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Narratives on inflation: evidence from the United States and South Africa

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Narratives on inflation: evidence from the United States and South Africa

Lovisa Reiche*

Abstract

This paper examines how consumers in the United States (US) and South Africa update their beliefs about unemployment and growth in response to inflation shocks. Using a novel experiment, I elicit both narratives and precise expectation updates. US consumers link inflation increases to supply shocks and disinflation to demand shocks, while South Africans associate inflation with general economic health. Higher-than-expected inflation raises perceived unemployment, reduces consumption and – in the US – increases informal borrowing without triggering higher wage demands. These patterns highlight the role of consumer narratives in shaping macroeconomic expectations, with implications for monetary policy, labour market behaviour and distributional outcomes, especially in emerging economies prone to supply-side shocks.

JEL classification

E24, E31, E71, J31

Keywords

Consumer inflation expectations, wage bargaining, emerging markets

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Experiment registered at the AEA RCT Registry: AEARCTR-0012206.

1. Introduction

Consumer surveys often reveal a negative correlation between inflation expectations and expectations of gross domestic product (GDP) growth, in contrast to professional forecasters (Candia, Coibion and Gorodnichenko 2020; Andre et al. 2022; Andre et al. 2025; Binetti, Nuzzi and Stantcheva 2024).[1] This pattern has been termed the 'supply-side narrative', as it aligns with cost-push shocks driving inflation. Because inflation expectations influence consumption and savings decisions (Bachmann, Berg and Sims 2015; Coibion, Gorodnichenko and Weber 2022; D'Acunto, Hoang and Weber 2022; Vellekoop and Wiederholt 2019), a counter-cyclical interpretation of inflation may prompt precautionary savings when high inflation is associated with adverse economic conditions (Candia, Coibion and Gorodnichenko 2020). Expectations that inflation will lead to higher unemployment may dampen wage bargaining, as workers anticipate higher risk of losing their jobs (Reiche and Maffei-Faccioli 2025). This helps explain the low expected pass-through from inflation to wages (Hajdini et al. 2023). These effects are particularly relevant in emerging economies, which are more exposed to supply-side shocks. However, less information is available on household expectations in this context. This study examines how consumers update their beliefs about unemployment and GDP growth in response to inflation surprises, and whether these updates could meaningfully affect labour market, consumption and investment behaviour.

I analyse novel experimental data from South Africa and the United States (US) collected between January and May 2024. My experiment is designed to elicit narratives as well as to examine how changes in inflation are linked to changes in people's expectations about macroeconomic variables such as GDP growth and unemployment and possible changes in their behaviour, such as the likelihood of requesting a higher wage, changing consumption or taking a loan. My method builds on the growing literature of survey experiments in macroeconomics (Coibion and Gorodnichenko 2025; Haaland, Roth and Wohlfart 2023). The goal of survey experiments is to establish a causal link between inflation expectations and other macroeconomic beliefs as well as possible behavioural responses. Three features

[1] See Figure A.1 in Annex A from Candia, Coibion and Gorodnichenko (2020).

distinguish this experiment from prior related work (Andre et al. 2022; Hajdini et al. 2023; Binetti, Nuzzi and Stantcheva 2024; Piccolo 2025):

1. *Cross-country setting*: The survey includes both South Africa and the US in a harmonised setting, offering new evidence on how consumers in middle-income countries link inflation to unemployment. This comparison is interesting and relevant given the greater reliance on wage bargaining and exposure to supply-side shocks in emerging economies. The experience these countries have with supply shocks may be instructive for advanced economies in a world where supply shocks driven by geopolitical tensions and climate change are becoming more common.
2. *Hypothetical inflation vignettes*: After eliciting prior forecasts, participants are randomly presented with hypothetical inflation shocks. This approach allows bidirectional shocks while maintaining treatment neutrality, avoiding confounds such as institutional trust, which could affect responses in experiments using central bank targets (Hajdini et al. 2023). This approach also isolates the effect of inflation magnitude on expectations rather than on specific events (Andre et al. 2022; Binetti, Nuzzi and Stantcheva 2024; Piccolo 2025).
3. *Continuous treatment*: Inflation shocks are randomly drawn from a uniform distribution, enabling estimation of interpretable cross-elasticities rather than mere directional effects.

I provide two novel insights. Firstly, narratives in the US are clearly asymmetric: down-side shocks are primarily linked to demand-side forces such as contractionary monetary policy and falling consumer demand, whereas upside shocks are attributed to supply-side forces such as supply chain disruptions, production costs and geopolitical tensions. In stark contrast, South African consumers predominantly associate any inflation deviation – up or down – with supply-side pressures such as unemployment, food prices and input prices. Secondly, higher inflation expectations causally increase unemployment and decrease job-finding expectations in both economies, with stronger effects in the US. Yet they do not have a sizeable effect on labour market behaviours. Instead, consumers in both economies react to inflation by consuming less.

The paper is structured as follows: section 2 introduces the setting and design of the surveys, section 3 describes and analyses the results, and section 4 concludes.

2. Data and methodology

2.1 Setting

I use experimental data from South Africa and the US collected between January and May 2024. South African participants were recruited via the MarkData syndicate survey and interviewed face-to-face in January and February 2024. The US sample was recruited via Prolific and completed an online questionnaire on Qualtrics in March and May 2024. While survey modes differ across countries, these methods align with common practices in their respective contexts: online surveys, such as the Michigan Survey of Consumers and the NY Fed Survey of Consumer Expectations, dominate in advanced economies, whereas face-to-face interviews typically yield higher-quality data in developing countries (Delavande 2023). The only large-scale household survey in South Africa (conducted by NielsenIQ for the Bureau of Economic Research (BER)) used face-to-face interviewing for most of the sample period (Reid, Siklos and du Plessis 2021), moving to telephone surveys during the COVID-19 pandemic.

The sample in both countries is representative of the working-age population (18–65), the subgroup for whom inflation and unemployment expectations are most economically relevant, as individuals in this group engage in wage bargaining and investment decisions. For South Africa, the sample is further restricted to respondents who have completed high school.[2]

At the time of the surveys, consumer price index (CPI) inflation and GDP growth were similar across countries (Figure 1), although South African unemployment was substantially higher. Inflation in South Africa has exceeded US levels since the 1980s, and at the time of the survey the SARB targeted inflation in the 3–6% range,[3] above

[2] The South African data are weighted to match the population on gender, race, age, province and educational attainment.

[3] The target was lowered to 3% in November 2025, with a 1% tolerance band.

the US target of 2% over the long run. Below, I summarise salient features of the macroeconomic and political contexts likely to have shaped respondents' perceptions.

2.1.1 South Africa

In early 2024, South Africa was approaching a general election. On 20 February, it was announced that the election was scheduled for 29 May 2024. Twenty-seven of the 1 027 surveyed participants were interviewed on or after the date of the announcement. The governing African National Congress (ANC) subsequently lost its parliamentary majority, reflecting widespread public dissatisfaction.

In Q1 2024, overall unemployment in South Africa was 32.9%, with youth unemployment reaching 45.5% (Stats SA 2024), disproportionately affecting individuals without a high school education, most of whom are black South Africans. Other prominent topics in the national media included inequality, rising crime rates, illegal immigration, corruption, and access to housing and utilities – about 12% of South Africans live in informal settlements, and in recent years access to drinking water has actually been declining (Stats SA 2025).

Another notable news item was energy supply constraints. The state-owned utility Eskom implemented widespread rolling power cuts ('load shedding') totalling 6 947 hours in 2023 – roughly 289 days – with daily real costs estimated at R240.12 million (nominal R364.13 million), according to the SARB (2024). Such persistent supply-side constraints are likely to shape consumer narratives about inflation and economic risk.

2.1.2 United States

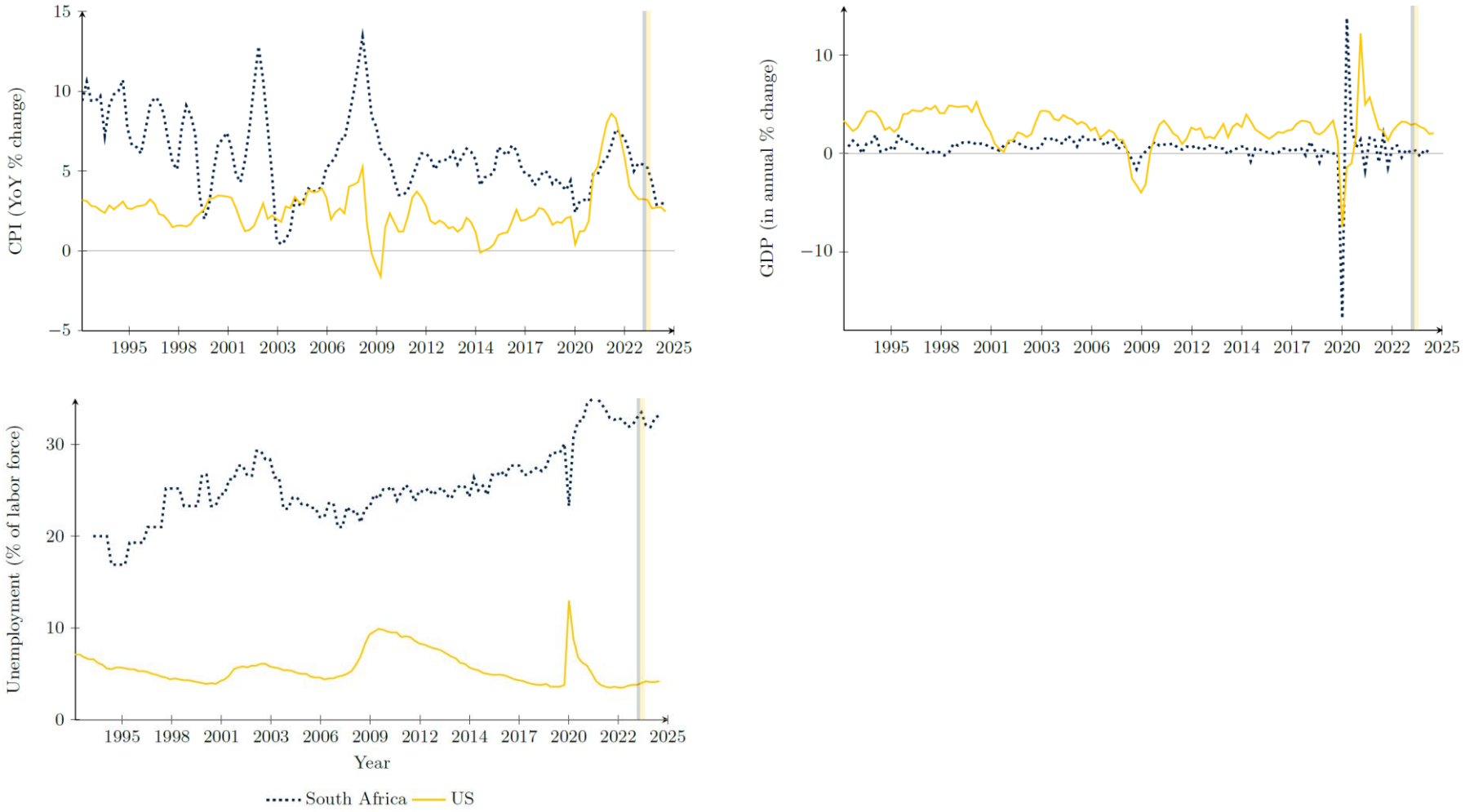
The US survey occurred during the run-up to the 2024 presidential election, with Joe Biden (Democrat) and Donald Trump (Republican) as the main candidates. At the time, prominent voter concerns included health care, national security and immigration.[4] Economic issues were less prominent in the survey period but received attention in the June 2024 presidential debate. Policy proposals included increased tariffs (advocated by Trump) and tax adjustments for high-income individuals (proposed by Biden). The

[4] Source: CivicScience, 26–28 September 2023.

pending expiration of the 2017 Tax Cuts and Jobs Act further framed public discourse around inflation, employment and fiscal policy.

Together, these contexts provide a backdrop for interpreting how consumers in each country link inflation to supply- or demand-side narratives and expectations about growth, unemployment and consumption behaviour. Figure 1 shows the historical paths of inflation, unemployment and GDP growth in both countries as well as during the relevant periods of the survey.

Figure 1: Inflation, GDP growth and unemployment in the US and South Africa



Note: Blue shaded area is the experimental period in South Africa; yellow shaded area is the experimental period in the US.

Source: South Africa: SARB; US: FRED, latest observation: Q2 2025

2.2 Experimental design

Before participating in the experiment, participants signed a consent form and were provided with general information about the survey and the principal researcher. They were informed that there are no wrong answers and were encouraged to truthfully report their views. All information can be found in Annex D. A commitment request was included in the US online survey, as recommended by Qualtrics, the survey platform (Geisen 2022). Participants provided their demographic details not through the platform but separately, before they started the survey.[5] For Prolific, respondents record demographics when signing up to the platform. In the MarkData syndicate survey, demographics are recorded when participants register as part of the syndicate.

