Inflation Expectations and Risk Preferences

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Motivation

- Heterogeneity in inflation expectations across socio-demographics well documented, but little evidence about similar heterogeneity w.r.t. risk preferences $\Rightarrow$ this paper
- Risk preferences may impact how individuals seek and process information about inflation
- Risk preferences have been linked to information-seeking behavior in other contexts, where risk-averse agents are less likely to seek information w.r.t. future risky outcomes
- Measuring this is challenging due to potential endogeneity issues

This Paper

1. Evaluate potential bias in prior inflation expectations across levels of risk aversion $\Rightarrow$ Biased expectations

2. Survey RCT to measure the causal impact of information on future inflation, which cannot be avoided, across levels of risk aversion: Is the bias due to physical information avoidance or due to biased information processing?

3. Check for evidence of reverse causality between inflation expectations and risk preferences

Surveys

- Sample period: January 16-February 3, 2023, during the peak of the recent inflation surge with German inflation at 8% in January 2023
- Households survey conducted online by *Bilendi & respondi*, representative w.r.t. gender, age, net income, education: 3,266 obs
- Expert survey conducted online in collaboration with German banks and insurance companies: 663 obs
- Drop speeders, truncate prior and posterior inflation expectations in the range $-5\% \leq \pi \leq 25\%$ and estimate Huber robust weights to endogenously account for outliers

Questionnaire

- Prior inflation expectations (short- and long-run, point forecasts)
- Randomized control trial (RCT) with random information treatments:
  1. T1: *Forecast* – graph plus text of baseline Bundesbank inflation projection
  2. T2: *Forecast Risk* – Bundesbank baseline plus risk scenario for inflation projection
  3. T3: *Energy Risk* – Bundesbank baseline plus risk scenario for energy price growth projection
  4. *Control* – no information treatment
- Posterior inflation expectations and forecast uncertainty (short- and long-run, probabilistic forecast)
- Financial risk tolerance (qualitative 11-point Likert scale)

▸ Questionnaire

Households' Prior Inflation Expectations and Risk Aversion

	Households											
	$\pi^{e,12m}_{prior}$	$\pi^{e,12m}_{prior}$	$\pi^{e,12m}_{prior}$	$\pi^{e,12m}_{prior}$	$\pi^{e,12m}_{prior}$	$\pi^{e,12m}_{prior}$	$\pi^{e,12m}_{prior}$	$\pi^{e,12m}_{prior}$	$\pi^{e,12m}_{prior}$	$\pi^{e,12m}_{prior}$	$\pi^{e,12m}_{prior}$	$\pi^{e,12m}_{prior}$
Risk Aversion	0.109***	0.107***	0.045	0.072**	0.071**	0.055*	0.090***	0.083***	0.074**	0.079**	0.056*	0.005
	(0.031)	(0.026)	(0.033)	(0.032)	(0.034)	(0.031)	(0.032)	(0.032)	(0.031)	(0.032)	(0.033)	(0.027)
π^{p}_{prior}		0.672***										0.660***
		(0.029)										(0.028)
Monetary Policy Literacy			-0.615***									-0.322***
			(0.060)									(0.056)
Financial Literacy				-0.444***								-0.238***
				(0.068)								(0.058)
Self-assessed Financial Knowledge					0.325***							-0.134
					(0.108)							(0.093)
Trust in the Bundesbank						-0.241***						-0.074***
						(0.028)						(0.028)
General Trust							-0.145***					-0.032
							(0.031)					(0.030)
General Optimism								-0.099***				-0.016
								(0.016)				(0.017)
Optimism Outlook Germany									-0.986***			-0.571***
									(0.097)			(0.104)
Optimism Personal Outlook										-0.688***		0.007
										(0.109)		(0.122)
Constant	7.285***	1.293***	8.291***	8.374***	6.676***	8.893***	8.124***	8.860***	9.693***	9.261***	7.138***	4.887***
	(0.216)	(0.299)	(0.260)	(0.286)	(0.288)	(0.282)	(0.294)	(0.358)	(0.319)	(0.390)	(0.573)	(0.667)
Demographic Controls											✓	✓
Observations	2554	2554	2554	2554	2554	2554	2554	2554	2554	2554	2554	2554
Adj. R^2	0.005	0.311	0.036	0.024	0.008	0.033	0.014	0.018	0.044	0.022	0.036	0.386

Note: Prior inflation expectations and inflation perceptions are truncated in the range $-5 \leq \pi^{e} \leq 25$. Demographic controls include age, gender, net income, level of education, household size, years of work experience, German federal state, and responsibility for various household tasks. We estimate OLS regressions with Huber weights and robust standard errors shown in parentheses. * p<.10, ** p<.05, *** p<.01

