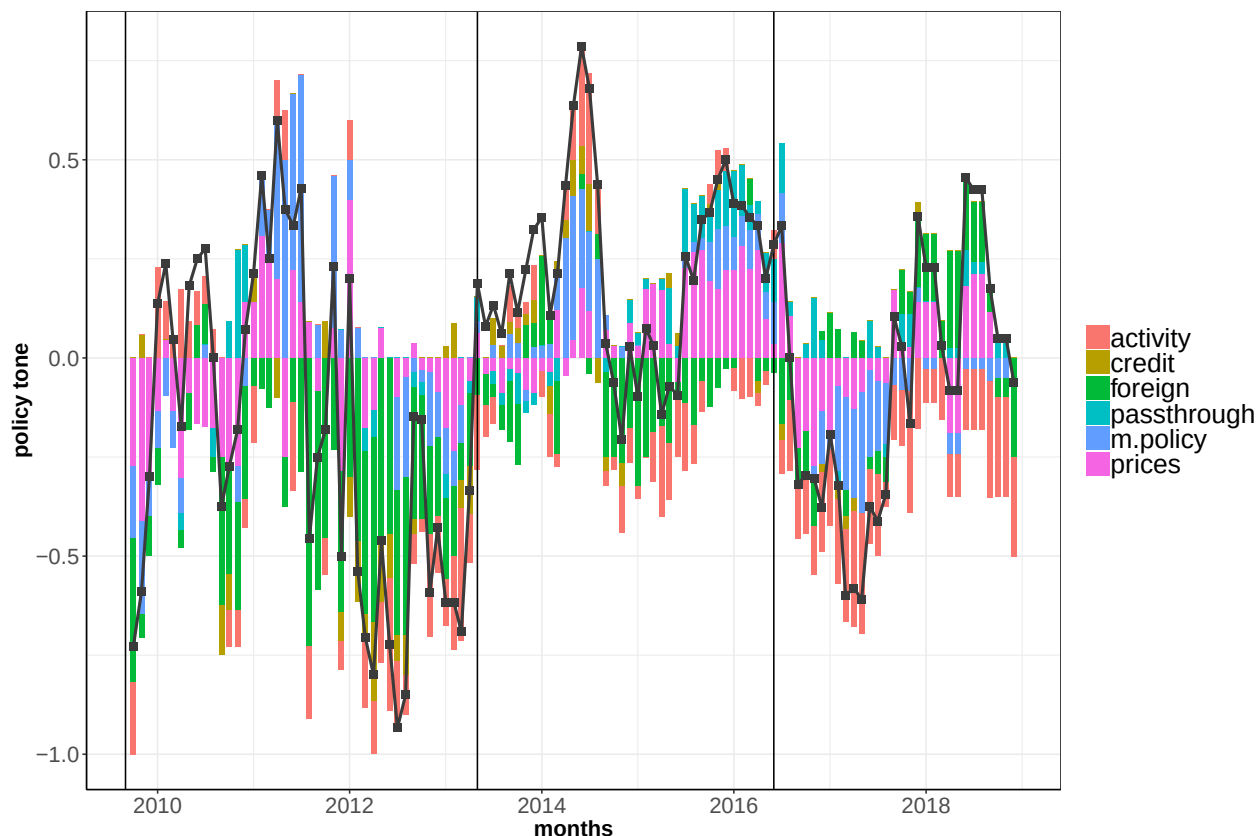


Note: The first shaded area in all graphs denotes the great financial crisis episode from September 2008 to September 2009. The second shaded area shows the turbulence in financial markets starting with the taper tantrum episode

Recall that every phrase in the lexicon has a topic tag, therefore, we can also keep track of the topic during the construction of the tone itself. There will be count of hawkish, dovish and neutral phrases stemming from each of the six topics. Therefore, we can decompose a tone indicator in terms of the topics driving the phrases. We sum up the tone decomposition in Figure 5, 6 and 7. We observe that in BanRep, the foreign outlook is important in moving the policy tone from positive to negative between 2010 and may 2013. Inflation and monetary policy topics explain the rise of policy tone after may 2013. By 2015 it is again the foreign outlook (for example the drop of oil prices) that explains the dovish movement. A move toward a hawkish

stance resumes in 2016 with a big concern about prices and exchange rate passthrough. After 2016, the concern about economic activity takes center stage.

