Final Report – Inflation Expectations and Gender Roles

1 General Information

DFG reference number:	KI 1757/5-1
Project number:	516656190
Project title:	Inflation Expectations and Gender Roles / Inflationserwartungen und Geschlechterrollen
Name of the applicant:	Prof. Dr. Fabian Kindermann
Official address:	Universität Regensburg, Universitätsstr. 31, 93053 Regensburg
Cooperation partners:	Prof. Dr. Michael Weber (Purdue University) Dr. Julia Le Blanc (JRC of the European Commission)
Reporting period:	01.10.2023 - 31.09.2025 (24 months)

2 Summary

Inflation expectations are a cornerstone of modern macroeconomics. When people anticipate high inflation, they perceive real interest rates as low, which encourages consumption and discourages savings. They may also demand higher wages during bargaining processes, potentially fueling inflation further. For these reasons, central banks worldwide increasingly prioritize managing inflation expectations, particularly at the individual level.

Despite these efforts, empirical evidence shows that consumer inflation expectations are upward biased: individuals expect inflation to be higher than official rates. Importantly, this bias is not uniform across the population. A striking and persistent difference exists between women and men: women tend to predict significantly higher inflation rates than men. This phenomenon, known as the gender gap in inflation expectations, raises fundamental questions about expectation formation and its social determinants.

This research project addresses these questions and advances the frontier in two major ways. First, it demonstrates that the gender gap is not confined to advanced economies but is a global phenomenon. Previous studies relied on data from a few industrialized countries, leaving the broader picture unexplored. This project uses novel survey data from more than 25,000 consumers in 25 countries across Asia, Africa, the Americas, Europe, and Oceania, covering 80% of global GDP and 62% of the world population. The gender gap persists in all countries, even after controlling for education, income, age, and other individual characteristics, confirming its robustness and universality.

Second, the project investigates mechanisms behind this gap, focusing on household roles and exposure to price signals. The underlying hypothesis is that individuals learn from prices they encounter most frequently, and that household task allocation shapes these experiences. Among households with children under 14, the data allow to distinguish between modern role distributions (i.e. households in which tasks like cooking for children or staying home with them when sick are shared equally across partners) and traditional distributions (where these tasks are primarily assigned to mothers). Our findings reveal that the gender gap exists only in traditional households; in modern households, it disappears. Furthermore, we document systematic differences in the

products individuals consider important for forming inflation forecasts, which vary by household type and role distribution.

By uncovering the global prevalence of the gender gap and identifying household organization as a key driver, this project provides new insights into expectation formation. It highlights the interplay between economic behavior and social norms, offering implications for central bank communication strategies and for understanding how demographic and cultural factors shape macroeconomic outcomes.

In German:

Inflationserwartungen sind ein Grundpfeiler der modernen Makroökonomie. Wenn Menschen mit hoher Inflation rechnen, nehmen sie reale Zinssätze als niedrig wahr, was den Konsum fördert und das Sparen hemmt. Zudem können sie in Lohnverhandlungen höhere Gehälter fordern, was die Inflation zusätzlich anheizen kann. Aus diesen Gründen legen Zentralbanken weltweit zunehmend Wert auf das Management von Inflationserwartungen, insbesondere auf individueller Ebene.

Trotz dieser Bemühungen zeigen empirische Befunde, dass die Inflationserwartungen von Konsumenten systematisch nach oben verzerrt sind: Individuen erwarten höhere Inflationsraten relativ zu offiziellen Werten. Diese Verzerrung ist nicht gleichmäßig über die Bevölkerung verteilt. Ein auffälliger Unterschied besteht zwischen Frauen und Männern: Frauen sagen typischerweise deutlich höhere Inflationsraten vorher als Männer. Dieses Phänomen, bekannt als Gender Gap in Inflationserwartungen, wirft grundlegende Fragen zur Bildung von Erwartungen und deren soziale Determinanten auf.