The main survey starts with baseline beliefs about inflation, unemployment and GDP growth. These are elicited as point forecasts over the 12-months-ahead horizon.[6] All participants are given definitions of the three variables.[7] For the US, there is evidence that participants understand the concept of inflation well, and asking for the "general price level" instead yields less precise responses (Bruine de Bruin et al. 2017; Bruine de Bruin et al. 2010). Informal evidence from the BER has confirmed this for South Africa, too (Pienaar 2018). Further, the survey elicits expected behaviours by asking the percentage chance that the respondent or other members of their household would ask for a higher wage, accept a lower wage, increase hours worked, increase or reduce consumption of goods and services, or take a loan informally (from family or friends) or formally (from a bank). Asking for percentage chances has proved effective in the context of developing countries (Delavande 2023); an example for job finding probabilities with a similar wording can be found in Delavande and Zafar (2019). Prior beliefs are used as reference points, but respondents are only reminded of their initial

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5 Age, income (household gross and net, personal gross and net), highest educational qualification, gender, race (black, Coloured, Indian, white) and province.

6 For unemployment: in 12 months

7 "Inflation is the rate at which the overall prices for goods and services change over time. If you believe overall prices will decrease, please enter a negative value."

"The unemployment rate is the percentage of adults who want to work and are capable of working but do not have a job and are looking for one."

"The GDP growth rate measures by how much a country's economy is getting bigger, i.e. is producing more goods and services, in a given year. If you expect that the GDP falls, please enter a negative value."

inflation forecast. Respondents receive no numerical anchor before their prior beliefs are elicited.

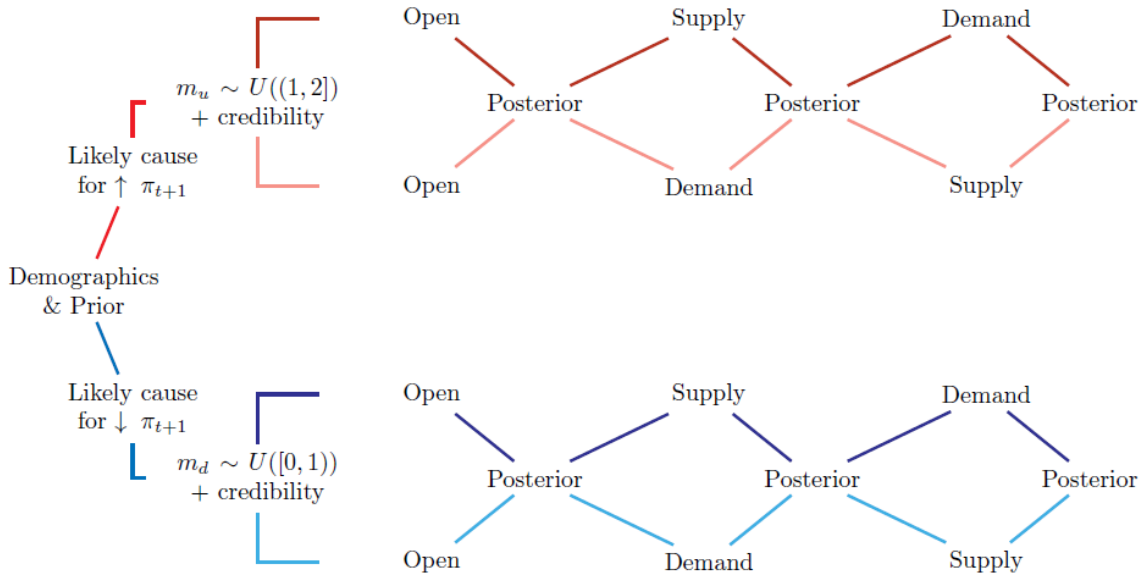
Next, I use hypothetical vignettes to create exogenous variation in inflation expectations. Hypothetical vignettes have become more prominent in the literature on expectation formation in recent years (see, for instance, Andre et al. 2025; Andre et al. 2022; Fuster and Zafar 2023; Piccolo 2025). Similar to standard information provision experiments (Haaland, Roth and Wohlfart 2023), hypothetical vignettes create exogenous variation in inflation expectations and test their causal impact on unemployment and growth expectations as well as anticipated behaviour. Reported values in response to hypothetical vignettes are typically lower than in classical information provision or incentivised experiments, so my results should be treated as lower bound to the estimated magnitude. I ask participants how credible[8] they rate the scenario they are given, but I find no difference in my results when removing observations that rate the scenario as less likely (Table B.6 in Annex B). On the other hand, hypothetical vignettes allow me to control the magnitude of inflation changes in relation to the initial prior and test for the role of different shock sources for each survey respondent. Further, they circumvent the problem of aligning prior and posterior questions without asking the respondent the same question twice and confusing them.

Participants are randomly allocated to one of two treatment arms, which will be labelled $\pi_{t+1} \uparrow$ and $\pi_{t+1} \downarrow$. All are summarised in Figure 2, where $\pi_{t+1} \uparrow$ indicates the upper arm, in which inflation expectations are increased, and $\pi_{t+1} \downarrow$ the lower arm, in which reference expectations are decreased. First, participants are asked what they believe will be the most likely reason inflation would be higher/lower than their initial forecast. This type of 'big picture' question can capture first-order considerations (Ferrario and Stantcheva 2022). Then, each participant in $\pi_{t+1} \uparrow$ randomly draws a multiplier $m_u \sim U(1, 2]$, and equivalently each participant in $\pi_{t+1} \downarrow$ randomly draws a multiplier $m_d \sim U[0, 1)$. Hence, for arms in $\pi_{t+1} \uparrow$ the scenario strictly increases expectations by no

[8] Credibility refers to the information treatment, not the credibility of the central bank.

more than 100% of the initial value, while for arms in $\pi_{t+1} \downarrow$ the scenario strictly reduces to no less than 0.[9]

Figure 2: Experimental design



Note: Respondents are randomised into one of four treatment arms after demographics and prior expectations are elicited. They are first randomly allocated in the inflation increasing (in red) or decreasing (in blue) arm, after which they draw a multiplier *m* from a uniform distribution that increases or decreases their prior expectation. They are then presented with three different possible causes for such change and asked about posterior expectations and behaviour after each. The first scenario is always open – that is, unspecified. The latter two are one supply- and one demand-side shock, where the treatment arm determines the order. Those in the darker-coloured arms receive supply first, those in the lighter-coloured arms receive demand first.

The factors are then used in three hypothetical scenarios: open, supply and demand. The first scenario is always open; for the latter two the order is determined randomly. All scenarios are written out below.

> ***Scenario 1: Open***
>
> *You said that you believe inflation in South Africa/the US over the next 12 months will be [Prior]%. Assume now that instead, inflation in South Africa/the US over the next 12 months will be [$m_{u/d}$ × Prior]%.*

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[9] Due to the asymmetric nature of the intervention around zero, exceptions must be made for those who expect deflation. Individuals in $\pi_{t+1} \downarrow$ with deflationary expectations are assigned a multiplier randomly drawn from $m_d \sim U(1, 2]$; in reverse, those in $\pi_{t+1} \uparrow$ randomly draw from $m_u \sim U[0, 1)$. Under this correction, I maintain the interpretation of the groups as 'decreasing' and 'increasing' expectations respectively. The share of respondents who expect deflation is small in the US (< 5%, in line with Gorodnichenko and Sergeyev 2021) but much larger in South Africa (23.4%), reflecting a much wider distribution of prior expectations.

Scenario 2 or 3: Supply

Assume now that the cause of the lower/higher inflation is a(n) decrease/increase in the production costs of firms.

Scenario 2 or 3: Demand

Assume now that the cause of the lower/higher inflation is a(n) decrease/increase in government spending.

Each participant answers the same posteriors for each scenario. I start with the two remaining macro variables: expected unemployment (in 12 months) and expected growth (over the next 12 months). The survey concludes with the same behavioural responses under the given scenario. My design using hypothetical vignettes avoids the issue of confusing participants by asking the same questions twice, as they know they respond under a different, hypothetical, scenario. This is designed to directly elicit consumers' beliefs about the connection between the variables. Using random values for the multiplier in the scenarios may help to identify whether the implied relationship is linear – an implicit assumption in previous information provision experiments. The elicitation is not incentivised due to logistical constraints. However, Haaland, Roth and Wohlfart (2023) argue that incentives have little effect on survey beliefs when the domain is non-political and it is not costly to respond truthfully. Finally, individuals are asked if they are members of a workers union. The precise wording can be found in Annex D. A summary of all elicited beliefs and demographics can be found in Table 1.

The average response time was only recorded for the online survey, which took about 15 minutes (868 seconds). I exclude responses below 3 minutes (21 participants) to exclude inattentive participants. No participants below this cutoff completed the full survey.

Table 1: Summary of elicited beliefs and demographics

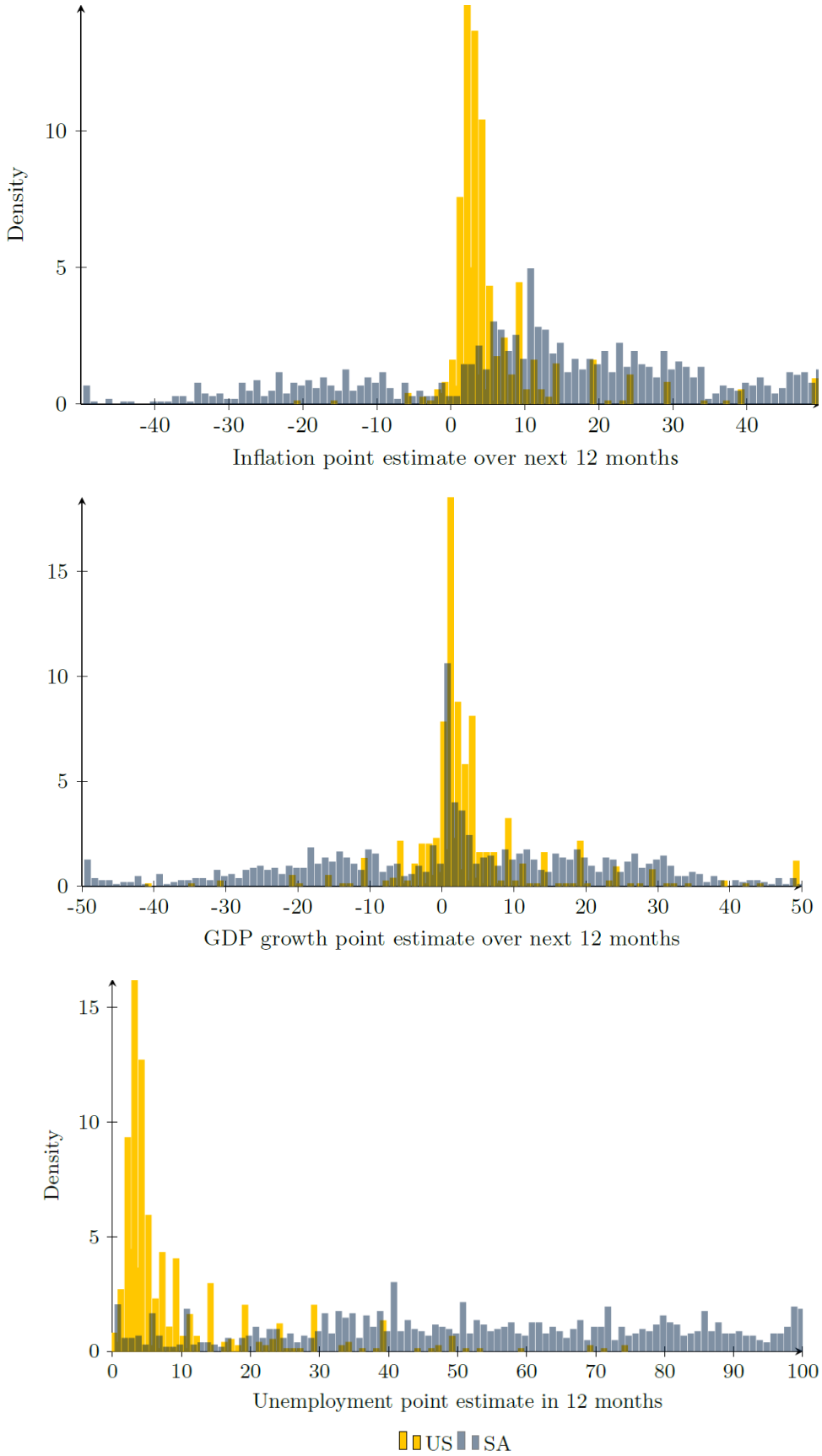
Demographics	Prior beliefs		Posterior beliefs	
Age	Inflation	Ask higher wage	Unemployment	Ask higher wage
Gender	Unemployment	Accept lower wage	GDP growth	Accept lower wage
Race	GDP growth	Increase hours		Increase hours
Education		Increase consumption		Increase consumption
Hh gross income		Reduce consumption		Reduce consumption
Employment		Take loan (informal)		Take loan (informal)
Region		Take loan (formal)		Take loan (formal)
Union				

3. Results

3.1 Prior expectations

Before analysing the effects of the treatment, I start by showing the prior expectations. Figure 3 shows the unweighted distributions of the three macroeconomic variables in both countries: inflation, unemployment and GDP growth. For all variables the distributions between the US and South Africa differ significantly, despite the same question wording. The only difference between the two settings is that the South African survey is face-to-face. US consumers are more closely clustered around the current value of the respective macroeconomic indicator. For inflation expectations, the prior expectations are similar to those reported in other surveys in the US or Europe (D'Acunto, Malmendier and Weber 2023; Weber et al. 2022). As has been observed before, there are spikes at rounded values (Binder 2017; Reiche and Meyler 2022), which indicate some level of uncertainty. In South Africa the distribution is more uniform for all four variables. There is less evidence about household survey expectations in South Africa than in the US. In a BER survey used in Reid and Siklos (2022) and Reid, Siklos and du Plessis (2021), household inflation expectations appear dispersed and with a heavy right tail, but more centred around the observed value than in the survey at hand. However, in the BER survey respondents are primed with historical values, which may have a sizeable effect on the distribution of household expectations (Reid and Siklos 2022). Further, the data used in these papers are only until 2016, such that the effect of high inflation after the pandemic is not captured.

