Methodological Improvements Begin with April 2024 Preliminary Release April 5, 2024

Joanne Hsu, PhD, Director

Since the University of Michigan began collecting the first Surveys of Consumers in 1946, the methodology of the surveys has routinely evolved in light of scientific advancements in data collection as well as societal changes in communication. Over the next four months, the Surveys of Consumers will be transitioning from its current method of interviewing via cellular phones with random digit dialing to interviewing via web surveys with address-based sampling. Starting with the preliminary release of April data, we will be supplementing the existing 600 targeted phone interviews per month with additional web interviews such that the monthly sample consists of 75% phone interviews and 25% web interviews. In May, half of the interviews will be collected via phone and half via web, and in June, 75% will be collected via web and 25% via phone. Starting with July's preliminary release, all data will be collected via web, with a target sample size of about 900 to 1,000 interviews per month.

This gradual transition smooths any differences between the two data collections across four months, ensures the continued integrity of the time series data, and is informed by over seven years of running a parallel data collection via the web alongside the official phone data collection. Our research shows that the Index of Consumer Sentiment exhibits a remarkably strong 0.97 time series correlation between the two data collection methods. The methodological design of the transition is consistent with the recommendations of the American Association for Public Opinion Research (AAPOR) Task Force on Transitions from Telephone Surveys to Self-Administered and Mixed-Mode Surveys. Technical details about the transition are available here and posted on the Survey Information tab of our data website.

The web-only surveys will maintain the key features of the current surveys:

- The data collection and twice-monthly release schedule will continue without any changes;
- Data dissemination methods remain the same;
- All core interview questions, including qualitative items, have been adapted for web and designed for both personal computers and mobile devices;
- The rotating panel design will continue;
- The target population remains adults aged 18 and older residing in the coterminous United States.

Summary of implications for data users

- Data users will be able to download and access these data in exactly the same manner and schedule as they are currently. Current headline data will continue to be posted at www.sca.isr.umich.edu, historical time series data at data.sca.isr.umich.edu, and micro-data at sda.umsurvey.org. Variable names will also remain consistent.
- Most measures, particularly index/relative scores and qualitative responses, can generally be interpreted as-is, with the awareness that the four month-to-month changes in estimates between March and July 2024 will reflect not only the typical sources of statistical variation across months – including sampling variation – but also method effects (discussed in more detail on page 3), which vary by survey question. The gradual changeover in methodology means that any method effects will be spread out across four months so that data users can still use the time series without the disruption of a sharp break in estimates for any variables.
- We recommend that data users take a more conservative approach to interpreting change estimates during this transition period, particularly since the size of the method effects differs by survey question, consistent with survey methodology research. Section 4 of the Surveys of Consumers technical report on the methodological transition provides more detail on interpreting the month-to-month changes during the transition period.

The remainder of this announcement will discuss the motivation for the transition and highlight key findings from our research on the parallel web data collection. Full technical documentation of the transition is available here, including a variable-by-variable comparison of phone and web data.

This methodological transition is motivated by the increasing difficulty of upholding long-term data integrity in phone interviewing, along with the potential for future innovations enabled by web interviewing.

In light of the increasing effort required to reach a randomly selected household over the telephone, the Surveys of Consumers research team began initial experiments with web data collection in 2010. Over time, the phone survey landscape has presented heightened challenges, making it increasingly impractical for a high-frequency survey in which timeliness is critical. Currently, one single completed interview requires more than 90 separate phone number dials and over three hours of interviewer time. Also, while there has been no effect on survey estimates thus far, contact with respondents has grown increasingly unpredictable. Navigating these hurdles requires strategic tradeoffs, and the Surveys of Consumers research team have continuously adapted to maintain data quality, representativeness, and precision of estimates. Even in the absence of resource constraints, few tools remain to meet future challenges.