Dieses Forschungsprojekt geht diesen Fragen nach und erweitert die Forschung in zwei zentralen Dimensionen. Erstens zeigt es, dass der Gender Gap nicht auf entwickelte Volkswirtschaften beschränkt ist, sondern ein globales Phänomen darstellt. Unser Projekt nutzt neuartige Umfragedaten von mehr als 25,000 Konsumenten in 25 Ländern in Asien, Afrika, Amerika, Europa und Ozeanien, die 80% des weltweiten BIP und 62% der Weltbevölkerung abdecken. Der Gender Gap besteht in allen Ländern fort, selbst nach Kontrolle für Bildung, Einkommen, Alter und andere individuelle Merkmale.

Zweitens untersucht das Projekt die Mechanismen hinter dieser Lücke, mit Fokus auf die Rollenverteilung im Haushalt und Preissignale. Die zugrunde liegende Hypothese lautet, dass Individuen aus den Preisen lernen, denen sie am häufigsten begegnen, und dass die Aufgabenverteilung im Haushalt diese Erfahrungen prägt. In Haushalten mit Kindern unter 14 Jahren unterscheiden wir zwischen moderner Rollenverteilung (d.h. Aufgaben wie Kochen für Kinder oder die Betreuung bei Krankheit werden gleichmäßig zwischen Partnern geteilt) und traditioneller Verteilung (diese Aufgaben werden überwiegend von Müttern übernommen). Unsere Ergebnisse zeigen, dass der Gender Gap nur in traditionellen Haushalten existiert; in modernen Haushalten verschwindet er. Darüber hinaus dokumentieren wir systematische Unterschiede in den Produkten, die Individuen für ihre Inflationsprognosen als wichtig erachten, und die je nach Haushaltstyp und Rollenverteilung variieren.

Die Projektergebnisse liefern somit neue Erkenntnisse zur Bildung von Erwartungen. Sie verdeutlichen das Zusammenspiel von wirtschaftlichem Verhalten und sozialen Normen und bieten Implikationen für die Kommunikationsstrategien von Zentralbanken sowie für das Verständnis, wie demografische und kulturelle Faktoren makroökonomische Ergebnisse beeinflussen.

3   Progress Report

Background and objectives

Scientific background   Central banks worldwide increasingly emphasize the management of consumers' subjective inflation expectations, given their pivotal role in shaping macroeconomic outcomes. When expectations are well-anchored to the central bank's target, monetary policy operates more effectively, and institutional credibility is strengthened, an essential prerequisite for maintaining central bank independence. However, empirical evidence consistently reveals that consumer expectations are biased upward relative to realized inflation rates and exhibit pronounced heterogeneity across individuals (Weber et al., 2022; Fofana et al., 2025). This variation is not random but reflects systematic differences linked to sociodemographic characteristics. Among these, gender stands out as one of the most robust predictors of individual inflation forecasts (Pfajfar and Santoro, 2009; Bruine de Bruin et al., 2010; D'Acunto et al., 2023).

Despite the well-documented existence of gender differences in inflation expectations, comprehensive evidence on the underlying mechanisms remains scarce. One prominent hypothesis attributes the gap to traditional gender roles, which often assign women greater responsibility for household grocery shopping, thereby increasing their exposure to volatile food prices (D'Acunto et al., 2021). Since consumers tend to overweight positive price changes for frequently purchased goods (Brachinger, 2008; Cavallo et al., 2017; Dietrich et al., 2023), this heightened exposure may amplify women's inflation expectations. Alternative explanations highlight gender gaps in financial literacy (Lusardi and Mitchell, 2014) and differences in forecast confidence (Bruine de Bruin et al., 2010; Reiche, 2024; D'Acunto et al., 2021). Furthermore, observed disparities may be partly driven by methodological factors, such as the elicitation techniques used to measure expectations, the prevailing inflationary environment during survey administration, and cross-country variation in survey contexts.

Core objectives   The stated objective of this project was to understand the importance of gender roles in shaping inflation expectations of women and men. The project therefore brought together a research team of three experienced researchers in the areas of family macroeconomics (Prof. Dr. Fabian Kindermann, University of Regensburg), household finance (Dr. Julia Le Blanc, Joint Research Centre of the European Commission) and inflation expectations and finance (Prof. Michael Weber, PhD, now Purdue University) to understand whether different gender role models shape perceived price signals and how they contribute to the differences in inflation expectations between women and men.