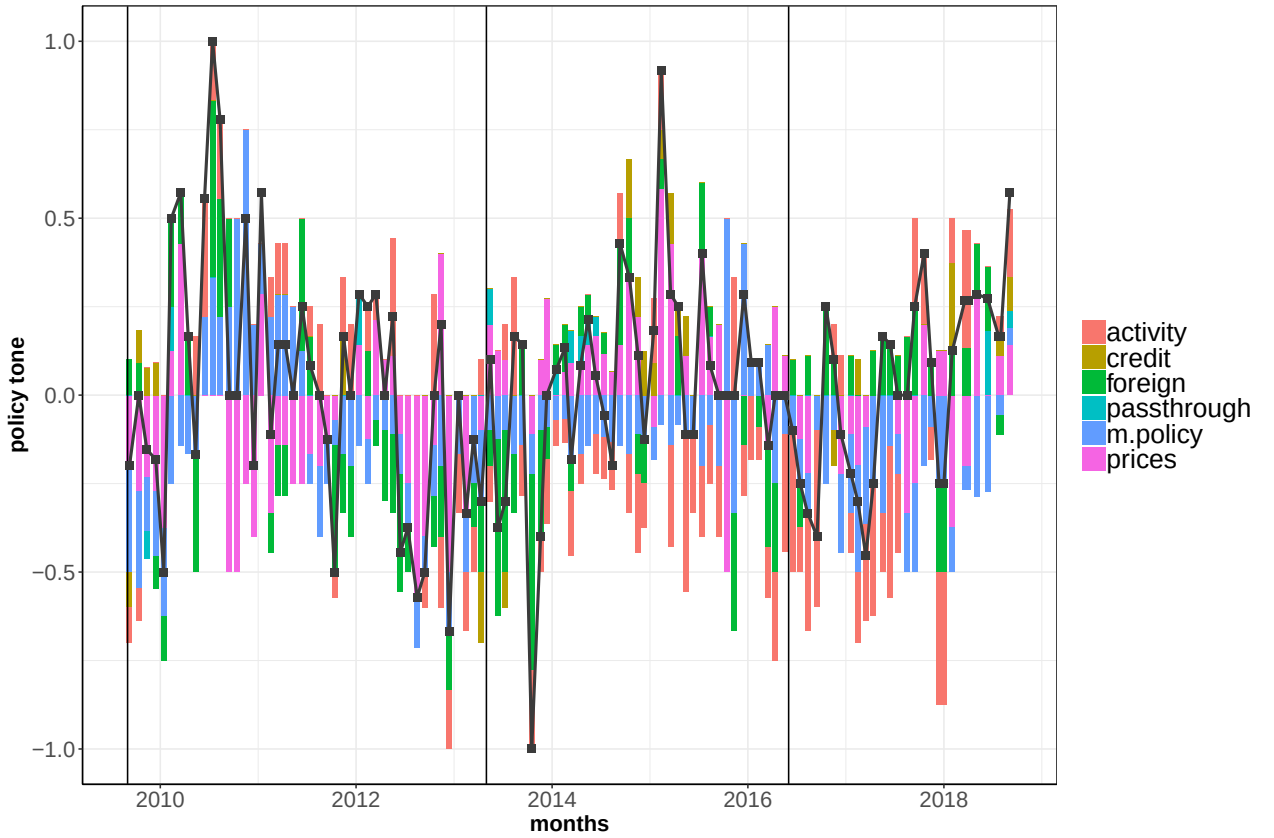
Figure 5. *Tone decomposition in BanRep*



In the BCCH, the initial hawkish move after 2010 is explained by activity, foreign outlook and monetary policy per se. The reversal to more neutral or dovish stance is mostly explained by inflation and foreign outlook. After May 2013, the move upward in tone is explained by inflation though concerns about activity has a negative pressure on the tone. This means that this period that goes from May 2013 to 2016 looks like a supply shock. After 2016 the inflationary concern is not pressing any more and tone looks more dovish or neutral.

In the BCRP, the initial hawkish stance after 2010 is mostly explained by monetary policy, activity concerns and the foreign scenario. The reversal in tone by 2012 is strongly influenced by the reduction in the speed of economic growth, exchange rate appreciation and the likely impact on prices. In the period between May 2013 and 2016 only the foreign escenario puts