At the same time, the survey and communication technology environments have evolved as well, which enabled us to begin an experimental monthly data collection of web interviews in 2017. Internet and smartphone usage have surged in the U.S. According to Census estimates, 91.2% of Americans have an internet subscription, and 85.3% have cellular data plans (American Community Survey, 2022). By employing address-based sampling (ABS) and interviewing respondents over the web, survey administrators can deploy numerous levers for improving data quality, reducing respondent burden, and improving processing speeds, while increasing scope for further improvements as well, including the targeting of specific populations. According to American Association for Public Opinion Research (2016), "Quite simply, the address lists available today are the best frames available for national U.S. household surveys," supporting our shift to ABS.

Over the past seven decades, similar challenges with data collection have arisen periodically, and the Surveys of Consumers have addressed these challenges through regular improvements in methodology. As an example, the table below displays changes in sampling frames and data collection over time:

Survey Period	Sampling Frame	Data Collection Method for Official Releases
Nov 1952 – Dec 1977	Area Probability Sampling	In-person interviewing
Jan 1978 – Sep 1993	Landline (Random Digit Dialing)	Telephone interviewing
Oct 1993 – Jul 2012	Landline (RDD)	Computer-assisted telephone interviewing
Jul 2012 – Dec 2014	Dual Frame (RDD)	Computer-assisted telephone interviewing
Jan 2015 – Jun 2024	Cell (RDD)	Computer-assisted telephone interviewing
Apr 2024 –	Address Based Sampling	Web interviewing

Methodological choices for the Surveys of Consumers are driven by evidence, and the upcoming transition is the latest step of continuous evolution based on hands-on research and experimentation.

This year's adjustments to the survey methodology are supported by 14 years of experimental research with web interviewing and seven years of parallel web data collection of Surveys of Consumers, both pre- and post-pandemic, during periods of high and low economic growth, as well as high and low inflation. This parallel data collection, which was completely separate from the official cell phone interviews reported in the standard data releases, has facilitated experimentation and fine tuning of methodological design features.

Taken together, the parallel data collection provided us with abundant evidence that data collected through the two methods are broadly comparable, with high time series correlations. The parallel data collection has also enabled us to study differences between the phone and web data. We have found that any differences that arose have been consistent with survey methodology theory as well as evidence from other web surveys; we discuss a few examples below. Comparisons of the parallel data collections are available here.

Preserving the integrity of the time series data is the top priority, and this is facilitated by the gradual transition from full-phone to full-web data collection.

We use the term "method effects" to refer to any differences in estimates from the phone and web interviews; in many cases, these differences are negligible. In our context, method effects include the influence of multiple factors on survey response behavior:

- Interviewer effects: the presence of an interviewer, who is trained to project a friendly and pleasant demeanor, potentially generates more favorable survey responses and fewer "don't know" responses than what a respondent would select in the absence of an interviewer. (See, for example, West and Blom, 2016, Neumann and Strack, 2000)
- Mode effects, including the presentation of questions: Respondents to telephone interviews may use response scales differently than web respondents, who may be more likely to choose middle options (like "same," rather than "up" or "down") under the visual presentation of questions for web interviews. (See, for example, Fricker, Galseic, Tourangeau, and Yan, 2005; Dillman, et. al, 2009; Bishop, 1987)
- Sampling differences: individuals without a cell phone would never be sampled under random digit dialing; those without a mailing address or do not have access to the internet would be missed under the new methodology. (See, for example, Couper, 2017)

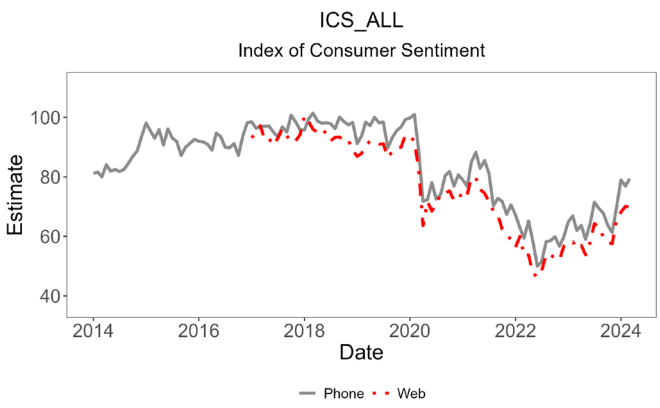
Notably, existing research in survey methodology has not revealed evidence that the effects above would vary across time in a way that is connected to economic conditions. The years of parallel data collection we have conducted show that these method effects are indeed relatively stable over time in the Surveys of Consumers context. Because the magnitude of the method effects varies across questions, we have opted to transition to the new methodology over the course of four months rather than implement a different adjustment factor for each question going forward. The gradual transition spreads out the method effects across four months to ensure the integrity of the time series. The technical documentation describes the various elements of the method effects in more detail, and disentangling the components is an area of continued research.