New survey data   At the core of this research agenda was the generation of new, world-wide survey data on inflation expectations and their relation to gender roles. In the fall of 2023, we designed a customized questionnaire on subjective inflation expectations of households, building on the best practices pioneered by the New York Fed Survey of Consumer Expectations or the European Central Bank Consumer Expectations Survey. The survey comprised 32 questions organized into six thematic blocks:

1. The first block collected demographic information, including gender (male, female, other), age, educational attainment, household income (in four quartile bins), and the presence of children under the age of 14.

2. In light of the established relevance of homeownership and liquidity for expectation formation, respondents were asked about their housing tenure, financing arrangements, and the existence of a liquidity buffer in the second block.

3. The third block focused on the intra-household allocation of routine responsibilities, such as grocery shopping, refueling vehicles, managing financial decisions, and income generation. For individuals that had children under the age of 14 present in the household, we also asked about the allocation of core tasks like cooking food for the family, taking part in children's leisure activity, and staying home when they are sick. Respondents were asked who generally is responsible for such tasks, giving them the option to answer "I am primarily responsible for this task", "I share this task with somebody else", or "Someone else is primarily responsible for this task".

4. The fourth block focused on eliciting inflation expectations. To ensure conceptual clarity without introducing bias, the block began with a concise definition of inflation, accompanied by two illustrative examples demonstrating the calculation of percentage changes, one positive and one negative. This approach aimed at familiarizing all respondents with the concept while avoiding priming effects toward either price increases or decreases. Participants were first asked to report their perception of the current inflation rate, followed by their expectations for inflation twelve months ahead. Expectations were elicited using the triangular method developed by Guiso et al. (2002), which enables the measurement of subjective uncertainty with minimal cognitive burden, in contrast to full probability distribution methods. Importantly, respondents were also asked to identify specific goods that influenced their inflation expectations and to assess the relevance of a predefined set of information sources in shaping those expectations.

5. In the penultimate block, respondents answered two questions aimed at determining their financial literacy and reported their willingness to take financial risks. Additionally, we elicited measures of trust in the country's central bank and in other people.

6. The final block examined perceptions of gender norms and the distributions of roles in typical households of the country of residence. We therefore used items adapted from the World Values Survey. These questions were presented in a matrix format with randomized item order to mitigate response bias. Participants indicated their level of agreement with value statements (e.g., "When a mother works for pay, the children suffer") and assessed the appropriateness of task allocations (e.g., "Cooking for the children, dressing them, and bringing them to bed") between mothers and fathers in a typical family. These items were placed at the end of the survey to avoid priming respondents to consider gender roles when forming their inflation expectations.

The survey was administered in 25 countries:

- **Asia:** China, India, Japan, South Korea, Philippines
- **Africa:** Nigeria, South Africa
- **Americas:** Brazil, Canada, Chile, Colombia, Mexico, United States
- **Europe:** Czech Republic, Finland, France, Germany, Great Britain, Hungary, Italy, Netherlands, Poland, Spain
- **Oceania:** Australia, Indonesia

This sample covers around 80% of global GDP and 62% of the world population. The questionnaire

was originally phrased in English and was translated into the respective national languages with the assistance of colleagues at local universities and central banks. To ensure semantic consistency across translations, all versions were back-translated into English and reviewed for fidelity to the original meaning. A pretest was conducted in the United States in January 2024 with 100 respondents, followed by a soft launch in March 2024 across all participating countries. The full launch proceeded once each country reached 100 completed responses and initial data quality checks ruled out suspicious response patterns. The survey data using a sampling design intended to ensure representativeness with respect to age (18–69), gender, and educational attainment, with the additional requirement that at least 60 percent of respondents were either married or cohabiting with a partner. The estimated time to answer to the survey questions was approximately 10 minutes.

