The Long-term Effects of Inflation on Inflation Expectations*

Fabio Braggion†, Felix von Meyerinck‡, Nic Schaub§, Michael Weber¶

February 13, 2024

Abstract

We study the long-term effects of inflation surges on inflation expectations. German households living in areas with higher local inflation during the hyperinflation of the 1920s expect higher inflation today, after partialling out determinants of historical inflation and current inflation expectations. Our evidence points towards transmission of inflation experiences from parents to children and through collective memory. Differential historical inflation also modulates the updating of expectations to current inflation, the response to economic policies affecting inflation, and financial decisions. We obtain similar results for Polish households residing in formerly German areas. Overall, our findings are consistent with inflationary shocks having a long-lasting impact on attitudes towards inflation.

Keywords: inflation, inflation expectations, long-term persistence, German hyperinflation
JEL Classifications: D14, E31, E71, G41, N14

*We would like to thank Gesellschaft für Konsumforschung (GfK), Deutsche Bundesbank, and Deutsches Institut für Wirtschaftsforschung (DIW) for providing the data. The views expressed in this paper are those of the authors and do not reflect the views of GfK, Deutsche Bundesbank, or DIW. We are grateful to Peter Bossaerts, Greg Buchak, Constantin Charles, Francesco D'Acunto, Ralf Fendel, Ralph Koijen, Jac Kragt, Stephan Luck, Marcus Opp, Per Östberg, Emil Verner, conference participants at the 6th Joint BoC - ECB - New York Fed Conference on Expectations Surveys, and seminar participants at the University of Zurich, Tilburg University, and KU Leuven for helpful comments. Financial support from the Swiss National Science Foundation (grant number 207668) and the sponsors association of the Swiss Institute of Banking and Finance of the University of St. Gallen is gratefully acknowledged.

†Tilburg University, NL-5000 LE Tilburg, The Netherlands, f.braggion@tilburguniversity.edu, +31 13-466-8209. Braggion is a CEPR research fellow and an ECGI member.

‡University of Zurich, CH-8032 Zurich, Switzerland, felix.vonmeyerinck@bf.uzh.ch, +41 44-634-3930.

§WHU – Otto Beisheim School of Management, D-56179 Vallendar, Germany, nic.schaub@whu.edu, +49 261-6509-817.

¶Booth School of Business, University of Chicago, IL 60637, U.S.A., michael.weber@chicagobooth.edu, +1 773-702-1241. Weber is a CEPR research affiliate and an NBER faculty research fellow.

1 Introduction

Following the COVID-19 pandemic and the war in Ukraine, inflation resurfaced, representing the first time many individuals experience inflation substantially above central banks' targets. Surges in inflation encountered during people's lifetime can trigger upward revisions of inflation expectations (e.g., Malmendier and Nagel, 2016; Goldfayn-Frank and Wohlfahrt, 2020; Salle et al., 2023). Yet, average inflation expectations of individuals across the age spectrum have been biased upwards relative to ex-post realizations (e.g., Weber et al., 2022; D'Acunto, Malmendier, et al., 2023). In this study, we propose that inflation shocks in the more distant past can also shape contemporary inflation expectations, reconciling why inflation expectations are higher than implied by lifetime inflation experiences. Such long-term effects of inflation complicate the job of central banks and governments to manage inflation expectations and suggest higher benefits of disinflationary policies than standard models predict.

As motivating evidence, Figure 1 shows households' inflation expectations in 2022 for 2023 (Panel A) as well as realized inflation in 2022 (Panel B) separately for European countries that did not experience a hyperinflation before 1930 (left bars) and for European countries that experienced a hyperinflation before 1930 (right bars). In Panel A, we find that individuals living in countries with a hyperinflation in the distant past have inflation expectations that are approximately 1.4 percentage points higher than the inflation expectations of individuals living in countries without such a history. In contrast, in Panel B, we find the difference in realized inflation rates between the two groups of countries to be only 0.3 percentage points and thus very similar. These raw data plots provide first suggestive evidence that inflation expectations are shaped by inflation shocks in the distant past rather than solely by current inflation.

To study the long-term effects of inflation shocks in detail, we focus on Germany. Germany provides a close-to-ideal setting for such an investigation for two main reasons. First, Germany experienced a severe hyperinflation in 1922-1923, and rich anecdotal evidence suggests that

this time period shapes Germans' attitude towards inflation to this day.[1] While all individuals in Germany live in areas that witnessed the hyperinflation, only very few individuals living today experienced this formative period themselves. This setting thus enables us to study the potential long-term effects of a major inflation shock. Second, we have granular data on realized inflation at the local level during the hyperinflation and on today's inflation expectations of households. In particular, we collect data on local inflation in 633 German towns between 1920 and 1924. Data on contemporary inflation expectations of households come from three large-scale surveys, the *Gesellschaft für Konsumforschung* (GfK) Consumer Climate MAXX survey, *Deutsche Bundesbank*'s Panel on Household Finances (PHF), and the Bundesbank Online Panel – Households (BOP-HH). Linking today's inflation expectations with historical inflation either at the zip code level or at the county level allows us to analyze whether local inflation during the German hyperinflation is correlated with local inflation expectations today.

Figure 2 visualizes our main finding in the raw data. We sort towns in Germany into quintiles based on their cumulative inflation between 1920 and 1924. For each quintile, we compute the average inflation expected by households living in those towns today. We then plot average inflation expectations against historical inflation quintiles. Consistent with Panel A of Figure 1, we find a positive relationship between historical inflation and contemporary inflation expectations. Because all households live in areas that witnessed the hyperinflation, the sole existence of a hyperinflation cannot explain these cross-sectional differences. Rather, the positive association suggests that individuals living in areas with higher inflation in the 1920s expect higher inflation today. Moving from the quintile with the lowest realized inflation in the 1920s to the quintile with the highest inflation increases expected inflation today by 0.7 percentage points, which corresponds to around 90% of the average realized annual rate of inflation during the time period our surveys cover. This result points towards an economically

[1] See, e.g., "Downward spiral: Already stumbling, Germany now faces threat of deflation", *The Wall Street Journal*, June 23, 2003; "Germany in the era of the hyperinflation", *Der Spiegel*, August 14, 2009; "German fears about inflation stall bold steps in debt crisis", *The New York Times*, December 2, 2011; "Will Europe find an answer?", *USA Today*, December 8, 2011; "Germany's hyperinflation-phobia", *The Economist*, November 15, 2013; "The eurozone: A strained bond", *Financial Times*, January 18, 2015; "Why Germany must swallow this Keynesian free lunch", *The Guardian*, February 24, 2015.

important long-lasting effect of inflationary shocks on inflation expectations.

Inflation expectations of individuals can of course differ for reasons other than historical inflation rates. Therefore, in a more formal analysis, we regress households' inflation expectations on historical local inflation, household controls, historical local controls, and county-time or state-time fixed effects. Household controls, such as age, gender, and education, account for known determinants of inflation expectations, such as lifetime experiences (e.g., Malmendier and Nagel, 2016; Goldfayn-Frank and Wohlfahrt, 2020; Salle et al., 2023), gender-specific shopping habits (e.g., D'Acunto et al., 2021), and cognitive abilities (e.g., D'Acunto, Hoang, et al., 2019; D'Acunto, Hoang, et al., 2023; Fermand et al., 2023). By including historical local controls, such as the historical local unemployment rate, we account for town-level characteristics potentially correlated with historical local inflation (e.g., Braggion et al., 2023). County-time or state-time fixed effects hold constant observable and unobservable regional time-varying determinants of inflation expectations. Hence, in these regressions, we essentially investigate whether differential historical inflation matters for today's inflation expectations of households that have the same observable characteristics and live in the same county or state, at the same point in time. Across all three surveys, we find a positive relationship between local inflation in the 1920s and today's inflation expectations, confirming the positive association shown in Figure 2 and again suggesting a long-term effect of inflationary shocks on inflation expectations.

We also test whether prior generations' inflation experiences are related to households' attitude towards inflation beyond inflation expectations. We show that households residing in areas with higher historical inflation are more likely to prioritize fighting against inflation as a political goal over maintaining peace and order, increasing citizens' influence on government decisions, and protecting the right to free speech. These results suggest that the inflation experiences of prior generations can shape attitudes towards inflation beyond inflation expectations.

Next, to investigate which year of the German hyperinflation drives our findings, we reexamine the relation between historical inflation and today's inflation expectations by year. We find local inflation at the onset of the inflationary period, in 1920, to drive our results

as well as local inflation at the beginning of the hyperinflation period, in 1922, but not local inflation at the peak of the hyperinflation in 1923 when rates were very high. These results are consistent with the social psychology literature, which argues that early experiences of an event are more likely to be remembered (e.g., Pennebaker and Gonzales, 2009).

We then perform several tests to rule out alternative explanations. One potential alternative explanation for the link between historical local inflation and today's inflation expectations is that local inflation itself may be persistent over a very long time. Under this alternative explanation, households' inflation expectations would primarily reflect contemporary inflation and not only historical inflation. To rule out this hypothesis, we test whether historical local inflation is correlated with realized local inflation today. We do not find a significant association between inflation in the 1920s and current inflation. Hence, persistence in local inflation rates over long periods of time is an unlikely explanation for our finding.

Another potential alternative explanation is that historical local inflation might proxy for other macroeconomic experiences not captured by the historical local control variables. In this case, omitted macroeconomic experiences are the driving force behind the documented relation, not historical inflation. To address this concern, we investigate the relation between historical inflation and expectations about other macroeconomic variables. We find that past inflation is not significantly correlated with households' expectations about price changes for real estate, expected interest rates, and expected stock returns. These results suggest the relationship between past inflation and today's inflation expectations is specific to inflation and unlikely to be driven by other macroeconomic experiences.

We can think of at least two, not mutually exclusive mechanisms through which the experience of the German hyperinflation persists locally across generations. The first channel is the transmission of the experience from parents to their children, consistent with theories suggesting that cultural traits are transmitted from one generation to the next (e.g., Bisin and Verdier, 2000, 2001). To test this first channel, we analyze whether results differ for households with and without a migration background. We show that the link between past inflation and today's inflation expectations is weaker for households with a migration background, consistent with such households being spared from the experience of the German

hyperinflation. This result provides support for the intergenerational transmission channel.[2]

The second channel that could drive our results is the transmission of inflation experiences over time through collective memory (e.g., Halbwachs, 1992; Dessí, 2008; Assmann, 2011; Bühler and Madestam, 2023; Fouka and Voth, 2023). To investigate this mechanism, we perform two tests. We first investigate whether the experience of the German hyperinflation is transmitted through speeches of politicians, which are known to shape a society's collective memory (e.g., Cohen, 1999; Adams and Baden, 2022; Fouka and Voth, 2023). We find that politicians whose constituency experienced higher historical inflation are more likely to give speeches about inflation, suggesting that the collective memory of the hyperinflation is transmitted through politicians' speeches. Additionally, we show that politicians from constituencies with higher historical inflation talk more about inflation when contemporaneous inflation rates are higher, which is consistent with the notion that periods of higher inflation are important to refresh local memories of the hyperinflation.[3]

In a second test of the collective memory channel, we consider the transmission of the experience of the inflationary period of the 1920s through the printed media, which shapes public narratives, informs beliefs about historical events, and shapes inflation expectations (e.g., Lamla and Lein, 2014; Larsen et al., 2021; Conrad et al., 2022; Andre et al., 2023; Goetzmann et al., 2023). Newspapers located in areas with higher historical inflation publish more articles on inflation today, which again provides support for the collective memory channel. Taken together, we find evidence for both the transmission of inflation experiences from parents to children as well as the transmission through collective memory.

Next, we investigate the potential impact of prior generations' experience of the hyperinflation on how households update their expectations to current inflation. Such a relationship may be expected because of associative memory theory, a concept derived from the psychology literature, which has been shown to explain the formation of inflation expectations and economic choices more generally (e.g., Kahana, 2012; Bordalo et al., 2020; Charles, 2022;

[2]A weak association between historical inflation and current inflation expectations even for migrants could be consistent with an assimilation to local norms and attitudes or other supply-side factors, such as a higher coverage of inflation in the media.

[3]This result of course can also partially reflect that local politicians cater to the concerns of their constituents, but by doing so, they also refresh and shape the local collective memory.

Bordalo et al., 2023; D'Acunto and Weber, 2023). The theory suggests that cues can trigger the recall of past experiences. In our case, current inflation might trigger households living in areas with higher historical inflation to recall the hyperinflation and update inflation expectations more strongly. Consistent with this conjecture, we find that higher local inflation in the 1920s is associated with a more pronounced adjustment to current inflation.

In a complementary test, we also examine how households living in areas with different levels of historical inflation update their inflation expectations to current inflation events. The specific events we focus on are changes in the value-added tax (VAT), which shape inflation expectations (e.g., D'Acunto et al., 2022; Bachmann et al., 2023). We exploit the temporary reduction of the German VAT, which was announced on June 3, 2020, and lasted from July 1 to December 31, 2020. We find that households in areas with higher historical inflation react more strongly to the VAT increase, but not to the VAT reduction when updating their inflation expectations. This result suggests that inflation shocks dating back as far as 100 years can explain today's response of households to economic policies, such as changes in VAT.

In addition to better understanding how individuals form inflation expectations, we also care about the extent to which historical inflation affects financial decisions of households. According to the Fisher equation, higher inflation expectations lead to lower perceived real interest rates (Fisher, 1930). As a result, investments that promise fixed nominal payments become less attractive. Consistent with this hypothesis, we find that households living in areas with higher historical inflation have a lower fraction of their financial wealth invested in bonds. Hence, local historical inflation can also help us understand households' financial decisions today.

So far, we focused on German households. However, Germans are known to care a lot about inflation and might thus behave differently from households in other countries (e.g., Shiller, 1997), limiting the external validity of our results. Yet, the motivating evidence in Figure 1 already suggests that the results we find might not be specific to Germany. To test the generalizability of our findings more directly, we rerun our main analysis using data on Polish households. This test is possible because a significant share of contemporary Poland

was part of Germany during the hyperinflation. The estimates obtained for Polish households are similar in size to the ones for German households, albeit statistically weaker. Effects for Polish households are particularly pronounced in areas with less expulsion of Germans after the Second World War. These results again support the idea of long-lasting effects of inflation surges on inflation expectations.

Overall, our findings hint towards a transmission of inflationary shocks across generations, which can pose challenges to central banks' and governments' efforts to manage inflation expectations. These results also suggest that the current surge in inflation could have lasting effects on inflation expectations going forward. Such lasting effects would amplify the social cost of inflation and thus increase the benefits of central bank and government policies that aim at achieving price stability in the short run.

Our paper contributes to at least two strands of the literature. First, we add to the literature on the formation of macroeconomic expectations, in particular inflation expectations. Previous studies find that households' inflation expectations are influenced by lifetime experiences (e.g., Malmendier and Nagel, 2016; Goldfayn-Frank and Wohlfart, 2020; Salle et al., 2023), cognitive abilities (e.g., D'Acunto, Hoang, et al., 2019; D'Acunto, Hoang, et al., 2023; Fermand et al., 2023), observed prices in daily life (e.g., D'Acunto et al., 2021), monetary policy communication (e.g., Coibion et al., 2022), as well as the media and public narratives (e.g., Lamla and Lein, 2014; Conrad et al., 2022; Andre et al., 2023), among others.[4] We add to this literature by documenting a robust positive relation between local inflation during the German hyperinflation of the 1920s and individuals' inflation expectations around 100 years later, which is consistent with inflation experiences being transmitted across generations and thus having a long-lasting impact on the formation of inflation expectations.

Second, we contribute to the literature on long-run persistence. Previous research documents that events in the distant past can impact today's socio-economic outcomes (e.g., Ichino and Maggi, 2000; Nunn and Wantchekon, 2011; Voigtländer and Voth, 2012; Alesina et al., 2013; Guiso et al., 2016; D'Acunto, Prokopczuk, et al., 2019; Bursztyn et al., 2021;

[4]Weber et al. (2022) and D'Acunto, Malmendier, et al. (2023) provide a recent review of the literature on the formation of inflation expectations for households and firms.

Cantoni and Yuchtman, 2021; Drelichman et al., 2021; Ang, 2023; Fouka and Voth, 2023). In this paper, we establish that today's attitudes towards inflation have determinants that can be traced back to historical inflation episodes, documenting long-run persistence in a new domain.

2 Historical background

The origins of the German hyperinflation go back to the onset of the First World War. In 1914, the German government suspended the convertibility between the *Mark* and gold and switched to a fiat money system. In the years thereafter, Germany had to finance current expenditures, the war, and, following defeat, reparation payments. Printing money increasingly became the way to meet these financial obligations. As a result, inflation increased substantially in the early 1920s and spun out of control in 1922 and 1923. In October 1923, the *Mark* stood at six billion-to-one relative to its pre-war value (e.g., Bresciani-Turroni, 1937; Dalio, 2018). In mid-October 1923, the government introduced a stabilization policy that stopped the hyperinflation.

