Abstract: The American public’s perceptions of macroeconomic conditions changed dramatically during the Covid-19 pandemic, in seemingly-perplexing ways. To document this phenomenon and better understand it, this paper analyzes forty-six years of surveys on the state of the U.S. economy. The effect of inflation on these perceptions did not change during the pandemic, but the effect of unemployment fell significantly. The temporary provision of large income stabilizers generated an unusually mild response to increased unemployment in 2020, then negative real wage growth caused unusual pessimism in 2021-22, despite a tight labor market.

Keywords: economic sentiment; consumer perceptions; economic surveys; macroeconomic conditions

JEL Codes: E32, E27, E01

** This paper has several figures that are best viewed in color. **

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Traditional macroeconomics evaluates the health of the economy through objective fundamentals like unemployment, inflation, and output growth. Theoretical models and policy prescriptions are also expressed in these terms, and are typically unshaped by the public’s perception of economic conditions. For the most part, macroeconomists have concerned themselves with these perceptions only insofar as they predict future values of macroeconomic fundamentals.

Until recently, the cost of doing so has been modest, because these perceptions have evolved in line with macroeconomic fundamentals. During recessions, slowdowns in output and increases in unemployment raise consumers’ pessimism about the economy; high inflation does the same thing. The reverse happens when these variables move in the opposite direction.

The last three years have stood this pattern on its head. During the height of the Covid-19 pandemic in 2020, tremendous swings in output and unemployment were associated with modest and somewhat surprising changes in the U.S. public’s assessment of macroeconomic conditions. The recovery in 2021 and 2022 was equally puzzling, with the public seemingly ignoring large gains in output and employment to despair over a more modest (yet genuine) increase in inflation. This perplexing pessimism has been widely noted in the media, as discussed below, and a variety of explanations for it postulated, none conclusively.

These phenomena deserve to be explained, both in their own right and for what they reveal about the macroeconomy. That is the goal of this paper. We create two comprehensive summary indices of economic perceptions and document their behavior before and during the Covid pandemic. We then examine how these indices relate to macroeconomic fundamentals, how this relationship has changed over time, and why.

Our findings do not support the prevailing media narrative about Covid-era changes and most postulated explanations for it. Unexpected changes in economic perceptions began earlier in the
pandemic than is recognized, were initially optimistic, not pessimistic, and involved unemployment rather than inflation. In an acceleration of a long term trend, unemployment, long a key variable, has become largely decoupled from these perceptions, as real wages have become similarly disconnected from labor market strength. As low unemployment has ceased to translate into real wage gains, economic pessimism has grown.

Section I. Economic Pessimism in the Media

The divergence between objective and subjective measures of macroeconomic conditions was not widely recognized until early 2022, though it had in fact begun much earlier, as we will see. Various barometers of public perceptions showed increasing pessimism despite low unemployment and reasonably strong economic growth.

There’s something very peculiar going on with how Americans perceive the economy...there’s a huge disconnect between economic reality, which is mixed–inflation is a big concern, but job growth has been terrific–and public perceptions, which are weirdly dismal. (Paul Krugman, New York Times, Mar. 3, 2022)

Once this was recognized, the search for explanations began. Some were founded in under-appreciated economic factors:

People are bothered by inflation, even when their own incomes are more than keeping up. Maybe that’s because inflation conveys a sense that things are out of control...inflation aversion is simply a fact of life (Paul Krugman, New York Times, Feb. 3, 2022)

In the long run we are all dead, Keynes famously said. What he didn’t say, but I will, is that in the medium run our wages have not yet caught up with inflation...Right now it is the medium run that is more vivid in the eyes of most Americans. (Tyler Cowen, “Economic Pessimism Makes Sense Right Now,” Bloomberg, Nov. 10, 2021)
Even though gas prices have retreated significantly over the past couple of months, behavioral economists say much of the nation’s collective angst can be chalked up to prices at the pump. (Martha White, “Consumers Still Don’t Feel Great about the Economy, Despite Lower Gas Prices,” CNN Business, Aug. 12, 2022)

Others were rooted in behavioral factors, namely, psychology or politics:

People are not responding rationally to objective data right now. We are living in polarized, partisan times. Questions about consumer confidence or the country being on the right or wrong track are meant to get at people’s views of the world outside of politics. But nothing lies outside of politics anymore. (Fareed Zakaria, Washington Post, Feb. 10, 2022)

[The] media have accentuated the negative. One liberal think tank analysis found that CNN and MSNBC devoted 50 percent more screen time in November to inflation than to all other economic developments combined…Fox News has devoted three times as much screen time to inflation as CNN. (Paul Krugman, New York Times, Feb. 3, 2022)

Soon after President Biden took office—and as the pandemic seemed to be winding down—[economic] optimism returned. Until it didn’t. An inextricable part of this is partisanship… Partisanship is part of what’s driving pessimism. (Philip Bump, Washington Post, June 7, 2022)

Still others were based on tangible non-economic factors:

The Times’s Nate Cohn makes a persuasive case [for] two causes—the delta variant and the withdrawal from Afghanistan… Life was getting messy, and the president who had promised normalcy…was not delivering. (Fareed Zakaria, Washington Post, Feb. 10, 2022)

I would be surprised if a media narrative were the full story. What else might explain the dissatisfaction? Even if you forget about inflation, the experience of living and working in the U.S. economy is often unpleasant right now… Public buses and subways are unreliable…after-school activities are unreliable, creating child-care gaps… Grocery stores are routinely out of items. Retail lines are long. Doctor’s appointments can be hard to get… By many measures—mental health, suicide attempts, blood pressure, violent crime, vehicle crashes, student learning—society is not functioning very well. (David Leonhardt, New York Times, Feb. 1, 2022)

This grab-bag of potential explanations rests on a vacuum, or near-vacuum, in the literature.

Most studies of public perceptions utilize longstanding indices produced by the University of
Michigan and the Conference Board, neither of which asks about the overall macroeconomy. Instead, they inquire about “business conditions,” personal finances, and “available jobs,” and apply prescribed weights to the responses to create an index. Given its focus on forecasting and use of “pre-weighted” data, this work can’t say much about the “rationality” of public perceptions or their macroeconomic correlates. As a result, when these perceptions behave in puzzling ways, almost anything is legitimate target of suspicion.