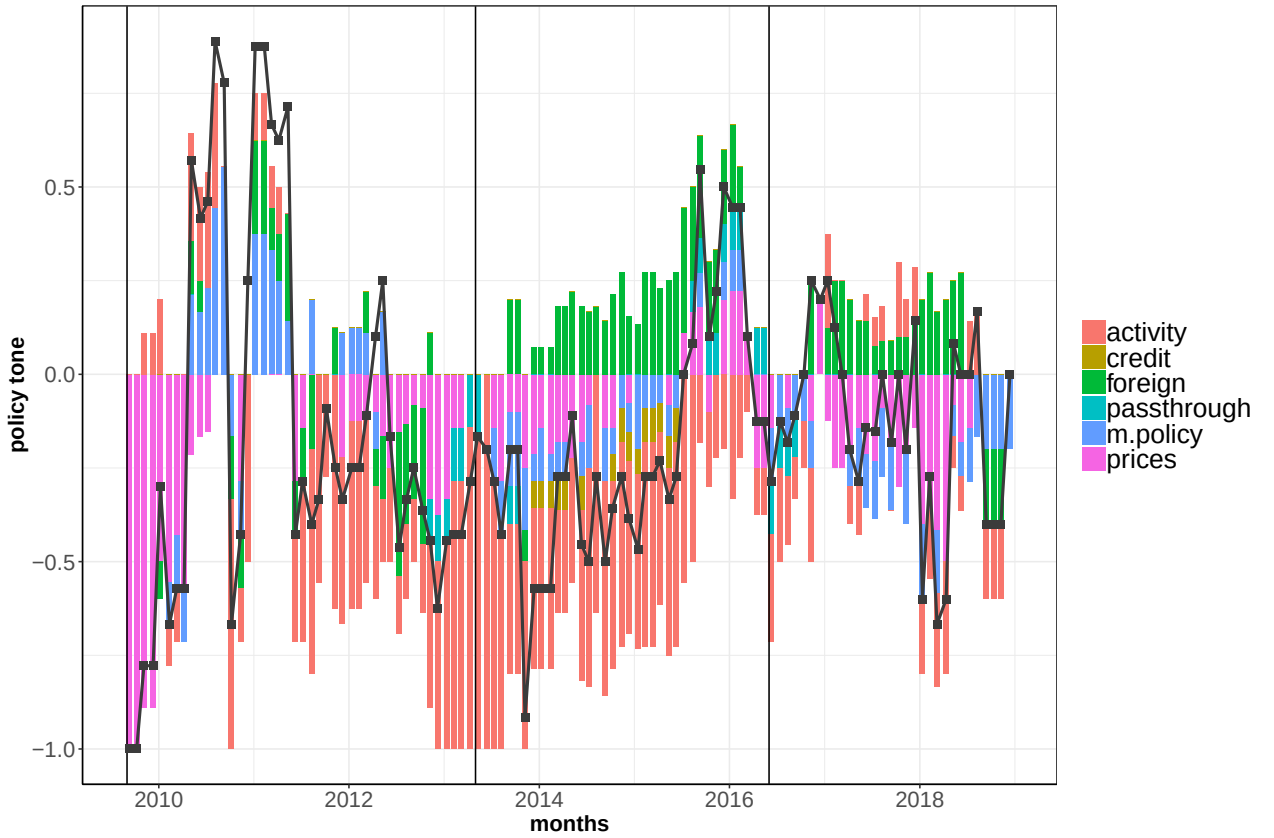
Figure 6. *Tone decomposition in BCCH*



pressure towards a more hawkish position. The policy rate remained constant between June 2011 and October 2013 but the tone of communication was well down the dovish territory. Between mid 2015 and February 2016, the policy tone quickly moved to hawkish pushed by inflationary pressures, passthrough concerns on top of the foreign outlook. During this period of hawkish tone and raising interest rates, the economic activity pushed the tone downward and so we can categorize this episode also as a supply shock scenario.

So, we can use the tone and its decomposition to characterize monetary policy further. Even when interest rates remain unchanged, policy tones may be switching due to policy makers concerns. In some cases we observe upward pressures coming from activity and inflation at the same time and in other cases we see that economic activity and inflation pressures go in opposite directions.

Figure 7. *Tone decomposition in BCRP*



4 The effect of tone over inflation expectations

The tone indicator and its decomposition can be used to identify the effects of monetary policy shocks. For example, [Gertler and Karadi \(2015\)](#) uses external instruments to identify the effects of monetary policy shocks. In our case, changes in tone not related to the state of the economy but solely to the monetary policy topic - as constructed here - can be regarded as instruments correlated with policy shocks.

Instead, in this paper we use the overall tone indicator for each country to study the effect of tone shocks (communication shocks) on inflation expectations. Inflation expectations relevant for monetary policy analysis refer to the medium and long run. In our case, we use medium run expectations because long run expectations may not have sufficient time variation. A perfectly anchored long run inflation expectation is basically constant. However, medium run expectations are affected by the state of the economy and by monetary policy decision. We take

the medium run to be a period around one year ahead.

The inflation expectations are obtained from central bank surveys. Figure A-3 shows that evolution of inflation expectations in Peru, Chile and Colombia. Solid lines refer to the one-year-ahead inflation expectations taken from the surveys conducted by the respective central banks. The dotted line is the inflation expectation for next calendar year gathered by Concensus Economics for each of the three countries.

One-year-ahead inflation expectations are sensitive to the state of the economy given by the key macroeconomic variables that might affect inflation and its future path. However, these expectations also depend on the long-run inflation expectations anchor. In figure A-4 we show year-on-year inflation together with one-year-ahead inflation expectations. We observe that episodes of rising inflation also imply episodes of rising inflation expectations. Particularly around September 2008 where inflation raised in all three countries. Also, but less noticeably, the second half of 2015 through early 2016 also show a rise in inflation expectations.

So rising inflation may affect inflation expectations and central banks do react to inflation expectations because rising inflation expectations may feedback to inflation. Inflation expectations are a key variable for monetary policy decisions.

We consider a three variable VAR system with GDP year-on-year growth, monthly one-year-ahead inflation expectations and the policy tone. Namely, $X_t = (\Delta y_t, \pi_t^e, tone_t)$. We are interested on the effect of tone shocks on inflation expectations.

Identification.