Figure 3 shows national consumer price indices (CPI) for Germany, other European countries, as well as the U.S. between 1870 and 2020 using data from Jordà et al. (2017). Before the hyperinflation, Germany experienced moderate inflation, very similar to the rest of Europe and the U.S. However, in 1920, inflation rates started to diverge, a trend that accelerated until 1923. After the hyperinflation until 1990, inflation in Germany was below inflation in other developed economies. Since 1990, inflation in Germany, the rest of Europe, and the U.S. was again comparable. Thus, the German hyperinflation can be considered a major inflation shock. In fact, the German hyperinflation is one of the worst hyperinflations documented to date (e.g., Hanke and Krus, 2013).

3 Data

3.1 Today's inflation expectations

Data on today's inflation expectations come from multiple surveys. First, we use the GfK Consumer Climate MAXX survey, which is conducted by GfK on behalf of the European Commission as part of the harmonized E.U. survey on consumer confidence. These data have been used in previous research on expectation formation (e.g., D'Acunto et al., 2022). The survey is conducted at a monthly frequency and involves repeated cross-sections of a representative sample of approximately 2,000 German households. Thus, households cannot be tracked over time. The survey contains information on households' expected inflation over the next 12 months. We follow existing research and set the top and bottom percentiles of all point forecasts to missing (e.g., Goldfayn-Frank and Wohlfart, 2020). For December 2013 to March 2017, GfK provided us with zip codes of respondents' place of residence, which we use to match households to the towns for which we have historical inflation data.

Second, we use data from *Deutsche Bundesbank*'s PHF, which is part of the European Central Bank (ECB)'s Household Finance and Consumption Survey (e.g., Goldfayn-Frank and Wohlfart, 2020). The PHF was conducted in 2011, 2014, and 2017, with each wave consisting of a representative sample of approximately 4,000 German households. For each wave, the PHF includes households that have been interviewed in previous waves as well as new households. To capture households' attitude towards inflation, we again use their expected rate of inflation over the next 12 months. Unfortunately, expected inflation rates are only available in the wave conducted in 2014, which restricts our sample to this wave. Apart from inflation expectations, the PHF also provides households' expectations about other macroeconomic variables, such as expected price changes for real estate, expected interest rates, and expected stock returns, as well as detailed information about households' wealth, such as investments in savings accounts, stocks, and bonds. For each household, we obtain the county of residence, which allows us to assign households to towns for which we have

historical inflation data.[5]

Third, we draw on data from *Deutsche Bundesbank*'s BOP-HH, an online survey of German households. The dataset covers the time period from April 2020 to March 2022 and includes monthly surveys of between 2,000 to 7,500 representative German households. Each wave includes households that have been interviewed in previous waves as well as refresher households. We again use households' expected rate of inflation over the next 12 months to measure their attitude towards inflation. We match households to historical inflation rates using information on the county of residence.[6]

Finally, we employ data from the Socio-Economic Panel (SOEP), which is administered by *Deutsches Institut für Wirtschaftsforschung* (DIW) (e.g., Fuchs-Schündeln and Schündeln, 2005; Alesina and Fuchs-Schündeln, 2007; D'Acunto, Hoang, et al., 2019; Fuchs-Schündeln and Halliasos, 2021). It consists of annual interviews conducted since 1984 with a representative sample of German households. For each wave, the SOEP includes households that have been interviewed previously as well as new households. The SOEP does not provide information on expected inflation rates. However, in the waves conducted in 1996, 2006, and 2016, respondents were asked to rank the relative importance of four political goals, namely "fighting inflation", "maintaining peace and order in this country", "increasing citizens' influence on government decisions", and "protecting the right to free speech". We construct a dummy variable that equals one if fighting inflation has the highest political priority, and zero otherwise. SOEP also provides zip codes of respondents' place of residence, which we again use to map households to towns for which we have historical inflation data.[7]

[5]This paper uses data from PHF wave 2 (doi: 10.12757/Bbk.PHF.02.04.01). von Kalckreuth et al. (2012) provide additional information on the PHF. All analyses were performed onsite at *Deutsche Bundesbank*'s Research Data and Service Centre (project number 2021\0035). The analyses, results, and views in this paper are those of the authors and not those of *Deutsche Bundesbank*.

[6]This paper uses data from BOP-HH waves 4 to 27 (doi: 10.12757\Bbk.BOPHH.202202.01). Beckmann and Schmidt (2020) provide additional information on the BOP-HH. All analyses were performed onsite at *Deutsche Bundesbank*'s Research Data and Service Centre (project number 2021\0071). The analyses, results, and views in this paper are those of the authors and not those of *Deutsche Bundesbank*.

[7]This paper uses data from SOEP waves 13, 23, and 33 (doi: 10.5684/soep-core.v37). Goebel et al. (2019) provide additional information on the SOEP. Analyses were performed onsite at the Research Data Center of the Socio-Economic Panel at the DIW (project number 5024). The analyses, results, and views in this paper are those of the authors and not those of DIW.

3.2 Local inflation in the 1920s

Data on local consumer prices in Germany in the 1920s come from the Quarterly Issue of the German Statistical Office (*Vierteljahresheft zur Statistik des Deutschen Reichs*).[8] Starting in December 1919, the statistical office collected prices of a basket of goods considered representative for a family of five members in all German towns with more than 10,000 inhabitants and constructed a local consumer price index. These data were originally compiled because the German Department of Labor (*Reichsarbeitsministerium*) needed information on local price changes as a basis for wage negotiations. In total, we have monthly consumer price data for 633 towns, out of which 530 are located in contemporary Germany. We then assign zip codes in today's Germany to the closest town for which we have historical inflation data. Finally, we compute cumulative local inflation for each zip code as the percentage change in the consumer price index assigned to this zip code between January 1920 and December 1924.

Figure 4 shows the locations of towns for which we have historical inflation data (white dots) as well as cumulative local inflation between 1920 and 1924 for all zip codes in contemporary Germany. Darker shading of zip code areas reflects higher cumulative inflation. A visual inspection of the map suggests that the southern regions of today's Germany, specifically the federal states of Bavaria and Baden-Wuerttemberg, experienced higher cumulative inflation in the 1920s. However, considerable variation in inflation also exists at the local level, which we exploit in our analysis.[9]

3.3 Descriptive statistics

Table 1 reports descriptive statistics. Panel A presents descriptive statistics for the GfK sample. We match households to towns with historical inflation data and retain only respondents located within 20 kilometers from the historical towns. We keep only the first observation of each respondent and remove observations with missing controls. Our final dataset comprises

[8] Figure A1 in Appendix C provides a sample page showing the consumer price index data from the German Statistical Office.

[9] Braggion et al. (2023) investigate the determinants of local inflation in Germany between 1920 and 1923. They find that local inflation is higher in areas that were occupied by French or Belgian troops and that have a lower unemployment rate. In the following regressions, we will control for known determinants of local historical inflation.

30,794 respondents. Almost half of the respondents are female. Household heads are on average 50.8 years old and the mean monthly net income of households is approximately EUR 2,100.[10] In 2017, the German population comprised 50.6% women, the average German was 44.4 years old, and the average household had net income of EUR 3,399.[11] On average, respondents expect prices to rise by almost 4.0% over the next 12 months. The average monthly rate of inflation between 1920 and 1924 in the respondents' zip code was 887%. However, this aggregate number hides substantial time-series variation. In 1920, the average monthly local inflation rate was 7.4%. It declined to 4.8% in 1921, rose to 38.5% in 1922, and reached 4,389.8% in 1923. In 1924, the year after the successful stabilization of the currency, the monthly local inflation rate averaged only 0.7%.

Panel B presents descriptive statistics for the PHF sample. After applying similar filters as above, the final sample comprises 3,358 households. 40.3% of responding household heads are female. The average age of responding household heads is 56.6 years. The mean monthly gross income of households is EUR 6,295 and the mean net wealth of households amounts to EUR 455,774. About three-thirds of all households have a savings account, 26.7% hold stocks, and 12.7% hold bonds. The average respondent expects prices to rise by 2.8% over the next 12 months.

Panel C displays descriptive statistics for the BOP-HH sample . After applying the same filters as in the other surveys, we obtain a sample comprising close to 30,000 respondents. The average expected rate of inflation over the next 12 months is 4.3%.

Finally, Panel D contains descriptive statistics for the sample from SOEP. We end up with approximately 18,000 respondents after applying similar filters as above. About 14% consider fighting inflation as the most important among the four political goals.

[10] In Table A1 in Appendix C, we provide additional descriptive statistics on other household characteristics, such as educational attainment, marital status, and employment status.

[11] Differences in household income between GfK, PHF, BOP-HH, and the overall population are likely due to different income definitions. In the GfK data and the BOP-HH data, income is net of taxes, whereas in PHF income is before taxes. Moreover, in the PHF and the BOP-HH data, income is defined more broadly (e.g., it includes income from financial assets). In addition, in the GfK and BOP-HH surveys, income is captured using categorical variables whereas respondents provide actual income figures in PHF surveys. The highest category in the BOP-HH data is "EUR 10,000 or more" whereas the highest category in the GfK data is only "EUR 4,000 or more".

4 Empirical approach

To test for a relationship between local inflation in the 1920s and today's inflation expectations, we run the following regression:

$$\begin{aligned} Expected\,inflation\,rate_i = \alpha + \beta Cumulative\,historical\,local\,inflation\,rate_i \\ + Household\,controls_i + Historical\,local\,controls_i + \epsilon_i, \end{aligned} \tag{1}$$

where $Expected\,inflation\,rate_i$ is the expected rate of inflation over the next 12 months of respondent i. $Cumulative\,historical\,local\,inflation\,rate_i$ is the cumulative inflation rate experienced between January 1920 and December 1924 in the location where respondent i lives. Throughout the paper, we use two variables to measure cumulative historical local inflation, the natural logarithm of cumulative local inflation as well as deciles formed on cumulative local inflation. $Household\,controls_i$ is a vector of respondent characteristics and includes, whenever the survey permits, a dummy variable for gender, age, age squared, dummy variables for educational attainment, dummy variables for marital status, dummy variables for employment status, household income, household wealth, dummy variables for urban and rural areas, and a dummy variable for living in East Germany in 1989, before the fall of the Berlin Wall. Control variables are based on the existing literature and account for known determinants of inflation expectations such as lifetime experiences (e.g., Malmendier and Nagel, 2016; Goldfayn-Frank and Wohlfahrt, 2020; Salle et al., 2023), gender-specific shopping habits (e.g., D'Acunto et al., 2021), and cognitive abilities (e.g., D'Acunto, Hoang, et al., 2019; D'Acunto, Hoang, et al., 2023; Fermand et al., 2023). $Historical\,local\,controls_i$ is a vector of historical town characteristics and includes the average local unemployment rate between January 1920 and December 1924, a dummy variable indicating whether an area was occupied by the French or Belgian army, and a dummy variable indicating whether the German Central Bank (*Reichsbank*) had a local branch. They control for characteristics potentially correlated with local historical inflation (e.g., Braggion et al., 2023). α are either county-time or state-time fixed effects. They account for observable and unobservable regional time-varying determinants of inflation expectations. ϵ is the error term. We cluster standard

errors at the county level.[12] The coefficient of interest is β. It captures the relationship between local inflation experienced in the early 1920s and inflation expectations of households today.

5 Empirical results

This section contains our empirical results. First, we investigate the relationship between local inflation in the 1920s and today's inflation expectations (Section 5.1). Second, we perform several tests to rule out alternative explanations (Section 5.2). Third, we study two potential channels through which the effect might operate (Section 5.3). We also analyze whether prior generations' inflation experiences are related to how households update their expectations to current inflation as well as economic policies affecting inflation (Section 5.4). We then analyze whether historical inflation matters for today's financial decisions (Section 5.5). Finally, we rerun our main analysis using data on Polish households to study the external validity of our results (Section 5.6).

5.1 Local inflation in the 1920s and today's inflation expectations

To investigate the relation between local inflation in Germany in the 1920s and today's inflation expectations of households, we estimate Equation (1) as outlined above. We present results in Table 2. In Panel A, we report the results based on GfK data. In Columns 1 and 3 we use the logarithm of cumulative local inflation as main independent variable, whereas Columns 2 and 4 use deciles of cumulative local inflation. In Columns 1 and 2, we include interacted state-time fixed effects. In Columns 3 and 4, we add interacted county-time fixed effects. Across all columns, we obtain a positive and significant coefficient estimate on historical local inflation. In Column 1 (Column 3), we find that a 1% increase in historical inflation is associated with an increase in today's inflation expectations of 0.04 (0.02) percentage points. The coefficient estimate in Column 2 (Column 4) suggests that moving from

[12] We also estimate our main regressions using the spatial correction proposed by Conley (1999), with different thresholds (25 km, 50 km, 75 km, 100 km, 125 km, and 150 km). Doing so results in higher statistical significance than clustering standard errors at the county level.

the decile with the lowest historical inflation in the 1920s to the decile with the highest inflation increases expected inflation today by 1.9 (1.1) percentage points. These estimates are economically sizeable given that the average realized inflation rate is 0.7% and the average expected inflation rate is 4.0% during our sample period from 2013 to 2017.

In Panel B, we present results for the PHF sample.[13] In Column 1 (Column 2), we use the logarithm of cumulative local inflation (cumulative local inflation deciles) as main independent variable. As we can only use the 2014 wave, there is no scope to account for unobservable time-varying determinants of inflation, and consequently we only include state fixed effects in our regressions. In line with the results in Panel A, we find positive and statistically significant relationships between historical inflation and expected inflation in both specifications.

In Panel C, we report results for the BOP-HH sample . In Column 1 (Column 2), we use the logarithm of cumulative local inflation (cumulative local inflation deciles) as main independent variable. The structure of the data allows us to include interacted state-time fixed effects, which absorb all time-varying characteristics at the state level. We again find positive and significant relationships between historical inflation and expected inflation in both specifications. Hence, across all three surveys, we find a positive association between local inflation in the 1920s and today's inflation expectations, which is consistent with the idea that local inflation experiences are transmitted across generations.

We also analyze whether prior generations' inflation experiences matter for households' attitude towards inflation beyond inflation expectations. To test for such effects, we run probit regressions akin to Equation (1). The dependent variable is a dummy variable sourced from SOEP, which indicates whether households prioritize fighting inflation as a political goal over maintaining peace and order, increasing citizen influence on government decisions, and protecting the right to free speech.

Table 3 presents the results. We report marginal effects. When we include interacted

[13]PHF differs from the other surveys in that missing values are imputed, similar to the Survey of Consumer Finances (SCF) in the U.S. For each observation, five different imputations ("implicates") are provided. Differences between implicates mimic the imputation-induced sampling uncertainty. We follow Rubin (1987) and estimate each regression separately for each of the five implicates. The reported coefficient estimate is the mean of the five coefficient estimates. We obtain the covariance matrix by averaging across the five covariance matrices and adjusting for the between-implicate variance.

state-time fixed effects, as in Columns 1 and 2, we obtain coefficient estimates that are positive but not statistically significant at conventional levels. However, when we include interacted county-time fixed effects, as in Columns 3 and 4, the positive coefficient estimates become statistically significant. These results suggest that the experience of inflation of prior generations can shape attitudes towards inflation beyond inflation expectations.

Finally, to investigate which year of the German hyperinflation drives our results, we rerun our analysis by year. To this end, we split the cumulative local inflation between 1920 and 1924 into five variables, each capturing the local cumulative inflation in a calendar year. We use these five variables and replicate the regressions reported in Columns 1 and 2 of Panel A of Table 2, which use data on inflation expectations from GfK.

We present the results in Table 4. We find positive and significant coefficients for local inflation in 1920 and 1922. In contrast, point estimates are not significant for local inflation in 1921, 1923, and 1924. Hence, local inflation at the onset of the inflationary period, in 1920, as well as local inflation at the beginning of the hyperinflation period, in 1922, drive our results but not local inflation at the peak of the hyperinflation in 1923, when inflation rates were very high. These findings are consistent with the social psychology literature that suggests that early experiences are more likely to be remembered (e.g., Pennebaker and Gonzales, 2009).

5.2 Alternative explanations

Next, we perform several tests to rule out alternative explanations. One potential concern with our findings is that local inflation itself may persist over a very long time. Under this alternative explanation, today's inflation expectations would primarily reflect contemporary local inflation and not only historical local inflation. To rule out this hypothesis, we construct a measure of realized local inflation today and test for a relationship between this measure and historical local inflation. We measure contemporary realized local inflation using data from REWE, Germany's second-largest supermarket chain with more than 3,500 outlets and a market share of around 18% as of 2019.[14] For each town for which we have historical inflation

[14]Fuest et al. (2024) provide a detailed description of these data. We are grateful to Florian Neumeier for collecting and sharing the data.

data, we select the REWE outlet closest to the town center and scrape product prices from each outlet's website on a weekly basis from June 17 to September 9, 2022, resulting in almost seven million weekly prices for 16,136 products available in 184 outlets. We compute the local realized rate of inflation for each outlet as the equally-weighted percentage change in the prices of all products available in one outlet between June and September 2022.[15] To investigate the relationship between historical local inflation and today's local inflation, we adapt Equation (1) and regress realized local inflation on our two measures of historical local inflation as well as historical local controls.[16]

We present the results in Table 5. In both specifications, the coefficient estimates are positive, but not statistically significant at conventional levels. Hence, we do not find much evidence for persistence in local inflation. Therefore, it seems unlikely that households residing in areas with historically higher inflation expect inflation to be higher today because realized local inflation is persistently higher.[17]

Another alternative explanation for our findings is that historical local inflation might proxy for other local macroeconomic experiences. In this case, omitted macroeconomic experiences are the driver behind the documented effect, not historical inflation. To address this concern, we investigate the relation between historical local inflation and households' expectations about other macroeconomic variables. Using the PHF survey, we replicate our analysis from Panel B of Table 2 with expected price changes for real estate, expected interest rates, and the expected stock returns as dependent variables.