However, this vacuum is not complete. For decades, several reputable American pollsters and news organizations, including Gallup, the New York Times, and the Washington Post, have asked respondents to assess the national economy. Grant (2014) analyzed these surveys and concluded that they are statistically distinct from the Michigan and Conference Board indices, informative about current values of macroeconomic variables (which are reported with a lag), and related to these variables and to each other in consistent and sensible ways. This work is the natural starting point for understanding what happened to consumer perceptions during the Covid-19 pandemic.

**Section II. Creating Indices of Macroeconomic Perceptions**

**Data.** Directly asking about the overall macroeconomy provides necessary face validity and lets respondents determine for themselves how to (implicitly) weight unemployment, inflation, etc. Two such questions have been asked over a span of decades: “good economy” (GE) questions that ask about the current state of the macroeconomy, and “better/worse” (BW) questions that inquire about the change in economic conditions. Extensive analysis in Grant (2014) affirmed these questions’ construct validity and showed that responses to the BW questions were closely correlated with
differences in the responses to the GE questions, though not so highly that the two measures can be considered synonymous.

While GE questions have been asked since 1985 and BW questions since 1976, neither has a single, consistent source. Rather, similar questions are asked by different pollsters. Surveys come and go; others are sporadic; each phrases the question and response options differently. One must amalgamate all of this data into summary indices, as described below. Tables 1 and 2 describe all surveys of either type that have any material temporal coverage, all of which are employed here. Grant (2014) utilized a subset of this data through 2010; here it has been expanded and updated through early 2023. Each survey typically contains about one thousand respondents in each month that it is conducted, so little variation comes from sampling error.

While any given “good economy” survey has significant temporal gaps, these are largely filled in by other surveys. Only nine of the 447 months from Dec. 1985 to Feb. 2023 are left uncovered. Larger gaps occur for the “better/worse” surveys. Of the 561 months from June 1976 to Feb. 2023, 146 are uncovered, mostly in the earlier years of this period. After 2000, only two months are not covered. Furthermore, every year of the sample period has at least three months of data, enough to detect changes in sentiment over the business cycle.

Methods. We wish to amalgamate the information in each class of survey questions (good economy, better/worse), accounting for these differences in phrasing (and associated differences in response frequencies), and allowing for the temporal gaps in each survey. Since each survey within a class—Gallup, the Washington Post, and so on—measures the same construct, their responses should and do have a strong underlying commonality. We express this commonality as a latent variable and
estimate it nonparametrically.

We let each individual’s survey response be governed by three terms: a time-varying latent variable, $L$, common to all respondents of all surveys (within a class); a random variate, $\alpha$, that generates cross-section variation in individual responses at any given point in time; and a time-invariant, survey-specific set of thresholds, $\mu$, that distinguish an “excellent” response from a “good” response, and so on. One can treat $L$ as a scalar index of perceived macroeconomic conditions.

The latent variable and associated thresholds are estimated by relating all surveys’ responses nonparametrically to time. This is done by expressing time as a series of splines, which are used as independent variables in an ordered probit model in which the responses are the dependent variable. Applying the estimated coefficients to the splines yields a smoothed, amalgamated, unrestricted estimate of the latent variable that extends for the full time span of that class of surveys, filling in any survey-less months.

Following Grant (2014), this model is formally stated as follows. Let $j$ index individuals, $t$ time in months, $s$ splines, and $z$ surveys (within a class). For each survey $z$, the individual-level latent variable, $I$, governing each individual’s response equals the sum of $L$ and $\alpha$, as follows:

$$I_{jt} = L_t + \alpha_{jt} = \sum_{s} \beta_s S_{st} + \alpha_{jt} \quad , \quad \text{with} \quad \sum_{s} S_{st} = 1 \forall t \quad \text{and} \quad \alpha_{j} \sim N(0,1) \forall t$$

*Least Favorable Response* if $I_{jt} < \mu_0$

*Next More Favorable Response* if $\mu_0 < I_{jt} < \mu_1$

*Most Favorable Response* if $I_{jt} \geq \mu_{\text{MAX}}$

$\mu_0 = 0$

where $S$ is a set of “B-splines,” determined according to the method of deBoor (1978), which sum...
to one at each point in time, and the $\mu$’s are the thresholds that $I_{j,t}$ must exceed in order for that respondent to report that economic conditions are “excellent” instead of “good,” and so on. The predicted value of $L$ at any time $T$ is $\sum \beta_i S_{x,T}$.

This ordered probit model is applied separately to each class of surveys (GE, BW), with an associated latent variable estimated for each. Each latent variable amalgamates the information contained in that class of surveys into a single time series, which serves as the single, summary measure of economic perceptions for that class of surveys and as the dependent variable in regressions that relate these perceptions to basic macroeconomic variables.

Results. Figure 1 presents both latent variables over the period June 1976 - Feb. 2023. Neither has natural units, which are defined by the standard probit identification condition that the errors have unit variance. Nonetheless, there is a simple basis for interpretation. Each survey’s thresholds lie about one unit apart, so (roughly speaking) a one unit increase in either latent variable is akin to each respondent choosing the next best response option.

In both measures, the least favorable macroeconomic perceptions over this period are all associated with acknowledged recessions. The Covid-era trough is the fourth smallest of the lot, with the recessions in the early 1980s, the early 1990s, and the late 2000s all outpacing it in misery.

Figure 2 compares the BW variable with the difference of the GE variable. (Eight month

1 Following the original study, about 2.5 splines per year are employed, in order to preserve all but the highest frequency variation. For simplicity, 1,000 people are assumed to respond to any given survey in any given month (to which the reported percentages responding “excellent,” etc., are applied). This is generally accurate (and an understatement otherwise).

2 This holds for the BW question only when all three response options are explicit.
backward differences are used, as Grant, 2014, found that this yielded the strongest correlation.) The differenced GE measure is quite similar to the BW measure, though the latter better anticipates significant changes in the economy.