Project-specific results and findings

The gender gap as a global phenomenon   With the help of the new survey data, we were able to establish the gender gap in inflation expectations as a truly global phenomenon, consistently observed across all 25 countries included in our survey. Figure 1 presents a world map highlighting these countries and visualizing the average difference in inflation expectations between female and male respondents. Yellow shading indicates countries with the smallest gender gaps, whereas purple denotes those with the largest; countries in grey were not surveyed. In every country surveyed, women report higher inflation expectations than men, with the gap ranging from approximately 0.6 percentage points (pp) in India to over 5 pp in Australia. The cross-country average difference is 2.6 pp, underscoring both the global prevalence and the substantial variation in gender-based inflation perceptions. These differences are economically meaningful. At the time of the survey, the average realized inflation rate across sample countries was 4.47%, implying that the gender gap amounts to nearly 60% of actual inflation.
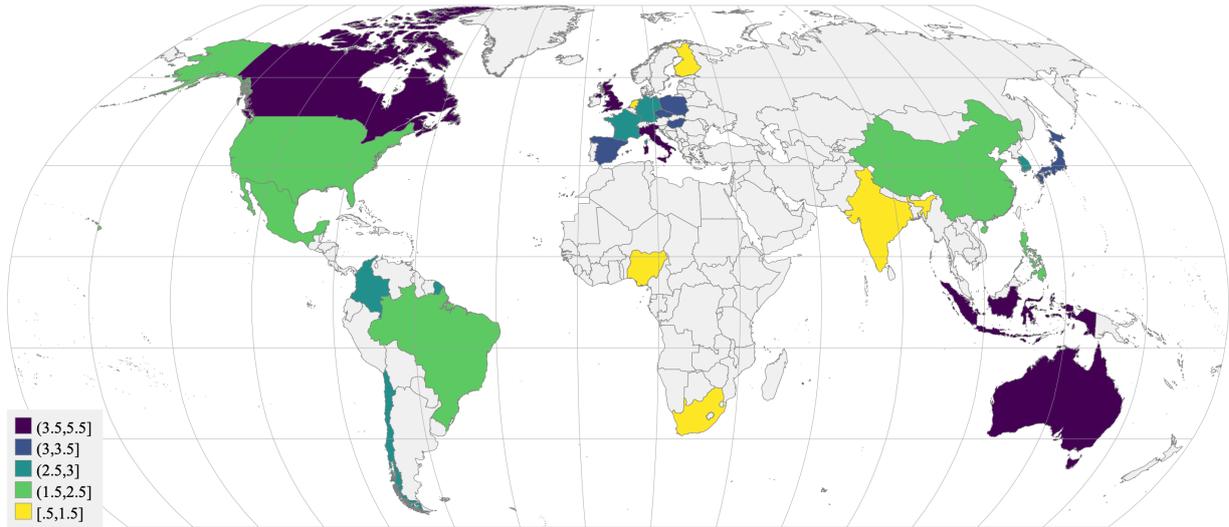

Figure 1: Differences in inflation expectations between women in men. Difference in mean inflation expectations between men and women in a given country (in percentage points).

Formal regression analysis supports these descriptive patterns. After controlling for country fixed effects, detailed background controls like family status, age group dummies, education, employment status, household income quartiles, homeownership, liquidity buffer presence, and financial

literacy, a sizable and statistically highly significant gender gap in inflation expectations of around 1.9 percentage points remains, supporting the idea that this gender gap is not (exclusively) a consequence of varying economic and demographic circumstances.

Inflation expectations and gender roles To study the relationship between inflation expectations and gender roles, survey respondents' household situations were classified into three family types: (i) households without children under the age of 14, (ii) households with children and a modern role distribution, and (iii) households with children and a traditional role distribution. Role distributions were derived from responses to a question on the allocation of household tasks, see above. Women[1] with children were classified as living in a traditional household if they reported being primarily responsible for tasks such as cooking for the children, dressing them, putting them to bed, and staying home when they are sick. Men were classified as living in a traditional household if they indicated that these tasks were either shared with someone else or primarily performed by someone else.