Results are reported in Table 6. Across all specifications, we find coefficient estimates that are not statistically significant at conventional levels. Moreover, the sign of coefficient estimates points in the opposite direction of what we find for inflation expectations. These

[15] In Figure A2 in Appendix C, we plot the deviation of the prices of products from the products' mean price over time. The figure shows that prices vary considerable across outlets. Hence, REWE sets different prices for the same product across different localities, unlike U.S. supermarket chains, which typically maintain uniform pricing across locations (e.g., DellaVigna and Gentzkow, 2019).

[16] Our measure capturing realized local inflation today is based on grocery prices, consistent with our historical local inflation measure. According to a sample calculation from 1920, groceries make up approximately 80% of the basket of goods used by the German Statistical Office to compute local consumer price indices.

[17] We report robustness tests of this analysis in Table A2 in Appendix C. In Panel A, we rerun this analysis using the realized rate of inflation at the supermarket-product-week level as dependent variable. In Panel B, we replicate the analysis at the supermarket-product level. We continue to find no evidence for persistence in local inflation.

results suggest that the relationship between past inflation and current inflation expectations is specific to inflation and unlikely to be driven by other macroeconomic experiences.[18]

5.3 Mechanism

So far, we provided evidence for a robust positive relationship between local inflation in Germany between 1920 and 1924 and today's inflation expectations of households. We can think of at least two, not mutually exclusive channels through which the experience of the German hyperinflation persists locally across generations. The first channel is the transmission of the experience of the hyperinflation from parents to their children. The second channel is the transmission of the experience of the hyperinflation through collective memory.

5.3.1 Transmission from parents to children

The first mechanism we consider is the transmission of the experience of the hyperinflation from parents to their children.[19] Theories of value transmission suggest that cultural traits are transmitted from one generation to the next (e.g., Bisin and Verdier, 2000, 2001). To test for this channel, we analyze whether results differ for households with and without a migration background. We would expect the relationship between past inflation and today's inflation expectations to be largely confined to households without a migration background because the ancestors of these households likely experienced the German hyperinflation.[20] We use PHF data, which contain information on respondents' migration status and their parents' migration status. We define two dummy variables, the first set equal to one if a respondent

[18] We can replicate these tests using the data provided by the BOP-HH survey and the setup from Panel C of Table 2. We report results in Table A3 in Appendix C. We continue to estimate insignificant coefficients across all three alternative measures of macroeconomic expectations of households.

[19] Examples for this channel are abundant in Germany. On December 12, 2022, *Das Erste*, one of the two large German public-service television channels, ran a 45-minute documentary about the long-term effects of the German hyperinflation. It singles out the intergenerational transmission of the experience of the hyperinflation as the channel driving the attitudes of Germans towards inflation today. In one case, a man describes his attitude towards inflation and attributes it to his grandmother's experience of the German hyperinflation: "*[He] is also concerned with [...] inflation. His grandmother Elisabeth plays a certain role in this. It is a classic, such a grandmother most likely exists in many families in Germany.*" (in German: "*[Ihn] beschäftigt auch [...] die Inflation. Seine Oma Elisabeth spielt dabei eine gewisse Rolle. Ein Klassiker, so eine Oma gibt es vermutlich in vielen Familien in Deutschland.*").

[20] We might expect an association between historical inflation and inflation expectations also for migrants, though smaller in magnitudes, because of assimilation to local norms or other supply-side channels, such as a transmission via the news media, which we discuss below.

was born abroad and zero otherwise, and the second set equal to one if a respondent's parents were born abroad and zero otherwise. We restrict the sample to respondents born in the E.U. We employ the regressions reported in Panel B of Table 2 and interact our measures of past inflation with the two dummies capturing respondents' migration status.

We report results in Table 7. We find the coefficient on the dummy variable that equals one for parents born abroad to be positive and significant. This is consistent with substantial migration from high-inflation countries to Germany in the past (e.g., from Turkey). However, the coefficient estimates on the interaction terms are negative and statistically significant. These results suggest that local inflation rates experienced during the German hyperinflation matter less for the formation of inflation expectations for respondents born abroad and for respondents whose parents were born abroad. These findings are consistent with the idea that an intergenerational transmission of the experience of the hyperinflation from parents to their children is part of the reason why inflation shocks can persist locally over multiple generations.

5.3.2 Transmission through collective memory

The experience of the hyperinflation could also be kept alive locally through collective memory.[21] A large literature argues that a society's collective memory influences beliefs and behavior (e.g., Halbwachs, 1992; Dessí, 2008; Assmann, 2011; Bühler and Madestam, 2023; Fouka and Voth, 2023). Differences in the inflation experienced 100 years ago may have become part of collective memory to a different extent, and differences in collective memory differentially shape attitudes towards inflation to this day. Hence, we would expect more discussion about inflation in areas with higher historical inflation, in particular during periods of higher inflation.

[21] Rich anecdotal evidence supports the existence of this channel. On February 9, 2024, *Deutschlandfunk*, a national radio broadcaster, aired a 30-minute documentary discussing what can be learned from inflationary periods in the past. It describes the enduring impact of the German hyperinflation as follows: *"The Germans 100 years ago live only from one moment to the next. They are constantly driven by fear. This German fear of inflation is so famous, it has been deeply ingrained into the collective memory [...]"* (in German: "*Die Deutschen vor 100 Jahren, die leben nur noch von einem Moment zum nächsten. Sie sind ständig getrieben von Angst. Diese deutsche Inflationsangst, die ist so berühmt, die hat sich so eingebrannt ins kollektive Gedächtnis [...]*").

In a first test of the collective memory channel, we study differences in the coverage of inflation in speeches held by members of the German parliament.[22] The literature in social and political sciences suggests that politicians' speeches reflect collective memories and that such speeches have the potential to influence public opinions (e.g., Cohen, 1999; Adams and Baden, 2022; Fouka and Voth, 2023). If collective memory of the German hyperinflation exists, we would expect politicians whose constituency experienced higher historical inflation in the 1920s to speak more about inflation in parliament. Moreover, we would expect legislators from these voting districts to speak more about inflation when contemporaneous inflation rates are higher, potentially because they share the same collective memory as their voting district or because they cater to the concerns of their constituents. To test for these potential effects, we use a novel dataset encompassing all statements made in the German parliament since the first legislative period starting in 1949 until the end of the 19$^{\text{th}}$ legislative period in 2021. These data are provided by Open Discourse, an independent non-profit organization dedicated to increasing transparency of the parliamentary discourse in Germany.[23] To filter speeches, we drop statements with less than 250 words in length as they often reflect short declarations of consent or objection. We classify a speech as being about inflation by setting a dummy equal to one if it contains the word inflation at least once, and zero otherwise.[24] We augment these data with information on the constituency of legislators, as provided by the archive of the German parliament. Historical inflation in a constituency is the historical population-weighted inflation of all historic towns in a constituency. The resulting sample comprises 54,726 speeches made by 1,324 politicians over 19 legislative periods and 72 years. 8.5% of all speeches contain the word inflation at least once. We estimate regressions similar to Equation (1) at the politician-legislative period level. Specifically, we regress the natural logarithm of the number of speeches on inflation per politician-legislative period on our two measures of historical inflation, politician controls, historical controls, and legislative period

[22]The German federal parliament (*Bundestag*) is a representative body directly elected by the population, similar to the House of Representatives in the U.S. or the House of Commons in the U.K.

[23]This paper uses data from Open Discourse version 3 (doi: https://doi.org/10.7910/DVN/FIKIBO).

[24]We follow Henrik et al. (2022) and use four German words for inflation: "*Inflation*" (inflation), "*Preissteigerung*" (price increase), "*Teuerung*" (price increase), and "*Geldentwertung*" (loss of purchasing power).

fixed effects.[25]

We report results in Table 8. In Panel A, we investigate whether politicians whose constituency experienced higher historical inflation are more likely to give speeches about inflation. In this analysis, we keep only the first legislative period of each politician in the sample. Coefficients on our measures of historical inflation are positive and statistically significant in both columns, indicating that legislators from higher-inflation constituencies talk more about inflation. In Column 1, we find that a 1% increase in local historical inflation is associated with a 0.4% increase in the number of speeches on inflation today. This result provides support for the conjecture that speeches of politicians shape the collective memory of the German hyperinflation.

In Panel B of Table 8, we analyze whether politicians from constituencies with higher historical inflation are more likely to give speeches about inflation when contemporaneous inflation rates are higher. To do so, we modify the specification from Panel A in two ways. We add an interaction term between historical inflation and average inflation in a legislative period. Moreover, in this analysis, the sample includes repeated observations of politicians, which allows us to saturate the regression with state fixed effects.[26] We find the coefficients on the interaction terms to be positive and statistically significant in both columns, suggesting that politicians from constituencies with higher historical inflation indeed talk more about inflation when contemporaneous inflation rates are higher. This finding points towards periods of higher inflation being important to refresh local memories of the hyperinflation.[27]

In a second test of the collective memory channel, we exploit local variation in newspaper coverage of inflation. The media plays a crucial role in shaping public narratives and informing

[25] As politician controls, we include a dummy variable for a politician's gender, age, age squared, dummy variables for marital status, dummy variables for a politician's role in parliament, dummy variables for party membership, the natural logarithm of the number of speeches that a politician holds in a legislative period, and the fraction of negative words across speeches.

[26] We do not include politician fixed effects because of insufficient within-politician variation. Out of the 1,324 legislators in our dataset, 477 (36%) show up in one legislative period, 379 (29%) show up in two legislative periods, and only 468 (35%) show up in more than two legislative periods.

[27] In Table A4 in Appendix C, we report robustness tests of this analysis. In Panel A, we replicate the analysis at the politician-legislative period-speech level. In Panel B, we replicate the analysis at the politician-legislative period-month level. We continue to find that politicians from constituencies with higher historical inflation talk more about inflation and that they talk more about inflation when contemporaneous rates of inflation are higher.

beliefs about historical events (e.g., Andre et al., 2023; Goetzmann et al., 2023). Moreover, media coverage of inflation influences inflation expectations (e.g., Lamla and Lein, 2014; Draeger, 2015; Larsen et al., 2021; Conrad et al., 2022). If media coverage indeed reflects collective memories of the hyperinflation, we would expect that newspapers in areas with higher past inflation rates publish more articles about inflation. To test this hypothesis, we retrieve articles published by German newspapers from Factiva.[28] We filter for articles published in business sections during the three-year time period from August 2018 to July 2021. As with speeches by German politicians, we drop articles with less than 250 words. We merge local historical inflation data for each newspaper via the zip code of the newspaper's editorial office.[29] The resulting sample comprises 68,956 articles published in 99 newspapers. As with speeches by politicians, we classify an article as being about inflation by setting a dummy variable equal to one if the text body contains at least one of the four German words referring to inflation, and zero otherwise. 10.3% of all articles contain the word inflation at least once. We aggregate the data at the newspaper level and estimate regressions akin to Equation (1). Specifically, we regress the natural logarithm of the number of articles on inflation per newspaper on our measures of historical inflation, newspaper controls, and historical controls.[30]

We report results in Table 9. We observe coefficient estimates that are positive and statistically significant in both columns, suggesting that newspapers located in areas with higher historical inflation print more articles on inflation today. In Column 1, we find that a 1% increase in historical local inflation is associated with a 1.0% increase in the number of articles published by newspapers headquartered in that area today. Hence, the media indeed seems to serve as a local institution that reflects collective memories of the hyperinflation, perpetuates the inflation narrative, and thereby likely shapes attitudes towards inflation over

[28] We are grateful to Jonas Romer for helping us collect the data.

[29] We use the location of the newspaper's editorial office to merge historical inflation data because information on journalists writing each article is sparse.

[30] Newspaper controls include the natural logarithm of the number of articles published in a newspaper between August 2018 and July 2021 and the fraction of negative words across articles.

long periods.[31] Taken together, these results are consistent with the idea that the inflation experienced 100 years ago may have become part of collective memory to a different extent, and differences in collective memory shape attitudes towards inflation differently.

5.4 Local inflation in the 1920s, current inflation, and today's inflation expectations

We also examine the potential impact of prior generations' experience of the hyperinflation on how households update their expectations to current inflation. Such a relationship may be expected because of associative memory theory, which is rooted in the psychology literature and has been shown to explain the formation of inflation expectations, investment decisions, and economic choices more generally (e.g., Kahana, 2012; Bordalo et al., 2020; Charles, 2022; Bordalo et al., 2023; D'Acunto and Weber, 2023). The theory suggests that cues can trigger the recall of past experiences. Hence, we expect households living in areas with higher historical inflation to update inflation expectations more strongly in response to current inflation as they recall the hyperinflation. We employ the BOP-HH sample because these data cover the recent surge in inflation. To test how households' inflation expectations are related to current inflation as a function of historical inflation, we modify the baseline regression from Panel C of Table 2 in two ways. First, we introduce an interaction term between historical inflation and current inflation. Second, we incorporate repeated observations of households, which allows us to saturate the regression with county fixed effects.[32]

We report results in Panel A of Table 10. We obtain coefficient estimates that are positive and statistically significant for both measures of historical inflation. Hence, the experience of higher past inflation is associated with a more pronounced adjustment of inflation expectations to current inflation. This finding indicates that the German hyperinflation not only influences households' contemporary inflation expectations, as observed earlier but also impacts how households update inflation expectations to current inflation, which is consistent with memory

[31] We report robustness tests of this analysis in Table A5 in Appendix C. In Panel A, we run this analysis at the newspaper-article level. In Panel B, we run this analysis at the newspaper-month level. We continue to find that newspapers located in areas with higher historical inflation print more articles on inflation today.

[32] We use county fixed effects rather than household fixed effects because the sample comprises only around two observations per household, leaving too little within-household variation for household fixed effects.

theory.

An alternative and complementary way of looking at this question is to investigate how households adjust inflation expectations to current inflation events. To do so, we examine a temporary change in the VAT (e.g., D'Acunto et al., 2022). Since 2007, VAT rates in Germany equal 19% for most goods and 7% for a selected set of goods of daily consumption, such as food items, books, and newspapers, as well as public transport. During the COVID-19 pandemic, on June 3, 2020, the German government announced a temporary reduction of the VAT by 3 and 2 percentage points, respectively, for the time period from July 1 to December 31, 2020. Given the high pass through of changes in VAT into consumer prices, these changes affect realized inflation in predictable ways and hence should also shape inflation expectations (e.g., Montag et al., 2023; Fuest et al., 2024). To study changes in inflation expectations in response to changes in the VAT, we modify the sample and the empirical framework from Panel A of Table 10. Specifically, we construct two symmetric 12-month subsamples centered around the VAT reduction on July 1, 2020, and the subsequent VAT increase on January 1, 2021. We then add interaction terms between our historical inflation measures and dummy variables that equal one for the six months after each event and zero for the six months before each event.

Panel B of Table 10 presents our results. The coefficient estimates for the decrease in the VAT, reported in Columns 1 and 2, are negative but not statistically significant at conventional levels. In contrast, the coefficient estimates for the increase in the VAT, reported in Columns 3 and 4, are positive and statistically significant. Thus, households in areas with higher historical inflation are sensitive to the VAT increase but not to the VAT reduction when updating their inflation expectations. These results suggest that inflation shocks dating back as far as 100 years can explain today's updating of inflation expectations to economic policies, such as changes in VAT.

5.5 Local inflation in the 1920s and today's financial decisions

In addition to better understanding how individuals form inflation expectations, we also care about the extent to which historical inflation affects financial decisions of households. According to the Fisher equation, higher inflation expectations lead to lower perceived real interest rates (Fisher, 1930). As a result, investments that promise fixed nominal payments become less attractive and we would expect that households in areas with higher historical inflation are less likely to hold fixed-income investments. To investigate the relation between historical inflation and today's investments of households in different asset classes, we use data on households' financial wealth from the PHF survey. In particular, we re-estimate Equation (1) with the fraction of financial wealth invested in savings accounts, stocks, and bonds as dependent variables.[33]

Table 11 reports the results. In Columns 1 and 2, the coefficient estimates for the fraction of financial wealth invested in savings accounts and stocks are not statistically significant at conventional levels. However, in Column 3, we find that households living in areas with higher historical inflation invest a significantly lower fraction of their financial assets in bonds. This result is consistent with such households having higher inflation expectations and therefore their perceived real returns of fixed-income securities are lower. Taken together, our results are in line with the German hyperinflation not only affecting contemporary attitudes towards inflation but also households' contemporary financial decisions.