Figure 3: Histograms of prior expectations



Note: Histograms of point estimates (unweighted) for the US in yellow and for South Africa in blue-gray.

The dispersion in prior beliefs in both countries is related to household characteristics. Table 2 summarises prior beliefs about inflation (over the next 12 months), unemployment (in 12 months) and GDP growth (over the next 12 months) by household group. Large differences are present that systematically relate to certain characteristics. For inflation expectations, women have higher forecasts in both countries (Jonung 1981; Bryan and Venkatu 2001; D'Acunto, Malmendier and Weber 2021; Reiche 2025). Further, there are differences in expectations by race, with black consumers having the highest forecasts in the US by a large margin, while the differences are less stark in South Africa. Age has a differential effect in the US and South Africa. While in the US younger participants have higher inflation expectations, the inverse is true in South Africa. The same patterns hold for unemployment and growth expectations, highlighting the need for causal identification when investigating the link between inflation and unemployment or growth expectations, as correlations may be driven by these types of demographic biases. The demographic differences may be explained by heterogeneous experiences in the economy, which have been shown to shape individual beliefs (Malmendier and Nagel 2016; Weber et al. 2022; D'Acunto, Malmendier and Weber 2023).

Table 2: Summary statistics of prior beliefs by household group

	Inflation			Unemployment			GDP growth			
Group	Mean	Median	SD	Mean	Median	SD	Mean	Median	SD	Obs.
United States										
All	6.74	4	10.88	8.74	5	10.68	4.71	2.4	12.41	739
Age										
< 35 years	8.86	4	14.1	11.41	5	13.23	6.68	3	16.84	246
35 to 54 years	6.84	4	10.87	8.34	5	10.31	4.1	2.1	9.89	245
≥ 55 years	5.01	3.6	5.54	6.62	4	7.61	3.67	2.3	9.24	268
Sex										
Man	6.07	3.7	9.61	7.66	4.5	9.2	4.82	2.5	12.57	367
Woman	7.69	4	11.91	9.79	5	12.03	4.79	2	12.56	366
Race										
Asian	6.81	3.95	10.67	7.72	5	7.4	6.83	3.6	15.72	54
Black	14.83	5	22.89	17.57	6	19.75	13.21	4	22.81	85
Mixed	5.18	4	4.82	8.61	5	8.74	4.23	2	10.89	79
White	5.87	4	8.02	7.32	4.5	8.55	3.23	2	9.68	489
South Africa										
All	11.51	12	22.26	55.28	54	27.59	1.72	2	22.36	1026
Age										
< 35 years	10.29	11	22.42	53.74	51	28.03	-0.45	2	22.89	431
35 to 54 years	11.54	12	21.75	55.32	54	27.32	2.46	2	21.23	519
≥ 55 years	18.14	22.5	23.86	63.61	69	25.74	8.57	17	25.03	76
Sex										
Man	10.86	11	21.72	54.7	53	27.14	2.24	2	21.79	453
Woman	12.02	12	22.69	55.75	55	27.96	1.31	2	22.82	573
Race										
Asian	17.58	23	24.64	59.96	59.5	23.47	18.48	21	18.56	24
Black	11.13	11	22.52	55.95	55	28.71	0.45	1.5	23.16	715
Mixed	13.68	14	20.73	54.86	53	26.12	5.79	4	17.9	144
White	10.18	12	21.98	51.63	52.5	23.64	1.11	7	21.37	143

3.2 Inflation narratives

Before assigning inflation scenarios, consumers are randomly allocated to either the increasing or decreasing inflation arm and asked to report the most likely causes for inflation to be higher or lower than initially anticipated. Respondents provided open-text answers capturing the shocks they associate with changes in inflation. To systematically analyse these responses, I apply a series of preprocessing steps in R using the `tm` and `tidytext` packages.

First, all text is converted to UTF-8 encoding to standardise character representations. I then remove numbers, punctuation and stop words (using the SMART dictionary), convert all text to lowercase and strip excess white space. Words are stemmed using the Porter stemming algorithm to consolidate related terms such as “economic”,

“economy” and “economical” into the common stem “econom”. I further harmonise the vocabulary by mapping specific stems to canonical forms to ensure consistency (e.g. “rais”, “rise” “high”→ “increas”; “low”, “cut”, “reduc” → “decreas”). The order of words is ignored such that “food price” and “price food” are pooled. To provide additional interpretability, I assign colours to words based on their economic narrative: supply-side factors (related to production costs, corporate greed and supply chain disruptions) in orange, external/global factors (e.g. “war”, “covid”, “trade”) in red, demand-side factors (related to monetary or fiscal policy and consumer demand) in dark blue and government/policy (e.g. “president”, “Trump”, “tax”) in light blue, with remaining words in gray. The classification resembles that of Andre et al. (2025).

After preprocessing, I calculate the number of words per response as a measure of response elaboration. The median word count is 2 in South Africa and 3 in the US, with some respondents providing up to 85 words. Elaboration does not vary systematically across treatments: in both countries, participants asked about inflation increases produce responses of similar median length and range as those asked about decreases. I also conduct robustness checks using word count as a proxy for attention (Smyth et al. 2009) and found no meaningful differences in results between shorter and longer responses (Table B.5 in Annex B).

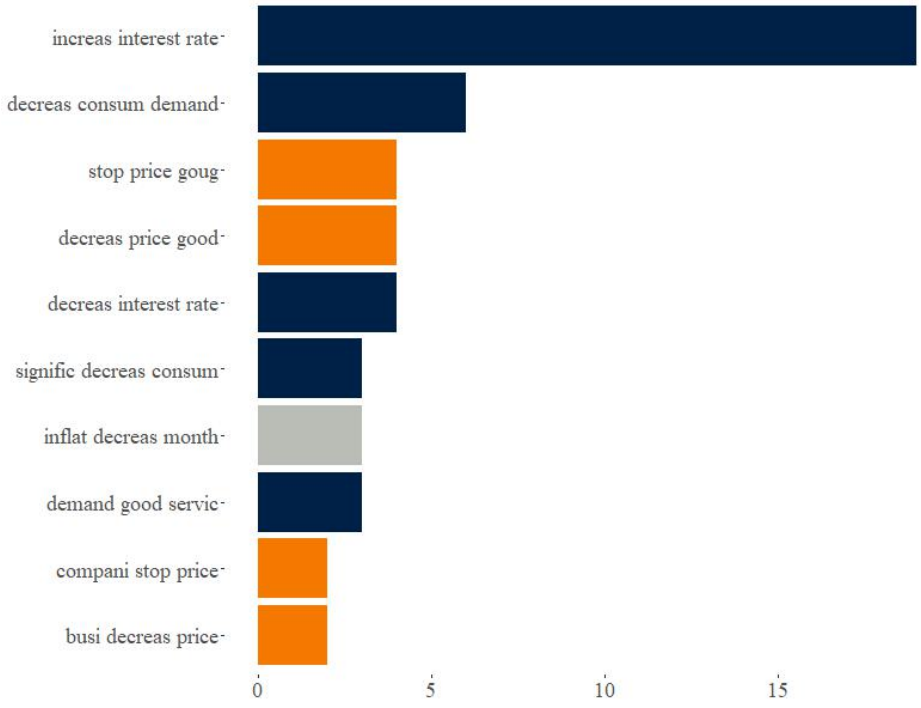
Importantly, the fact that the South African data were collected face-to-face may have narrowed what could otherwise have been an even larger cross-mode gap in response elaboration. Earlier work comparing face-to-face and web surveys finds that web respondents tend to satisfice more often – for example, producing higher “don’t-know” rates, more item nonresponse and less differentiation on rating scales – than interviewer-administered respondents (Heerwegh and Loosveldt 2008). If South African respondents had been surveyed online instead of in person, their responses might have been even shorter or less elaborate (Antoun and Presser 2024); thus, the in-person mode likely moderated a mode-induced reduction in response quality. Given this, the low median word counts in our data – while modest – are arguably more comparable across countries than they might appear at first glance, as the face-to-face mode in South Africa may have helped counteract potential satisficing effects relative to a hypothetical online-only comparison.

Examining the content of the most frequent n-grams provides insights into how respondents in each country perceive the drivers of inflation. The choice of n-gram length is guided by the median word count of the responses. Because South African responses are very short, I focus on bigrams, which effectively capture the most informative two-word combinations without overfragmenting the sparse text. In contrast, US responses were slightly longer, so I show trigrams to preserve richer three-word phrases that convey more context and nuance. This approach ensures that I extract meaningful patterns from both data sets while respecting the brevity of the responses. Figures 4a and 4b show the most frequent trigrams for US responses, while Figures 4c and 4d show the most frequent bigrams in South Africa. Additional word clouds are provided in Figure A.2 in Annex A. Both methods are useful tools for visualising responses to open-ended survey questions and understanding themes in consumers' answers (Ferrario and Stantcheva 2022).

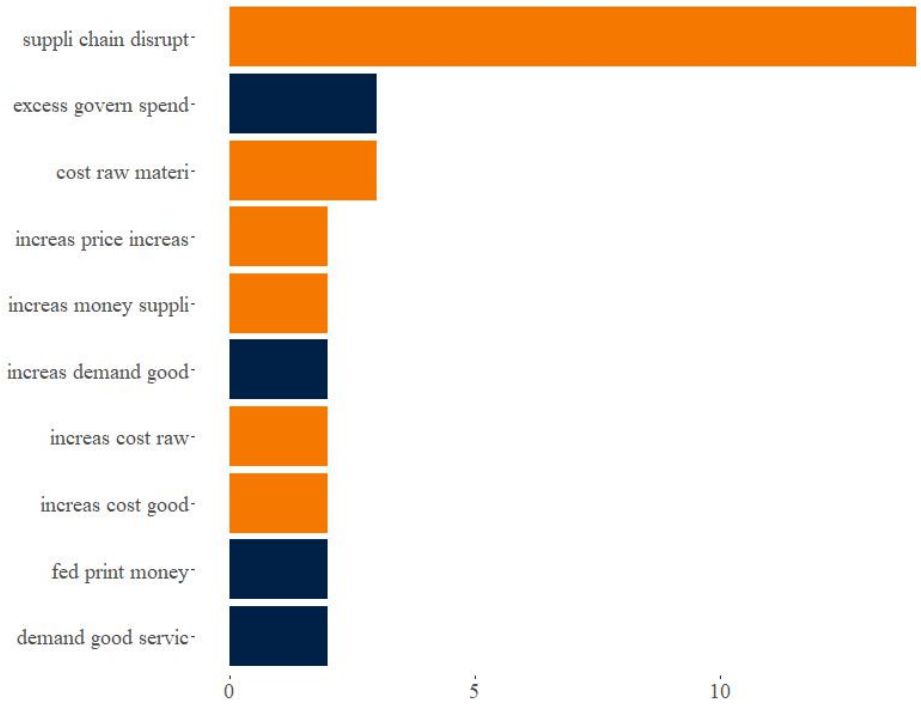
Figure 4: N-grams for the inflation changes