Section III. Macroeconomic Factors Influencing Assessments of the National Economy

Methods. To determine the macroeconomic underpinnings of these survey responses, we regress the associated latent variables on a set of economic fundamentals. Following Grant (2014), we use inflation, the unemployment rate, output growth, a medium-term interest rate (the seven-year Treasury bill), an index of the strength of the dollar, and (in the levels specification) a time trend. These are graphed in Figure 3.

The first three variables in this list are not instantaneously reported with perfect accuracy. Preliminary values for the unemployment rate and output growth are reported with a lag and subsequently revised, while the consumer price index, used in calculating inflation, is reported with a one month delay. Grant (2014) shows that the revised values better explain these survey responses, implying that economic assessments are based on the public’s genuine perceptions of macroeconomic conditions, not reported statistics. We use the revised values available as of March 2023 and scale the dollar strength index by a factor of ten, so that its standard deviation is 3

3 Inflation is calculated using the all-urban Consumer Price Index, and the unemployment rate is seasonally adjusted. Each quarterly observation of the real, chain-weighted, seasonally-adjusted Gross Domestic Product is assumed to pertain to the middle month of each quarter; the other months are calculated by linear interpolation. The trade-weighted index of exchange rates of the U.S.’s most important trading partners is from the Federal Reserve Bank of St. Louis. Inflation and output growth are calculated using twelve month backward differences. See Grant (2014) for more on the selection of these variables and the alternatives that were considered.
comparable to those of the other variables (see Table 3).

Following Grant (2014), we estimate level and difference specifications for the GE question and regress the BW latent variable on differences of the independent variables. Backward differences of twelve months are used in the differenced GE specification (which nearly maximized explanatory power and controls for seasonality without sacrificing degrees of freedom) and eight-months in the BW specification (which maximized explanatory power in that paper). Estimation is conducted using ordinary least squares (OLS), with the standard errors adjusted using the Newey-West correction. The sample period begins in 1976 for the BW question and a decade later for the GE question, and ends in December 2022, to allow revisions to unemployment and GDP growth.

We acknowledge that factors other than macroeconomic fundamentals could affect assessments of the economy. An obvious suspect is media coverage. Disentangling causation from correlation here is tricky, and even recent, methodologically sophisticated studies disagree (Hopkins et al., 2017; Boydstun et al., 2018). However, even when media coverage is found to matter, “the lion’s share of consumer sentiment is explained by economic fundamentals...economic performance accounts for...much of the variance in economic media tone” (Boydston et al., 2018, p. 997). Our operative assumption, in line with these findings, is that one can form meaningful inferences about changes in consumer perceptions without accounting for secondary factors such as media coverage.

Baseline Results. Descriptive statistics and estimates are presented in Table 3. As each independent variable’s standard deviation is broadly comparable, relative coefficient magnitudes are meaningful. We focus initially on the pre-Great Recession time frame, found in the leftmost column of each panel of the table. Here, as in Grant (2014), economic assessments are most strongly influenced by
unemployment. Increasing this by three percentage points would cause most respondents to choose the next worse response option. Significant but smaller effects, in the expected direction, are observed with inflation and GDP growth, with positive effects for the exchange rate and mixed, often small effects for the interest rate. Except for this last variable, the estimates are fairly consistent across specifications, in part because assessments of the macroeconomy adjust rapidly (see Grant, 2014).

Overall, that paper concluded that one percentage point of unemployment was “worth” two to five percentage points of inflation, in terms of perceptions. This ratio is duplicated in studies that relate measures of happiness or life satisfaction to unemployment and inflation (DiTella, MacCulloch, and Oswald, 2001, 2003; Wolfers, 2003; Malasevic-Perovic, 2008; Blanchflower et al., 2014); with other such studies duplicating our generally small effects of long-term interest rates and economic growth (Oswald, 1997; Welsch, 2007, 2011). This 2:1-5:1 ratio also appears when relating post-1970 presidential approval to economic conditions (Berlemann and Enkelmann, 2014).

This ratio, then, is widespread. It is also reasonable, as it aligns with the “costs” of each factor as experienced by the public. The cost of inflation is straightforward: a loss of purchasing power. An unanticipated, general price increase of one percent lowers purchasing power by one percent in the short run (less in the long run, as the labor market adjusts). In contrast, the costs of unemployment are multifaceted and large (Helliwell and Huang, 2014). A number of studies have found that a one percentage point decrease in unemployment raised U.S. men’s wages by about 1.5% (Coleman, 1984; Bils, 1985; Rayack, 1987; Solon, Barsky, and Parker, 1994; see also Barlevy, 2001). In addition, the unemployed lose earnings and the opportunity to gain valuable work experience and suffer from reduced mental health, while the employed are less able to switch jobs.
and have fewer weekly hours. This logic supports the 2:1-5:1 ratio observed in the literature.

This conclusion rules out one explanation for Covid-era movements, namely, that the public intrinsically values low inflation more than low unemployment:

One theory...goes like this: When voters secure a raise or new job, they tend to interpret that as a product of their own efforts and abilities; when they go to the store and see that prices are up, they blame “the economy” and the politicians who manage it (Eric Levitz, “Five Reasons Voters Underrate the Biden Economy, New York Magazine, Feb. 2022).

People are bothered by inflation, even when their own incomes are more than keeping up. Maybe that’s because inflation conveys a sense that things are out of control...inflation aversion is simply a fact of life (Paul Krugman, New York Times, Feb. 3, 2022).

Valuing a point of unemployment more than a point of inflation, as has been the case across a variety of subjective metrics, is reasonable.

Updated Results. The baseline we just established was dominated by data from the late twentieth century. This is true not only for our initial estimates but also for the happiness, presidential approval, and wage cyclicality studies we cited, which all were dominated by data from the 1970s and 1980s. How do things change when more recent data is incorporated?

To investigate, we now extend the sample period through December 2022, in the rightmost columns of each panel of Table 3. The estimate on unemployment falls dramatically in all specifications, with the other estimates exhibiting smaller, unsystematic changes. The macroeconomic underpinnings of consumer perceptions have indeed changed. But they involve unemployment, not inflation.

