



## The effect of question wording on consumers' reported inflation expectations <sup>☆</sup>

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### ABSTRACT

Economists and policy makers increasingly consult national household surveys asking individuals about their economic circumstances, financial decisions, and expectations for the future. For decades, the Reuters/Michigan Survey of Consumers and other national surveys have asked about expectations for “prices in general”, with responses being used by academic economists, policy makers, and central bankers. Although median responses track official inflation estimates, respondents exhibit considerable disagreement, with some reporting seemingly large overestimations. Here, we demonstrate that changes in the wording of survey questions about inflation expectations affect the central tendency of responses as well as their dispersion. We randomly assigned respondents to questions asking about “prices in general”, “inflation”, or “prices you pay”. Respondents' expectations and perceptions were lower and less dispersed when questions asked about “inflation” instead of “prices in general” or “prices you pay”, with the latter two formulations eliciting similar response patterns. These question-wording effects were mediated by how much respondents thought of (extreme) personal price experiences when receiving questions about “prices in general” or “prices you pay”. Compared to questions about “inflation”, questions about “prices in general” and “prices you pay” elicited expectations that were more strongly correlated to expected increases in gas prices, which were relatively large and likely salient at that time.

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## 1. Introduction

Economists increasingly use national household surveys to elicit individuals' beliefs about their economic circumstances, as well as related expectations and decisions. Economic surveys can provide information that is useful in terms of predicting individuals' future behavior, beyond what can be deduced from observable measures (Hurd, 2009; Manski, 2004). The usefulness of economic surveys depends in part on how well questions are understood by respondents. Shorter questions and simpler wording make responding easier and reduce “don't know” responses (Basili & Scott, 1996; Knäuper, Belli, Hill, & Herzog, 1997; Yan & Toureangaeau, 2008). However, seemingly irrelevant changes in question wording can influence

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people's interpretations of a question (Bruine de Bruin, 2011). For example, people are more willing to endorse a policy to "not allow" a behavior rather than "forbid" it (Holleman, 1999), and to estimate different speeds for cars "colliding" or "hitting" each other in a previously watched video-taped accident (Loftus & Palmer, 1974). Hence, it is important to understand the potential effect of wording on responses before implementing questions on national economic surveys.

Here, we examine the effect of wording on consumers' interpretations of and responses to a widely used question about expectations for future inflation. Inflation expectations are widely believed to affect people's economic decisions about saving, investing, purchasing durable goods, and negotiating wages (see Armantier, Bruine de Bruin, Topa, van der Klaauw, & Zafar, 2011). In order to achieve price stability, central bankers aim to keep inflation expectations consistent with their policy objectives. They rely on surveys of consumers to assess inflation expectations, in combination with market-based measures, model-based forecasts and surveys of professionals.

For decades, survey measures of inflation expectations, collected by the Reuters/Michigan Survey of Consumers (henceforth: the Michigan survey), as well as other national surveys, have used simple terms, asking respondents for expected changes in "prices in general" over the next 12 months and over longer time periods. Yet, to date, relatively little is known about how this choice of wording affects how people interpret the question and generate their responses.<sup>1</sup>

Median responses to survey questions about expectations for "prices in general" generally track actual inflation, and sometimes outperform professional and model-based forecasts in predicting actual inflation (Ang, Bekaert, & Wei, 2007; Hafer & Hein, 1985; Thomas, 1999). Yet, there tends to be considerable disagreement among respondents, with some expecting seemingly high inflation (Bates & Gabor, 1986; Bruine de Bruin et al., 2010; Bryan & Venkatu, 2001). Because price changes are not uniform across product categories, variations in individuals' consumption patterns could partially explain variations in their inflation expectations (Hafer & Hein, 1985; Ranyard, Del Missier, Bonini, Duxbury, & Summers, 2008). However, previous work also suggests that the disagreement in responses may reflect variations in how respondents interpret the Michigan Survey question about "prices in general". That is, some seem to interpret that question as asking about prices they personally pay, while others recognize it as asking about the US inflation rate (Bruine de Bruin et al., 2010), a concept with which members of the general public have some familiarity (Leiser & Driori, 2005; Svenson & Nilsson, 1986; Williamson & Wearing, 1996).

Moreover, responses to the Michigan Survey's question about their year-ahead expectations for "prices in general" vary depending on what respondents think of when generating their answers. Respondents who think relatively more about their personal price experiences than about the US inflation rate report significantly year-ahead higher expectations (Bruine de Bruin et al., 2010), because experiences with large price changes (such as for gas and transportation) are most likely to come to mind (Bruine de Bruin, van der Klaauw, & Topa, 2011). These results are in line with research finding that extreme events are more memorable (Morewedge, Gilbert, & Wilson, 2005), and that price increases are often noticed more than price decreases (Jungermann et al., 2007; Kahneman & Tversky, 1979). If questions that *directly* ask about expected "inflation" focus respondents less on their personal price experiences, they should evoke lower responses than questions that ask about expectations for "prices in general".

In the present research, we test this hypothesis by randomly assigning respondents to answering questions about "prices in general", "inflation", or "prices you pay". We examine how these variations in question wording affect reported expectations, thoughts about personal price experiences, the relationship of reported expectations to salient changes in specific prices, as well as ratings of question clarity and ease of responding.

## 2. Materials and methods

### 2.1. Sample

We conducted an Internet survey with RAND's American Life Panel (ALP). Its members were recruited from 2007 respondents to the Michigan Survey, who were originally contacted through random-digit dialing. Interested individuals without internet access were offered a Web TV. A total of 815 ALP members completed our survey questions. Of those,<sup>2</sup> 54.2% respondents reported being female, 87.7% being white, 66.0% being married or living with a partner, 61.7% having completed education beyond high school, and 55.4% receiving at least \$75 k in household income. Median age was 48 years old ( $M = 47.7$ ,  $SD = 14.3$ ).

### 2.2. Procedure

Our web-based survey was available between May 29, 2008, and November 5, 2008, with 45.7% of respondents completing it by May 31, 2008, and 89.1% by June 30, 2008. Following the Michigan Survey protocol, respondents first answered

<sup>1</sup> Jungermann, Brachinger, Belting, Grinberg, and Zacharias (2007) did examine the effect of response modes on reported price changes for specific product categories, concluding that it was best to ask questions of the format: "12 months ago, 500 g of coffee cost €3.49. How much does coffee cost presently?"

<sup>2</sup> During the months in which the survey was online, the different monthly samples of the Michigan Survey of Consumers included between 53.7% and 59.8% females, 58.8–62.4% being married or living with a partner, 62.8–71.4% having at least a bachelors degree, 37.1–46.5% reporting income over \$75k, 83.2%–85.3% being white, and 59.9–66.1% being 48 years of age or older. By comparison, our sample had higher rates of respondents who were white, married or living with a partner, reporting no college education, having a household income of \$75k or more, and younger – in terms of having values falling outside of the range observed for the Michigan sample.

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