Throughout the transition to web surveys, microdata will continue to be publicly released after the conclusion of each month. Data users will be able to separately analyze web and phone interviews, or employ their own methods for combining interviews from the two methods.

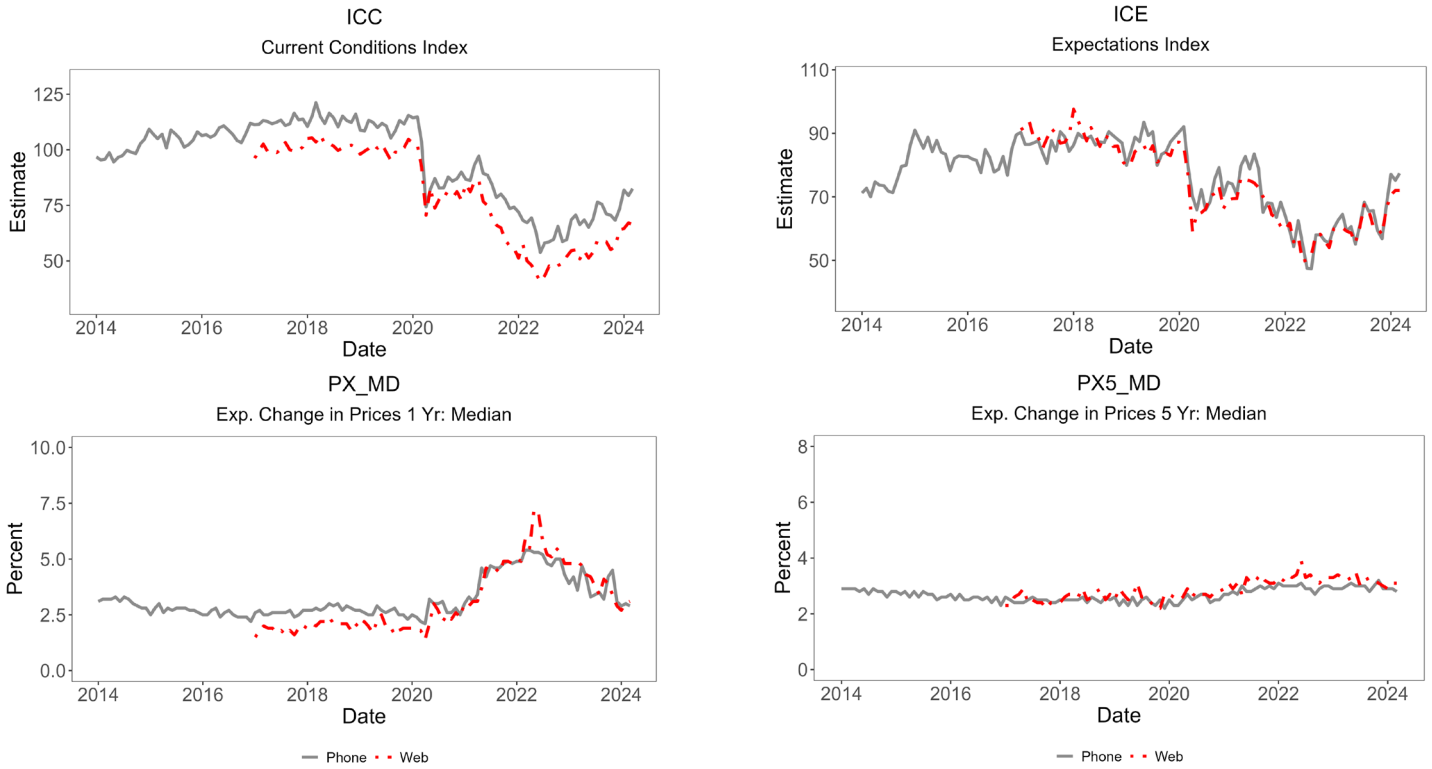
In general, web-based estimates of key indicators exhibit high time series correlations with phone-based estimates.