To illuminate the timing and nature of these changes, we re-estimate the BW and differedenced
GE specifications over a successive sequence of time periods, ending in Dec. 2022, Dec. 2021, Dec. 2020, and so on, back to 1990 for the first regression and 2000 for the second. This yields a sequence of coefficient estimates on each independent variable. Those for unemployment, output growth, and inflation are reported in graphical form in Figures 4 and 5.4

Some variables’ estimates are stable over time and some are not. In both specifications, the unemployment coefficients moderate as the sample period lengthens, especially after the Great Recession and the onset of the Covid-19 pandemic. For GDP growth, the results are mixed. In the former specification, in Figure 4, coefficient estimates grow over time but remain stable when Covid-era data are included. In the latter specification, in Figure 5, they remain largely stable until the Covid era arrives and then fall precipitously. In contrast, the coefficient estimates on inflation remain relatively stable throughout.

This indicates that the moderation of unemployment’s effect is not simply a Covid phenomenon, but part of a longer term trend. In the better/worse estimates in Figure 4, the unemployment coefficient estimate in pre-pandemic 2019 is half of its value in 1990; a comparable decline occurs in the shorter time frame in Figure 5.

Is this decline also reasonable? Two strands of evidence bear on this question. One examines labor market fluidity, as expressed in worker flows between jobs and/or employment. Molloy et al. (2016) argue that fluidity has declined since the 1980s, and Davis and Haltiwanger (2014) since 2000. Both studies show that this labor market ossification is partly attributable to an aging workforce; beyond that, the explanations are multifaceted but less conclusive. The possibilities include changes in industrial composition, firm age, the specificity of human capital,

4 There are relatively small effects on the coefficient estimates for the remaining variables.
and labor market regulation (e.g., employment at will or occupational licensing).

One would expect such ossification to dampen the wage impact of business cycle fluctuations. Two studies provide direct evidence on this point. Molloy et al. (2016) argue that wage cyclicality fell in the 2000s, while Grant (2001) compares the 1975-81 period with 1983-93, and finds continued procyclicality among nonunion workers but dramatically reduced cyclicality among union workers. These are joined by a sequence of panel studies that relate individuals’ average annual real wage change to the contemporaneous change in the national unemployment rate. Earlier studies of this type, cited above, found that a one percentage point decrease in unemployment raised men’s wages by about 1.5%; the increases were concentrated among job changers (3-4%), not job stayers (about 0.5%). The two analogous studies utilizing later time periods obtain smaller estimates. Gertler et al. (2020; data from 1990-2012) get effects of 0.5% for job stayers and 1.6% for job switchers, while the overall effect in Bellou and Kaymak (2021; data from 1979-2008) is only 0.2%. This is a notable degree of moderation in wage cyclicality.

5 This evidence estimates Beaudry and DiNardo’s (1991) implicit contract model for three different decades—the 1980s, 1990s, and 2000s—and obtains markedly lower estimates for the 2000s. Grant (2003) affirms Beaudry and DiNardo’s estimates for the 1976-1984 and extends them to a variety of data sets spanning the mid 1960s to the late 1990s. On the other hand, Ballou and Kaymak (2021) largely reproduce Beaudry and DiNardo’s and Grant’s findings on data from 1979-2008; this runs counter to Molloy et al.’s result.

6 The only other common approach relates wage levels to unemployment levels and individual fixed effects. However, no early studies (with 1960s-1980s data) employ this approach, and Ballou and Kaymak (2021) show that the two specifications do not yield equivalent estimates. Thus these estimates are uninformative about changes in wage cyclicality over time.

7 Gertler et al.’s results are directly comparable, as they are also for men, as in all of the wage cyclicality studies cited in the previous subsection. Bellou and Kaymak include men and women, but their estimate is so small it definitely indicates a moderation in cyclicality. Solon et al. (1994) find that women’s cyclicality is one-third of men’s in their (older) data; this is still more than double Bellou and Kaymak’s overall effect.
Overall, the evidence consistently implies that U.S. wage cyclicality has fallen in recent decades. If so, improved macroeconomic conditions would be associated with smaller increases in real earnings. The moderation of unemployment’s effect on economic perceptions is also reasonable, because wages are now less sensitive to the business cycle.

Section IV. The Great Decoupling

Covid Era Perceptions: Explained and Unexplained. To focus on the Covid era in detail, we take pre-Covid estimates on all independent variables in all three specifications, from the beginning of the sample period through Dec. 2019, and use them to predict the values of the dependent variables through Dec. 2022. Figure 6 contains the actual and predicted values of each variable, whose difference equals the residual. Prior to the Covid era, these residuals have occasionally been sizeable, generally at the onset of and emergence from recession, with a magnitude of about one half unit. Covid-era swings are far larger and more rapid. These residuals offset similarly large variation in predicted perceptions, yielding modest changes in the latent variables themselves. Beneath Figure 1’s placid surface lies great turbulence.

A more granular understanding of these changes comes from a decomposition attributing them to changes in the independent variables and in the residual. The components of the decomposition are calculated using the following identity:

$$L_t - L_{t-3} = \delta_1(X_{1t} - X_{1,t-3}) + \delta_2(X_{2t} - X_{2,t-3}) + .... + (e_t - e_{t-3})$$  \hspace{1cm} (2)

where \( t \) is time in months, \( L \) is the GE latent variable from equation (1), the \( X \)’s are the independent
variables, \( e \) represents the residual, and the \( \delta \)'s are regression coefficients, which are estimated through Dec. 2019. (The other specifications’ results are similar–see the bottom of Table 4.)

The decomposition is presented in Table 4, beginning in early 2020, just before Covid lockdowns take effect, and ending in late 2022. It reinforces the decoupling documented above and affirms that unemployment is the prime source of expected swings in perceptions, far more than inflation. Equally notable are the generally negative residual contributions after Q2 2020, which often surpass the contributions of the independent variables. This reflects a secular increase in pessimism over this period, as indicated by the steadily worsening GE residual and consistently negative BW residual in Figure 6. The predicted values of the latent variable in early 2020 and late 2022 are almost identical, but the actual value declines by about one unit over this period.\(^8\)

In summary, during the Covid era, “puzzling” economic perceptions began earlier than is recognized, were (initially) far “too high,” not “too low,” involved unemployment much more than inflation, and continued a longer term trend of reduced sensitivity to labor market conditions. Most importantly, there is not one puzzle, but two: diminished sensitivity to large swings in unemployment in 2020, followed by an unexplained secular decline after mid-2020. Below, we argue that these two puzzles have different causes; together, they largely explain Covid-era swings in the public’s perceptions of the economy.