Trigrams for the US

(a) $\pi_{t+1} \downarrow$

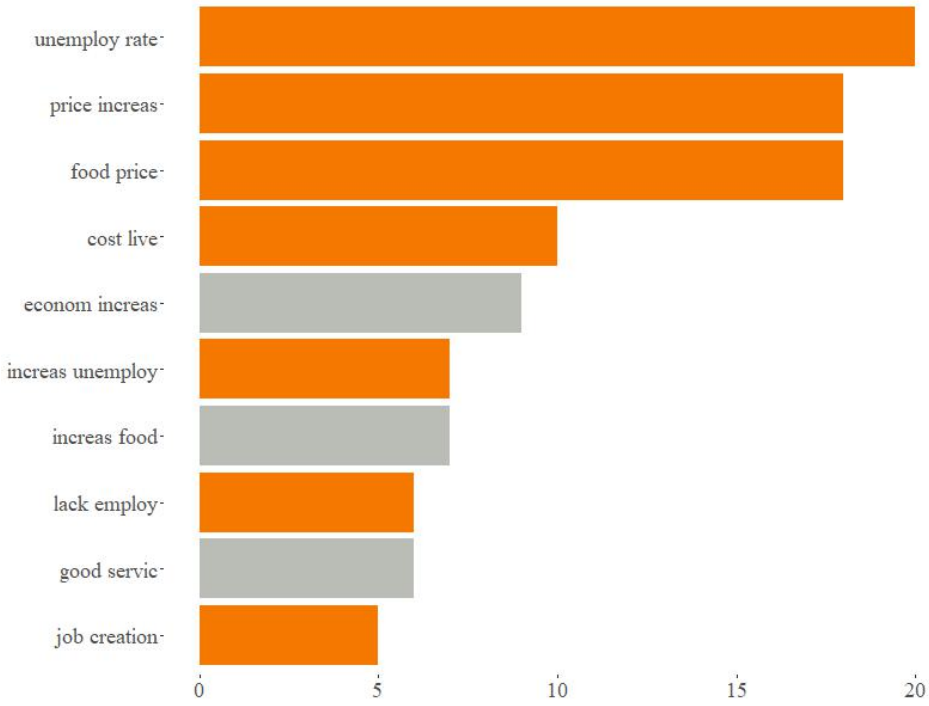


(b) $\pi_{t+1} \uparrow$

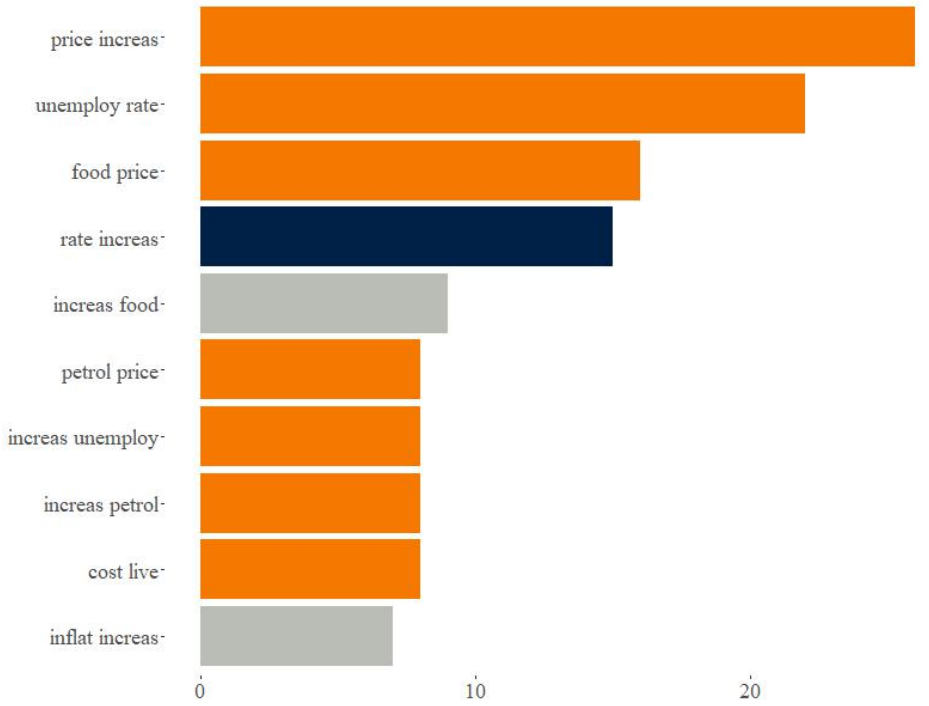


Bigrams for South Africa

(c) $\pi_{t+1} \downarrow$



(d) $\pi_{t+1} \uparrow$



Note: N-grams based on word-combination counts to the question "What do you think would be the most likely cause for inflation to be lower/higher than your initial forecast?"

The US responses reveal a clear distinction between perceived causes of rising and falling inflation. For scenarios where respondents anticipated lower-than-expected inflation, the single most frequent trigram was “increase interest rate”, followed by “decrease interest rate” and “decrease consumer demand”. These trigrams are all associated with demand-side factors, indicating that US consumers primarily attribute lower inflation to monetary policy interventions or reductions in consumption. In contrast, when respondents anticipated higher-than-expected inflation, the most frequent trigrams were “supply chain disruption”, “war middle east” and “product cost increase”, all of which are supply-side factors. This asymmetry suggests that US respondents tend to conceptualise inflation changes in a cause-specific manner: demand factors explain disinflation, while supply factors drive inflation. These findings are important in the context of the literature on inflation narratives. Andre et al. (2025) show that US consumers have a supply-side narrative of the latest inflation surge. This is confirmed in my experiment. However, the asymmetry between increases and decreases is a novel finding and is important in the context of policymakers communicating inflation targets and projections to the public.

In South Africa, the pattern is less differentiated. Across both inflation increase and decrease scenarios, the three most frequent bigrams were “unemploy rate”, “price increase” and “food price”, all reflecting supply-side concerns. While this indicates a consistent focus on supply-side constraints, the lack of differentiation between up- and down-inflation scenarios suggests that South African respondents may perceive inflation more homogeneously, or that the brevity of responses limits the expression of nuanced causal reasoning. In other words, consumers in South Africa may recognise persistent supply pressures as a general driver of inflation but do not systematically attribute disinflation to distinct demand-side forces. Unemployment is highlighted as the most important factor for the health of the economy and is thus seen as important in affecting inflation.

Taken together, these patterns highlight an interesting cross-country contrast in inflation narratives. US respondents exhibit context-specific attribution, assigning demand-side factors to inflation decreases and supply-side factors to increases. South African respondents, by contrast, appear to focus primarily on supply-side pressures irrespective of the direction of inflation, reflecting either a perception of structural

constraints or the difficulty of capturing nuanced causal distinctions in very short responses. In the next section, I show in more detail how beliefs about (dis)inflationary shocks feed into beliefs about the labour market and the wider economy.

3.3 Responses to (dis)inflationary shocks

The experimental design allows for a precise estimation of how inflationary shocks shape consumer beliefs about unemployment and GDP growth. In the primary analysis, I focus on the first treatment, the *open scenario*, in which the cause of inflation is unspecified. The supply- and demand-specific scenarios are analysed as robustness checks, providing complementary evidence.

To quantify belief updating, I compute the percentage change between prior and posterior hypothetical expectations for each variable *k*:

$$\%\Delta k = \frac{(\text{hypothetical}_k - \text{prior}_k)}{\text{prior}_k}$$

Panel A of Table 3 presents the average effects of inflation increases and decreases on expectations relative to respondents' priors in both countries. There are systematic asymmetries in belief updating across countries. In both South Africa and the US, higher-than-expected inflation leads to significantly higher unemployment expectations, consistent with a cost-push or supply-side interpretation of inflation. Respondents are relatively unresponsive to inflation below expectations, suggesting that upside shocks dominate consumers' attention when it comes to unemployment. The magnitude of the response is substantially larger in the US, reflecting greater sensitivity to inflation surprises in a context of historically lower unemployment and tighter labour markets.

GDP growth expectations exhibit country-specific patterns. In the US, respondents revise growth upwards only when inflation is below expectations, while growth forecasts remain largely unchanged in response to positive inflation shocks. This suggests a decoupling of expected growth from high inflation, potentially reflecting the narrative that inflation increases are driven by supply-side constraints rather than weak demand. In contrast, South African consumers lower growth expectations regardless

of whether inflation rises or falls, indicating a more pessimistic or generalised negative outlook, consistent with structural economic constraints.

Table 3: Average effects in the unspecified scenario

	US		South Africa	
	π_{t+1} ↑	π_{t+1} ↓	π_{t+1} ↑	π_{t+1} ↓
Panel A: Macroeconomic variables				
Unemployment	0.29***	0.01	0.08***	0.03
	(0.03)	(0.02)	(0.03)	(0.03)
GDP growth	-0.01	0.14***	-0.39***	-0.27***
	(0.04)	(0.04)	(0.09)	(0.09)
Panel B: Percentage chance of economic behaviours				
Ask higher wage	0.32***	0.18***	0.23***	0.24***
	(0.08)	(0.06)	(0.05)	(0.05)
Accept lower wage	0.21***	0.19***	0.16***	0.21***
	(0.03)	(0.04)	(0.03)	(0.04)
Increase consumption	-0.19***	0.36***	0.12***	0.19***
	(0.03)	(0.05)	(0.03)	(0.03)
Decrease consumption	0.26***	-0.09***	0.17***	0.12***
	(0.03)	(0.02)	(0.03)	(0.03)
Increase hours worked	0.16***	0.01	0.24***	0.15***
	(0.03)	(0.02)	(0.04)	(0.04)
Take informal loan	0.12***	-0.07***	0.15***	0.15***
	(0.03)	(0.03)	(0.03)	(0.04)
Take formal loan	0.09**	0	0.14***	0.09***
	(0.04)	(0.03)	(0.03)	(0.03)
N	884		1 026	

Note: The table shows the average effect of being in the increasing and decreasing inflation treatment arm on the beliefs about a respective variable. Huber robust regressions. Standard errors in parentheses below. *p<0.1; **p<0.05; ***p<0.01.

Behavioural responses align closely with these macroeconomic expectations. In the US, respondents anticipate reducing consumption when inflation rises and increasing it when inflation falls, reflecting standard precautionary responses (Candia, Coibion and Gorodnichenko 2020). The consumption response is also reflected in attitudes to borrowing: informal and formal loan-taking increases with high inflation and decreases when inflation is low. Labour market behaviours are more nuanced: hours worked increase following positive inflation shocks, potentially reflecting an attempt to maintain real income in the face of higher prices, while no reduction occurs for negative shocks. Interestingly, the likelihood of both asking for a higher wage and accepting a lower

wage rises with inflation shocks in both directions. This may reflect heightened uncertainty, leading consumers to simultaneously entertain multiple, even seemingly contradictory, behavioural responses. In South Africa, the behavioural patterns are less economically intuitive: all reported percentages increase regardless of the direction of the inflation shock. This could reflect either heuristic-driven responses, measurement noise or the prominence of structural constraints that decouple expectations from standard rational-choice predictions. Distinguishing between these drivers is not possible given the data at hand. I will revisit the behavioural response by estimating elasticities to show that these inconsistent results are not statistically significant – other than the consumption response, which is in line with what is observed in the US.

Overall, the results highlight the asymmetric and context-dependent ways in which consumers update expectations and adjust behaviour in response to inflationary shocks, with stronger and more theoretically coherent responses observed in the US.

Further, the experimental design allows me to estimate the effect of inflation expectations on expectations about macroeconomic variables and economic behaviours for each scenario in elasticity form. Denote the percentage change in inflation expectations of observation *i* in country as $(1 - m_{ic})$, where m_{ic} is the factor by which prior expectations are multiplied in the experimental design, and let $(\pi_{t+1}\uparrow)_{ic}$ be a dummy equal to 1 if participant *i* is assigned to the increasing-inflation scenario.

I estimate the *average inflation elasticity of variable k* with respect to increasing and decreasing inflation expectations using the following pooled specification with a US indicator and interaction terms:

$$\%\triangle k_{ic} = \beta_0 + \beta_1(\pi_{t+1}\uparrow)_{ic} + \beta_2(m-1)_{ic} + \beta_3[(m-1)_{ic} \times (\pi_{t+1}\uparrow)_{ic}] + 1\{c = US\}\left[\gamma_0 + \gamma_1(\pi_{t+1}\uparrow)_{ic} + \gamma_2(m-1)_{ic} + \gamma_3[(m-1)_{ic} \times (\pi_{t+1}\uparrow)_{ic}]\right] + \varepsilon_{ic} \quad (1)$$

Here, β_0 captures the percentage change in *k* associated with a 1% *decrease* in inflation expectations for South Africa, while $\beta_0 + \beta_1$ gives the percentage change in *k* associated with a 1% *increase* in inflation expectations. The interaction terms with

1{c = US} allow these effects to differ for US respondents. The estimates represent the average elasticity across observations. Because treatment assignment is exogenous, demographic controls are not required.[10] I include robust specifications separated by country in Table B.1 in Annex B. The interaction specification is chosen as the main specification to allow for mode effects to be captured by the US dummy.

3.3.1 Macroeconomic expectations

Table 4 summarises the regression results for regression 1. I find that on average increasing inflation expectations are associated with a significant increase in unemployment expectations and a decrease in job-finding expectations in both countries. However, the effects are stronger in the US. The design also allows me to separately estimate the effect of increasing and decreasing inflation. I find that the effects on unemployment in the US are driven only by the increasing inflation scenario, while the results on job finding are driven by the decreasing inflation scenario. I visualise the effects in Figure 6. The binscatter results of the experimental data suggest that the linear relationship with the asymmetry around the increasing and decreasing treatment arm is a good approximation. In both countries, there is no evidence of inflationary beliefs affecting expected GDP growth.

[10] Different demographic groups may exhibit different effect sizes; this is explored in the next section.