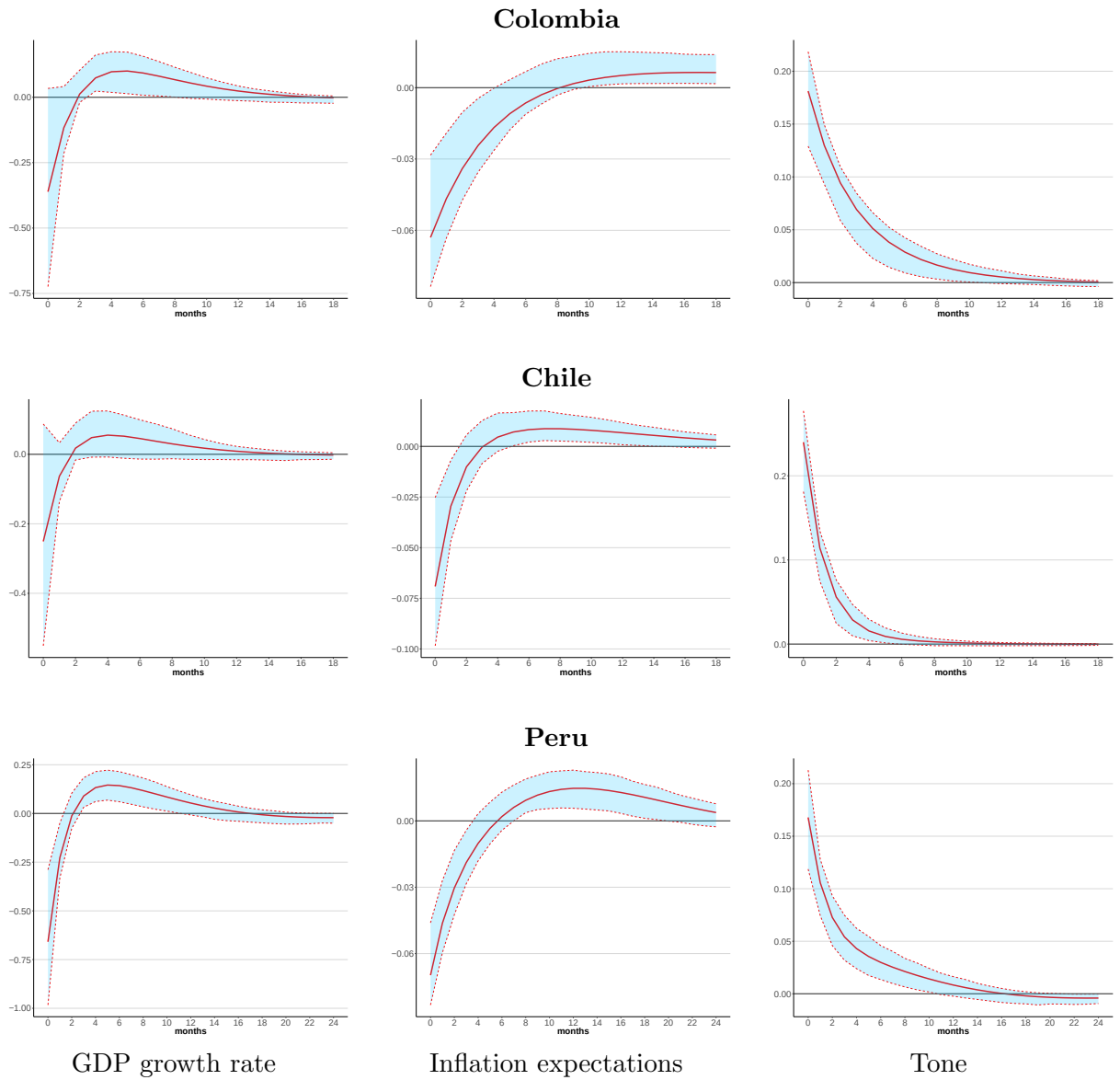
We use two types of identification procedures. The first is the Blanchard-Quah assumption (Blanchard and Quah 1989) that neither a tone shock or an inflation expectation shock does have long-run effects on GDP growth. The second identification procedure assumes that a tone shock that makes the tone to be more hawkish, does reduce GDP growth during the first three months but is agnostic about what might happen to inflation expectations. In this case we follow Rubio-Ramirez et al. (2010).

Results under Blanchard-Quah identification.

Figure 8 depicts the effect of a communication shock on inflation expectations and output growth. In all three countries, there is an immediate reduction in inflation expectations following

a tone shock. Inflation expectations fall in about 0.05 points at the time of the shock. In the case of Colombia, the growth rate of output tends to fall at times 0 and 1 after the shock. The effect on inflation expectations tend to last strongly up to 4 months after the to shock. In Chile, output growth falls but not clearly. Inflation expectations fall up to the second month after the shock. For Peru, results confirm the effects of tone shocks on inflation expectations.