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\(^8\) Table 4 may overstate what happened in mid-2021, when a temporary surge in economic growth is paired with slight declines in the latent variable. The period used to calculate GDP growth is especially favorable, coming twelve months after Q2 2020's deep contraction in output. So is this variable’s coefficient estimate, which is twice as high in the levels GE specification as in its confederates. Qualitatively, however, the main point still stands. Using more conservative quarter-on-quarter (annualized) growth numbers and the more conservative coefficient estimates of the other specifications, the latent variable is predicted to increase modestly in the first and second quarters of 2021, while its actual change is negative.
Initial Decoupling. What caused the initial decoupling of perceptions from macroeconomic fundamentals? One explanation is suggested in Table 4’s final column, which documents major policy actions during this period that affected households directly, through monetary transfers (rather than indirectly through changes in growth or unemployment). Two major sets of actions were initiated with March 2020's CARES Act: Economic Impact Payments (EIP), or stimulus payments, and enhanced unemployment insurance (UI) that increased the amount and duration of payments while granting eligibility to self-employed workers. Each could be worth thousands of dollars to a household.\(^9\) Altogether, these and subsequent actions transferred roughly $2 trillion to households, far outweighing the aggregate loss of labor and capital income.

On a quarterly basis, the initial timing of these actions broadly corresponded to changes in the residual in Table 4. The UI expansions and initial EIP associated with the CARES Act could account for Q2 2020's large positive residual, and its reversal in the following quarter as well. Not having plummeted in Q2 2020, the latent variable had little room to rise in the following quarter, as the economy began to recover. Beyond that, the timing is mixed. The 2021 initiation of expanded Child Tax Credits was associated with an increase in the residual, but the second and third EIPs were associated with declines. Still, as household balance sheets came to depend more on transfers and less on the state of the economy, it is unsurprising that economic sentiment would become somewhat decoupled from macroeconomic conditions.\(^10\)

\(^9\) In Q2 2020, UI payments increased by $600 per week, while a family of four could receive nearly $4,000 in stimulus payments. As 2020 proceeded, enhanced UI benefits continued, albeit at a lower rate; two additional rounds of EIP followed at the turn of the year (along with an enhanced Child Tax Credit). Each of these could pay a family of four more than $5,000.

\(^10\) This decoupling is also observed in the Federal Reserve’s more recent Survey of Household Economics and Decisionmaking. This survey invites respondents to assess not only the
These financial stabilization programs had ended as 2022 dawned; a few months later, the deadly Omicron wave of Covid-19 had passed. The Covid era began to recede. Nonetheless, public perceptions continued their perplexing run. The good economy latent variable continued to decline, with the largest change coming from the residual component, as Table 4 shows. The BW latent variable in Figure 6 (like its differenced GE counterpart) tells a similar story in difference terms. Throughout 2022, its residuals have been roughly $-\frac{1}{2}$, supporting a continuing sense of economic decline that continues to push GE ratings downward. In other words, both latent variables support “continued decoupling” after 2020. This deserves its own unique explanation.

**Continued Decoupling: What It Isn’t.** The media attention lavished on this “continued decoupling” fostered several proposed explanations, as quoted in Section I. We pose them here as hypotheses:

**Hypothesis 1: “Overreaction” to Inflation.** The public is “overreacting” to inflation, more than is “economically reasonable.”

**Hypothesis 2: High Gas Prices.** The public is reacting to high gas prices, over and above their contribution to general inflation.

**Hypothesis 3: Political Partisanship.** The public is viewing the economy through a partisan lens, “irrationally” lowering assessments of the economy.

**Hypothesis 4: Mismeasurement of Labor Market Slack.** Headline unemployment doesn’t adequately reflect the state of the labor market, perhaps because labor force participation fell.

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overall economy, but also their own financial condition. In this data, assessments of the latter have improved slightly during the pandemic, consistent with observed increases in household wealth, while assessments of the former have plummeted (Thompson, 2022). Financially, people were doing well, but not crediting the economy for it. This theme will be further developed below.
Hypothesis 5: Low Real Wages. The rapid onset of unexpectedly high inflation in the second half of the Covid era has lowered real wages for many workers, despite a strong economy.

We already cast doubt on the first hypothesis in Section III, showing that Covid-era perceptions involved an under-reaction to unemployment, compared to historical norms, rather than increased sensitivity to inflation. We now address the next three hypotheses, examining whether the postulated factor is related to past residuals in either latent variable. The Appendix graphs the residuals and two of these factors.

Gas Prices. This is the only possibility of the four to have been considered in the literature, though inadequately for our purposes. Low gas prices did not prevent GE assessments from being unexpectedly low in 2015-2016; nor did higher prices prevent BW assessments from being unexpectedly high in 2017-2019. Over the 1991-2019 period for which we have data, the correlation between the twelve-month change in gasoline prices and the residual is, perversely, positive in all three specifications (though generally small).

“Unmeasured” Labor Market Conditions. If the headline unemployment rate overstated labor market strength, predicted values of the latent variable would be unexpectedly high and the residuals unexpectedly low.

11 Edelstein and Kilian (2009) and Johnson and Lamdin (2012) examine how gas prices affect the Index of Consumer Sentiment, controlling for purchasing power and real consumption in the former paper and for income in the latter paper. This index is a combination of current and future conditions—the former paper is especially expectations-focused—and subject to the limitations pointed out in the introduction. Furthermore, neither study accounts for unemployment, the most important control of all. Under these circumstances their findings have limited applicability here.

12 This correlation is taken from 1991 through the end of 2019, the period for which the data are available from the Federal Reserve Bank of St. Louis. The remaining correlations are taken from 1983 (when the relevant wage series begins) through the end of 2019.
There is no evidence for this. Except for the spring of 2020, the six unemployment measures created by the Bureau of Labor Statistics, U1-U6, move in concert during the Covid era. Establishment-level data indicates slightly more job creation than the household survey on which the unemployment rate is calculated. (In a similar vein, Gross National Income has risen more than GDP.) Pre-Covid changes in the labor force participation rate are weakly related to the BW and GE residuals, with correlations below 0.10 in magnitude.