5.6 Local inflation in the 1920s and today's inflation expectations in Poland

To test the generalizability of our findings beyond the German context, we rerun our main analysis using data on Polish households. This exercise is possible because a significant share of contemporary Poland was part of Germany during the hyperinflation. We obtain monthly data on inflation expectations of Polish households for the time period January 2020 to December 2021 from GfK Poland. GfK surveys both German and Polish households as part of the harmonized E.U. survey on consumer confidence. The Polish GfK data also contain

[33] In these regressions, we include variables capturing respondents' financial literacy, risk aversion, and trust as additional household controls.

zip codes of respondents' place of residence, which we use to match households to towns for which we have historical inflation data. Historical inflation data are available for 97 towns in contemporary Poland, which belonged to Germany between 1920 and 1924. After applying similar filters as to the German samples, we end up with 1,428 households. We estimate Equation (1) on this sample of Polish households.[34]

We present results of this test in Table 12. In Columns 1 and 2, we estimate coefficients that are very similar in size to the ones obtained for German households, although they are not statistically significant at conventional levels. The lack of significance may be due to the reduced sample size of Polish households, which is less than 5% of the size of the German sample. Another potential factor is the expulsion of Germans from areas that belonged to Germany prior to the Second World War and are now part of Poland.[35] We would expect the relationship between past inflation and today's inflation expectations to be more pronounced in areas with less expulsion of Germans as the transmission of the hyperinflation experience is likely stronger in these areas. To shed light on the impact of migration, we introduce a proxy for the fraction of the population that migrated away from these areas. Specifically, we collect data on local migration during the years 1944 to 1955 from Steinberg (1991) and scale the sum of migrants by the local population in 1919. We add this proxy to the model, along with an interaction term of this measure with historical inflation. In Columns 3 and 4, we find that the effect of past inflation on inflation expectations is stronger in areas with weaker migration. Thus, the results are again consistent with inflation experiences being transmitted across generations and with migration having a strong effect on this relationship. These findings also indicate that the shock of the German hyperinflation pertains not only to households living in today's Germany but also to those living in today's Poland.

[34]Figure A3 in Appendix C shows the towns for which we have historical inflation data (white dots) as well as cumulative local inflation between 1920 and 1924 for each zip code in contemporary Poland. Darker shading reflects areas with higher cumulative historical inflation. As in Figure 4, considerable variation in local inflation exists.

[35]In September 1939, Poland was invaded by Nazi Germany and the Soviet Union and then divided under the German-Soviet non-aggression pact. Nazi Germany and the Soviet Union became war opponents in June 1941, when Nazi Germany invaded the Soviet Union. The war ended in May 1945 with the Soviets having advanced to the West. Large parts of the German-speaking population living in areas that belonged to Germany until the Second World War and Poland thereafter fled from the advancing Soviet troops.

6 Conclusion

In this paper, we study potential long-term effects of inflation shocks on households' attitude towards inflation. Focusing on Germany, we find that households living in areas with higher local inflation during the hyperinflation of the 1920s expect higher inflation around 100 years later. Our results point towards an intergenerational transmission of inflation experiences from parents to children and a transmission through collective memory. Historical local inflation also mediates how households update their expectations to current inflation, how households respond to economic policies that affect inflation in predictable ways, and how households make financial decisions. When we study Polish households residing in formerly German areas, we find similar effects as for German households. Overall, our findings are consistent with inflationary shocks impacting attitudes towards inflation across generations. These results also suggest that the current surge in inflation could have lasting effects on inflation expectations going forward. Such lasting effects would amplify the social cost of inflation and thus increase the benefits of central bank and government policies that aim at achieving price stability in the short run. An interesting avenue for future work is to study how high historical inflation surges need to be to trigger lasting imprints on inflation expectations.

References

Adams, T., and C. Baden, 2022, The memories of others: How leaders import collective memories in political speech, *International Journal of Comparative Sociology* 61, 310-330.

Alesina, A., and N. Fuchs-Schündeln, 2007, Good bye Lenin (or not?): The effect of communism on people's preferences, *American Economic Review* 97, 1507-1528.

Alesina, A., P. Giuiliano, and N. Nunn, 2013, On the origins of gender roles: Women and the plough, *Quarterly Journal of Economics* 128, 469-530.

Andre, P., I. Harland, C. Roth, and J. Wohlfart, 2023, Narratives about the macroeconomy, Working paper, CESifo.

Ang, D., 2023, The Birth of a Nation: Media and racial hate, *American Economic Review* 113, 1423-1460.

Assmann, J., 2011, Cultural memory and early civilization. Writing, remembrance, and political imagination, Cambridge University Press, Cambridge, U.K.

Bachmann, R., B. Born, O. Goldfayn-Frank, G. Kocharkov, R. Luetticke, and M. Weber, 2023, A temporary VAT cut as unconventional fiscal policy, Working paper, National Bureau of Economic Research.

Beckmann, E., and T. Schmidt, 2020, Bundesbank online pilot survey on consumer expectations, Working paper, Deutsche Bundesbank.

Bisin, A., and T. Verdier, 2000, Beyond the melting pot: Cultural transmission, marriage, and the evolution of ethnic and religious traits, *Quarterly Journal of Economics* 115, 955-988.

Bisin, A., and T. Verdier, 2001, The economics of cultural transmission and the dynamics of preferences, *Journal of Economic Theory* 97, 298-319.

Bordalo, P., N. Gennaioli, and A. Shleifer, 2020, Memory, attention, and choice, *Quarterly Journal of Economics* 135, 1399-1442.

Bordalo, P., J. Conlon, N. Gennaioli, S.Y. Kwon, and A. Shleifer, 2023, Memory and probability, *Quarterly Journal of Economics* 138, 265-311.

Braggion, F., F. von Meyerinck, and N. Schaub, 2023, Inflation and individual investors' behavior: Evidence from the German Hyperinflation, *Review of Financial Studies* 36, 5012-5045.

Bresciani-Turroni, C., 1937, The economics of inflation – A study of currency depreciation in post war Germany, George Allen and Unwin, London, U.K.

Bursztyn, L., D. Cantoni, D.Y. Yang, N. Yuchtman, and Y.J. Zhang, 2021, Persistent political engagement: Social interactions and the dynamics of protest movements, *American Economic Review: Insights* 3, 233-250.

Bühler, M., and A. Madestam, 2023, State repression, exit, and voice: Living in the shadow of Cambodia's Killing Fields, Working paper, LMU Munich.

Cantoni, D., and N. Yuchtman, 2021, Chapter 8 - Historical natural experiments: Bridging economics and economic history, in A. Bisin and G. Federico (editors): The handbook of historical economics, Academic Press, Cambridge, Massachusetts, U.S.A.

Charles, C., 2022, Memory and trading, Working paper, London School of Economics.

Cohen, J.E., 1999, Presidential responsiveness and public policy-making, The University of Michigan Press, Ann Arbor, U.S.A.

Coibion, O., Y. Gorodnichenko, and M. Weber, 2022, Monetary policy communications and their effects on household inflation expectations, *Journal of Political Economy* 130, 1537-1584.

Conley, T.G., 1999, GMM estimation with cross sectional dependence, *Journal of Econometrics* 92, 1-45.

Conrad, C., Z. Enders, and A. Glas, 2022, The role of information and experience for households' inflation expectations, *European Economic Review* 143, 104015.

D'Acunto, F., D. Hoang, and M. Paloviita, and M. Weber, 2019, Cognitive abilities and inflation expectations, *American Economic Review Papers & Proceedings* 102, 562-566.

D'Acunto, F., D. Hoang, and M. Paloviita, and M. Weber, 2023, IQ, expectations, and choice, *Review of Economic Studies* 90, 2292-2325.

D'Acunto, F., D. Hoang, and M. Weber, 2022, Managing households' expectations with unconventional policies, *Review of Financial Studies* 35, 1597-1642.

D'Acunto, F., U. Malmendier, J. Ospina, and M. Weber, 2021, Exposure to grocery prices and inflation expectations, *Journal of Political Economy* 129, 1615-1639.

D'Acunto, F., U. Malmendier, and M. Weber, 2023, Chapter 5 - What do the data tell us about inflation expectations?, in R. Bachmann, G. Topa, and W. van der Klaauw (editors): Handbook of economic expectations, Academic Press, Cambridge, Massachusetts, U.S.A.

D'Acunto, F., M. Prokopczuk, and M. Weber, 2019, Historical antisemitism, ethnic specialization, and financial development, *Review of Economic Studies* 86, 1170-1206.

D'Acunto, F., and M. Weber, 2023, Memory and beliefs: Evidence from the field, Working paper, Georgetown University.

Dalio, R., 2018, Principles for navigating big debt crises, Bridgewater, Connecticut, U.S.A.

DellaVigna, S., and M. Gentzkow, 2019, Uniform pricing in U.S. retail chains, *Quarterly Journal of Economics* 134, 2011-2084.

Dessí, R., 2008, Collective memory, cultural transmission, and investments, *American Economic Review* 98, 534-660.

Draeger, L., 2015, Inflation perceptions and expectations in Sweden – Are media reports the missing link? *Oxford Bulletin of Economics and Statistics* 775, 681-700.

Drelichman, M., H.J. Voth, and J. Vidal-Robert, 2021, The long run effects of religious persecution: Evidence from the Spanish inquisition, *Proceedings of the National Academy of Sciences* 118, e2022881118.

Fermand, E., C.M. Kuhnen, G. Li, and I. Ben-David, 2023, Extrapolative uncertainty and household economic behavior, *Management Science*, forthcoming.

Fisher, I., 1930, The theory of interest, Macmillan, New York, U.S.A.

Fouka, V., and H.-J. Voth, 2023, Collective remembrance and private choice: German-Greek conflict and behavior in times of crisis, *American Political Science Review* 117, 851-870.

Fuchs-Schündeln, N., and M. Halliasos, 2021, Participation following success, *Journal of Monetary Economics* 117, 671-688.

Fuchs-Schündeln, N., and M. Schündeln, 2005, Precautionary savings and self-selection: Evidence from the German reunification 'experiment', *Quarterly Journal of Economics* 120, 1085-1120.

Fuest, C., F. Neumaier, and D. Stöhlker, 2024, The pass-through of temporary VAT rate cuts: Evidence from German supermarket retail, *International Tax and Public Finance*, forthcom-

ing.

Goebel, J., M.M. Grabka, S. Liebig, M. Kroh, D. Richter, C. Schröder, and J. Schupp, 2019, The German Socio-Economic Panel Study (SOEP), *Jahrbücher für Nationalökonomie und Statistik* 239, 345-360.

Goetzmann, W., D. Kim, and R.J. Shiller, 2023, Crash narratives, Working paper, National Bureau of Economic Research.

Goldfayn-Frank, O., and J. Wohlfart, 2020, Expectation formation in a new environment: Evidence from the German reunification, *Journal of Monetary Economics* 115, 301-320.

Guiso, L., P. Sapienza, and L. Zingales, 2016, Long-term persistence, *Journal of the European Economic Association* 14, 1401-1436.

Halbwachs, M., 1992, On collective memory, University of Chicago Press, Chicago, U.S.A.

Hanke, S.H., and N. Krus, 2013, World hyperinflations, in R. Parker and R. Whaples (editors): The handbook of major events in economic history, Routledge Publishing, London, U.K.

Henrik, M., T. Schmidt, J. Rieger, L.M. Hufnagel, and N. Hornig, 2022, A German inflation narrative - How the media frame price dynamics: Results from a RollingLDA analysis, Working paper, University of Dortmund.

Ichino, A., and G. Maggi, 2000, Work environment and individual background: Explaining regional shirking differentials in a large Italian firm, *Quarterly Journal of Economics* 115, 1057-1090.

Jordà, O., M. Schularick, and A.M. Taylor, 2017, Macrofinancial history and the new business cycle facts, in M. Eichenbaum and J.A. Parker (editors): NBER macroeconomics annual 2016 (volume 31), University of Chicago Press, Chicago.

Kahana, M.J., 2012, Foundations of human memory, Oxford University Press, Oxford, U.K.

von Kalckreuth, U., M. Eisele, J. Le Blanc, T. Schmidt, and J. Zhu, The PHF: a comprehensive panel survey on household finances and wealth in Germany, Working paper, Deutsche Bundesbank.

Lamla, M., and S.M. Lein, 2014, The role of media for consumers' inflation expectation formation, *Journal of Economic Behavior and Organization* 106, 62-77.

Larsen, V.H., L.A. Thorsrud, and J. Zhulanova, 2021, News-driven inflation expectations and information rigidities, *Journal of Monetary Economics* 117, 507-520.

Malmendier, U., and S. Nagel, 2016, Learning from inflation experiences, *Quarterly Journal of Economics* 131, 53-88.

Montag, F., R. Mamrak, A. Sagimuldina, and M. Schnitzer, 2023, Imperfect price information, market power, and tax pass-through, Working paper, Dartmouth College.

Nunn, N., and L. Wantchekon, 2001, The slave trade and the origins of mistrust in Africa, *American Economic Review* 101, 3221-3252.

Pennebaker, J.W., and A.L. Gonzales, 2009, Making history: Social and psychological processes underlying collective memory, in P. Boyer and J.V. Wertsch (editors): Memory in mind and culture, Cambridge University Press, Cambridge, U.K.

Remus, R., U. Quasthoff, and G. Heyer, 2010, SentiWS – A publicly available German-language resource for sentiment analysis, Proceedings of the 7th International Language Resources and Evaluation, 1168-1171.

Rubin, D.B., 1987, Multiple imputation for nonresponse in surveys, John Wiley, New York,

U.S.A.

Salle, I., O. Coibion, and Y. Gorodnichenko, 2023, Lifetime memories of inflation: Evidence from surveys and the lab, Working paper, University of Ottawa.

Shiller, R.J., 1997, Why do people dislike inflation?, in C.D. Romer and D.H. Romer (editors): Reducing inflation: Motivation and strategy, University of Chicago Press, Chicago.

Steinberg, H.G., 1991, Die Bevölkerungsentwicklung in Deutschland im Zweiten Weltkrieg, Kulturstiftung der Deutschen Vertriebenen, Bonn, Germany.

Voigtländer, N., and H.-J. Voth, 2012, Persecution perpetuated: The medieval origins of anti-semitic violence in Nazi Germany, *Quarterly Journal of Economics* 127, 1339-1392.

Weber, M., F. D'Acunto, Y. Gorodnichenko, and O. Coibion, 2022, The subjective inflation expectations of households and firms: Measurement, determinants, and implications, *Journal of Economic Perspectives* 36, 157-184.

Figures

Figure 1: Past hyperinflations and today's inflation expectations

This figure shows average expected rates of inflation in 2022 for the year 2023 (Panel A) and average realized rates of inflation for the year 2022 (Panel B) separately for European countries that did not experience a hyperinflation before 1930 and for European countries that experienced a hyperinflation before 1930. European countries that did not experience a hyperinflation before 1930 include Belgium, the Czech Republic, Denmark, Estonia, Finland, Greece, Ireland, Island, Italy, Latvia, Lithuania, Luxembourg, the Netherlands, Norway, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland, and the U.K. European countries that experienced a hyperinflation before 1930 include Austria, France, Germany, Hungary, Poland, and Russia. Data on expected and realized inflation rates are from the Organization for Economic Co-operation and Development (OECD), except for Russia. Data on realized inflation rates of Russia are from the Russian Federal State Statistics Service. Data on historical hyperinflations are from Hanke and Krus (2013).

Panel A: Expected inflation rates

Panel B: Realized inflation rates

Figure 2: Local inflation in the 1920s and today's inflation expectations

This figure shows average expected rates of inflation over the next 12 months for households living in zip codes with different historical local inflation. We sort zip codes into quintiles based on the cumulative local inflation between January 1920 and December 1924. We assign zip codes to the closest town for which we have historical inflation data within a 20-kilometer radius. The sample is based on the GfK Consumer Climate MAXX survey. The figure shows point estimates together with 99% confidence intervals.

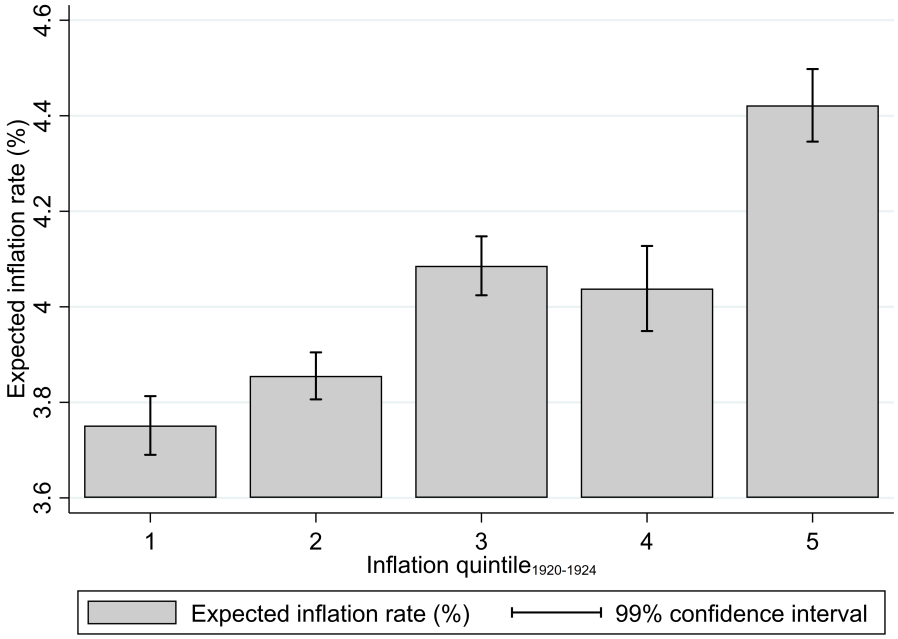


Figure 3: Consumer price indices in Germany, the rest of Europe, and the U.S. between 1870 and 2020

This figure shows national CPIs for Germany, the rest of Europe, and the U.S. between 1870 and 2020. The rest of Europe includes Belgium, Denmark, Finland, France, Ireland, Italy, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the U.K. CPIs are set to one at the beginning of each decade. Data on consumer price indices are from Jordà et al. (2017).