Figure 8. *Response to one s.d shock in tone - BQ identification*

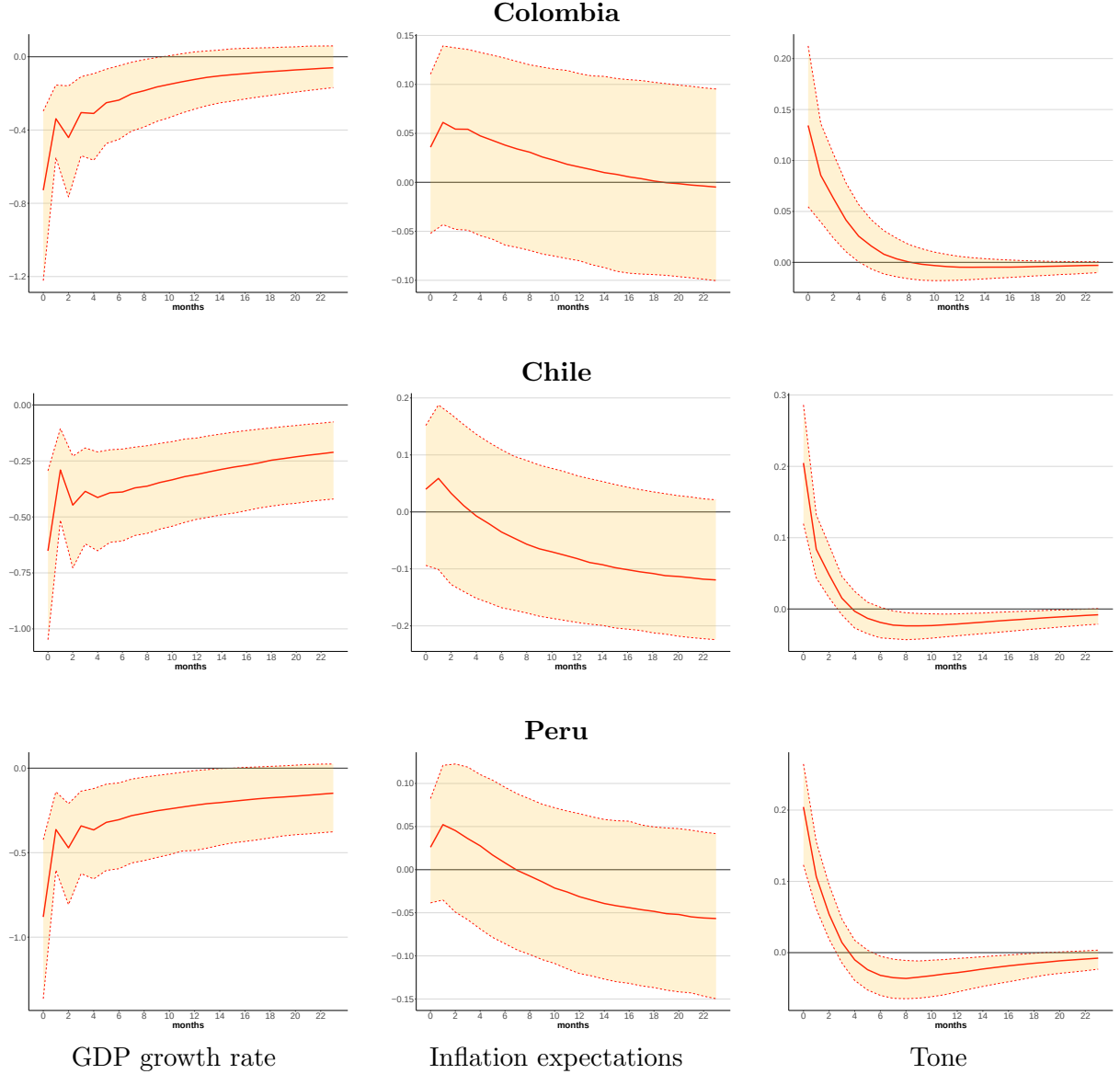


Results under sign-restriction identification.

Figure 9 shows the results for the three countries. In this case the results of a tone shocks over

inflation expectations are not clear. There is a jump upwards in median inflation expectations just after the communication shock and after a year it is somewhat on negative territory.

Figure 9. *Response to one s.d shock in tone - Sign restriction identification*



5 Conclusions

This paper shows that a construction of a central-bank-specific lexicon can be valuable to construct and dissect the underlying tone in monetary policy communications. We build monetary

policy dictionaries for Colombian Banco de la Republica, the Central Bank of Chile and the Central Bank of Peru. We classify the lexicon terms and we can further decompose the tone into topics. This allows a novel way to assess monetary policy.

We use the tone indicators to evaluate the effect of tone shocks on inflation expectations via a identified vector autoregressions. We find some evidence that communication shocks can affect inflation expectations.

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Appendix

Hawkish lexicon

Table A-1. *Hawkish lexicon - BanRep*

N	text	topic	tense
1	a pesar de las presiones de costos	prices	state
2	aceleración de la actividad doméstica	activity	state
3	aceleración de la economía se origina principalmente en minería	activity	state
4	aceleración de la inflación	prices	state
5	aceleración de la inflación se explicó principalmente por el mayor ritmo de aumento anual del IPC de alimentos	prices	state
6	aceleración del consumo privado	activity	state
7	aceleración del crecimiento del producto	activity	state
8	aceleración del crecimiento económico	prices	state
9	aceleración del crecimiento se daría en la minería	activity	state
10	aceleración del dinamismo del crédito	credit	state
11	aceleración del PIB	activity	state
12	aceleración en el crecimiento del consumo	activity	state
13	aceleración en el crédito hipotecario también indica una dinámica favorable	credit	state
14	aceleración en la inflación	prices	state

Table A-2. *Hawkish lexicon - BCCH*

N	text	topic	tense
1	aceleración del crecimiento	activity	state
2	aceleración en la tasa de inflación	prices	state
3	acentuación de los riesgos financieros internacionales	foreign	state
4	actividad económica habría acelerado	activity	state
5	actividad económica se viene recuperando de manera gradual	activity	state
6	actividad económica continúa su dinamismo	activity	state
7	actividad económica crece a un ritmo sostenido	activity	state
8	actividad económica dinámica	activity	state
9	actividad económica habría acelerado su crecimiento	activity	state
10	actividad económica habría crecido 8,7 por ciento en el tercer trimestre, manteniendo su fuerte dinamismo	activity	state
11	actividad económica local se viene recuperando	activity	state
12	actividad económica mantiene un alto crecimiento	activity	state
13	actividad económica mantiene un sólido crecimiento	activity	state
14	actividad económica mundial sigue mostrando indicadores favorables	foreign	state

Table A-3. *Hawkish lexicon - BCRP*

N	text	topic	tense
1	aceleración del crecimiento	activity	state
2	aceleración en la tasa de inflación	prices	state
3	acentuación de los riesgos financieros internacionales	foreign	state
4	actividad económica habría acelerado	activity	state
5	actividad económica se viene recuperando de manera gradual	activity	state
6	actividad económica continúa su dinamismo	activity	state
7	actividad económica crece a un ritmo sostenido	activity	state
8	actividad económica dinámica	activity	state
9	actividad económica habría acelerado su crecimiento	activity	state
10	actividad económica habría crecido 8,7 por ciento en el tercer trimestre, manteniendo su fuerte dinamismo	activity	state
11	actividad económica local se viene recuperando	activity	state
12	actividad económica mantiene un alto crecimiento	activity	state
13	actividad económica mantiene un sólido crecimiento	activity	state
14	actividad económica mundial sigue mostrando indicadores favorables	foreign	state