Political Factors. If economic assessments are imbued with political sentiment, waning fortunes for the governing (Democratic) party could drag down perceptions of the economy as well. This conclusion is indirectly supported by the jump in the BW latent variable observed after Donald Trump took office in 2017, which (cross-tabulations show) stems from a large increase in sentiment among Republicans, offset by a smaller decline among Democrats.

However, this jump is “identified” by the only BW survey with any material coverage over the period 2015-2017, that taken by YouGov. Unlike the other surveys utilized in this paper, it only surveys registered voters. This can affect the sample composition, while the question screening out nonvoters could have priming effects that cause respondents to view subsequent questions in a political light. A similar change is not observed in GE assessments (in the latent variable itself or in either survey with regular coverage over that period), nor has it been observed with either latent variable in prior presidential transitions.

To investigate further, we use Fair’s (2018) analysis of economic factors on electoral outcomes. We treated the pre-election (October) residuals from all three of his specifications (President, Congress in presidential election years, Congress in off-years) as dependent variables, and related them (independently) to both latent variables and to their residuals. In this large set of
regressions, the resulting correlations were small and dispersed around zero. The evidence for a causal link from political sentiment to consumer sentiment is tenuous at best; the direct evidence that such a link has recently diminished economic optimism is non-existent.

Continued Decoupling: What It Is. The final hypothesis is wages failed to keep pace with inflation after 2020, generating unexpectedly pessimistic assessments of the macroeconomy.

If wages respond to unemployment and inflation in a consistent way over time, they would have no independent effect on economic perceptions (beyond that generated by those other two variables). If this consistency does not hold, however, unexpectedly low real wages could generate economic pessimism. A decoupling of real wages from macroeconomic fundamentals could cause economic perceptions to become decoupled from these fundamentals as well.

As before, we proceed by seeing if real wages can explain past pre-Covid residuals in either latent variable. This is not a trivial exercise. The skill composition of the workforce varies countercyclically (Solon, Barsky, and Parker, 1994), preventing the use of aggregate statistics to measure real wage changes. Instead, it is standard to account for skill via individual fixed effects (explicitly or implicitly, through differencing), using microdata that follows individuals across time. The U.S. data suitable for this purpose is limited. The Current Population Survey (CPS) is large but loses everyone who changes location between surveys, including those who move because they have changed jobs. The Panel Study of Income Dynamics (PSID) and National Longitudinal Surveys track location-movers but are much smaller, and the latter follows cohorts with a limited age range.

With these caveats noted, we found two published sources of average individual-level wage growth over time. Solon et al. (1992) report annual wage changes among males in the PSID from
1967-1987, while the Federal Reserve Bank of Atlanta publishes a wage growth series, the “Wage Growth Tracker,” that utilizes matched panels from the CPS from 1983 forward (as in Grant’s 2001 analysis of wage cyclicality). The annual real wage changes implied by both are graphed in Figure 7, alongside the annualized BW residual from Figure 6.

Both series correlate with this residual fairly strongly. For the PSID, the correlation is 0.53; for the CPS, it is 0.38 (through 2019, and higher through 2022). Crucially, this latter series affirms substantial real wage losses in 2021 and 2022. These findings support the perception of an economy that is getting worse, which is reflected in negative BW residuals and declining GE residuals.

Further leverage can be gained from age-level breakdowns, which are provided by the Wage Tracker and by YouGov for the BW question. We identify three age groups: Young (teens and 20s, roughly speaking), Middle (30s and 40s), and Older (50s and 60s—see the note to Figure 7 for more detail). The bottom panel of Figure 7 presents a scatterplot of real wages against the net positivity of sentiment for all three groups. Three time frames are also distinguished—the 2010-2019 expansion, 2020, and 2021-22—with trendlines provided for the expansionary period.

*Across* these three age groups, the highest wage growth is experienced by the Young, who are generally the most positive about economic conditions. With age comes reduced wage growth and increased pessimism. Similarly, *within* two of these three groups, Middle and Older, sentiment improves when wages rise faster, with correlations that equal or exceed those quoted above.\(^\text{13}\)

These last two groups dominate the labor market and survey respondents; together they

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\(^{13}\) The pre-Covid correlations are 0.67 for the Middle group and 0.37 for the Older group. For the remaining group, Youth, pre-Covid sentiment was similar, regardless of wages, and the correlation is near zero. The correlation is strongest in the group with the greatest labor market participation and weakest in the group with the least labor market participation.
explain how perceptions evolved before, during, and after Covid. During the pre-Covid economic expansion, real wage growth varied substantially from one year to the next, and optimism about the economy varied accordingly, generating points that hug the trendlines fairly closely. In 2020 came Covid, and sentiment plummeted in all three age groups, as shown in Figure 7's largest three points, all clear outliers. In 2021 and 2022 unemployment and GDP growth normalized but real wages fell substantially. Economic perceptions fell right along with them, as shown in the larger (but not largest) points in the figure. These points lie near the pre-Covid trendline, implying that low real wage growth alone explains most of the drop in sentiment during those two years. This decline is not irrational, but a reflection of the inability of wages to keep up with inflation.

Section V. Conclusion

During the later part of the 20th century, the public’s assessment of the macroeconomy was fundamentally “rational.” Different surveys of economic conditions related coherently to each other, to related surveys, and to macroeconomic fundamentals in a way that was fairly stable over time. A point of unemployment mattered much more than a point of inflation, in line with a contemporaneous literature demonstrating the sizeable procyclicality of real wages.