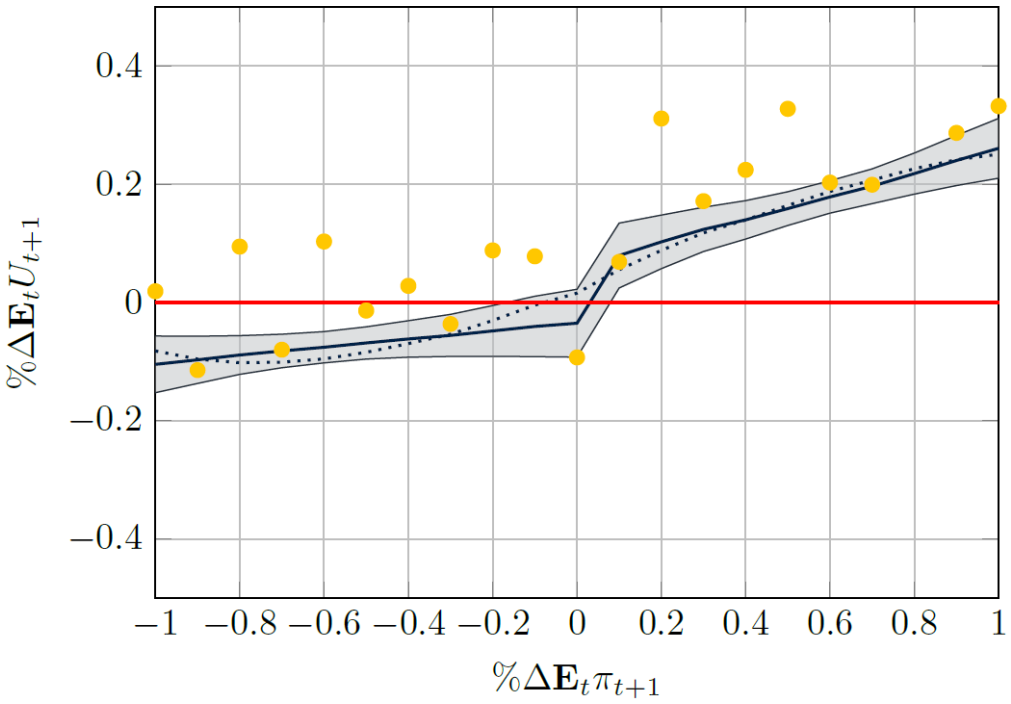
Table 4: Estimated elasticities in the unspecified scenario (interactions)

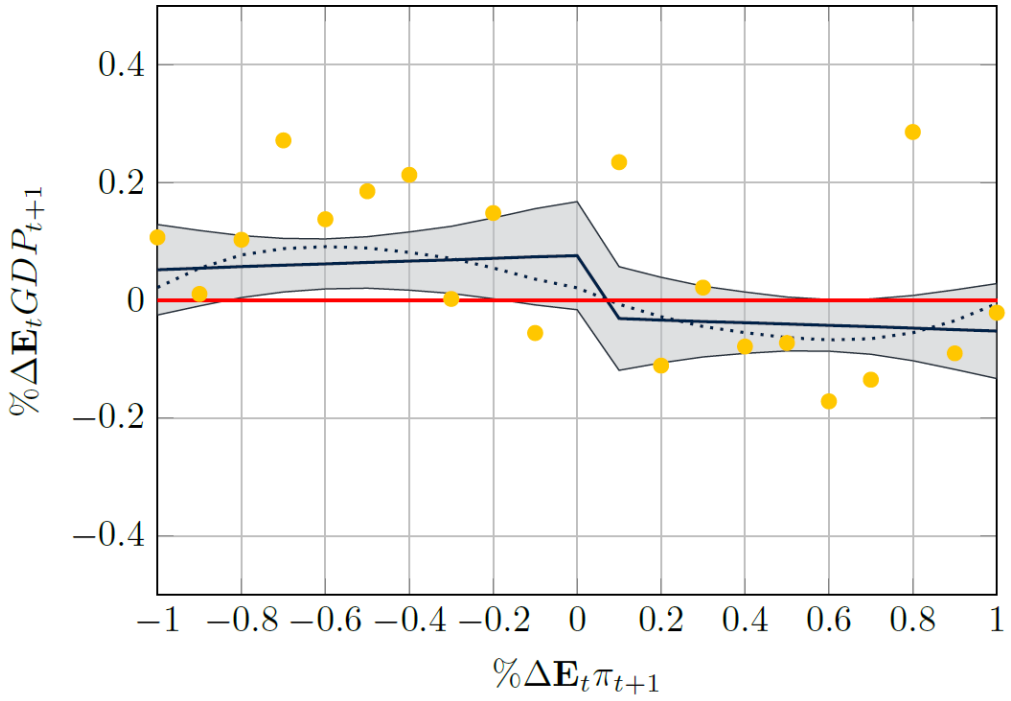
		%Δ Unempl.		%Δ GDP growth		%Δ Job finding	
		(1)	(2)	(3)	(4)	(5)	(6)
$(\pi_{t+1} \uparrow)$	β_1		0.05		-0.03		-0.12**
			(0.05)		(0.14)		(0.06)
$\%\Delta \mathbf{E}_t \pi_{t+1}$	β_2	0.05**	0.12*	0.02	0.13	-0.04*	0.06
		(0.02)	(0.07)	(0.06)	(0.18)	(0.02)	(0.07)
$\%\Delta \mathbf{E}_t \pi_{t+1} \times (\pi_{t+1} \uparrow)$	β_3		-0.22**		-0.17		-0.01
			(0.09)		(0.25)		(0.1)
US	γ_0	0.11***	-0.02	0.27***	0.29**	-0.05***	-0.1
		(0.02)	(0.06)	(0.04)	(0.14)	(0.02)	(0.06)
$(\pi_{t+1} \uparrow) \times US$	γ_1		0.05		-0.08		0.07
			(0.08)		(0.2)		(0.09)
$\%\Delta \mathbf{E}_t \pi_{t+1} \times US$	γ_2	0.16***	-0.07	-0.09	-0.06	-0.1***	-0.19*
		(0.03)	(0.1)	(0.07)	(0.24)	(0.03)	(0.11)
$\%\Delta \mathbf{E}_t \pi_{t+1} \times up \times US$	γ_3		0.4***		0.05		0.06
			(0.14)		(0.34)		(0.15)
Observations		1649	1649	1359	1359	1622	1622
Residual SE		0.3	0.29	0.65	0.29	0.3	0.3

Note: Huber robust regressions. Standard errors in parentheses below. *p<0.1; **p<0.05; ***p<0.01.

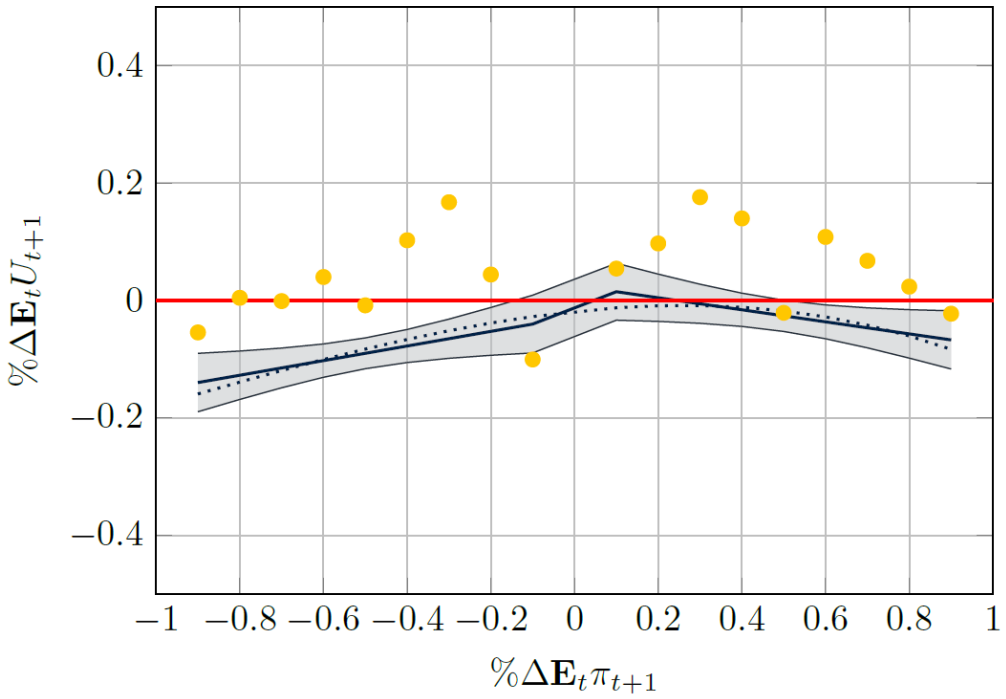
Figure 5: Visualising estimated elasticities in the unspecified scenario

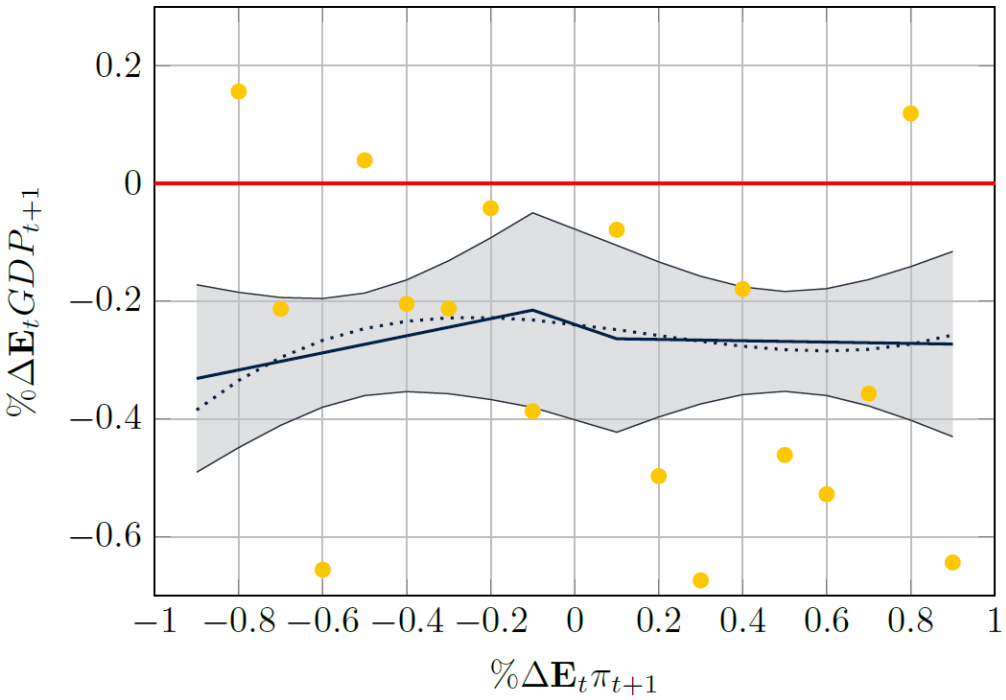
a) US





b) South Africa





Note: The figure plots the predicted regression line (in blue) and a binscatter plot of the responses (in yellow), where each bin is assigned per 0.1 digit change in inflation expectation. The continuous line reflects model (1) and the dotted line a model with quadratic and cubed terms. The data for the plots can be found in Table B.1 in Annex B.

3.3.2 Behavioural response to hypothetical scenario

The experiment also enables me to examine how macroeconomic beliefs translate into behavioural responses. I replicate the regression results discussed above, which are presented in Table 5. The most pronounced behavioural reaction to inflationary shocks appears in consumption decisions: consumers in both countries associate higher inflation with a lower likelihood of increasing consumption and a higher likelihood of reducing it. This could be a reflection of precautionary savings (Candia, Coibion and Gorodnichenko 2020) or simply a reflection that consumption is the easiest-to-adjust margin.

Table 5: Estimated elasticities in the unspecified scenario

		%Δ Ask higher wage		%Δ Accept lower wage		%Δ Increase hours		%Δ Increase consumption		%Δ Decrease consumption		%Δ Take loan (official)		%Δ Take loan (unofficial)	
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
$(\pi_{t+1} \uparrow)$	β_1		0.01		0.05		0.1**		0.01		-0.04		0.08		0
			(0.06)		(0.07)		(0.05)		(0.07)		(0.06)		(0.06)		(0.06)
$\%\Delta \mathbf{E}_t \pi_{t+1}$	β_2	-0.04	-0.07	-0.02	-0.09	0.01	-0.01	-0.07**	-0.22**	0.01	-0.05	0.04	-0.06	0.02	-0.05
		(0.02)	(0.08)	(0.03)	(0.09)	(0.02)	(0.07)	(0.03)	(0.09)	(0.02)	(0.08)	(0.03)	(0.08)	(0.02)	(0.08)
$\%\Delta \mathbf{E}_t \pi_{t+1} \times (\pi_{t+1} \uparrow)$	β_3		0.05		0.07		-0.13		0.28**		0.2*		0.06		0.14
			(0.11)		(0.13)		(0.09)		(0.13)		(0.11)		(0.11)		(0.11)
US	γ_0	0.05**	-0.05	-0.06**	0.09	0.02	0.03	-0.07***	0.12	0	-0.07	-0.05**	-0.02	-0.04**	0.02
		(0.02)	(0.07)	(0.03)	(0.08)	(0.02)	(0.06)	(0.03)	(0.08)	(0.02)	(0.07)	(0.02)	(0.07)	(0.02)	(0.06)
$(\pi_{t+1} \uparrow) \times US$	γ_1		0.07		-0.15		-0.1		-0.23**		0.25***		0.04		0.03
			(0.1)		(0.11)		(0.08)		(0.11)		(0.09)		(0.1)		(0.09)
$\%\Delta \mathbf{E}_t \pi_{t+1} \times US$	γ_2	0.06*	-0.09	0.08*	0.34**	0.07**	0.07	-0.25***	0.07	0.21***	0.13	0.03	0.08	0.09**	0.21*
		(0.04)	(0.11)	(0.04)	(0.13)	(0.03)	(0.1)	(0.04)	(0.13)	(0.03)	(0.11)	(0.04)	(0.11)	(0.03)	(0.11)
$\%\Delta \mathbf{E}_t \pi_{t+1} \times (\pi_{t+1} \uparrow) \times US$	γ_3		0.2		-0.3		0.14		-0.3		-0.22		-0.15		-0.29*
			(0.16)		(0.19)		(0.14)		(0.19)		(0.16)		(0.16)		(0.16)
Observations		1543	1543	1450	1450	1539	1539	1507	1507	1541	1541	1488	1488	1456	1456
Residual SE		0.32	0.32	0.38	0.37	0.28	0.27	0.42	0.41	0.32	0.31	0.31	0.3	0.3	

Note: Huber robust regressions. Standard errors in parentheses below. *p<0.1; **p<0.05; ***p<0.01.