Dovish lexicon

Table A-4. *Dovish lexicon - BanRep*

N	text	topic	tense
1	abundancia de liquidez internacional	foreign	state
2	acontecimientos de Europa aumentaron el riesgo de una fuerte recesión en ese continente	foreign	future
3	actividad económica de los principales países de América Latina mantendría crecimientos bajos	foreign	state
4	actividad económica del país sigue débil	activity	state
5	actividad económica en Colombia se habría desacelerado	activity	state
6	actividad económica en varias regiones del mundo sugieren que la recuperación del crecimiento continuará en 2014, pero con una ligera desaceleración en relación con las previsiones anteriores	foreign	state
7	actividad económica más débil de lo esperado	activity	state
8	actividad económica mundial continúa débil	foreign	state
9	actividad económica mundial ha sido algo más débil	foreign	state
10	actividad económica mundial sigue débil	foreign	state
11	actividad económica viene creciendo a un ritmo menor	activity	state
12	actual episodio de apreciación de la tasa de cambio es transitorio	forex	future
13	actual nivel de la tasa de referencia continúe estimulando el crecimiento	mopo	state
14	adicionalmente caen los ingresos por exportaciones	foreign	state

Table A-5. *Dovish lexicon - BCCH*

N	text	topic	tense
1	acotado crecimiento de la actividad y la demanda interna	activity	state
2	actividad económica ha continuado evolucionando a un ritmo moderado	activity	state
3	actividad económica ha estado algo menos dinámica que lo previsto	activity	state
4	actividad ha continuado mostrando debilidad	activity	state
5	actividad y demanda continúan mostrando un débil desempeño	activity	state
6	actividad y demanda del segundo trimestre dan cuenta de un crecimiento acotado	activity	state
7	actividad y demanda muestran señales de moderación	activity	state
8	actividad y demanda que crecieron a un ritmo moderado	activity	state
9	actividad y la demanda interna han crecido algo por debajo	activity	state
10	actividad y la demanda interna han crecido por debajo	activity	state
11	actividad y la demanda interna mostraron un crecimiento acotado	activity	state
12	actividad y la demanda siguen mostrándose más débiles	activity	state
13	adopción de política monetaria más expansiva	mopo	state
14	adopción de una política monetaria más expansiva	mopo	state

Table A-6. *Dovish lexicon - BCRP*

N	text	topic	tense
1	aceleración de la inflación tiene carácter temporal	prices	state
2	acelerar la reducción en la tasa de referencia	mopo	state
3	acentuado la incertidumbre sobre el ritmo de crecimiento de la actividad económica global	foreign	future
4	actividad económica continúa creciendo por debajo de su potencial	activity	state
5	actividad económica se viene recuperando pero continúa creciendo por debajo de su potencial	activity	state
6	apreciación de la moneda	forex	state
7	apreciación del nuevo sol	forex	state
8	aumento de la inflación ha obedecido principalmente a factores temporales de oferta	prices	state
9	aumento del precio de algunos alimentos y servicios públicos se viene revirtiendo	prices	state
10	aumentos de precios de algunos alimentos y servicios públicos así como la depreciación cambiaria, se están revirtiendo	prices	state
11	ausencia de presiones inflacionarias	prices	state
12	bajas expectativas de inflación	prices	state
13	Banco Central no prevé presiones inflacionarias	prices	future
14	caída de los precios internacionales	foreign	state

Neutral lexicon

Table A-7. *Neutral lexicon - BanRep*

N	text	topic	tense
1	actividad económica continúa en una trayectoria de crecimiento esencialmente en línea con lo previsto	activity	state
2	adoptar las medidas de política monetaria que contribuyan a que la economía colombiana alcance el máximo crecimiento sostenible	mopo	state
3	adoptar las medidas de política monetaria que sean necesarias para alcanzar la meta de inflación	mopo	state
4	adoptar las medidas de política necesarias para mantener la capacidad adquisitiva de la moneda	mopo	state
5	adoptar las medidas necesarias a fin de garantizar la convergencia de la inflación hacia la meta	mopo	state
6	adoptar las medidas que sean necesarias	mopo	future
7	adoptará las medidas conducentes en caso de que cambien las circunstancias	mopo	future
8	adoptará las medidas de política que contribuyan al cumplimiento de la meta	mopo	future
9	allanar el camino para el cumplimiento de la meta de inflación	prices	state
10	apropiado mantener inalterada la tasa de interés	mopo	state
11	apropiado mantener la tasa de interés	mopo	state
12	apropiado prolongar la pausa en el incremento de sus tasas de interés de intervención	mopo	future
13	atento a todos los riesgos que amenacen el objetivo inflacionario	mopo	future
14	Colombia no se ha reflejado la crisis	foreign	state

Table A-8. *Neutral lexicon - BCCH*

N	text	topic	tense
1	actividad económica continúa en una trayectoria de crecimiento esencialmente en línea con lo previsto	activity	state
2	antecedentes respecto del sector real siguen siendo mixtos	activity	state
3	atento a todos los riesgos que amenacen el objetivo inflacionario	mopo	future
4	cambio leve acerca en forma importante la tasa rectora a una posición más neutral	mopo	state
5	cambios futuros en la TPM para lograr este objetivo dependerán de la nueva información	mopo	future
6	cifras parciales de actividad y demanda del segundo trimestre son coherentes con lo previsto	activity	state
7	condiciones en el mercado del crédito se mantienen estables	credit	state
8	condiciones financieras externas tendieron a normalizarse	foreign	state
9	condiciones financieras globales no muestran grandes cambios	foreign	state
10	condiciones financieras globales no registran cambios	foreign	state
11	condiciones financieras internacionales han permanecido estables.	foreign	state
12	condiciones financieras se mantienen estables	foreign	state
13	confrontar las desviaciones	mopo	future
14	consumo privado permanece estable	activity	state