Recent decades have upended those patterns in the same way that Hemingway once described the onset of bankruptcy: gradually, then suddenly. The importance of unemployment slowly waned as wage cyclicity tempered. Then came Covid. It, and its aftermath, blew apart the tightly linked triangle of labor market tightness, real wage growth, and economic perceptions—first (probably) through mammoth government transfers, then through the inability of wages to keep up with
inflation despite a tight labor market. This caused economic perceptions to decouple from the unemployment rate, generating unusually pessimistic responses to “better/worse” questions and increasingly pessimistic (and negative) responses to “good economy” questions. As of the end of 2022, this process has largely played out but has not begun to reverse. In order for that to happen, substantial real wage growth will be required.
REFERENCES


<table>
<thead>
<tr>
<th>Survey Organization / Sponsor</th>
<th>Question Asked of Respondents</th>
<th>Temporal Span</th>
<th>Observations / Months in Survey Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABC News / Washington Post</td>
<td>“Would you describe the state of the nation’s economy these days as excellent, good, not so good, or poor?”</td>
<td>Monthly, Dec. 1985 - Feb. 2010, and irregularly thereafter up to the present.</td>
<td>320 obs. in the 447 months from Dec. 1985 to Feb. 2023</td>
</tr>
<tr>
<td>Gallup / USA Today</td>
<td>“How would you rate economic conditions in this country today–as excellent, good, only fair, or poor?”</td>
<td>Feb. 1997 - present, at irregular intervals, with monthly coverage since Dec. 2017.</td>
<td>209 obs. in the 374 months from Jan. 1997 to Feb. 2023</td>
</tr>
<tr>
<td>Quinnipiac University</td>
<td>“Would you describe the state of the nation’s economy these days as excellent, good, not so good, or poor?”</td>
<td>Dec. 2001 - present, at irregular intervals.</td>
<td>88 obs. in the 255 months from Dec. 2001 to Feb. 2023</td>
</tr>
<tr>
<td>Pew Research</td>
<td>“How would you rate economic conditions in this country today–as excellent, good, only fair, or poor?”</td>
<td>Feb. 2004 - present, at irregular intervals.</td>
<td>100 obs. in the 229 months from Feb. 2004 to Feb. 2023</td>
</tr>
<tr>
<td>CNN</td>
<td>“How would you rate the economic conditions in the country today–as very good, somewhat good, somewhat poor, or very poor?</td>
<td>Aug. 1997 - present, at irregular intervals.</td>
<td>123 obs. in the 367 months from Aug. 1997 to Feb. 2023</td>
</tr>
</tbody>
</table>
Table 2. Survey Details, Better/Worse Questions.

<table>
<thead>
<tr>
<th>Survey Organization / Sponsor</th>
<th>Question Asked of Respondents</th>
<th>Temporal Span</th>
<th>Observations / Months in Survey Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>New York Times / CBS News</td>
<td>“Do you think the economy is getting better, getting worse, or staying about the same?”</td>
<td>June 1976 - Jan. 2015, at irregular intervals.</td>
<td>207 of the 464 months from June 1976 to Jan. 2015</td>
</tr>
<tr>
<td>USA Today / Gallup</td>
<td>“Right now, do you think that economic conditions in the country as a whole are getting better or getting worse?” (the percent volunteering the response “same” also reported)</td>
<td>July 1991 - present, at irregular intervals, with monthly coverage since Dec. 2017.</td>
<td>190 of the 380 months from July 1991 to Feb. 2023</td>
</tr>
<tr>
<td>YouGov / The Economist</td>
<td>“Overall, do you think the economy is getting better or worse?” (“same” also offered as a response option)</td>
<td>Monthly from Dec. 2009 to the present.</td>
<td>159 of the 159 months from Dec. 2009 to Feb. 2023</td>
</tr>
</tbody>
</table>
Table 3. Regression Results (coefficient estimates, with robust standard errors in parentheses).

<table>
<thead>
<tr>
<th>Independent Variable</th>
<th>Mean, Standard Deviation, June ‘76-Dec. ‘22</th>
<th>“GOOD ECONOMY” LATENT VARIABLE</th>
<th>“BETTER/WORSE” LATENT VARIABLE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(N=273) (N=445)</td>
<td>(N=261) (N=433)</td>
<td>(N=387) (N=273) (N=559)</td>
</tr>
<tr>
<td>Unemployment (percentage points)</td>
<td>6.25 (1.73)</td>
<td>-0.39* (0.03) -0.15* (0.04)</td>
<td>-0.39* (0.05) -0.08* (0.03)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-0.15* (0.04)</td>
<td>(0.06) (0.04) (0.04)</td>
</tr>
<tr>
<td>One Year Output Growth (percent)</td>
<td>2.68 (2.17)</td>
<td>0.06* (0.02) 0.05 (0.02)</td>
<td>0.03 (0.02) 0.03 (0.02)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.02 (0.02)</td>
<td>(0.02) (0.02) (0.02)</td>
</tr>
<tr>
<td>Twelve Month Inflation (percent)</td>
<td>3.65 (2.67)</td>
<td>-0.08* (0.02) -0.13* (0.03)</td>
<td>-0.09* (0.04) -0.09* (0.05)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-0.13* (0.03)</td>
<td>(0.04) (0.05) (0.03)</td>
</tr>
<tr>
<td>Exchange Rate (Fed series, scaled by 0.1)</td>
<td>9.38 (1.37)</td>
<td>0.13* (0.02) 0.15* (0.05)</td>
<td>0.08* (0.03) 0.03 (0.04)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.02 (0.05)</td>
<td>(0.02) (0.05) (0.03)</td>
</tr>
<tr>
<td>Seven Year T-Bill Rate (percentage pts)</td>
<td>5.81 (3.41)</td>
<td>-0.00 (0.02) 0.11* (0.04)</td>
<td>-0.12* (0.04) -0.02 (0.05)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.02 (0.04)</td>
<td>(0.02) (0.05) (0.05)</td>
</tr>
<tr>
<td>Time in Years / Constant Term</td>
<td>----</td>
<td>-0.02* (0.01) 0.02* (0.01)</td>
<td>----</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-0.02 (0.01)</td>
<td>----</td>
</tr>
<tr>
<td>R²</td>
<td>----</td>
<td>0.91 0.72</td>
<td>0.69 0.35 0.43</td>
</tr>
<tr>
<td>standard deviation of dependent variable</td>
<td>----</td>
<td>0.42 0.49</td>
<td>0.31 0.32 0.43</td>
</tr>
</tbody>
</table>