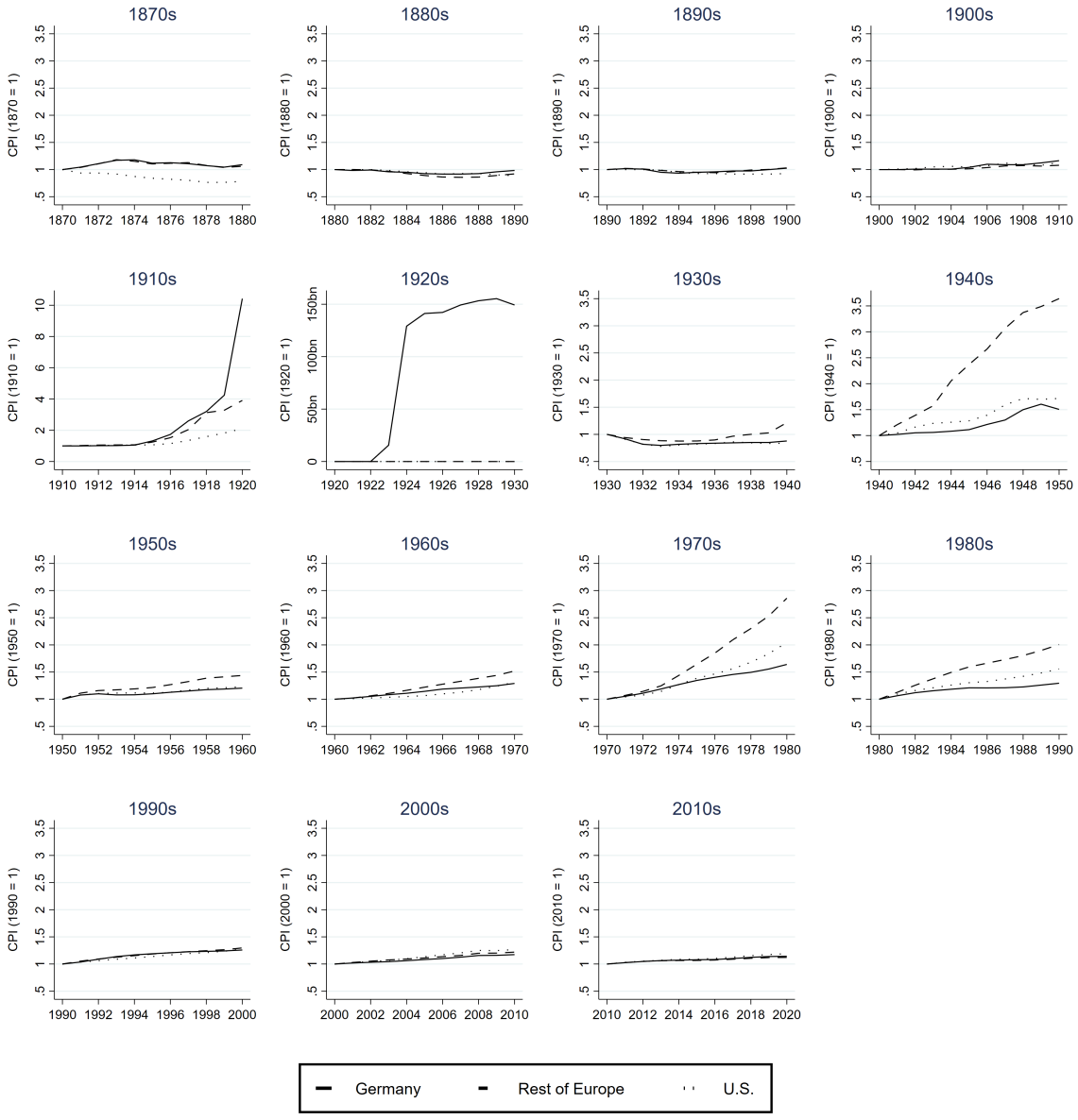
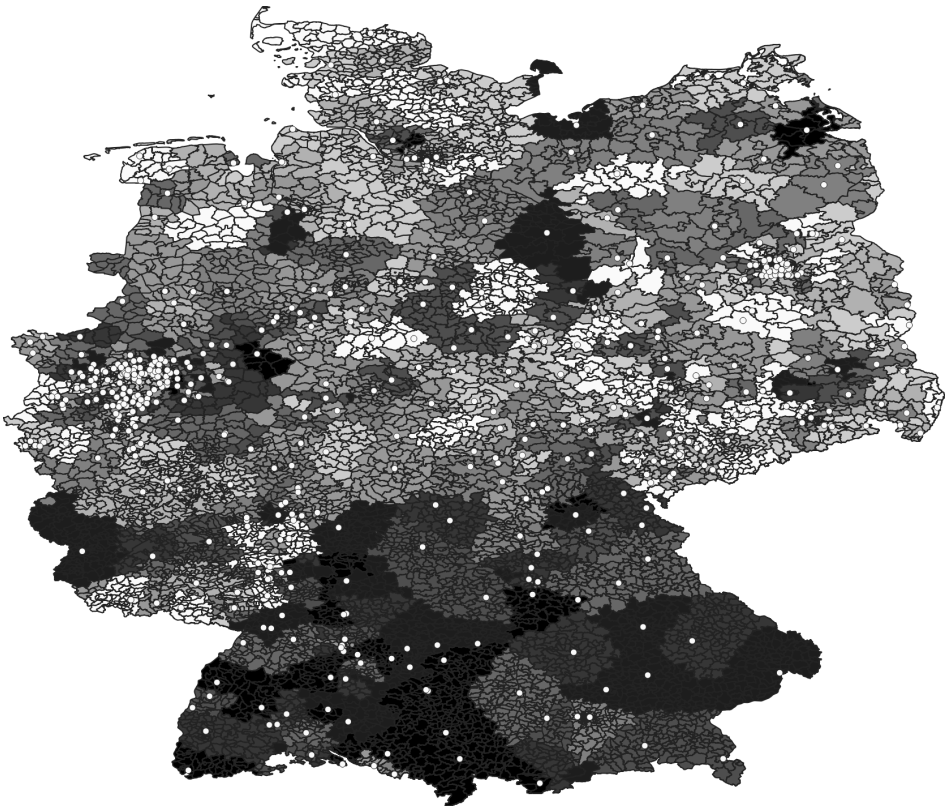


Figure 4: Local inflation in the 1920s

This figure shows the locations of the towns for which we have historical inflation data (white dots) as well as historical inflation for each zip code in contemporary Germany. We assign zip codes to the closest town for which we have historical inflation. Darker shading of a zip code reflects higher cumulative inflation between January 1920 and December 1924.



Tables

Table 1: Descriptive statistics

This table presents descriptive statistics on household characteristics, household expectations, and historical inflation. In Panel A, the sample is based on the GfK Consumer Climate MAXX survey. In Panel B, the sample is based on *Deutsche Bundesbank*'s PHF. In Panel C, the sample is based on *Deutsche Bundesbank*'s BOP-HH. In Panel D, the sample is based on the SOEP. Appendix A provides detailed descriptions of all variables used throughout the study.

Panel A: GfK

	Mean	Median	N
Household characteristics			
Female (d)	0.538	1.000	30,794
Age (years)	50.76	51.00	30,794
Net income per month (EUR)	2,089	2,250	30,794
Household expectations			
Expected inflation rate over next 12 months (%)	3.97	3.00	30,794
Historical inflation			
Avg. monthly inflation rate between 1920 and 1924 (%)	886.52	895.49	30,794
- 1920	7.36	7.39	30,794
- 1921	4.75	4.66	30,794
- 1922	38.50	38.36	30,794
- 1923	4,389.81	4,403.44	30,794
- 1924	0.69	0.70	30,794

Panel B: PHF

	Mean	Median	N
Household characteristics			
Female (d)	0.403	0.000	3,358
Age (years)	56.62	57.00	3,358
Gross income per month (EUR)	6,295	4,557	3,358
Net wealth (EUR)	455,774	204,581	3,358
Has a savings account (d)	0.742	1.000	3,358
Stock market participation (d)	0.267	0.000	3,358
Bond market participation (d)	0.127	0.000	3,358
Household expectations			
Expected inflation rate over next 12 months (%)	2.79	2.00	3,358
Expected inflation rate for real estate over next 12 months (%)	3.33	2.50	2,976
Expected interest rate over next 12 months (%)	0.78	0.50	2,862
Expected stock return over next 12 months (%)	0.90	0.00	2,321
Historical inflation			
Avg. monthly inflation rate between 1920 and 1924 (%)	892.86	867.17	3,358

Panel C: BOP–HH

	Mean	Median	N
Household characteristics			
Female (d)	0.417	0.000	29,606
Age (years)	55.45	57.00	29,606
Net income per month (EUR)	3,812	3,250	29,606
Household expectations			
Expected inflation rate over next 12 months (%)	4.28	3.50	29,606
Historical inflation			
Avg. monthly inflation rate between 1920 and 1924 (%)	897.08	867.17	29,606

Panel D: SOEP

	Mean	Median	N
Household characteristics			
Female (d)	0.444	0.000	17,967
Age (years)	48.42	47.00	17,967
Net income per month (EUR)	2,064	2,066	17,967
Attitudes towards inflation			
Fight against inflation most important (d)	0.140	0.000	17,967
Historical inflation			
Avg. monthly inflation rate between 1920 and 1924 (%)	899.06	880.88	17,967

Table 2: Local inflation in the 1920s and today's inflation expectations

This table presents the results from OLS regressions with (interacted) location and time fixed effects. The dependent variable is the expected rate of inflation over the next 12 months. The variable *Log(inflation)*$_{1920\text{-}1924}$ is the natural logarithm of cumulative local inflation between January 1920 and December 1924. The variable *Inflation decile*$_{1920\text{-}1924}$ is the decile of cumulative local inflation between January 1920 and December 1924. In Panel A, local inflation is computed at the zip code level. In Panels B and C, local inflation is computed at the county level. Household controls include, whenever possible, a dummy variable for gender, age, age squared, dummy variables for educational attainment, dummy variables for marital status, dummy variables for employment status, household income, household wealth, dummy variables for urban and rural areas, and a dummy variable for living in East Germany in 1989. Historical controls include the average local unemployment rate between January 1920 and December 1924, a dummy variable for areas occupied by the French or Belgian army, and a dummy variable for areas with a local branch of the *Reichsbank*. In Panel A, the sample is based on the GfK Consumer Climate MAXX survey. In Panel B, the sample is based on *Bundesbank's* PHF. In Panel C, the sample is based on *Deutsche Bundesbank*'s BOP-HH. Appendix A provides detailed descriptions of all variables used throughout the study. Appendix B provides an overview of the household controls used for each survey. Standard errors are clustered at the county level. t-statistics are provided in parentheses. ***, **, * denote statistical significance at the 1%, 5%, and 10% level, respectively.

Panel A: GfK data

	Expected inflation rate (%)			
	(1)	(2)	(3)	(4)
Log(inflation)$_{1920-1924}$	3.658***		2.029*	
	(3.11)		(1.67)	
Inflation decile$_{1920-1924}$		0.214***		0.123**
		(3.38)		(2.07)
Household controls	Yes	Yes	Yes	Yes
Historical controls	Yes	Yes	Yes	Yes
State-time fixed effects	Yes	Yes	No	No
County-time fixed effects	No	No	Yes	Yes
Adj. R^2	0.077	0.079	0.333	0.333
N	30,794	30,794	30,794	30,794

Panel B: Bundesbank data (PHF)

	Expected inflation rate (%)	
	(1)	(2)
Log(inflation)$_{1920-1924}$	1.713**	
	(2.36)	
Inflation decile$_{1920-1924}$		0.060*
		(1.76)
Household controls	Yes	Yes
Historical controls	Yes	Yes
State fixed effects	Yes	Yes
Adj. R^2	0.071	0.070
N	3,358	3,358

Panel C: Bundesbank data (BOP–HH)

	Expected inflation rate (%)	
	(1)	(2)
$\text{Log(inflation)}_{1920-1924}$	0.664**	
	(2.48)	
$\text{Inflation decile}_{1920-1924}$		0.025**
		(2.10)
Household controls	Yes	Yes
Historical controls	Yes	Yes
State-time fixed effects	Yes	Yes
Adj. R^2	0.115	0.115
N	29,606	29,606

Table 3: Local inflation in the 1920s and today's attitudes towards inflation

This table presents the results from probit regressions with interacted location and time fixed effects. The dependent variable is a dummy variable that equals one for respondents who rank "fighting inflation" as the most important political goal, relative to "maintaining peace and order in this country", "increasing citizens' influence on government decisions", and "protecting the right to free speech". The variable *Log(inflation)*$_{1920\text{-}1924}$ is the natural logarithm of cumulative local inflation between January 1920 and December 1924. The variable *Inflation decile*$_{1920\text{-}1924}$ is the decile of cumulative local inflation between January 1920 and December 1924. Local inflation is computed at the zip code level. Household controls include a dummy variable for gender, age, age squared, dummy variables for educational attainment, dummy variables for marital status, dummy variables for employment status, household income, household wealth, and dummy variables for urban and rural areas. Historical controls include the average local unemployment rate between January 1920 and December 1924, a dummy variable for areas occupied by the French or Belgian army, and a dummy variable for areas with a local branch of the *Reichsbank*. The sample is based on the SOEP. Appendix A provides detailed descriptions of all variables used throughout the study. Appendix B provides an overview of the household controls used. Standard errors are clustered at the county level. We report marginal effects. t-statistics are provided in parentheses. ***, **, * denote statistical significance at the 1%, 5%, and 10% level, respectively.

	Fight against inflation (d)			
	(1)	(2)	(3)	(4)
$\text{Log(inflation)}_{1920-1924}$	0.034		0.080*	
	(1.30)		(1.92)	
$\text{Inflation decile}_{1920-1924}$		0.002		0.006***
		(1.30)		(2.64)
Household controls	Yes	Yes	Yes	Yes
Historical controls	Yes	Yes	Yes	Yes
State-time fixed effects	Yes	Yes	No	No
County-time fixed effects	No	No	Yes	Yes
Pseudo R^2	0.095	0.095	0.138	0.138
N	17,967	17,967	17,967	17,967

Table 4: Local inflation in the 1920s by year and today's inflation expectations

This table presents the results from OLS regressions with interacted location and time fixed effects. The dependent variable is the expected rate of inflation over the next 12 months. The variable *Log(inflation)*$_{Year}$ is the natural logarithm of cumulative local inflation for each calendar year from 1920 to 1924. The variable *Inflation decile*$_{Year}$ is the decile of cumulative local inflation for each calendar year from 1920 to 1924. Local inflation is computed at the zip code level. Household controls include a dummy variable for gender, age, age squared, dummy variables for educational attainment, dummy variables for marital status, dummy variables for employment status, household income, and dummy variables for urban and rural areas. Historical controls include the average local unemployment rate between January 1920 and December 1924, a dummy variable for areas occupied by the French or Belgian army, and a dummy variable for areas with a local branch of the *Reichsbank*. The sample is based on the GfK Consumer Climate MAXX survey. Appendix A provides detailed descriptions of all variables used throughout the study. Appendix B provides an overview of the household controls used. Standard errors are clustered at the county level. t-statistics are provided in parentheses. ***, **, * denote statistical significance at the 1%, 5%, and 10% level, respectively.

	Expected inflation rate (%)	
	(1)	(2)
Log(inflation)$_{1920}$	4.070***	
	(3.24)	
Log(inflation)$_{1921}$	0.892	
	(0.30)	
Log(inflation)$_{1922}$	6.834**	
	(2.35)	
Log(inflation)$_{1923}$	2.491	
	(1.24)	
Log(inflation)$_{1924}$	1.759	
	(0.86)	
Inflation decile$_{1920}$		0.176***
		(3.58)
Inflation decile$_{1921}$		0.015
		(0.17)
Inflation decile$_{1922}$		0.115*
		(1.68)
Inflation decile$_{1923}$		0.016
		(0.26)
Inflation decile$_{1924}$		0.016
		(0.30)
Household controls	Yes	Yes
Historical controls	Yes	Yes
State-time fixed effects	Yes	Yes
Adj. R^2	0.084	0.084
N	30,794	30,794

Table 5: Local inflation in the 1920s and today's realized inflation

This table presents the results from OLS regressions with state fixed effects. The dependent variable is the realized rate of inflation at the supermarket level between June 17 and September 9, 2022. The variable *Log(inflation)*$_{1920\text{-}1924}$ is the natural logarithm of cumulative local inflation between January 1920 and December 1924. The variable *Inflation decile*$_{1920\text{-}1924}$ is the decile of cumulative local inflation between January 1920 and December 1924. Historical local inflation is computed at the zip code level. Historical controls include the average local unemployment rate between January 1920 and December 1924, a dummy variable for areas occupied by the French or Belgian army, and a dummy variable for areas with a local branch of the *Reichsbank*. The sample is based on data from REWE, Germany's second-largest supermarket chain. Appendix A provides detailed descriptions of all variables used throughout the study. Standard errors are clustered at the county level. t-statistics are provided in parentheses. ***, **, * denote statistical significance at the 1%, 5%, and 10% level, respectively.