Table A-9. *Neutral lexicon - BCRP*

N	text	topic	tense
1	actividad económica crece a un ritmo sostenido, sin presiones inflacionarias	activity	state
2	actividad económica local viene creciendo a un ritmo cercano al de su potencial	activity	state
3	alineadas a la meta de inflación	prices	state
4	atento a la proyección de inflación	prices	future
5	cercano a su potencial	activity	state
6	cercano al de su potencial	activity	state
7	condiciones financieras internacionales son aún inciertas	foreign	state
8	crecimiento de la economía peruana se ha estabilizado alrededor de su nivel sostenible de largo plazo	activity	state
9	crecimiento de la economía se ha estabilizado alrededor de su nivel sostenible de largo plazo	activity	state
10	economía peruana mantiene sólidos fundamentos	activity	state
11	escenario externo aún complicado	foreign	state
12	existen factores de riesgo vinculados a la solvencia fiscal de algunas economías desarrolladas	foreign	state
13	expectativas converjan a la meta	prices	future
14	expectativas de inflación del público alrededor de 2,5 por ciento	prices	state

Interest rates and tone

Figure A-1. *Tones shades*

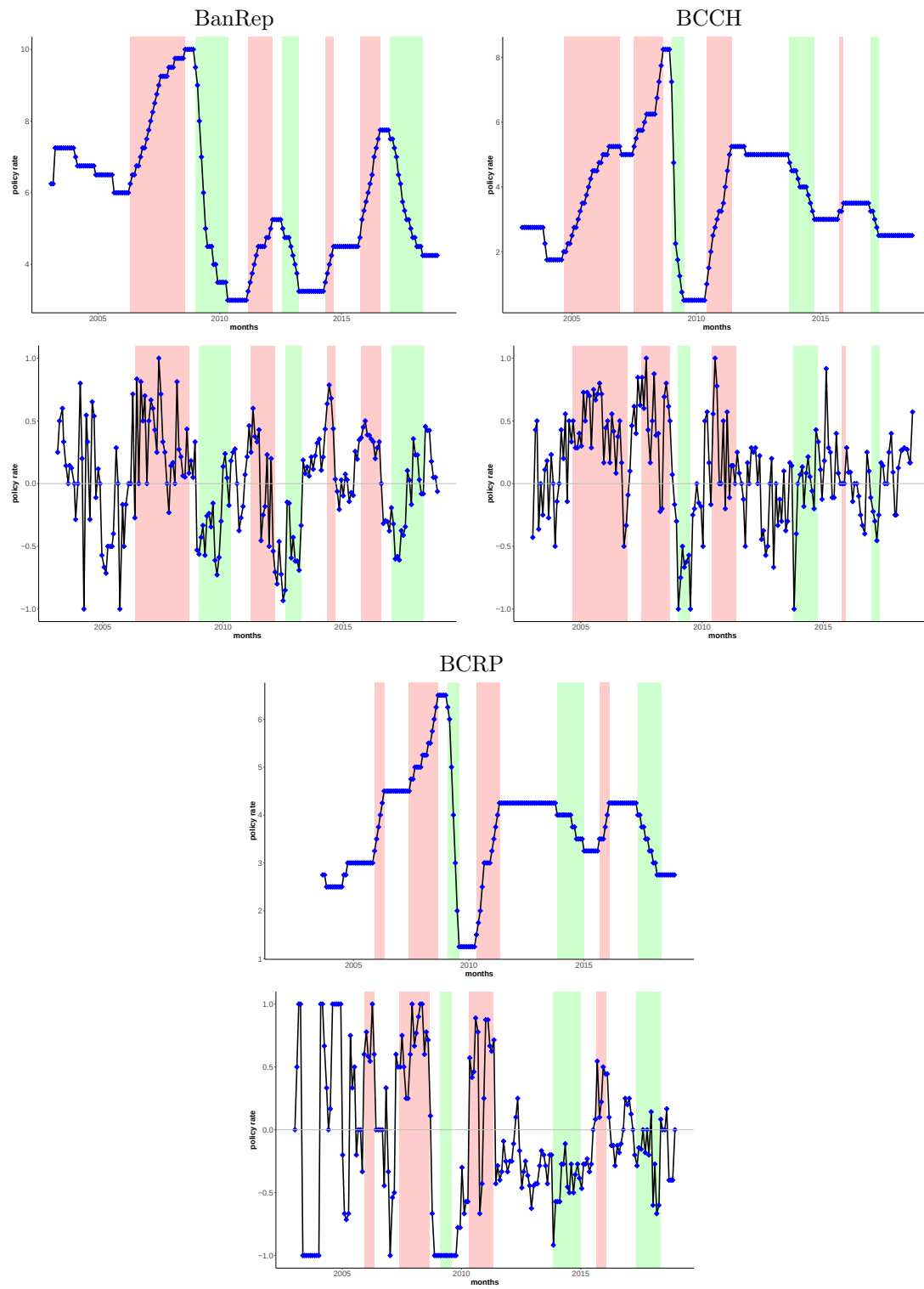
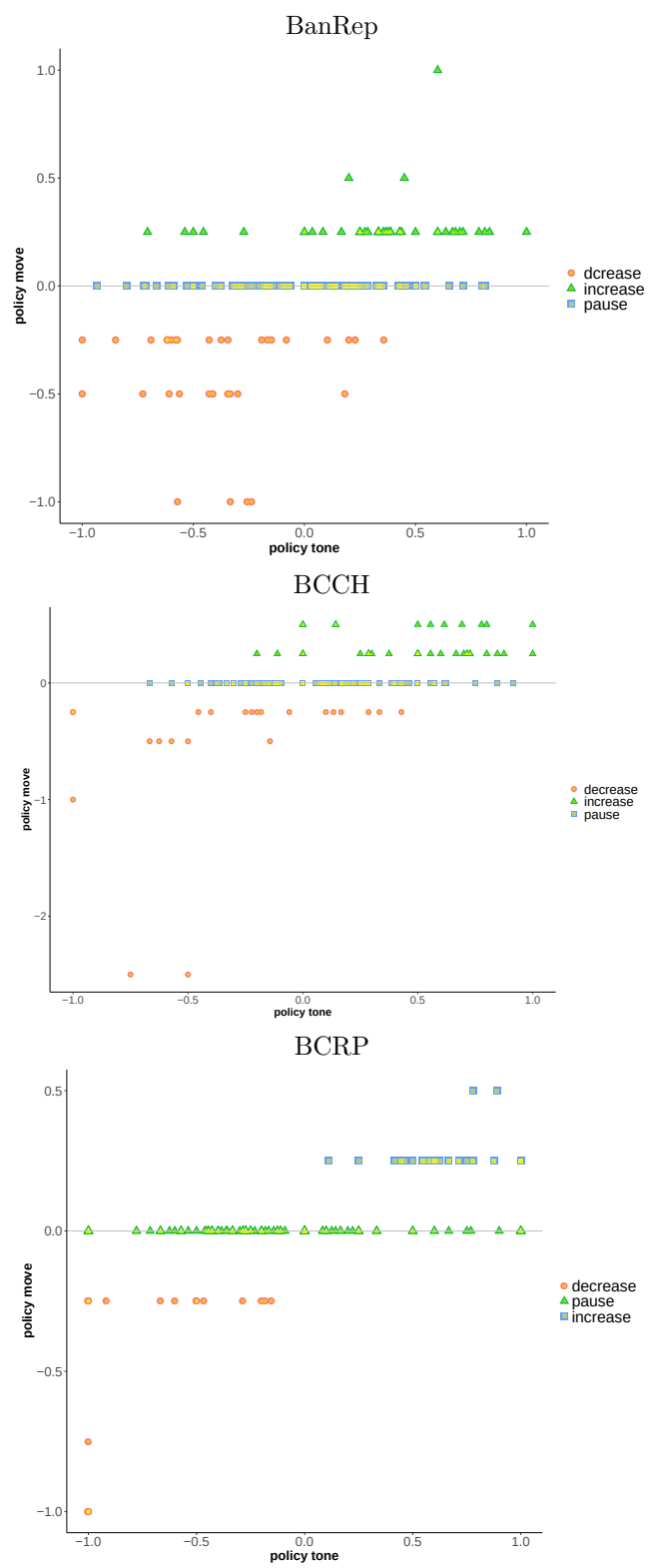