Note: Final revised values of each independent variable are used in the regressions reported in the table. The R² values for regressions using real-time data, instead, are reported in the last row. Each regression also includes a constant. As discussed in the text, differences are taken over twelve months for the “good economy” regressions and over eight months for the “better/worse” regressions. * = p < .05.
<table>
<thead>
<tr>
<th>Month</th>
<th>Gallup Percent Positive</th>
<th>Latent Variable</th>
<th>3 Month Change in Latent Variable</th>
<th>Three Month Change in Latent Variable Attributable to Three Month Change In:</th>
<th>Major Covid Policy Responses during that Quarter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feb. 2020</td>
<td>63</td>
<td>1.19</td>
<td>---</td>
<td>---</td>
<td>Covid lockdowns begin in March</td>
</tr>
<tr>
<td>May 2020</td>
<td>22</td>
<td>0.63</td>
<td>-0.56</td>
<td>-1.67 0.13 -0.95 -0.01 2.09</td>
<td>UI expansions; 1st set of Economic Impact Payments (EIP)</td>
</tr>
<tr>
<td>Aug. 2020</td>
<td>28</td>
<td>0.57</td>
<td>-0.06</td>
<td>0.83 -0.07 0.62 -0.06 -1.60</td>
<td>enhanced UI benefit of $600 / wk. reduced to $300 / wk.</td>
</tr>
<tr>
<td>Nov. 2020</td>
<td>36</td>
<td>0.73</td>
<td>0.16</td>
<td>0.29 0.01 0.06 -0.01 -0.24</td>
<td>2nd set of EIP begin in late Dec.</td>
</tr>
<tr>
<td>Feb. 2021†</td>
<td>20</td>
<td>0.70</td>
<td>-0.03</td>
<td>0.09 -0.03 0.27 0.01 -0.16</td>
<td>3rd set of EIP</td>
</tr>
<tr>
<td>May 2021</td>
<td>27</td>
<td>0.59</td>
<td>-0.11</td>
<td>0.07 -0.19 1.03 0.03 -1.07</td>
<td>UI expansions end; expanded Child Tax Credit begin in July</td>
</tr>
<tr>
<td>Aug. 2021</td>
<td>25</td>
<td>0.53</td>
<td>-0.06</td>
<td>0.10 -0.02 -0.63 0.01 0.36</td>
<td>Child Tax Credit payments end in Dec.</td>
</tr>
<tr>
<td>Nov. 2021</td>
<td>22</td>
<td>0.44</td>
<td>-0.09</td>
<td>0.17 -0.09 0.05 0.06 -0.23</td>
<td></td>
</tr>
<tr>
<td>Feb. 2022</td>
<td>21</td>
<td>0.30</td>
<td>-0.14</td>
<td>0.07 -0.06 -0.18 0.05 0.04</td>
<td></td>
</tr>
<tr>
<td>May 2022</td>
<td>14</td>
<td>0.12</td>
<td>-0.18</td>
<td>0.03 -0.04 -0.18 0.15 -0.23</td>
<td></td>
</tr>
<tr>
<td>Aug. 2022</td>
<td>16</td>
<td>0.06</td>
<td>-0.06</td>
<td>-0.02 0.02 0.03 0.04 -0.13</td>
<td></td>
</tr>
<tr>
<td>Nov. 2022</td>
<td>15</td>
<td>0.22</td>
<td>0.16</td>
<td>0.02</td>
<td>0.06</td>
</tr>
<tr>
<td>------------</td>
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</tr>
<tr>
<td>Feb. 2020 - Nov. 2022</td>
<td>-48</td>
<td>-0.97</td>
<td>----</td>
<td>-0.02</td>
<td>-0.28</td>
</tr>
<tr>
<td>Good Economy Coefficient Estimates</td>
<td>----</td>
<td>----</td>
<td>----</td>
<td>-0.17*</td>
<td>-0.06*</td>
</tr>
<tr>
<td>in differences</td>
<td>----</td>
<td>----</td>
<td>----</td>
<td>(0.02)</td>
<td>(0.03)</td>
</tr>
<tr>
<td>Better/Worse Estimates</td>
<td>----</td>
<td>----</td>
<td>----</td>
<td>-0.16*</td>
<td>-0.06*</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(0.05)</td>
<td>(0.02)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-0.26*</td>
<td>-0.07*</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(0.07)</td>
<td>(0.03)</td>
</tr>
</tbody>
</table>

Note: the decomposition is executed using the Levels Good Economy Specification Estimated through Dec. 2019, whose estimates are listed first in the table. Standard errors are in parentheses and * implies p < .05.

† Gallup’s percent positive for this month is about six percentage points below the adjoining months; this is smoothed out in the latent variable.
Figure 1. Latent Variables (and associated thresholds), Good Economy (top) and Better/Worse Questions

Note: ABC Thresholds are in Blue, CBS in Red, Gallup in Green, QU (good economy) and YouGov (better/worse) in Purple, Pew in Orange, CNN in Brown.
Figure 2. Better/Worse Latent Variable (in black) and Differenced Good Economy (dashed, in red) Latent Variables

Note: for the Good Economy variable, eight-month backward differences are used.
Figure 3. Graphs of All Macro Variables

- Scaled Exchange Rates
- Unemployment
- Real GDP Growth

- Inflation
- 7 Year T-Bill Rate
Figure 4. “Better/Worse” Estimates, Rolling Estimation Windows

Unemployment

GDP Growth

Inflation
Figure 5. Differenced “Good Economy” Estimates, Rolling Estimation Windows
Figure 6. Predicted and Actual Values of the Dependent Variable, All Three Specifications, using Pre-Covid Coefficient Estimates (obtained using data through Dec. 2019)

Note: The better/worse residuals are those in Figure 6, averaged by year. Annual wage growth is adjusted for inflation using the CPI. “Young” includes ages 16-24 for wage growth and 18-29 for YouGov; “Middle” includes ages 25-54 for wage growth and 30-44 for YouGov; “Older” includes ages 55+ for wage growth and 45-64 for YouGov. In the bottom graph, the larger points represent 2021-2022 and largest points represent 2020.

![Residuals, both Latent Variables](image1)

![Twelve Mo. Change in LFPR (perc. pts.)](image2)

![Real Change in Gas Prices (12 months, %)](image3)