	Realized inflation rate (%)	
	(1)	(2)
$\text{Log(inflation)}_{1920-1924}$	0.462	
	(1.18)	
$\text{Inflation decile}_{1920-1924}$		0.016
		(0.62)
Historical controls	Yes	Yes
State fixed effects	Yes	Yes
Adj. R^2	0.190	0.187
N	184	184

Table 6: Local inflation in the 1920s and today's other expectations

This table presents the results from OLS regressions with location fixed effects. The dependent variable is either the expected rate of inflation for real estate over the next 12 months (Columns 1 and 2), the expected interest rate over the next 12 months (Columns 3 and 4), or the expected stock return over the next 12 months (Columns 5 and 6). The variable *Log(inflation)*$_{1920\text{-}1924}$ is the natural logarithm of cumulative local inflation between January 1920 and December 1924. The variable *Inflation decile*$_{1920\text{-}1924}$ is the decile of cumulative local inflation between January 1920 and December 1924. Local inflation is computed at the county level. Household controls include a dummy variable for gender, age, age squared, dummy variables for educational attainment, dummy variables for marital status, dummy variables for employment status, household income, household wealth, dummy variables for urban and rural areas, and a dummy variable for living in East Germany in 1989. Historical controls include the average local unemployment rate between January 1920 and December 1924, a dummy variable for areas occupied by the French or Belgian army, and a dummy variable for areas with a local branch of the *Reichsbank*. The sample is based on *Deutsche Bundesbank*'s PHF. Appendix A provides detailed descriptions of all variables used throughout the study. Appendix B provides an overview of the household controls used. Standard errors are clustered at the county level. t-statistics are provided in parentheses. ***, **, * denote statistical significance at the 1%, 5%, and 10% level, respectively.

	Expected inflation rate for real estate (%)		Expected interest rate (%)		Expected stock return (%)	
	(1)	(2)	(3)	(4)	(5)	(6)
$\text{Log(inflation)}_{1920-1924}$	-0.652		-0.167		-0.451	
	(-0.39)		(-1.03)		(-0.27)	
$\text{Inflation decile}_{1920-1924}$		-0.057		-0.009		-0.025
		(-0.74)		(-1.24)		(-0.32)
Household controls	Yes	Yes	Yes	Yes	Yes	Yes
Historical controls	Yes	Yes	Yes	Yes	Yes	Yes
State fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R^2	0.098	0.098	0.045	0.045	0.006	0.006
N	3,094	3,094	2,974	2,974	2,402	2,402

Table 7: Local inflation in the 1920s, migration, and today's inflation expectations

This table presents the results from OLS regressions with location fixed effects. The dependent variable is the expected rate of inflation over the next 12 months. The variable *Inflation decile$_{1920\text{-}1924}$* is the decile of cumulative local inflation between January 1920 and December 1924. Local inflation is computed at the county level. *Parents born abroad (d)* is a dummy variable that equals one for respondents whose parents were not born in Germany and zero for respondents whose parents were born in Germany. *Born abroad (d)* is a dummy variable that equals one for respondents who were not born in Germany and zero for respondents who were born in Germany. Household controls include a dummy variable for gender, age, age squared, dummy variables for educational attainment, dummy variables for marital status, dummy variables for employment status, household income, household wealth, dummy variables for urban and rural areas, and a dummy variable for living in East Germany in 1989. Historical controls include the average local unemployment rate between January 1920 and December 1924, a dummy variable for areas occupied by the French or Belgian army, and a dummy variable for areas with a local branch of the *Reichsbank*. The sample is based on *Deutsche Bundesbank*'s PHF and comprises only respondents born in the E.U. Appendix A provides detailed descriptions of all variables used throughout the study. Appendix B provides an overview of the household controls used. Standard errors are clustered at the county level. T-statistics are provided in parentheses. ***, **, * denote statistical significance at the 1%, 5%, and 10% level, respectively.

	Expected inflation rate (%)
	(1)
Inflation decile$_{1920-1924}$	0.088***
	(2.67)
Parents born abroad (d)	0.524*
	(1.76)
Inflation decile × Parents born abroad (d)	-0.125**
	(-2.31)
Born abroad (d)	1.188
	(1.64)
Inflation decile × Born abroad (d)	-0.188*
	(-1.67)
Household controls	Yes
Historical controls	Yes
State fixed effects	Yes
Adj. R^2	0.075
N	3,172

Table 8: Local inflation in the 1920s and today's political coverage of inflation

This table presents the results from OLS regressions with location and time fixed effects. The dependent variable is the natural logarithm of the number of speeches on inflation that a politician holds in a legislative period. The variable *Log(inflation)$_{1920\text{-}1924}$* is the natural logarithm of cumulative local inflation between January 1920 and December 1924. The variable *Inflation decile$_{1920\text{-}1924}$* is the decile of cumulative local inflation between January 1920 and December 1924. Local inflation is computed at the constituency level. The variable *Contemporaneous inflation (%)* is the average year-over-year national realized rate of inflation in a legislative period. Politician controls include a dummy variable for gender, age, age squared, dummy variables for marital status, dummy variables for a politician's role in parliament, dummy variables for party membership, the natural logarithm of the number of speeches that a politician holds in a legislative period, and the fraction of negative words across speeches. Historical controls include the average local unemployment rate between January 1920 and December 1924 in a constituency, a dummy variable for constituencies occupied by the French or Belgian army, and a dummy variable for constituencies with a local branch of the *Reichsbank*. The sample is based on data from Open Discourse. In Panel A, we keep only the first legislative period of each politician. In Panel B, the sample includes all legislative periods. Appendix A provides detailed descriptions of all variables used throughout the study. Standard errors are clustered at the state level. t-statistics are provided in parentheses. ***, **, * denote statistical significance at the 1%, 5%, and 10% level, respectively.

Panel A: Local inflation in the 1920s and today's political coverage of inflation

	Log(# speeches on inflation)	
	(1)	(2)
Log(inflation)$_{1920-1924}$	0.446***	
	(4.09)	
Inflation decile$_{1920-1924}$		0.018***
		(3.10)
Politician controls	Yes	Yes
Historical controls	Yes	Yes
Time fixed effects	Yes	Yes
Adj. R^2	0.342	0.340
N	1,324	1,324

Panel B: Local inflation in the 1920s, contemporaneous inflation, and today's political coverage of inflation

	Log(# speeches on inflation)	
	(1)	(2)
Log(inflation)$_{1920-1924}$	-0.013	
	(-0.06)	
Log(inflation)$_{1920-1924}$ × Contemporaneous inflation (%)	0.112**	
	(2.25)	
Inflation decile$_{1920-1924}$		-0.003
		(-0.25)
Inflation decile$_{1920-1924}$ × Contemporaneous inflation (%)		0.005*
		(1.91)
Politician controls	Yes	Yes
Historical controls	Yes	Yes
Time fixed effects	Yes	Yes
State fixed effects	Yes	Yes
Adj. R^2	0.349	0.349
N	3,183	3,183

Table 9: Local inflation in the 1920s and today's newspaper coverage of inflation

This table presents the results from OLS regressions. The dependent variable is the natural logarithm of the number of articles on inflation published in a newspaper between August 2018 and July 2021. The variable *Log(inflation)*$_{1920\text{-}1924}$ is the natural logarithm of cumulative local inflation between January 1920 and December 1924. The variable *Inflation decile*$_{1920\text{-}1924}$ is the decile of cumulative local inflation between January 1920 and December 1924. Local inflation is computed at the zip code level. Newspaper controls include the natural logarithm of the number of articles published in a newspaper between August 2018 and July 2021 and the fraction of negative words across articles. Historical controls include the average local unemployment rate between January 1920 and December 1924, a dummy variable for areas occupied by the French or Belgian army, and a dummy variable for areas with a local branch of the *Reichsbank*. The sample is based on data from Factiva. Appendix A provides detailed descriptions of all variables used throughout the study. Standard errors are clustered at the county level. t-statistics are provided in parentheses. ***, **, * denote statistical significance at the 1%, 5%, and 10% level, respectively.

	Log(# articles on inflation)	
	(1)	(2)
$\text{Log(inflation)}_{1920-1924}$	0.997***	
	(3.74)	
$\text{Inflation decile}_{1920-1924}$		0.057***
		(3.59)
Newspaper controls	Yes	Yes
Historical controls	Yes	Yes
Adj. R^2	0.942	0.943
N	99	99

Table 10: Local inflation in the 1920s, current inflation, and today's inflation expectations

This table presents the results from OLS regressions with location and time fixed effects. The dependent variable is the expected rate of inflation over the next 12 months. The variable *Log(inflation)*$_{1920\text{-}1924}$ is the natural logarithm of cumulative local inflation between January 1920 and December 1924. The variable *Inflation decile*$_{1920\text{-}1924}$ is the decile of cumulative local inflation between January 1920 and December 1924. Local inflation is computed at the country level. The variable *Current inflation (%)* is the year-over-year national realized rate of inflation in a certain month. The variable *Post VAT decrease (d)* equals one after the VAT decrease (July 1, 2020, onward), and zero otherwise. The variable *Post VAT increase (d)* equals one after the VAT increase (January 1, 2021, onward), and zero otherwise. Household controls include a dummy variable for gender, age, age squared, dummy variables for educational attainment, dummy variables for marital status, dummy variables for employment status, household income, household wealth, dummy variables for urban and rural areas, and a dummy variable for living in East Germany in 1989. Historical controls include the average local unemployment rate between January 1920 and December 1924, a dummy variable for areas occupied by the French or Belgian army, and a dummy variable for areas with a local branch of the *Reichsbank*. The sample is based on *Deutsche Bundesbank*'s BOP-HH and includes repeated observations. In Columns 1 and 2 (Columns 3 and 4) of Panel B, we focus on a 12-month window centered around the VAT decrease (increase) on July 1, 2020 (January 1, 2021). Appendix A provides detailed descriptions of all variables used throughout the study. Appendix B provides an overview of the household controls used. Standard errors are clustered at the county level. t-statistics are provided in parentheses. ***, **, * denote statistical significance at the 1%, 5%, and 10% level, respectively.

Panel A: Current inflation

	Expected inflation rate (%)	
	(1)	(2)
Log(inflation)$_{1920-1924}$ × Current inflation (%)	0.163***	
	(2.90)	
Inflation decile$_{1920-1924}$ × Current inflation (%)		0.007***
		(2.98)
Household controls	Yes	Yes
Historical controls	Yes	Yes
County fixed effects	Yes	Yes
Time fixed effects	Yes	Yes
Adj. R^2	0.113	0.113
N	64,098	64,098

Panel B: Current inflation events

	Expected inflation rate (%)			
	(1)	(2)	(3)	(4)
Log(inflation)$_{1920-1924}$ × Post VAT decrease (d)	-0.212			
	(-0.30)			
Inflation decile$_{1920-1924}$ × Post VAT decrease (d)		-0.008		
		(-0.26)		
Log(inflation)$_{1920-1924}$ × Post VAT increase (d)			0.809**	
			(2.06)	
Inflation decile$_{1920-1924}$ × Post VAT increase (d)				0.035**
				(2.01)
Household controls	Yes	Yes	Yes	Yes
Historical controls	Yes	Yes	Yes	Yes
County fixed effects	Yes	Yes	Yes	Yes
Time fixed effects	Yes	Yes	Yes	Yes
Adj. R^2	0.104	0.104	0.080	0.080
N	16,238	16,238	28,936	28,936

Table 11: Local inflation in the 1920s and today's financial decisions

This table presents the results from OLS regressions with location fixed effects. The dependent variable is either the fraction of financial assets held in the savings account (Column 1), the fraction of financial assets invested in individual stocks or equity mutual funds (Column 2), or the fraction of financial assets invested in individual bonds or bond mutual funds (Column 3). The variable *Inflation decile*$_{1920\text{-}1924}$ is the decile of cumulative local inflation between January 1920 and December 1924. Local inflation is computed at the county level. Household controls include a dummy variable for gender, age, age squared, dummy variables for educational attainment, dummy variables for marital status, dummy variables for employment status, household income, household wealth, dummy variables for urban and rural areas, a dummy variable for living in East Germany in 1989, and variables capturing financial literacy, risk aversion, and trust. Historical controls include the average local unemployment rate between January 1920 and December 1924, a dummy variable for areas occupied by the French or Belgian army, and a dummy variable for areas with a local branch of the *Reichsbank*. The sample is based on *Deutsche Bundesbank*'s PHF. Appendix A provides detailed descriptions of all variables used throughout the study. Appendix B provides an overview of the household controls used. Standard errors are clustered at the county level. t-statistics are provided in parentheses. ***, **, * denote statistical significance at the 1%, 5%, and 10% level, respectively.

	% savings account	% stocks	% bonds
	(1)	(2)	(3)
Inflation decile$_{1920-1924}$	0.221	-0.026	-0.249**
	(0.73)	(-0.14)	(-2.20)
Household controls	Yes	Yes	Yes
Historical controls	Yes	Yes	Yes
State fixed effects	Yes	Yes	Yes
Adj. R^2	0.098	0.119	0.053
N	3,553	3,553	3,553

Table 12: Local inflation in the 1920s and today's inflation expectations in Poland

This table presents the results from OLS regressions with interacted location and time fixed effects. The dependent variable is the expected rate of inflation over the next 12 months. The variable *Log(inflation)*$_{1920\text{-}1924}$ is the natural logarithm of cumulative local inflation between January 1920 and December 1924. The variable *Inflation decile*$_{1920\text{-}1924}$ is the decile of cumulative local inflation between January 1920 and December 1924. Local inflation is computed at the zip code level. The variable *% displaced* is the fraction of the local population that migrated away between 1944 and 1955. Household controls include a dummy variable for gender, age, age squared, dummy variables for educational attainment, dummy variables for marital status, dummy variables for employment status, household income, and dummy variables for urban and rural areas. Historical controls include the average local unemployment rate between January 1920 and December 1924, a dummy variable for areas occupied by the French or Belgian army, and a dummy variable for areas with a local branch of the *Reichsbank*. The sample is based on the Polish section of the GfK Consumer Climate MAXX survey. Appendix A provides detailed descriptions of all variables used throughout the study. Appendix B provides an overview of the household controls used. Standard errors are clustered at the county level. t-statistics are provided in parentheses. ***, **, * denote statistical significance at the 1%, 5%, and 10% level, respectively.

	Expected inflation rate (%)			
	(1)	(2)	(3)	(4)
Log(inflation)$_{1920-1924}$	2.146		16.249	
	(0.47)		(1.63)	
Inflation decile$_{1920-1924}$		0.103		0.689*
		(0.58)		(1.86)
% displaced			14.377*	0.079
			(1.78)	(0.73)
Log(inflation) × % displaced			-0.548*	
			(-1.79)	
Inflation decile × % displaced				-0.022*
				(-1.91)
Household controls	Yes	Yes	Yes	Yes
Historical controls	Yes	Yes	Yes	Yes
State-time fixed effects	Yes	Yes	Yes	Yes
Adj. R^2	0.066	0.066	0.052	0.061
N	1,428	1,428	1,376	1,376

Appendix A: Variable descriptions

Variable	Description
Household characteristics	
Female (d)	Dummy variable that equals one for female respondents and zero for male respondents
Age (years)	Age of the respondent (in years)
Middle school (d), High school (d), University (d), etc.	Dummy variables that capture a respondent's educational attainment
Couple (d), Married (d), Separated (d), etc.	Dummy variables that capture a respondent's marital status
Part-time (d), Unemployed (d), Self-employed (d), etc.	Dummy variables that capture a respondent's employment status
Net income per month (EUR)	Net income of the household per month (in Euro)
Gross income per month (EUR)	Gross income of the household per month (in Euro)
Net wealth (EUR)	Net wealth of the household (in Euro)
Has a savings account (d)	Dummy variable that equals one for respondents who have a savings account, and zero otherwise
% savings account	Value of savings account scaled by financial assets
Stock market participation (d)	Dummy variable that equals one for respondents who own individual stocks or equity mutual funds, and zero otherwise
% stocks	Value of individual stocks and equity mutual funds scaled by financial assets
Bond market participation (d)	Dummy variable that equals one for respondents who own individual bonds or bond mutual funds, and zero otherwise
% bonds	Value of individual bonds and bond mutual funds scaled by financial assets
Rural (d), Urban (d)	Dummy variables that capture the population density of the area in which a respondent lives; we classify areas with less than 20,000 residents as rural and areas with more than 100,000 residents as urban
East German in 1989 (d)	Dummy variable that equals one for respondents who lived in East Germany in 1989, and zero otherwise
Parents born abroad (d)	Dummy variable that equals one for respondents whose parents were not born in Germany and zero for respondents whose parents were born in Germany; we compute this variable only for respondents born in the E.U.
Born abroad (d)	Dummy variable that equals one for respondents who were not born in Germany and zero for respondents who were born in Germany; we compute this variable only for respondents born in the E.U.
Household expectations	
Expected inflation rate (%)	Point forecast of the expected rate of inflation over the next 12 months; we set top and bottom percentiles of this variable to missing
Expected inflation rate for real estate (%)	Point forecast of the expected rate of inflation for real estate over the next 12 months; we set top and bottom percentiles of this variable to missing