For South Africa, none of the other elicited behaviours shows a significant response. In contrast, the US shows modest effects on labour-market and borrowing behaviour. On average, US consumers report being more inclined to ask for higher wages and less inclined to accept lower wages. As inflation rises, the likelihood of asking for higher wages increases further, but, surprisingly, so does the likelihood of accepting lower wages. This pattern may reflect heightened economic and labour-market uncertainty (for a plausible mechanism, see the discussion in Reiche and Maffei-Faccioli (2025)). Additionally, although US consumers are on average less likely to take out loans – either formally or informally – than their South African counterparts, they become more likely to take informal loans when inflation increases.

3.4 Robustness

To test the robustness of the above results, I show whether these are driven by population subgroups. I also test whether the effects change when consumers receive an explanation for what has caused the hypothetical change in inflation.

3.4.1 The role of demographics

I test whether the results are driven by specific demographic groups. To do so, I disaggregate the regressions by gender (Table B.2 in Annex B), union membership (Table B.3) and income (Table B.4). I focus on the specification that pools the increasing and decreasing treatment arms. For clarity, I present the results for the US and South Africa separately rather than combining them in a single regression.

Self-identified gender has a significant influence on the results in both countries. Following a positive inflation shock, women anticipate a larger increase in unemployment than men, while perceiving no effect on GDP growth. In contrast, men do perceive an effect on GDP growth – negative in the US and positive in South Africa. Regarding union membership, I find no significant differences in unemployment beliefs in the US, but the perceived effect on GDP growth does differ: union members are less likely to anticipate a decline in GDP growth in response to inflationary shocks. In South Africa, the evidence on differences between union members and non-members is less conclusive. Finally, across income groups, I find no significant differences for any of the outcomes in either country.

3.4.2 The role of attention and credibility

Participants who pay less attention to the results (as proxied by the number of words they use in their answers) or find the treatment less plausible may respond less to the treatment. Table B.5 in Annex B shows the baseline regression for participants who have an above-median word count in the open-text response discussed in section 3.2. For those participants, I find a stronger effect on GDP growth in both countries but a slightly lower effect on unemployment expectations. In contrast, credibility – as defined by ranking the possibility of the inflation treatment above median – has no noticeable effect on the results (Table B.6 in Annex B). If anything, the results are slightly stronger for the low credibility group.

3.4.3 The role of the shock narrative

I test whether the results on beliefs about the economy and personal behaviours depend on the type of shock consumers have in mind. For this, I re-elicit the same beliefs under two scenarios, a supply-side narrative and a demand-side narrative, explained in section 2.2. In Annex B, Table B.7 summarises the regression results in the demand scenario and Table B.8 in the supply scenario. Overall, I find no substantial changes in the results. The effects on unemployment and job finding weaken under both scenarios for South Africa.

The above section has shown that consumers in both the US and South Africa tend to revise unemployment expectations upwards when confronted with inflation higher than previously anticipated. The effect is somewhat stronger in the US, where it is also robust to union membership and income and has behavioural implications. Households report that they will reduce consumption when inflation is high and may take a loan from friends and family, but they are not inclined to ask for a higher wage. This supply-side interpretation of inflationary shocks holds even when inflation is assumed to be increased by government spending. Households continue to believe that unemployment will increase, though at a lower rate than when inflation is caused by production cost increases.

4. Conclusion

Consumer surveys consistently reveal a positive correlation between inflation and unemployment expectations across developed countries, a pattern often interpreted through a supply-side lens (Candia, Coibion and Gorodnichenko 2020; Hajdini et al. 2023; Andre et al. 2025; Kamdar and Rey 2025; Coibion, Gorodnichenko and Kamdar 2018). This paper extends that literature in two ways: (i) by developing a novel experimental design that elicits consumers' narratives about inflation shocks alongside the average elasticity of unemployment and GDP growth with respect to changes in inflation expectations, and (ii) by estimating these elasticities in both a developed economy (the US) and an emerging economy (South Africa).

First, I use open-ended survey responses to capture the narratives consumers associate with inflationary and disinflationary shocks. Consistent with Andre et al. (2025), US respondents link inflation increases primarily to supply-side shocks. Importantly, I also find that they interpret disinflationary shocks as demand-driven, indicating that any deviation from expected inflation is perceived as negative for the economy. In South Africa, narratives are less easily categorised into standard supply- and demand-side frameworks. Consumers often associate inflation shocks with broad economic health, government policies and structural inefficiencies as key drivers. This contrast highlights the role of institutional and macroeconomic context in shaping how households interpret macroeconomic signals.

Second, my experimental design allows precise measurement of how consumers update their beliefs about unemployment and GDP growth in response to inflation shocks. Unlike prior studies (Hajdini et al. 2023; Andre et al. 2025), which rely on information treatments that induce relatively uniform belief updates, my design captures the magnitude and asymmetry of these adjustments. I find that a linear model with asymmetry around zero fits the data well. In both countries, consumers perceive a positive correlation between inflation and unemployment. Yet the patterns differ: US respondents increase unemployment expectations when inflation rises above prior expectations, whereas South African respondents lower unemployment expectations when inflation falls short of expectations. These effects are particularly pronounced among women but remain robust across union membership and income groups. The

responses on GDP growth are more nuanced, with significant updates primarily among US males.

Behavioural responses align with these narratives. In both countries, consumers do not demand sizeable increases to wages in response to higher inflation. Instead, they reduce consumption, and in the US they increase informal borrowing to meet expenses. These behaviours reinforce the importance of understanding narrative-driven responses for monetary policy. For example, Candia, Coibion and Gorodnichenko (2020) caution that forward guidance may be less effective in low-inflation periods if households react to perceived inflation by increasing precautionary savings. This appears as a valid concern as reflected in my experimental results. Moreover, these dynamics have distributional consequences: individuals who perceive inflation as high may anticipate higher unemployment, reduce wage bargaining and experience larger real wage losses. In the US, this effect is particularly strong for marginalised groups, including women and black respondents, suggesting that misperceptions of inflation can exacerbate inequality.

The findings carry important implications for the design of monetary policy in both developed and emerging economies. First, policymakers should recognise the asymmetry in how consumers interpret inflationary versus disinflationary shocks. Effective communication should provide clear, intuitive narratives (e.g. “inflation has increased/decreased, because …”) to prevent overly pessimistic or misleading interpretations. While communicating with the public is a difficult challenge (Blinder et al. 2024), a focus on education may be the most promising avenue (Haldane, Macaulay and McMahon 2021). Second, labour market frictions and distributional effects should inform policy responses: real wage losses among households that misinterpret inflation may be accompanied by higher precautionary savings and reduced consumption, amplifying volatility in unemployment and labour force participation. These considerations are particularly relevant in emerging economies, where supply-side shocks are more frequent and institutional constraints are more pronounced.

Overall, these results underscore the importance of integrating consumer narratives, behavioural responses and distributional heterogeneity into both the analysis and communication of monetary policy, bridging the gap between macroeconomic theory

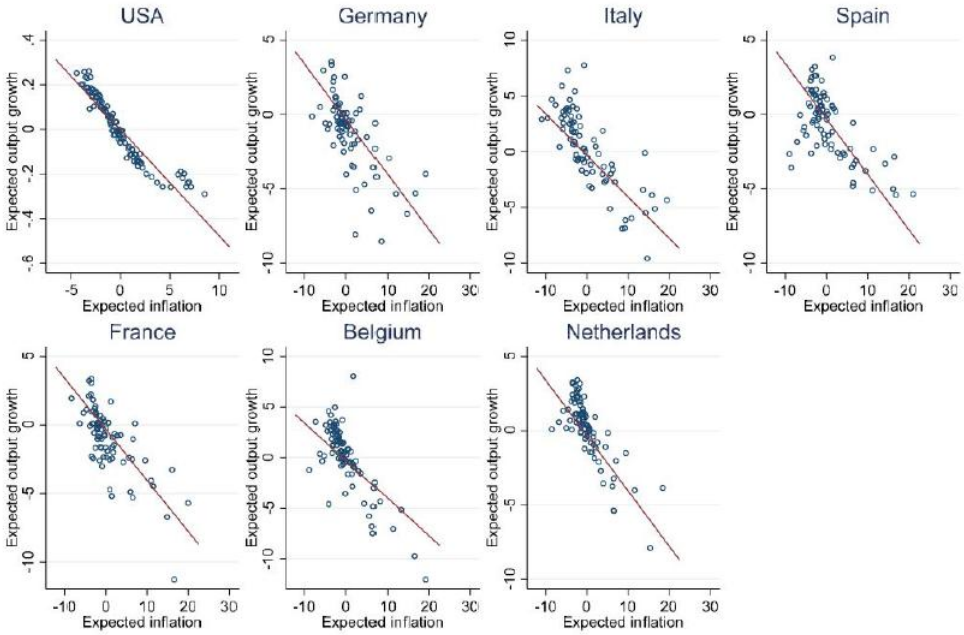
and real-world household expectations. While the survey method and setting may not always be directly comparable, this survey provides a first step towards understanding how consumers form economic narratives not only in the context of a developed country (Andre et al. 2025), but also how these results may change for emerging economies.

Annexures

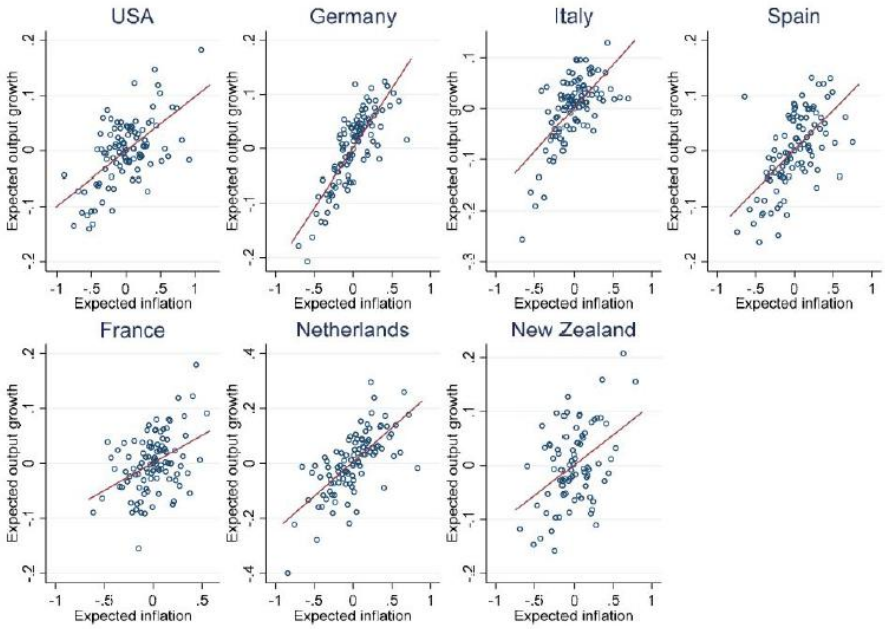
Annex A: Figures

Figure A.1: Binscatter for the joint distribution of expectations on inflation and output growth

(a) Households



(b) Professional forecasters

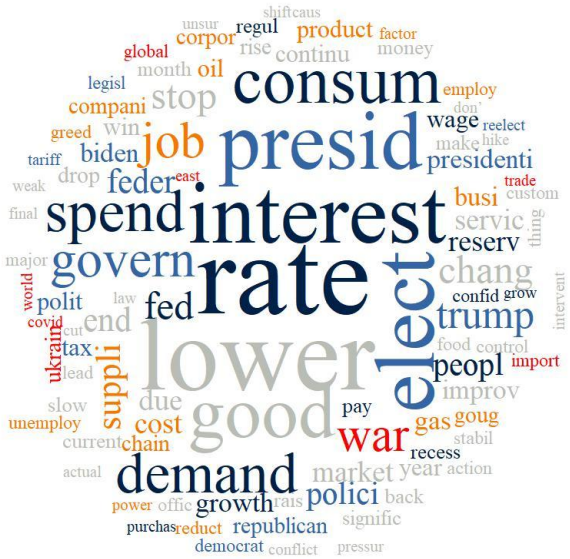


Source: Candia, Coibion and Gorodnichenko 2020

Figure A.2: Word clouds for the inflation changes

United States

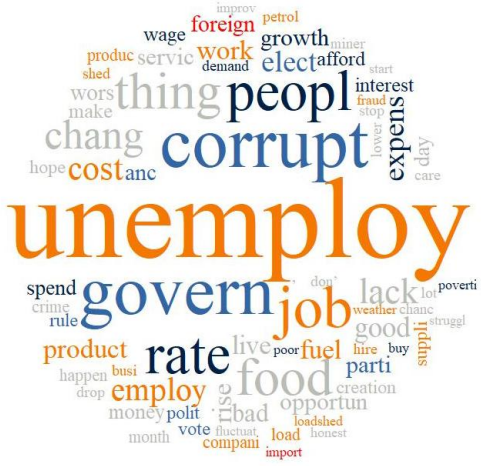
(a) π_{t+1} ↓



(b) π_{t+1} ↑

South Africa

(c) π_{t+1} ↓



(d) π_{t+1} ↑

Note: These word clouds are based on word counts to the question “What do you think would be the most likely cause for inflation to be lower/higher than your initial forecast?”