Figure A-2. *Tone and monetary policy stance*



Inflation expectations

Figure A-3. *Inflation expectations in Peru, Chile and Colombia*

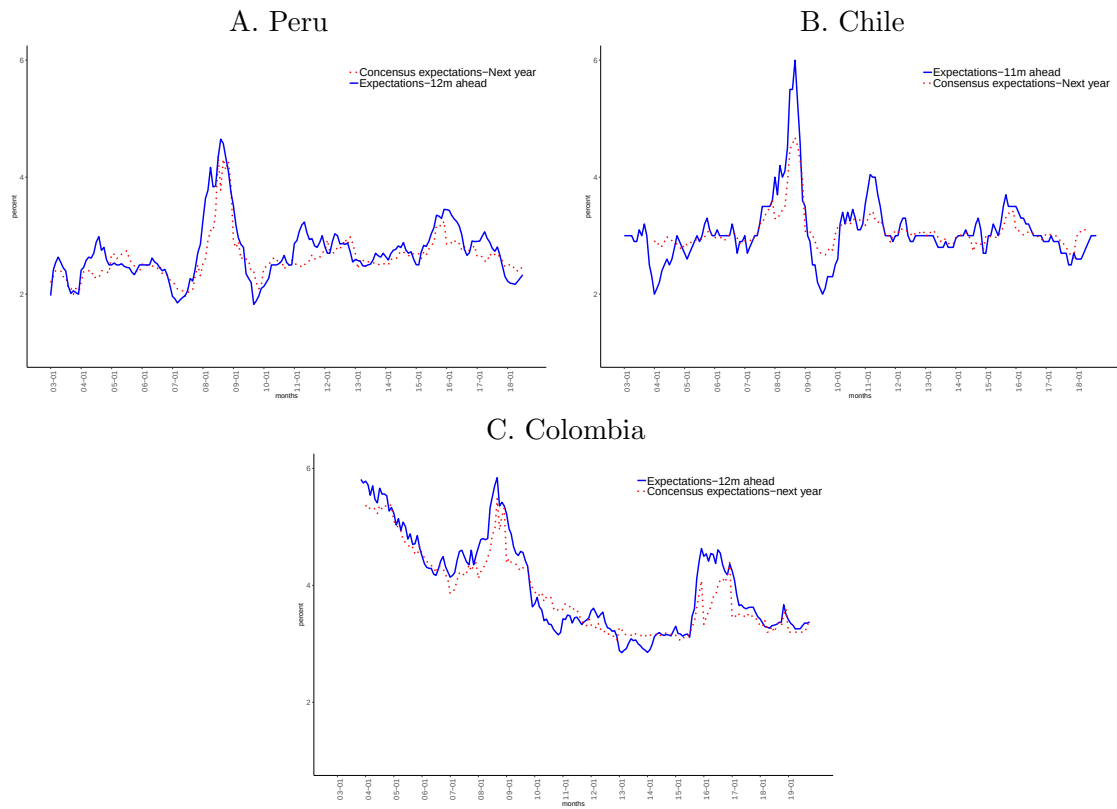


Figure A-4. *Inflation and inflation expectations in Peru, Chile and Colombia*