Cross-country evidence, shown in the left panel of Figure 2, reveals that countries with a higher share of mothers in traditional-role households exhibit significantly larger gender gaps in inflation expectations. This pattern provides motivating evidence that the allocation of household duties within the household can potentially amplify sensitivity to certain price signals, contributing to elevated inflation perceptions among women. Within-country evidence, presented in the right panel of Figure 2, shows that women without children consistently expect higher inflation than men (left group of bars), with a statistically significant gap of approximately 2 percentage points. Among parents, no gender gap is observed in households with modern role distributions (middle group of bars).[2] In contrast, traditional-role households with children (right group of bars) exhibit a substantial and statistically significant gap: women expect inflation rates that are, on average, 5 percentage points higher than men. Formal regression analysis corroborates these findings.
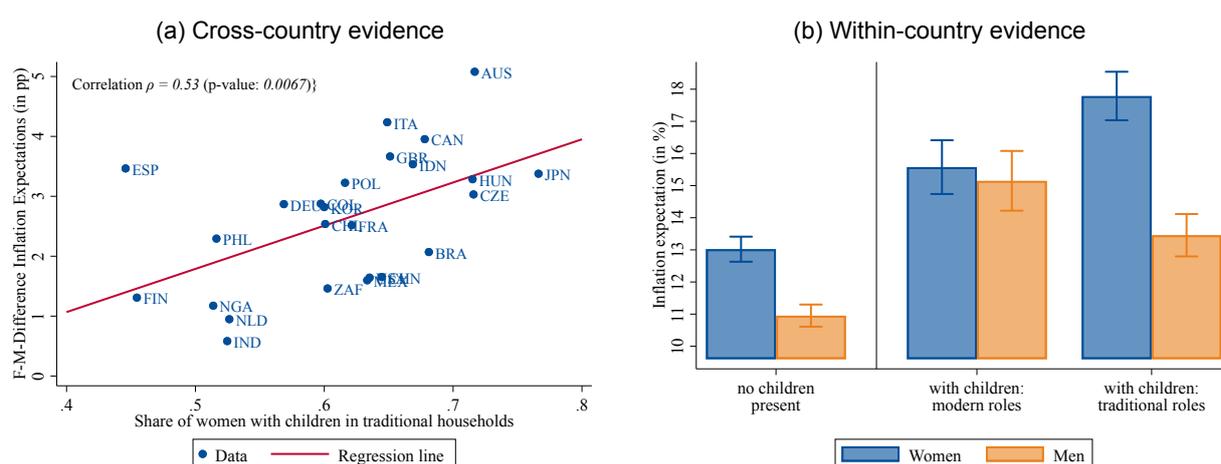

Figure 2: Gender roles and inflation expectations. Panel a. Cross-country relation between share of women living in families with traditional role distribution in the total number of women with children under age 14 present in the household and country-wide difference in inflation expectations between women and men. Panel b. Individual family types and inflation expectations.