Annex B: Tables

Table B.1: Estimated elasticities in the unspecified scenario

		%Δ Unempl.			%Δ GDP growth		
		(1)	(2)	(3)	(4)	(5)	(6)
Panel A: US							
$\%\Delta \mathbf{E}_t \pi_{t+1}$	β_0	0.2***	0.07	0.28***	-0.08**	0.02	-0.2***
		(0.02)	(0.06)	(0.05)	(0.03)	(0.1)	(0.07)
$\%\Delta \mathbf{E}_t \pi_{t+1} \times (\pi_{t+1} \uparrow)$	β_1		0.13			-0.05	
			(0.09)			(0.14)	
	$\beta_0 + \beta_1$		0.2***			-0.02	
			(0.07)			(0.11)	
$[\%\Delta \mathbf{E}_t \pi_{t+1}]^2$	β_2			0.06			-0.01
				(0.04)			(0.06)
$[\%\Delta \mathbf{E}_t \pi_{t+1}]^3$	β_3			-0.11*			0.19*
				(0.06)			(0.1)
Observations		847	847	847	837	837	837
Residual SE		0.29	0.28	0.28	0.46	0.28	0.28
Panel B: South Africa							
$\%\Delta \mathbf{E}_t \pi_{t+1}$	β_0	0.05**	0.12*	0.08	0.02	0.15	-0.08
		(0.02)	(0.07)	(0.06)	(0.07)	(0.23)	(0.18)
$\%\Delta \mathbf{E}_t \pi_{t+1} \times (\pi_{t+1} \uparrow)$	β_1		-0.23**			-0.16	
			(0.1)			(0.32)	
	$\beta_0 + \beta_1$		-0.1			-0.01	
			(0.07)			(0.22)	
$[\%\Delta \mathbf{E}_t \pi_{t+1}]^2$	β_2			-0.13***			-0.1
				(0.05)			(0.16)
$[\%\Delta \mathbf{E}_t \pi_{t+1}]^3$	β_3			-0.04			0.19
				(0.1)			(0.31)
Observations		973	973	973	689	689	689
Residual SE		0.31	0.3	0.29	0.81	0.3	0.29

Note: Huber robust regressions. Standard errors in parentheses below. *p<0.1; **p<0.05; ***p<0.01.

Table B.2: Estimated elasticities by gender in the unspecified scenario

	%Δ Unemployment		%Δ GDP growth	
	Women	Men	Women	Men
	(1)	(2)	(3)	(4)
Panel A: US				
$\%\Delta \mathbf{E}_t \pi_{t+1}$	0.24***	0.16***	-0.01	-0.14***
	(0.03)	(0.02)	(0.05)	(0.04)
Observations	421	416	414	413
Residual SE	0.34	0.21	0.57	0.36
Panel B: South Africa				
$\%\Delta \mathbf{E}_t \pi_{t+1}$	0.05*	0.06	0.01	0.02***
	(0.03)	(0.04)	(0.10)	(0.10)
Observations	549	424	375	314
Residual SE	0.27	0.35	0.84	0.79

Note: Huber robust regressions. Standard errors in parentheses below. *p<0.1; **p<0.05; ***p<0.01.

Table B.3: Estimated elasticities in the unspecified scenario by union membership

	%Δ Unemployment		%Δ GDP growth	
	Yes	No	Yes	No
	(1)	(2)	(3)	(4)
Panel A: US				
$\%\Delta \mathbf{E}_t \pi_{t+1}$	0.19**	0.19***	0.08	-0.1***
	(0.08)	(0.02)	(0.09)	(0.04)
Observations	106	556	107	551
Residual SE	0.42	0.26	0.51	0.46
Panel B: South Africa				
$\%\Delta \mathbf{E}_t \pi_{t+1}$	-0.03	0.06**	-0.12	0.03
	(0.08)	(0.02)	(0.23)	(0.08)
Observations	124	813	86	578
Residual SE	0.42	0.29	0.95	0.8

Note: Huber robust regressions. Standard errors in parentheses below. *p<0.1; **p<0.05; ***p<0.01.

Table B.4: Estimated elasticities in the unspecified scenario by income group

	%Δ Unemployment			%Δ GDP growth		
	Low	Middle	High	Low	Middle	High
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: US						
$\%\Delta \mathbf{E}_t \pi_{t+1}$	0.21***	0.21***	0.15***	-0.09	-0.07	-0.1*
	(0.03)	(0.03)	(0.04)	(0.06)	(0.05)	(0.06)
Observations	245	357	213	241	354	211
Residual SE	0.28	0.32	0.26	0.48	0.48	0.39
Panel B: South Africa						
$\%\Delta \mathbf{E}_t \pi_{t+1}$	0.03	0.04	0.09	0.07	-0.16	0.29
	(0.04)	(0.03)	(0.06)	(0.15)	(0.12)	(0.18)
Observations	213	396	170	150	293	115
Residual SE	0.25	0.3	0.36	0.88	0.9	0.81

Note: Huber robust regressions. Standard errors in parentheses below. *p<0.1; **p<0.05; ***p<0.01.

Table B.5: Estimated elasticities in the unspecified scenario by open-text elaboration

	%Δ Unemployment		%Δ GDP growth	
	Yes	No	Yes	No
	(1)	(2)	(3)	(4)
Panel A: US				
$\%\Delta \mathbf{E}_t \pi_{t+1}$	0.16***	0.23***	-0.14***	-0.03**
	(0.03)	(0.03)	(0.05)	(0.04)
Observations	323	524	322	515
Residual SE	0.27	0.3	0.44	0.5
Panel B: South Africa				
$\%\Delta \mathbf{E}_t \pi_{t+1}$	0.04	0.06**	0.14	-0.09
	(0.04)	(0.03)	(0.11)	(0.1)
Observations	411	562	315	374
Residual SE	0.31	0.29	0.85	0.84

Note: Huber robust regressions. Standard errors in parentheses below. *p<0.1; **p<0.05; ***p<0.01.

Table B.6: Estimated elasticities in the unspecified scenario by treatment credibility

	%Δ Unemployment		%Δ GDP growth	
	Yes	No	Yes	No
	(1)	(2)	(3)	(4)
Panel A: US				
$\%\Delta \mathbf{E}_t \pi_{t+1}$	0.18***	0.22***	-0.06	-0.11*
	(0.03)	(0.03)	(0.05)	(0.04)
Observations	396	451	387	450
Residual SE	0.26	0.3	0.4	0.49
Panel B: South Africa				
$\%\Delta \mathbf{E}_t \pi_{t+1}$	0.02	0.07**	0.04	-0.04
	(0.03)	(0.04)	(0.09)	(0.1)
Observations	467	506	327	362
Residual SE	0.25	0.39	0.71	0.88

Note: Huber robust regressions. Standard errors in parentheses below. *p<0.1; **p<0.05; ***p<0.01.

Table B.7: Estimated elasticities in the demand scenario

		%Δ Unempl.		%Δ GDP growth		%Δ Job finding	
		(1)	(2)	(3)	(4)	(5)	(6)
$(\pi_{t+1} \uparrow)$	β_1		-0.08		0.13		0.05
			(0.06)		(0.17)		(0.06)
$\%\Delta \mathbf{E}_t \pi_{t+1}$	β_2	0.02	0.17**	0.07	0.02	-0.05**	-0.17**
		(0.02)	(0.07)	(0.06)	(0.21)	(0.03)	(0.08)
$\%\Delta \mathbf{E}_t \pi_{t+1} \times (\pi_{t+1} \uparrow)$	β_3		-0.17		-0.11		0.13
			(0.1)		(0.29)		(0.12)
US	γ_0	0.12***	0.02	0.28***	0.36**	-0.09***	0
		(0.02)	(0.06)	(0.05)	(0.17)	(0.02)	(0.07)
$(\pi_{t+1} \uparrow) \times US$	γ_1		0.2**		-0.08		-0.1
			(0.09)		(0.24)		(0.1)
$\%\Delta \mathbf{E}_t \pi_{t+1} \times US$	γ_2	0.11***	-0.06	-0.04	0.09	-0.05	0.09
		(0.03)	(0.11)	(0.09)	(0.28)	(0.04)	(0.12)
$\%\Delta \mathbf{E}_t \pi_{t+1} \times (\pi_{t+1} \uparrow) \times US$	γ_3		0.01		-0.11		-0.13
			(0.15)		(0.39)		(0.17)
Observations		1617	1617	1301	1301	1545	1545
Residual SE		0.32	0.32	0.7	0.32	0.35	0.34

Note: Huber robust regressions. Standard errors in parentheses below. *p<0.1; **p<0.05; ***p<0.01.

Table B.8: Estimated elasticities in the supply scenario

		%Δ Unempl.		%Δ GDP Growth		%Δ Job Finding	
		(1)	(2)	(3)	(4)	(5)	(6)
$(\pi_{t+1} \uparrow)$	β_1		0.06		0.02		-0.08
			(0.06)		(0.16)		(0.07)
$\%\Delta \mathbf{E}_t \pi_{t+1}$	β_2	0.02	0.02	-0.03	0.1	-0.02	0.03
		(0.02)	(0.07)	(0.06)	(0.2)	(0.03)	(0.09)
$\%\Delta \mathbf{E}_t \pi_{t+1} \times (\pi_{t+1} \uparrow)$	β_3		-0.09		-0.3		0.03
			(0.1)		(0.28)		(0.12)
US	γ_0	0.14***	0.06	0.27***	0.31**	-0.08***	-0.08
		(0.02)	(0.06)	(0.05)	(0.15)	(0.02)	(0.07)
$(\pi_{t+1} \uparrow) \times US$	γ_1		0.15*		-0.14		-0.04
			(0.09)		(0.22)		(0.1)
$\%\Delta \mathbf{E}_t \pi_{t+1} \times US$	γ_2	0.2***	0.07	-0.04	-0.01	-0.13***	-0.13
		(0.03)	(0.11)	(0.08)	(0.26)	(0.04)	(0.12)
$\%\Delta \mathbf{E}_t \pi_{t+1} \times (\pi_{t+1} \uparrow) \times US$	γ_3		0.04		0.14		0.04
			(0.15)		(0.37)		(0.17)
Observations		1609	1609	1305	1305	1563	1563
Residual SE		0.34	0.34	0.65	0.34	0.36	0.35

Note: Huber robust regressions. Standard errors in parentheses below. *p<0.1; **p<0.05; ***p<0.01.

Annex C: Power calculations

I describe the power calculation for equation 1 in more detail. The method extends to the other specifications. I start by rewriting equation 1:

$$hypothetical_{k,i}^{s} = (1 + \alpha_0^s)prior_{k,i} + \alpha_1^s(\pi_{t+1}\uparrow)_i prior_{k,i} + \beta_0^s(Y-1)_i prior_{k,i} + \beta_1^s(Y-1)_i(\pi_{t+1}\uparrow)_i prior_{k,i} + prior_{k,i}\varepsilon_i^s \quad (2)$$

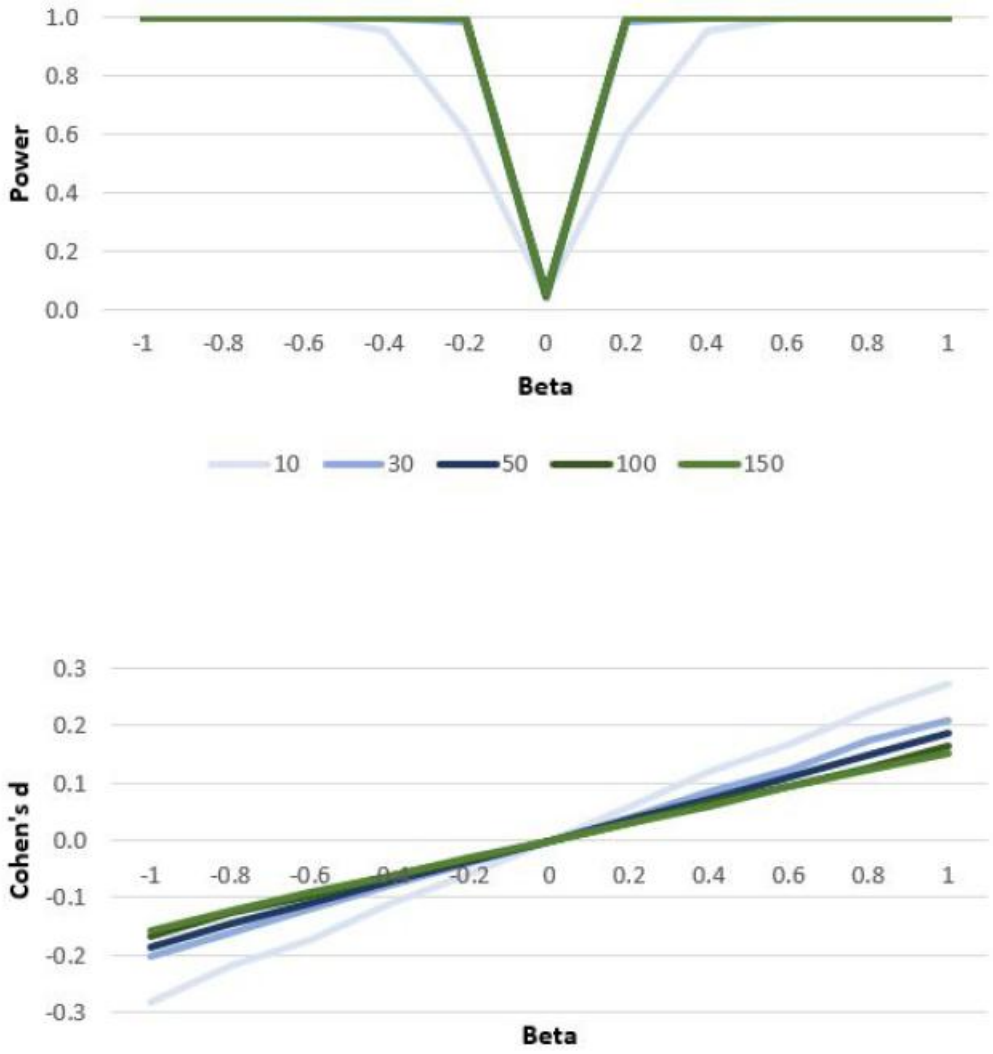
Looking at the right-hand side, I can obtain information about all variables and simulate hypothetical responses, given different levels of the parameters. I start by assuming that α_0^s = α_1^s = 0, such that there is no bias to increase or decrease the hypothetical from the prior that is not captured by the level of inflation change. I further assume β_1^s = 0 : that is, that the elasticity is symmetric for percentage increases and decreases in inflation. Thus, I do not need to specify the dummy $(\pi_{t+1}\uparrow)_i$. Then I obtain $prior_{k,i}$ as observations from a random sample of any sample size n drawn from survey data on variable k. For instance, the Consumer Expectations Survey in the European Union includes expectations on unemployment. Since the prior is pre-treatment, it is the same as the survey question in standardised consumer surveys. I draw $(Y-1)_i$ from a uniform distribution between 0 and 2, excluding the value 1. Finally, I specify ε_i^s as random draw from a normal distribution with mean 0 and standard deviation of 1.