Web-phone time series correlations are strong for headline variables: 0.97 for the Index of Consumer Sentiment, 0.98 for the Current Conditions Index, and 0.94 for the Expectations Index. Year-ahead inflation expectations have a web-phone correlation of 0.94, and five-year inflation expectations have a correlation of 0.81. Time series charts for these five variables are displayed below.

Note that the Current Conditions Index, which has the highest time series correlation of the three headline measures, has web estimates that are consistently lower than (though parallel to) phone estimates; this is an example of the "method effects" described above, likely attributable to the role of an interviewer projecting positive affect in phone surveys (Neumann and Strack, 2000). Similar patterns are visible throughout the core survey. Index scores or "net" variables – those taking the format of percentage of consumers responding favorably minus the percentage of consumers responding unfavorably – generally have very high time series correlations, primarily over 0.9.



Many of these variables have similar monthly average values between phone and web. For others, web interviews yield somewhat lower values than phone interviews, while at the same



time exhibiting parallel month-to-month changes between the two modes. This is consistent with survey methodological research which has found that phone respondents tend to provide more positive responses than respondents on web or other self-administered modes (see, for example, Christian, Dillman, and Smith, 2008; Morris and Kennedy, 2017; Fowler, Jr., Roman, and Di, 1998).

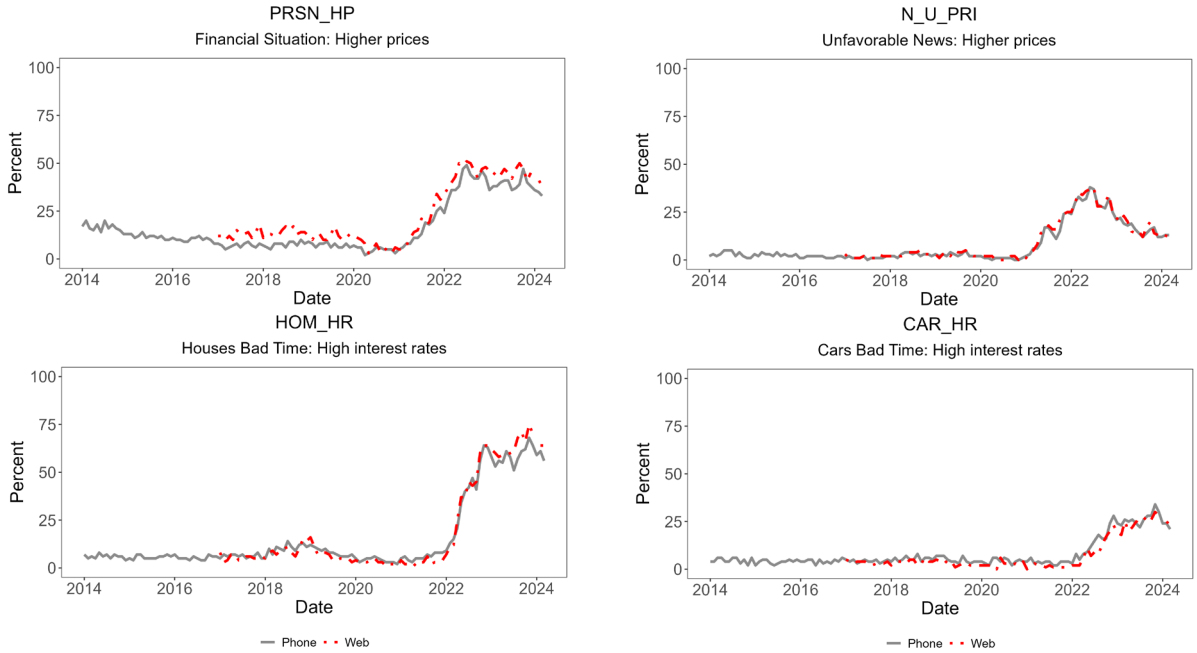
As such, some variables may simultaneously exhibit larger method effects while exhibiting lower time series correlations than others. As mentioned, the gradual transition from phone to web will divide the method effects across four months, which ensures there are no disruptions from a sharp break in estimates for any variables. The technical documentation on our website includes time series charts and correlations for all variables.