---

[1]We excluded 66 respondents who did not identify with a binary gender.
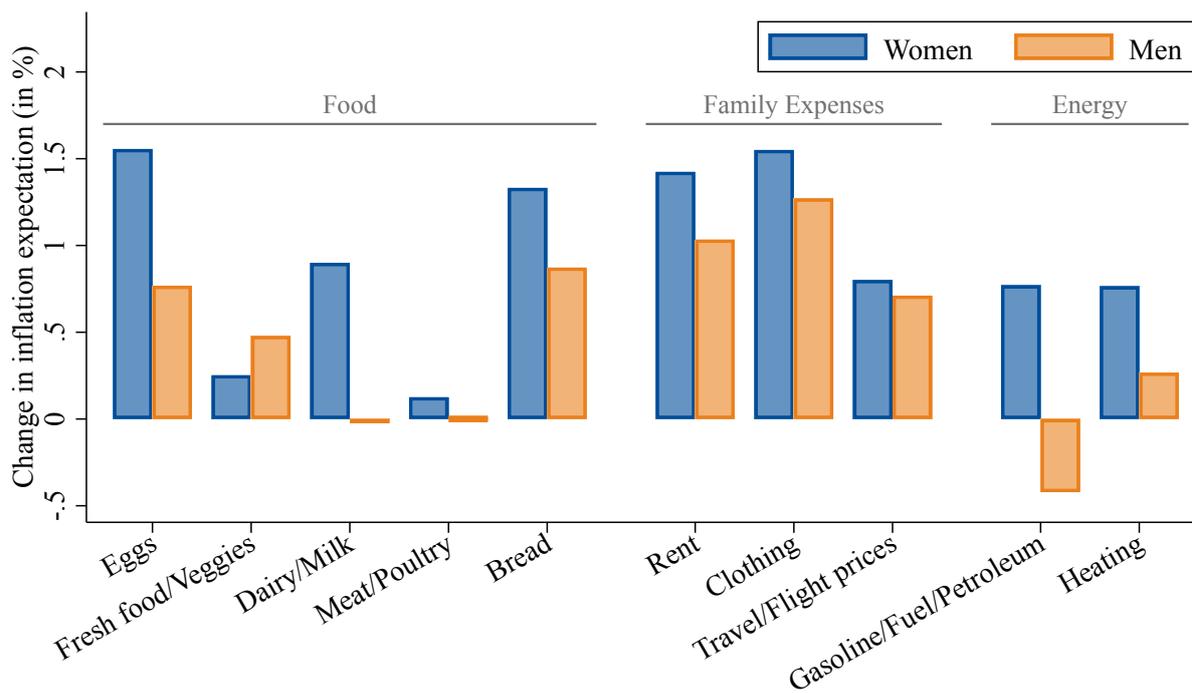[2]See "Data and Measures" for formal definitions.

Figure 3: Products relevant to inflation forecasts and inflation expectations. Relation between products individuals classify as important for inflation forecasting and inflation expectations.

Individuals learn from the prices they see   One hypothesis for the gender gap in inflation expectations is that, due to traditional household roles, women are more frequently exposed to grocery prices than men. Grocery prices are highly volatile and less persistent than other components of the consumption basket, to an extend that central banks often exclude them from core inflation measures. Yet, the salience and volatility of grocery prices and the tendency to focus on price increases may lead women in traditional-role households to perceive greater price pressures and, consequently, expect higher inflation.

To examine how product-specific price signals shape inflation expectations, we use data on the product categories respondents identified as influential in forming their forecasts. Figure 3 displays the estimated impact of each product category on inflation expectations. A coefficient of one implies that citing a product as important is associated with a one percentage point increase in expected inflation. The results show that women report significantly higher expectations when citing eggs or dairy/milk. Their inflation expectations are also notably shaped by changes in energy prices. In contrast, responses to "family expenses" are similar across genders. A crucial difference between food and family expenses is that the former are salient and consumers have frequent exposure to them in their daily life, whereas the latter – rent, clothing, and travel – are infrequent expenses that are not very salient and consumers might not even notice them given direct payments from their deposit accounts (D'Acunto et al., 2021). These findings suggest that while some categories result in comparable inflation perceptions, others contribute meaningfully to the gender gap.

Note that the role of information in shaping individual inflation expectations is twofold. On the one hand, men and women may learn from similar signals differently when forming expectations, as shown above. On the other hand, they may also attend to different prices and thus receive different signals. To assess the importance of the latter channel, we analyzed which product categories

respondents consider important when forming their forecasts. We find that, across all family types, women are more likely than men to consider food prices important when forming inflation expectations. Since women also respond more strongly to food price signals, this may partly explain their generally higher expectations, even in childless households. For family expenses, gender differences vary by family type: women in modern arrangements pay less attention to these signals than men, whereas those in traditional arrangements pay significantly more. Given that men and women respond similarly to family expense signals, this variation likely contributes to differences in the gender gap across family types. Finally, women in traditional households show slightly greater attention to energy prices, further amplifying the gender gap in inflation expectations within these households.

We also explicitly test for other potential explanations of the gender gap in inflation expectations, specifically for the role of financial literary and forecast confidence (as measured by the bounds individuals put on their inflation forecasts). We found that neither controlling for financial literacy nor forecast confidence (interacted with gender) can render the gender dummy on inflation forecasts zero.