Using the variables on the right-hand side, I then compute a vector of hypothetical responses given a value of β_0^s and a sample size n. Using the simulated data allows me to run a regression and compute an estimate $\hat{\beta}_0^s$ as well as its p-value. I test if the p-value is below 0.05. This exercise is repeated for 500 repetitions to compute the share of how often the null hypothesis of $\beta_0^s = 0$ is rejected at a 5% significance level. Similarly, I compute Cohen's d (Cohen 1988) for each iteration as the estimated coefficient normalised by the pooled standard error and compute the average d for a given β_0^s and n. I repeat the exercise for different levels of β_0^s and n. The result can be found in Figure C.1.

I find that my design allows me to estimate effect sizes larger than 0.1 (still considered small effect sizes) with power larger than 0.8 for sample sizes of 100 observations and larger. Hence, my experiment has sufficient power given my total sample size of 1 000

observations split over four treatment arms. I obtain high power through the continuous treatment variation, which spreads treatments out further and thus increases power.

Figure C.1: Power calculation and Cohen's d for different sample sizes and values for β_0^s



Annex D: Questionnaire

D.1 Consent

General Information

The aim of this research is to understand consumers' beliefs about inflation and unemployment in South Africa/the US. We appreciate your interest in participating in this survey. Please read through this information before agreeing to participate (if you wish to) by ticking the 'yes' box below.

You may ask any questions before deciding to take part by contacting the researcher. The Principal Researcher is Lovisa Reiche, who is attached to the Department of Economics at the University of Oxford.

In this survey you will be asked about your beliefs about current and future inflation and unemployment in South Africa/the US and your personal employment outlook. This should take about 20 minutes. No background knowledge is required, we are simply interested in your views. There are no right or wrong answers. This information will be used to design more transparent and clear communication of the central bank with the public.

Do I have to take part?

No. Please note that participation is voluntary. If you do decide to take part, you may withdraw at any point for any reason. All questions are optional. However, we do encourage you to answer with your best estimate.

How will my data be used?

We will not collect any data that could directly identify you. We will take all reasonable measures to ensure that data remain confidential. The responses you provide will be stored in a password-protected electronic file on University of Oxford secure servers and may be used in academic publications, conference presentations and reports. Research data will be stored for 5 years after publication or public release of the work of the research. The data that we collect from you will be transferred to, stored and processed in the United Kingdom. By submitting your personal data, you agree to this transfer, storing or processing.

Who will have access to my data?

The University of Oxford is the data controller with respect to your personal data and, as such, will determine how your personal data are used in the research. The University will process your personal data for the purpose of the research outlined above. Research is a task that we perform in the public interest. Further information about your rights with respect to your personal data is available from https://compliance.admin.ox.ac.uk/individual-rights. The data you provide may be shared with the Reserve Bank of South Africa. The data will always be anonymised. The results will be written up for a DPhil degree.

Who has reviewed this research?

This research has been reviewed by, and received ethics clearance through, a subcommittee of the University of Oxford Central University Research Ethics Committee [ECONCIA23-24-03]. The research has further been reviewed by the South African Reserve Bank's Research Committee.

Who do I contact if I have a concern or I wish to complain?

If you have a concern about any aspect of this research, please speak to Lovisa Reiche (lovisa.reiche@economics.ox.ac.uk) or her supervisor, Michael McMahon (michael.mcmahon@economics.ox.ac.uk), and we will do our best to answer your query. We will acknowledge your concern within 10 working days and give you an indication of how it will be dealt with. If you remain unhappy or wish to make a formal complaint, please contact the Chair of the Research Ethics Committee at the University of Oxford, who will seek to resolve the matter as soon as possible: Social Sciences & Humanities Interdivisional Research Ethics Committee; Email: ethics@socsci.ox.ac.uk; Address: Research Services, University of Oxford, Boundary Brook House, Churchill Drive, Headington, Oxford OX3 7GB.

Do you agree to take part in the survey?

O Yes I agree to take part

O No, I do not agree to take part

D.2 Prior expectations

Next, we would like to ask you for your expectations about the economy and your personal economic situation in 12 months' time. Of course, no one can know the future. These questions have no right or wrong answers – we are interested in your views and opinions.

D.2.1 General economy

- What do you think the rate of inflation in South Africa/the US will be over the next 12 months?
  Note: Inflation is the rate at which the overall prices for goods and services change over time. If you believe overall prices will decrease, please enter a negative value.
  ….. percent
- What do you think the rate of unemployment in South Africa/the US will be over the next 12 months?
  Note: The unemployment rate is the percentage of adults who want to work and are capable of working but do not have a job and are looking for one.
  ….. percent
- What do you think the rate of GDP growth in South Africa/the US will be over the next 12 months?
  Note: The GDP growth rate measures by how much a country's economy is getting bigger, i.e. is producing more goods and services, in a given year. If you expect that the GDP will fall, please enter a negative value.
  ….. percent

D.2.2 Behavioural response

Assume the economy will be as you predict over the next 12 months. The next questions will ask you about the percent chance of some events happening. Your answers can range from 0 to 100, where 0 means there is absolutely no chance and 100 means that it is absolutely certain.

- What is the percent chance that you and/or another member of your household will ask your/their employer for a higher wage?
  ….. percent
- What is the percent chance that you and/or another member of your household will accept a lower wage if asked by your/their employer?
  ….. percent
- What is the percent chance that you and/or another member of your household will increase the hours worked?
  ….. percent
- What is the percent chance that you and/or another member of your household will reduce the hours worked?
  ….. percent
- What is the percent chance that your household will increase your consumption of goods and services?
  ….. percent
- What is the percent chance that your household will reduce your consumption of goods and services?
  ….. percent
- What is the percent chance that your household will increase savings such as cash reserves or money saved in a bank account?
  ….. percent
- What is the percent chance that your household will reduce/use savings such as cash reserves or money saved in a bank account?
  ….. percent
- What is the percent chance that your household will take a loan from an unofficial source such as friends/family?
  ….. percent
- What is the percent chance that your household will take a loan from an official source such as a bank?
  ….. percent

D.3 Hypothetical vignettes

- *Filter: up*
  What do you think could cause that inflation in the next 12 months would be higher than you previously predicted?
  .....
- *Filter: down*
  What do you think could cause that inflation in the next 12 months would be lower than you previously predicted?
  .....
- *Filter: up*
  You said that you believe inflation in South Africa in the next 12 months will be [Prior]%. Assume now that instead, inflation in South Africa/the US over the next 12 months will be [$Y \sim U$ (1, 2] × Prior]%.
- *Filter: down*
  You said that you believe inflation in South Africa in the next 12 months will be [Prior]%. Assume now that instead, inflation in South Africa/the US over the next 12 months will be [$Y \sim U$ [0, 1) × Prior]%.

Scenario explanation in order as specified in treatment arm.

1. Assume that the cause of this difference is a(n) decrease/increase in the supply of goods and services – in other words, by firms producing less/more than before. I will ask you now about your beliefs under such a scenario.
   elicit posterior
2. Assume that the cause of this difference is a(n) increase/decrease in the demand for goods and services – in other words, by households, firms and the government consuming and investing more/less than before. I will ask you now about your beliefs under such a scenario.
   elicit posterior

D.4 Posterior expectations

D.4.1 General economy

- What do you think the rate of unemployment in South Africa/the US would be over the next 12 months?
  ….. percent
- What do you think the rate of GDP growth in South Africa/the US would be over the next 12 months?
  Note: If you expect that the GDP falls, please enter a negative value.
  ….. percent

D.4.2 Behavioural response

Continue to assume that [inflation/unemployment] in the next 12 months will be [*Y* × Prior]%. We would like to hear how you think you and your household would react to such a situation.

- If applicable: What is the percent chance that you and/or another member of your household would ask your/their employer for a higher wage?
  Your answers can range from 0 to 100, where 0 means there is absolutely no chance and 100 means that it is absolutely certain.
  ..... percent *Filter: if different from prior*
  Why did you increase/decrease the percent chance relative to the economy with [Prior]%[inflation/unemployment]?
  .....
- If applicable: What is the percent chance that you and/or another member of your household would accept a lower wage if offered by your/their employer?
  Your answers can range from 0 to 100, where 0 means there is absolutely no chance and 100 means that it is absolutely certain.
  ..... percent *Filter: if different from prior*
  Why did you increase/decrease the percent chance relative to the economy with [Prior]% [inflation/unemployment]?
  .....
- If applicable: What is the percent chance that you and/or another member of your household would increase the hours worked?

Your answers can range from 0 to 100, where 0 means there is absolutely no chance and 100 means that it is absolutely certain.

..... percent *Filter: if different from prior*

Why did you increase/decrease the percent chance relative to the economy with [Prior]% [inflation/unemployment]?

.....

- If applicable: What is the percent chance that you and/or another member of your household would reduce the hours worked?
  Your answers can range from 0 to 100, where 0 means there is absolutely no chance and 100 means that it is absolutely certain.
  ..... percent *Filter: if different from prior*
  Why did you increase/decrease the percent chance relative to the economy with [Prior]% [inflation/unemployment]?
  .....
- What is the percent chance that your household would reduce your consumption of goods and services?
  Your answers can range from 0 to 100, where 0 means there is absolutely no chance and 100 means that it is absolutely certain.
  ..... percent *Filter: if different from prior*
  Why did you increase/decrease the percent chance relative to the economy with [Prior]% [inflation/unemployment]?
  .....
- What is the percent chance that your household would increase your consumption of goods and services?
  Your answers can range from 0 to 100, where 0 means there is absolutely no chance and 100 means that it is absolutely certain.
  ..... percent *Filter: if different from prior*
  Why did you increase/decrease the percent chance relative to the economy with [Prior]% [inflation/unemployment]?
  .....
- What is the percent chance that your household would increase savings such as cash reserves or money saved in a bank account?
  Your answers can range from 0 to 100, where 0 means there is absolutely no

chance and 100 means that it is absolutely certain.

..... percent *Filter: if different from prior*

Why did you increase/decrease the percent chance relative to the economy with [Prior]% [inflation/unemployment]?

.....

- What is the percent chance that your household would reduce/use up savings such as cash reserves or money saved in a bank account?

  Your answers can range from 0 to 100, where 0 means there is absolutely no chance and 100 means that it is absolutely certain.

  ..... percent *Filter: if different from prior*

  Why did you increase/decrease the percent chance relative to the economy with [Prior]% [inflation/unemployment]?

  .....

- What is the percent chance that your household will take a loan from an unofficial source such as friends/family?

  Your answers can range from 0 to 100, where 0 means there is absolutely no chance and 100 means that it is absolutely certain.

  ..... percent *Filter: if different from prior*

  Why did you increase/decrease the percent chance relative to the economy with [Prior]% [inflation/unemployment]?

  .....

- What is the percent chance that your household will take a loan from an official source such as a bank?

  Your answers can range from 0 to 100, where 0 means there is absolutely no chance and 100 means that it is absolutely certain.

  ..... percent *Filter: if different from prior*

  Why did you increase/decrease the percent chance relative to the economy with [Prior]% [inflation/unemployment]?

  .....

D.5 Demographics

To start, we would like to ask you some questions about you and your household.

D.5.1 Recorded by the syndicate survey in South Africa

The syndicate survey run by MarkData elicits age, income (household gross and net, personal gross and net), highest educational qualification, gender, race (black, Coloured, Indian, white), marital status and employment status.

D.5.2 Additional questions

- *Filter: only those in full-time, part-time or casual employment and those on leave planning to return to work*
  Which professional status currently applies to you?
  O Non-salaried employee, including in agriculture
  O Salaried employee in private sector
  O Salaried employee in public sector or civil servant
  O Self-employed or entrepreneur (including self-employed farmer)
  O Trainee/intern
  O Unpaid family worker
  O Other
- *Filter: only those in full-time, part-time or casual employment and those on leave planning to return to work*
  Are you a member of a workers union?
  O Yes
  O No
  O Don’t know

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