Phone and web-based survey data both exhibit similar trends by demographic group.

For both modes of data collection, younger consumers report more favorable levels of sentiment than their older counterparts. Similarly, higher-income consumers report higher sentiment than those with lower incomes. Patterns by political party identification are comparable across modes as well. For both data collection methods, during the Trump administration, Republicans had higher levels of sentiment than Democrats, with Independents in the middle. The pattern was reversed during the Biden administration, again with Independents in the middle.

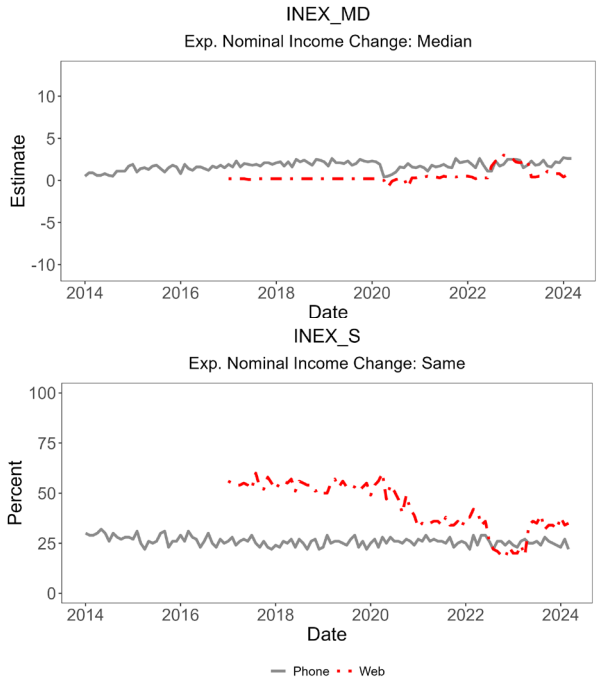
Like phone interviews, our web interviews also yield high-quality open-ended responses, continuing the integrity of the qualitative time series data.

Even without the presence of an interviewer, the web interviews generate coded responses to open-ended, qualitative questions that are generally comparable to those from phone data. Examples from commonly-cited reasons for unfavorable assessments of personal finances, news heard about economic developments, reasons for buying conditions for homes, and reasons for buying conditions for vehicles are displayed below; time series correlations for these variables all exceed 0.96. Some less-frequently used codes have somewhat lower time series correlations, but they also tend to be exhibit substantial month-to-month volatility regardless of mode.



Measures of nominal income expectations will require separate interpretation of trends before and after the web transition.

We have prioritized continuing the long history of stable question wording and design on the Surveys of Consumers. For most measures, the web interviews exhibit strong time series correlations with the phone interviews. One important exception is the measurement of income expectations, where it is apparent that consumers respond to the question quite differently on the phone and on the web, with a time series correlation of 0.14.



This is primarily attributable to the share of consumers reporting that they expect their incomes to stay the same. Since 2017, between 22 and 29% of phone respondents have chosen this option. In contrast, the share of web respondents selecting "stay the same" ranged between 18 and 62% during this period. As a result, the difference between web and phone varies over time.

There are ways to elicit nominal income expectations via the web that would reduce the usage of the "stay the same" response and might generate higher median expectations akin to what had been measured on the phone. However, implementing a full re-design of this question would be inconsistent with our broader approach to other questions, in which we were able to achieve high time series correlations with minimal alterations to question design when adapting them for web interviewing.

The surveys include other questions about labor markets which do not exhibit the same unusual patterns as nominal income expectations. Unemployment rate expectations for, for example, have a 0.97 web-phone time series correlation. The time series correlation for real income expectations is 0.87, albeit at a consistently lower level for web than phone, consistent with survey methodological research showing that phone respondents tend to provide more positive responses than web respondents (see, for example, Christian, Dillman, and Smith, 2008; Morris and Kennedy, 2017; Fowler, Jr., Roman, and Di, 1998). These and other measures can provide additional context on how consumers view labor markets.