We conclude that men and women differ in labor market opportunities, access to financial resources, and participation in investment activities, which often leaves women with fewer savings and greater vulnerability in old age. Beyond these structural disparities, traditional household roles expose women more frequently to volatile prices for goods such as food and energy, leading to higher perceived inflation and stronger expectations of future price increases. Since nominal interest rates are identical across genders, higher expected inflation lowers perceived real interest rates for women, reducing the attractiveness of saving and encouraging consumption. Consequently, even if income and opportunity gaps were fully closed, women could remain disproportionately vulnerable unless household responsibilities are shared more equally or central banks succeed in correcting misperceptions through effective communication that emphasizes broad-based price dynamics rather than changes in a few salient goods.

Deviations from the original concept

The original proposal aimed to complement the classification of household role distributions with an additional measure of gender norms at the country level. Specifically, we intended to capture stated perceptions of gender roles as an aggregate indicator of cultural attitudes or stereotypes. To this end, our survey included two questions: one assessing agreement with value statements (e.g. "When a mother works for pay, the children suffer") and another evaluating the perceived appropriateness of task allocations (e.g. "Cooking for the children, dressing them, and bringing them to bed") between mothers and fathers in a typical family of the country a respondent is living in. These items were adapted from established instruments in, for example, the World Values Survey and the European Social Survey.

Our hypothesis was that these stated gender norms would correlate with the gender gap in inflation expectations, similar to the pattern observed in Panel (a) of Figure 2. While we find substantial cross-country variation in stated gender roles, this variation does not align with differences in the average gender gap in inflation expectations, as shown in Panel (a) of Figure 4. A focused analysis for Europe, combining inflation expectations from the EU Consumer Survey with value indicators from the European Social Survey (see Panel (b) of the figure), yields a mildly positive but statis-

tically insignificant correlation. Moreover, the negative slope observed in the regression is driven entirely by three countries, Sweden, Denmark, and Finland. Excluding these countries flattens the relationship. Although this finding is intriguing, a deeper exploration of its causes lies beyond the scope of this report and is left for future research.
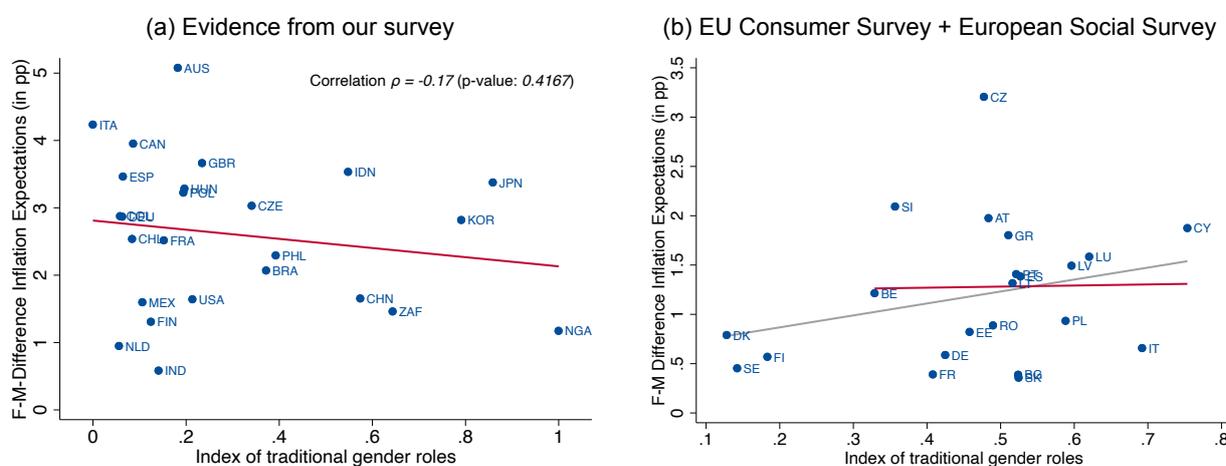

Figure 4: Stated gender roles and inflation expectations. Both panels. Index of stated gender roles and inflation expectations in our survey.