Expected interest rate (%)	Point forecast of the expected rate of interest over the next 12 months; we set top and bottom percentiles of this variable to missing
Expected stock return (%)	Point forecast of the expected rate of return on stocks over the next 12 months; we set top and bottom percentiles of this variable to missing
Fight against inflation (d)	Dummy variable that equals one for respondents who rank "fighting inflation" as the most important political goal, relative to "maintaining peace and order in this country", "increasing citizens' influence on government decisions", and "protecting the right to free speech"
Historical local inflation	
Monthly inflation rate (%)	Month-over-month local realized rate of inflation between January 1920 and December 1924
Cumulative inflation rate	Cumulative local realized rate of inflation between January 1920 and December 1924
$\text{Log(inflation)}_{1920-1924}$	Ln(cumulative inflation rate)
$\text{Inflation decile}_{1920-1924}$	Decile of cumulative inflation rate
Other historical local variables	
Local unemployment rate (%)	Average local unemployment rate between January 1920 and December 1924; we impute the unemployment rate by using the past unemployment rate of the town or the unemployment rate of the state in which the town is located
Occupied (d)	Dummy variable that equals one for towns occupied by the French or Belgium army at some point between January 1920 and December 1924, and zero otherwise
German Central Bank (d)	Dummy variable that equals one for towns with a branch of the *Reichsbank* at some point between January 1920 and December 1924, and zero otherwise
Politician characteristics	
# speeches on inflation	Number of speeches on inflation that a politician holds in a legislative period; we use four German words to identify speeches on inflation: "*Inflation*" (inflation), "*Preissteigerung*" (price increase), "*Teuerung*" (price increase), and "*Geldentwertung*" (loss of purchasing power)
Log(# speeches on inflation)	Ln(# speeches on inflation + 1)
Speech on inflation (d)	Dummy variable that equals one for speeches on inflation, and zero otherwise; we use four German words to identify speeches on inflation: "*Inflation*" (inflation), "*Preissteigerung*" (price increase), "*Teuerung*" (price increase), and "*Geldentwertung*" (loss of purchasing power)
Female (d)	Dummy variable that equals one for female politicians and zero for male politicians
Age (years)	Age of the politician (in years)
Couple (d), Married (d), Separated (d), etc.	Dummy variables that capture a politician's marital status
Member of parliament (d), Minister (d), Chancellor (d), etc.	Dummy variables that capture a politician's role in parliament
SPD (d), CDU/CSU (d), FDP (d), etc.	Dummy variables that capture a politician's party membership

# speeches	Number of speeches that a politician holds in a legislative period
Log(# speeches)	Ln(# speeches)
% negative words	Fraction of negative words across speeches that a politician holds in a legislative period; we use a word list based on the Harvard IV-4 dictionary to identify negative words (Remus et al., 2010)
Newspaper characteristics	
# articles on inflation	Number of articles on inflation published in a newspaper between August 2018 and July 2021; we use four German words to identify articles on inflation: "*Inflation*" (inflation), "*Preissteigerung*" (price increase), "*Teuerung*" (price increase), and "*Geldentwertung*" (loss of purchasing power)
Log(# articles on inflation)	Ln(# articles on inflation + 1)
Article on inflation (d)	Dummy variable that equals one for articles on inflation, and zero otherwise; we use four German words to identify articles on inflation: "*Inflation*" (inflation), "*Preissteigerung*" (price increase), "*Teuerung*" (price increase), and "*Geldentwertung*" (loss of purchasing power)
# articles	Number of articles published in a newspaper between August 2018 and July 2021
Log(# articles)	Ln(# articles)
% negative words	Fraction of negative words across articles published in a newspaper between August 2018 and July 2021; we use a word list based on the Harvard IV-4 dictionary to identify negative words (Remus et al., 2010)
Other variables	
Realized inflation rate (%)	Realized rate of inflation at the supermarket level between June 17 and September 9, 2022; we compute the realized rate of inflation at the supermarket level as the equally-weighted average rate of inflation across all products
Contemporaneous inflation (%)	Average year-over-year national realized rate of inflation in a legislative period
Current inflation (%)	Year-over-year national realized rate of inflation
Post VAT decrease (d)	Dummy variable that equals one after the VAT decrease (July 1, 2020, onward), and zero otherwise
Post VAT increase (d)	Dummy variable that equals one after the VAT increase (January 1, 2021, onward), and zero otherwise
% displaced	Number of persons that migrated away from an area between 1944 and 1955 scaled by the local population in 1919

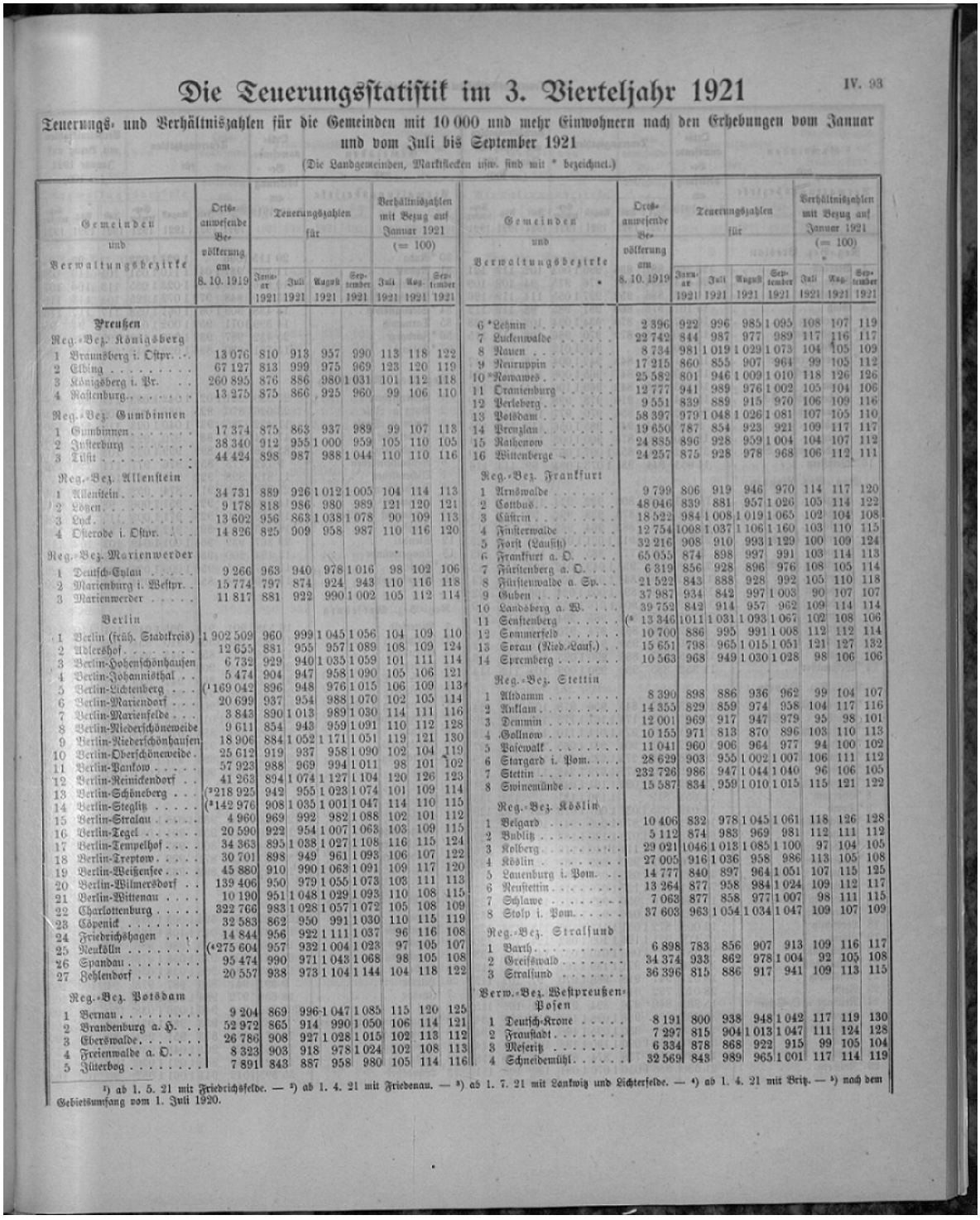
Appendix B: Overview of household control variables

	GfK	PHF	BOP-HH	SOEP	GfK Poland
Gender	Female (d)	Female (d)	Female (d)	Female (d)	Female (d)
Age	Age Age^2	Age Age^2	Age Age^2	Age Age^2	Age Age^2
Educational attainment	Middle school (d) High school (d) University (d)	Middle school (d) High school (d) University (d) Other (d)	Middle school (d) High school (d) University (d) Other (d)	High school (d) Above high school (d)	Middle school(d) High school (d) University(d)
Marital status	Couple (d) Married (d) Separated/divorced/widowed (d)	Married (d) Separated (d) Divorced (d) Widowed (d)	Couple (d) Married (d) Separated (d) Divorced (d) Widowed (d)	Married (d) Separated (d) Divorced (d) Widowed (d)	Married/couple (d) Separated/divorced (d) Widowed (d)
Employment status	Part-time (d) Unemployed (d) Self-employed (d) Full-time education (d) Retired (d) Housekeeping (d)	Part-time (d) On leave (d) Unemployed (d) Full-time education (d) Retired (d) Disabled (d) Housekeeping (d) Other (d)	Part-time (d) On leave (d) Unemployed (d) Full-time education (d) Retired (d) Disabled (d) Housekeeping (d) Other (d)	Part-time (d) On leave (d) Unemployed (d) Full-time education (d) Retired (d) Disabled (d) Other (d)	Part-time (d) Unemployed (d) Self-employed (d) Full-time education (d) Retired (d) Housekeeping (d)
Household income	$Ln(net\ income+\sqrt{net\ income^2+1})$ Missing (d) (net income is set to zero if net income is missing)	$Ln(gross\ income+\sqrt{gross\ income^2+1})$	$Ln(net\ income+\sqrt{net\ income^2+1})$	$Ln(net\ income+\sqrt{net\ income^2+1})$	$Ln(net\ income+\sqrt{net\ income^2+1})$
Household wealth	Not available	$Ln(net\ wealth+\sqrt{net\ wealth^2+1})$	$Ln(net\ wealth+\sqrt{net\ wealth^2+1})$	Not available	Not available
Urban and rural areas	Rural area (d) Urban area (d)	Rural area (d) Urban area (d)	Rural area (d) Urban area (d)	Rural area (d) Urban area (d)	Rural area (d) Urban area (d)
East German in 1989	Not available	East in 1989 (d)	East in 1989 (d)	East in 1989 (d)	Not available

Appendix C: Additional figures and tables

Figure A1: Sample page from the Quarterly Issue of the German Statistical Office

This figure shows a sample page from the Quarterly Issue of the German Statistical Office.



Die Teuerungsstatistik im 3. Vierteljahr 1921 IV. 93

Teuerungs- und Verhältniszahlen für die Gemeinden mit 10 000 und mehr Einwohnern nach den Erhebungen vom Januar und vom Juli bis September 1921

(Die Landgemeinden, Marktflecken usw. sind mit * bezeichnet.)

Gemeinden und Verwaltungsbezirke	Ortsanwesende Bevölkerung am 8. 10. 1919	Teuerungszahlen für Januar 1921	Juli 1921	August 1921	September 1921	Verhältniszahlen mit Bezug auf Januar 1921 (= 100) Juli 1921	August 1921	September 1921
Preußen								
Reg.-Bez. Königsberg								
1 Braunsberg i. Ostpr.	13 076	810	913	957	990	113	118	122
2 Elbing	67 127	813	999	975	969	123	120	119
3 Königsberg i. Pr.	260 895	876	886	980	1 031	101	112	118
4 Rastenburg	13 275	875	866	925	960	99	106	110
Reg.-Bez. Gumbinnen								
1 Gumbinnen	17 374	875	863	937	989	99	107	113
2 Insterburg	38 340	912	955	1 000	959	105	110	105
3 Tilsit	44 424	898	987	988	1 044	110	110	116
Reg.-Bez. Allenstein								
1 Allenstein	34 731	889	926	1 012	1 005	104	114	113
2 Lötzen	9 178	818	986	980	989	121	120	121
3 Lyck	13 602	956	863	1 038	1 078	90	109	113
4 Oberode i. Ostpr.	14 826	825	909	958	987	110	116	120
Reg.-Bez. Marienwerder								
1 Deutsch-Eylau	9 266	963	940	978	1 016	98	102	106
2 Marienburg i. Westpr.	15 774	797	874	924	943	110	116	118
3 Marienwerder	11 817	881	922	990	1 002	105	112	114
Berlin								
1 Berlin (früh. Stadtkreis)	1 902 509	960	999	1 045	1 056	104	109	110
2 Adlershof	12 655	881	955	957	1 089	108	109	124
3 Berlin-Hohenschönhausen	6 732	929	940	1 035	1 059	101	111	114
4 Berlin-Johannisthal	5 474	904	947	958	1 090	105	106	121
5 Berlin-Lichtenberg	([1]) 169 042	896	948	976	1 015	106	109	113
6 Berlin-Mariendorf	20 699	937	954	988	1 070	102	105	114
7 Berlin-Marienfelde	3 843	890	1 013	989	1 030	114	111	116
8 Berlin-Niederschöneweide	9 611	854	943	959	1 091	110	112	128
9 Berlin-Niederschönhausen	18 906	884	1 052	1 171	1 051	119	121	130
10 Berlin-Oberschöneweide	25 612	919	937	958	1 090	102	104	119
11 Berlin-Pankow	57 923	988	969	994	1 011	98	101	102
12 Berlin-Reinickendorf	41 263	894	1 074	1 127	1 104	120	126	123
13 Berlin-Schöneberg	([2]) 218 925	942	955	1 023	1 074	101	109	114
14 Berlin-Steglitz	([3]) 142 976	908	1 035	1 001	1 047	114	110	115
15 Berlin-Stralau	4 960	969	992	982	1 088	102	101	112
16 Berlin-Tegel	20 590	922	954	1 007	1 063	103	109	115
17 Berlin-Tempelhof	34 363	895	1 038	1 027	1 108	116	115	124
18 Berlin-Treptow	30 701	898	949	961	1 093	106	107	122
19 Berlin-Weißensee	45 880	910	990	1 063	1 091	109	117	120
20 Berlin-Wilmersdorf	139 406	950	979	1 055	1 073	103	111	113
21 Berlin-Wittenau	10 190	951	1 048	1 029	1 093	110	108	115
22 Charlottenburg	322 766	983	1 028	1 057	1 072	105	108	109
23 Köpenick	32 583	862	950	991	1 030	110	115	119
24 Friedrichshagen	14 844	956	922	1 111	1 037	96	116	108
25 Neukölln	(*) 275 604	957	932	1 004	1 023	97	105	107
26 Spandau	95 474	990	971	1 043	1 068	98	105	108
27 Zehlendorf	20 557	938	973	1 104	1 144	104	118	122
Reg.-Bez. Potsdam								
1 Bernau	9 204	869	996	1 047	1 085	115	120	125
2 Brandenburg a. H.	52 972	865	914	990	1 050	106	114	121
3 Eberswalde	26 786	908	927	1 028	1 015	102	113	112
4 Freienwalde a. O.	8 323	903	918	978	1 024	102	108	113
5 Jüterbog	7 891	843	887	958	980	105	114	116
6 *Lehnin	2 396	922	996	985	1 095	108	107	119
7 Luckenwalde	22 742	844	987	977	989	117	116	117
8 Nauen	8 734	981	1 019	1 029	1 073	104	105	109
9 Neuruppin	17 215	860	855	907	964	99	105	112
10 *Nowawes	25 582	801	946	1 009	1 010	118	126	126
11 Oranienburg	12 777	941	989	976	1 002	105	104	106
12 Perleberg	9 551	839	889	915	970	106	109	116
13 Potsdam	58 397	979	1 048	1 026	1 081	107	105	110
14 Prenzlau	19 650	787	854	923	921	109	117	117
15 Rathenow	24 835	896	928	959	1 004	104	107	112
16 Wittenberge	24 257	875	928	978	968	106	112	111
Reg.-Bez. Frankfurt								
1 Arnswalde	9 799	806	919	946	970	114	117	120
2 Cottbus	48 046	839	881	957	1 026	105	114	122
3 Cüstrin	18 522	984	1 008	1 019	1 065	102	104	108
4 Finsterwalde	12 754	1008	1 037	1 106	1 160	103	110	115
5 Forst (Lausitz)	32 216	908	910	993	1 129	100	109	124
6 Frankfurt a. O.	65 055	874	898	997	991	103	114	113
7 Fürstenberg a. O.	6 319	856	928	896	976	108	105	114
8 Fürstenwalde a. Sp.	21 522	843	888	928	992	105	110	118
9 Guben	37 987	934	842	997	1 003	90	107	107
10 Landsberg a. W.	39 752	842	914	957	962	109	114	114
11 Senftenberg	(*) 13 346	1011	1 031	1 093	1 067	102	108	106
12 Sommerfeld	10 700	886	995	991	1 008	112	112	114
13 Sorau (Niederlausitz)	15 651	798	965	1 015	1 051	121	127	132
14 Spremberg	10 563	968	949	1 030	1 028	98	106	106
Reg.-Bez. Stettin								
1 Altdamm	8 390	898	886	936	962	99	104	107
2 Anklam	14 355	829	859	974	958	104	117	116
3 Demmin	12 001	969	917	947	979	95	98	101
4 Gollnow	10 155	971	813	870	896	103	110	113
5 Pasewalk	11 041	960	906	964	977	94	100	102
6 Stargard i. Pom.	28 629	903	955	1 002	1 007	106	111	112
7 Stettin	232 726	986	947	1 044	1 040	96	106	105
8 Swinemünde	15 587	834	959	1 010	1 015	115	121	122
Reg.-Bez. Köslin								
1 Belgard	10 406	832	978	1 045	1 061	118	126	128
2 Bublitz	5 112	874	983	969	981	112	111	112
3 Kolberg	29 021	1046	1 013	1 085	1 100	97	104	105
4 Köslin	27 005	916	1 036	958	986	113	105	108
5 Lauenburg i. Pom.	14 777	840	897	964	1 051	107	115	125
6 Neustettin	13 264	877	958	984	1 024	109	112	117
7 Schlawe	7 063	877	858	977	1 007	98	111	115
8 Stolp i. Pom.	37 603	963	1 054	1 034	1 047	109	107	109
Reg.-Bez. Stralsund								
1 Barth	6 898	783	856	907	913	109	116	117
2 Greifswald	34 374	933	862	978	1 004	92	105	108
3 Stralsund	36 396	815	886	917	941	109	113	115
Verw.-Bez. Westpreußen-Posen								
1 Deutsch-Krone	8 191	800	938	948	1 042	117	119	130
2 Fraustadt	7 297	815	904	1 013	1 047	111	124	128
3 Meseritz	6 334	878	868	922	915	99	105	104
4 Schneidemühl	32 569	843	989	965	1 001	117	114	119

[1]) ab 1. 5. 21 mit Friedrichsfelde. — [2]) ab 1. 4. 21 mit Friedenau. — [3]) ab 1. 7. 21 mit Lankwitz und Lichterfelde. — [4]) ab 1. 4. 21 mit Britz. — [5]) nach dem Gebietsumfang vom 1. Juli 1920.