Full technical documentation on the methodological transition are available on the Survey Information tab of our data website.

References

Bishop, George F. (1987) "Experiments with the Middle Response Alternative in Survey Questions." *Public Opinion Quarterly*, Volume 51, Issue 2, Summer 1987, Pages 220–232, https://doi.org/10.1086/269030

Christian, L.M., Dillman, D.A. and Smyth, J.D. (2007) "The Effects of Mode and Format on Answers to Scalar Questions in Telephone and Web Surveys." In *Advances in Telephone Survey Methodology* (eds J.M. Lepkowski, C. Tucker, J.M. Brick, E.D.d. Leeuw, L. Japec, P.J. Lavrakas, M.W. Link and R.L. Sangster). https://doi.org/10.1002/9780470173404.ch12

Couper, Mick P. (2017). "New Developments in Survey Data Collection." *Annual Review of Sociology* Vol. 43, Pages 121-145. https://doi.org/10.1146/annurev-soc-060116-053613

Dillman, Don A., Glenn Phelps, Robert Tortora, Karen Swift, Julie Kohrell, Jodi Berck, Benjamin L. Messer (2009). "Response rate and measurement differences in mixed-mode surveys using mail, telephone, interactive voice response (IVR) and the Internet," *Social Science Research*, Volume 38, Issue 1, Pages 1-18 https://doi.org/10.1016/j.ssresearch.2008.03.007

Fowler, Jr., Floyd Jackson, Anthony M. Roman, Zhu Xiao Di. (1998) "Mode Effects in a Survey of Medicare Prostate Surgery Patients." *Public Opinion Quarterly*, Volume 62, Issue 1, May 1998, Pages 29–46, https://doi.org/10.1086/297829

Fricker, Scott, Mirta Galesic, Roger Tourangeau, Ting Yan. (2005) "An Experimental Comparison of Web and Telephone Surveys." *Public Opinion Quarterly*, Volume 69, Issue 3, Fall 2005: 370–392, https://doi.org/10.1093/poq/nfi027

Harter, Rachel, Michael P. Battaglia, Trent D. Buskirk, Don A. Dillman, Ned English, Mansour Fahimi, Martin R. Frankel, Timothy Kennel, Joseph P. McMichael, Cameron Brook McPhee, Jill Montaquila, Tracie Yancey, Andrew L. Zukerberg (2016) "Address-based Sampling: AAPOR Task Force Report." https://aapor.org/wp-content/uploads/2022/11/AAPOR_Report_1_7_16_CLEAN-COPY-FINAL-2.pdf

Morris, George Elliott and Courtney Kennedy (2017) "Personal finance questions elicit slightly different answers in phone surveys than online." Pew Research Center. http://pewrsr.ch/2vzwDwQ (accessed April 4, 2024)

Neumann, R., & Strack, F. (2000) "'Mood contagion': The automatic transfer of mood between persons." *Journal of Personality and Social Psychology, 79*(2), 211–223. https://doi.org/10.1037/0022-3514.79.2.211

Olson, Kristen, Jolene D Smyth, Rachel Horwitz, Scott Keeter, Virginia Lesser, Stephanie Marken, Nancy A Mathiowetz, Jaki S McCarthy, Eileen O'Brien, Jean D Opsomer, Darby Steiger, David Sterrett, Jennifer Su, Z Tuba Suzer-Gurtekin, Chintan Turakhia, James Wagner (2021) Transitions from Telephone Surveys to Self-Administered and Mixed-Mode Surveys: AAPOR Task Force Report, *Journal of Survey Statistics and Methodology*, Volume 9, Issue 3, June 2021, Pages 381–411, https://doi.org/10.1093/jssam/smz062

West, Brady T., Annelies G. Blom (2017) Explaining Interviewer Effects: A Research Synthesis, *Journal of Survey Statistics and Methodology*, Volume 5, Issue 2, June 2017, Pages 175–211, https://doi.org/10.1093/jssam/smw024