Research data

Data anonymity   Our data was collected in March 2024 in cooperation with the global survey company Dynata, which fully administered the data collection process and provided us with de-identified survey data. We asked Dynata to implement quotas to ensure that the sample was representative with respect to age (18–69), gender, and educational attainment, and that at least 60 percent of respondents were either married or living with a partner. The estimated completion time for the survey was approximately 10 minutes.

The survey was designed to guarantee respondent anonymity, even if the data is made publicly available. Specifically, we avoided overly detailed demographic questions and excluded individuals younger than 18 or older than 69 to prevent sampling from very small age groups. Furthermore, identity-sensitive variables such as after-tax income were collected in broad categories rather than exact figures. In particular, income was grouped into four bins corresponding to the quartiles of the national income distribution, and we verified that each bin contained a sufficient number of respondents. These measures make it virtually impossible for any researcher to re-identify individuals in the dataset.

Data Publication   We plan to publish the full microdata three years after the end of the project's funding period, allowing time for follow-up studies. After this latency period, the complete dataset will be archived and made publicly accessible through the University of Regensburg's publication server, which ensures permanent storage and easy accessibility. Each dataset will receive a DOI for reliable referencing. A subset of the data used in the first manuscript is already available under DOI: 10.5283/epub.78075 (see Section 4.2).

Bibliography

Brachinger, H. W. (2008). A new index of perceived inflation: Assumptions, method, and application to germany. *Journal of Economic Psychology 29*(4), 433–457.

Bruine de Bruin, W., W. Vanderklaauw, J. S. Downs, B. Fischhoff, G. Topa, and O. Armantier (2010). Expectations of inflation: The role of demographic variables, expectation formation, and financial literacy. *Journal of Consumer Affairs 44*(2), 381–402.

Cavallo, A., G. Cruces, and R. Perez-Truglia (2017). Inflation expectations, learning, and supermarket prices: Evidence from survey experiments. *American Economic Journal: Macroeconomics 9*(3), 1–35.

D'Acunto, F., U. Malmendier, and M. Weber (2023). What do the data tell us about inflation expectations? In R. Bachmann, G. Topa, and W. V. D. Klaauw (Eds.), *Handbook of economic expectations*, pp. 133–161. Elsevier.

Dietrich, A., E. S. Knotek II, K. O. Myrseth, R. W. Rich, R. Schoenle, and M. Weber (2023). Greater than the sum of its parts: Aggregate vs. aggregated inflation expectations. Technical report, National Bureau of Economic Research.

D'Acunto, F., U. Malmendier, J. Ospina, and M. Weber (2021). Exposure to grocery prices and inflation expectations. *Journal of Political Economy 129*(5), 1615–1639.

D'Acunto, F., U. Malmendier, and M. Weber (2021). Gender roles produce divergent economic expectations. *Proceedings of the National Academy of Sciences 118*(21), e2008534118.

Fofana, S., P. Patzelt, and R. Reis (2025). *Household disagreement about expected inflation*. Edward Elgar Publishing.

Guiso, L., T. Jappelli, and L. Pistaferri (2002). An empirical analysis of earnings and employment risk. *Journal of Business & Economic Statistics 20*(2), 241–253.

Lusardi, A. and O. S. Mitchell (2014). The economic importance of financial literacy: Theory and evidence. *Journal of Economic Literature 52*(1), 5–44.

Pfajfar, D. and E. Santoro (2009). Asymmetries in inflation expectations across sociodemographic groups. Technical report, mimeo.

Reiche, L. (2024). Beyond groceries: financial confidence and the gender gap in inflation expectations. Technical report, CESifo Working Paper.

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*(3), 157–184.

4 Published Project Results

4.1 Category A – Articles in peer-reviewed journals, contributions to peer-reviewed conferences or to anthology volumes, and book publications

4.2 Category B – Any other form of published results

1. Kindermann, F., J. Le Blanc, and M. Weber (2025), "Inflation Expectations and Gender Roles," Manuscript submitted at the date of filing the report, no preprint available because of journal policies. A copy of the manuscript was submitted confidentially to the DFG.

2. Kindermann, F., J. Le Blanc, and M. Weber (2025), "Dataset and analysis files for Inflation Expectations and Gender Roles," DOI: 10.5283/epub.78075.