Figure A2: Variation in local supermarket prices

This figure shows the variation in the prices of products across supermarkets and over time. Variation is computed as the deviation from the product's mean price across all outlets at the same point in time. The sample is based on data from REWE, Germany's second-largest supermarket chain.

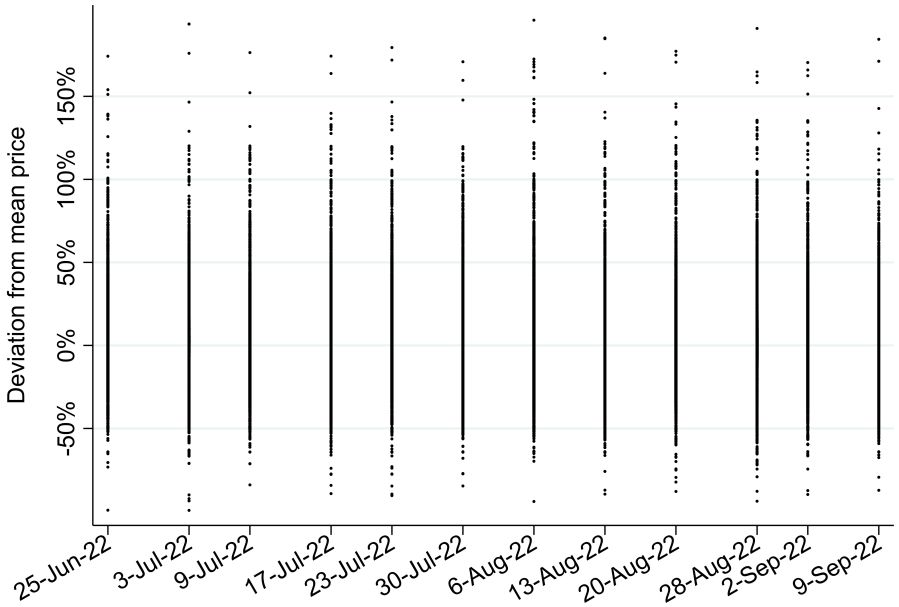


Figure A3: Local inflation in Poland in the 1920s

This figure shows the locations of the towns for which we have historical inflation data (white dots) as well as historical inflation for each zip code in contemporary Poland. We assign zip codes to the closest town for which we have historical inflation. Blurred zip codes did not belong to Germany in the 1920s. Darker shading of a zip code reflects higher cumulative inflation between January 1920 and December 1924.

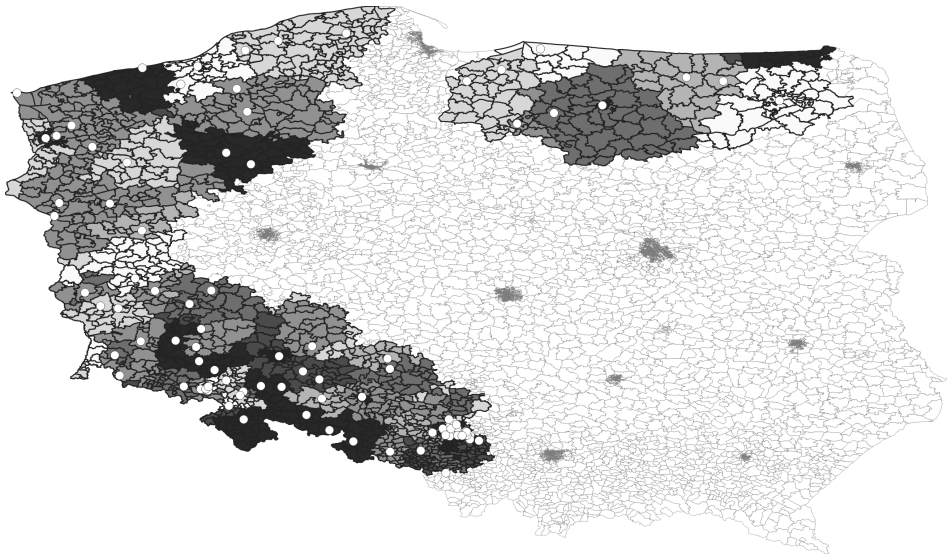


Table A1: Additional descriptive statistics

This table presents additional descriptive statistics on household characteristics. The sample is based on the GfK Consumer Climate MAXX survey. Appendix A provides detailed descriptions of all variables used throughout the study.

	Mean	Median	N
Educational attainment			
Below middle school (d)	0.300	0.000	30,794
Middle school (d)	0.441	0.000	30,794
High school (d)	0.127	0.000	30,794
University (d)	0.132	0.000	30,794
Marital status			
Single (d)	0.196	0.000	30,794
Couple (d)	0.115	0.000	30,794
Married (d)	0.508	1.000	30,794
Separated/divorced/widowed (d)	0.181	0.000	30,794
Employment status			
Full-time (d)	0.392	0.000	30,794
Part-time (d)	0.134	0.000	30,794
Unemployed (d)	0.040	0.000	30,794
Self-employed (d)	0.067	0.000	30,794
Full-time education (d)	0.054	0.000	30,794
Retired (d)	0.272	0.000	30,794
Housekeeping (d)	0.041	0.000	30,794
Urban and rural areas			
Rural area (d)	0.306	0.000	30,794
Urban area (d)	0.413	0.000	30,794

Table A2: Local inflation in the 1920s and today's realized inflation

This table presents the results from OLS regressions with (interacted) location, time, and product fixed effects. The dependent variable is either the realized rate of inflation at the supermarket-product-week level (Panel A) or the realized rate of inflation at the supermarket-product level between June 17 and September 9, 2022. The variable *Log(inflation)*$_{1920\text{-}1924}$ is the natural logarithm of cumulative local inflation between January 1920 and December 1924. The variable *Inflation decile*$_{1920\text{-}1924}$ is the decile of cumulative local inflation between January 1920 and December 1924. Historical local inflation is computed at the zip code level. Historical controls include the average local unemployment rate between January 1920 and December 1924, a dummy variable for areas occupied by the French or Belgian army, and a dummy variable for areas with a local branch of the *Reichsbank*. The sample is based on data from REWE, Germany's second-largest supermarket chain. Appendix A provides detailed descriptions of all variables used throughout the study. Standard errors are clustered at the county level. t-statistics are provided in parentheses. ***, **, * denote statistical significance at the 1%, 5%, and 10% level, respectively.

Panel A: Supermarket-product-week level

	Realized inflation rate (%)			
	(1)	(2)	(3)	(4)
$\text{Log(inflation)}_{1920-1924}$	0.041		-0.024	
	(0.51)		(-0.55)	
$\text{Inflation decile}_{1920-1924}$		0.002		-0.002
		(0.44)		(-0.90)
Historical controls	Yes	Yes	Yes	Yes
State-time fixed effects	Yes	Yes	Yes	Yes
Product-time fixed effects	No	No	Yes	Yes
Adj. R^2	0.005	0.005	0.771	0.771
N	6,768,551	6,768,551	6,768,551	6,768,551

Panel B: Supermarket-product level

	Realized inflation rate (%)			
	(1)	(2)	(3)	(4)
$\text{Log(inflation)}_{1920-1924}$	0.418		-0.390	
	(1.14)		(-1.44)	
$\text{Inflation decile}_{1920-1924}$		0.014		-0.030
		(0.56)		(-1.44)
Historical controls	Yes	Yes	Yes	Yes
State fixed effects	Yes	Yes	Yes	Yes
Product fixed effects	No	No	Yes	Yes
Adj. R^2	0.000	0.000	0.435	0.435
N	480,278	480,278	480,278	480,278

Table A3: Local inflation in the 1920s and today's other expectations

This table presents the results from OLS regressions with interacted location and time fixed effects. The dependent variable is either the expected rate of inflation for real estate over the next 12 months (Columns 1 and 2), the expected interest rate over the next 12 months (Columns 3 and 4), or the expected stock return over the next 12 months (Columns 5 and 6). The variable *Log(inflation)*$_{1920\text{-}1924}$ is the natural logarithm of cumulative local inflation between January 1920 and December 1924. The variable *Inflation decile*$_{1920\text{-}1924}$ is the decile of cumulative local inflation between January 1920 and December 1924. Local inflation is computed at the county level. Household controls include a dummy variable for gender, age, age squared, dummy variables for educational attainment, dummy variables for marital status, dummy variables for employment status, household income, household wealth, dummy variables for urban and rural areas, and a dummy variable for living in East Germany in 1989. Historical controls include the average local unemployment rate between January 1920 and December 1924, a dummy variable for areas occupied by the French or Belgian army, and a dummy variable for areas with a local branch of the *Reichsbank*. The sample is based on *Deutsche Bundesbank*'s BOP-HH. Appendix A provides detailed descriptions of all variables used throughout the study. Appendix B provides an overview of the household controls used. Standard errors are clustered at the county level. t-statistics are provided in parentheses. ***, **, * denote statistical significance at the 1%, 5%, and 10% level, respectively.

	Expected inflation rate for real estate (%)		Expected interest rate (%)		Expected stock return (%)	
	(1)	(2)	(3)	(4)	(5)	(6)
Log(inflation)$_{1920-1924}$	-0.155		0.018		0.952	
	(-0.30)		(0.22)		(0.56)	
Inflation decile$_{1920-1924}$		-0.013		-0.001		0.007
		(-0.54)		(-0.21)		(0.09)
Household controls	Yes	Yes	Yes	Yes	Yes	Yes
Historical controls	Yes	Yes	Yes	Yes	Yes	Yes
State-time fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R^2	0.060	0.060	0.024	0.024	0.011	0.011
N	28,651	28,651	17,278	17,278	2,755	2,755

Table A4: Local inflation in the 1920s and today's political coverage of inflation

This table presents the results from probit and OLS regressions with location and time fixed effects. The dependent variable is either a dummy that equals one for speeches on inflation, and zero otherwise (Panel A) or the natural logarithm of the number of speeches on inflation that a politician holds in a given month (Panel B). The variable *Log(inflation)*$_{1920\text{-}1924}$ is the natural logarithm of cumulative local inflation between January 1920 and December 1924. The variable *Inflation decile*$_{1920\text{-}1924}$ is the decile of cumulative local inflation between January 1920 and December 1924. Local inflation is computed at the constituency level. The variable *Contemporaneous inflation (%)* is the year-over-year national realized rate of inflation in a certain month. Politician controls include a dummy variable for gender, age, age squared, dummy variables for marital status, dummy variables for a politician's role in parliament, dummy variables for party membership, the natural logarithm of the number of speeches, and the fraction of negative words across speeches. Historical controls include the average local unemployment rate between January 1920 and December 1924 in a constituency, a dummy variable for constituencies occupied by the French or Belgian army, and a dummy variable for constituencies with a local branch of the *Reichsbank*. The sample is based on data from Open Discourse. In Columns 1 and 2, we keep only the first legislative period of each politician. In Columns 3 and 4, the sample includes all legislative periods. Appendix A provides detailed descriptions of all variables used throughout the study. Standard errors are clustered at the state level. t-statistics are provided in parentheses. ***, **, * denote statistical significance at the 1%, 5%, and 10% level, respectively.

Panel A: Politician-legislative period-speech level

	Speech on inflation (d)			
	(1)	(2)	(3)	(4)
$\text{Log(inflation)}_{1920-1924}$	0.086***		-0.013	
	(4.63)		(-0.28)	
$\text{Inflation decile}_{1920-1924}$		0.004***		-0.001
		(4.29)		(-0.27)
$\text{Log(inflation)}_{1920-1924}$ × Contemporaneous inflation (%)			0.018**	
			(2.38)	
$\text{Inflation decile}_{1920-1924}$ × Contemporaneous inflation (%)				0.001**
				(2.46)
Politician controls	Yes	Yes	Yes	Yes
Historical controls	Yes	Yes	Yes	Yes
Time fixed effects	Yes	Yes	Yes	Yes
State fixed effects	No	No	Yes	Yes
Pseudo R^2	0.168	0.168	0.133	0.133
N	21,178	21,178	54,726	54,726

Panel B: Politician-legislative period-month level

	Log(# speeches on inflation)			
	(1)	(2)	(3)	(4)
$\text{Log(inflation)}_{1920-1924}$	0.101***		-0.021	
	(4.08)		(-0.46)	
$\text{Inflation decile}_{1920-1924}$		0.005***		-0.001
		(3.61)		(-0.58)
$\text{Log(inflation)}_{1920-1924}$ × Contemporaneous inflation (%)			0.033**	
			(2.41)	
$\text{Inflation decile}_{1920-1924}$ × Contemporaneous inflation (%)				0.001*
				(2.02)
Politician controls	Yes	Yes	Yes	Yes
Historical controls	Yes	Yes	Yes	Yes
Time fixed effects	Yes	Yes	Yes	Yes
State fixed effects	No	No	Yes	Yes
Adj. R^2	0.096	0.096	0.097	0.096
N	12,834	12,834	32,701	32,701

Table A5: Local inflation in the 1920s and today's newspaper coverage of inflation

This table presents the results from probit and OLS regressions with time fixed effects. The dependent variable is either a dummy that equals one for articles on inflation, and zero otherwise (Panel A) or the natural logarithm of the number of articles on inflation published in a newspaper in a given month (Panel B). The variable *Log(inflation)*$_{1920\text{-}1924}$ is the natural logarithm of cumulative local inflation between January 1920 and December 1924. The variable *Inflation decile*$_{1920\text{-}1924}$ is the decile of cumulative local inflation between January 1920 and December 1924. Local inflation is computed at the zip code level. Article controls include the natural logarithm of the number of words in an article and the fraction of negative words in an article. Newspaper controls include the natural logarithm of the monthly number of articles published in a newspaper and the fraction of negative words across articles. Historical controls include the average local unemployment rate between January 1920 and December 1924, a dummy variable for areas occupied by the French or Belgian army, and a dummy variable for areas with a local branch of the *Reichsbank*. The sample is based on data from Factiva. Appendix A provides detailed descriptions of all variables used throughout the study. Standard errors are clustered at the county level. t-statistics are provided in parentheses. ***, **, * denote statistical significance at the 1%, 5%, and 10% level, respectively.

Panel A: Newspaper-article level

	Article on inflation (d)	
	(1)	(2)
Log(inflation)$_{1920-1924}$	0.062***	
	(2.76)	
Inflation decile$_{1920-1924}$		0.003**
		(2.41)
Article controls	Yes	Yes
Historical controls	Yes	Yes
Time fixed effects	Yes	Yes
Adj. R^2	0.044	0.044
N	68,956	68,956

Panel B: Newspaper-month level

	Log(# articles on inflation)	
	(1)	(2)
Log(inflation)$_{1920-1924}$	0.558***	
	(3.14)	
Inflation decile$_{1920-1924}$		0.029***
		(2.80)
Newspaper controls	Yes	Yes
Historical controls	Yes	Yes
Time fixed effects	Yes	Yes
Adj. R^2	0.513	0.513
N	2,355	2,355