Experts' Prior Inflation Expectations and Risk Aversion

	Experts										
	$\pi^{e,12m}_{prior}$	$\pi^{e,12m}_{prior}$	$\pi^{e,12m}_{prior}$	$\pi^{e,12m}_{prior}$	$\pi^{e,12m}_{prior}$	$\pi^{e,12m}_{prior}$	$\pi^{e,12m}_{prior}$	$\pi^{e,12m}_{prior}$	$\pi^{e,12m}_{prior}$	$\pi^{e,12m}_{prior}$	$\pi^{e,12m}_{prior}$
Risk Aversion	0.209***	0.223***	0.148***	0.178***	0.194***	0.194***	0.200***	0.194***	0.180***	0.145**	0.143***
	(0.052)	(0.045)	(0.048)	(0.058)	(0.048)	(0.051)	(0.054)	(0.049)	(0.047)	(0.056)	(0.050)
π^{p}_{prior}		0.552***									0.494***
		(0.089)									(0.076)
Monetary Policy Literacy			-0.558***								-0.359***
			(0.113)								(0.100)
Self-assessed Financial Knowledge				0.245*							-0.048
				(0.138)							(0.129)
Trust in the Bundesbank					-0.273***						-0.195***
					(0.064)						(0.058)
General Trust						-0.122**					0.043
						(0.051)					(0.051)
General Optimism							-0.056*				0.010
							(0.029)				(0.033)
Optimism Outlook Germany								-0.683***			-0.134
								(0.149)			(0.132)
Optimism Personal Outlook									-1.015***		-0.544**
									(0.220)		(0.221)
Constant	5.796***	0.954	7.313***	5.469***	7.818***	6.602***	6.771***	7.403***	8.756***	8.019***	8.235***
	(0.235)	(0.827)	(0.363)	(0.261)	(0.463)	(0.392)	(0.633)	(0.368)	(0.630)	(2.096)	(2.515)
Demographic Controls										✓	✓
Observations	586	586	586	586	586	586	586	586	586	586	586
Adj. R^2	0.040	0.228	0.095	0.044	0.100	0.049	0.047	0.076	0.100	0.062	0.322

Note: Prior inflation expectations and inflation perceptions are truncated in the range $-5 \leq \pi^{e} \leq 25$. Demographic controls include age, gender, net income, level of education, household size, years of work experience, German federal state, and responsibility for various household tasks. We estimate OLS regressions with Huber weights and robust standard errors shown in parentheses. * p<.10, ** p<.05, *** p<.01

Updates Towards Information: The Role of Physical Information Avoidance

	Households		Experts	
	$\pi^{e,12m}_{post}$	$\pi^{e,12m}_{post}$	$\pi^{e,12m}_{post}$	$\pi^{e,12m}_{post}$
$\pi^{e,12m}_{prior}$	0.780***	0.773***	0.915***	0.881***
	[0.736,0.825]	[0.728,0.817]	[0.840,0.991]	[0.806,0.956]
Forecast	3.346***	3.288***	1.385***	1.441***
	[2.817,3.876]	[2.769,3.808]	[0.458,2.312]	[0.511,2.371]
Forecast Risk	3.112***	3.038***	2.028***	2.026***
	[2.579,3.644]	[2.505,3.570]	[1.164,2.892]	[1.186,2.867]
Energy Risk	0.488*	0.427	-0.444	-0.395
	[-0.033,1.009]	[-0.095,0.949]	[-1.355,0.467]	[-1.315,0.526]
Forecast x $\pi^{e,12m}_{prior}$	-0.543***	-0.538***	-0.237***	-0.239***
	[-0.609,-0.476]	[-0.603,-0.473]	[-0.373,-0.102]	[-0.375,-0.104]
Forecast Risk x $\pi^{e,12m}_{prior}$	-0.494***	-0.485***	-0.296***	-0.291***
	[-0.561,-0.426]	[-0.553,-0.418]	[-0.416,-0.177]	[-0.406,-0.176]
Energy Risk x $\pi^{e,12m}_{prior}$	0.001	0.006	0.136**	0.135**
	[-0.064,0.066]	[-0.059,0.070]	[0.003,0.268]	[0.001,0.269]
Constant	1.743***	2.503***	0.980***	1.429
	[1.388,2.098]	[1.727,3.279]	[0.437,1.524]	[-1.598,4.456]
Controls		✓		✓
Observations	2554	2554	586	586
Adj. R^2	0.537	0.542	0.697	0.698

Updates Towards Information: The Role of Physical Information Avoidance

	Households			
	$\pi^{e,12m}_{prior}$	$\pi^{e,12m}_{prior}$	$\pi^{e,12m}_{post}$	$\pi^{e,12m}_{post}$
Risk Aversion	0.113***	0.005	0.020	-0.023
	[0.043,0.183]	[-0.055,0.066]	[-0.028,0.068]	[-0.076,0.031]
Constant	7.280***	4.577***	7.389***	9.647***
	[6.802,7.757]	[3.019,6.135]	[7.064,7.715]	[8.416,10.877]
Controls		✓		✓
Observations	1933	1933	1933	1933
Adj. R^2	0.005	0.400	-0.000	0.046
	Experts			
	$\pi^{e,12m}_{prior}$	$\pi^{e,12m}_{prior}$	$\pi^{e,12m}_{post}$	$\pi^{e,12m}_{post}$
Risk Aversion	0.180***	0.121**	0.078	0.001
	[0.083,0.276]	[0.012,0.230]	[-0.016,0.173]	[-0.106,0.109]
Constant	5.909***	4.643***	6.869***	11.963***
	[5.431,6.388]	[1.460,7.825]	[6.383,7.355]	[9.521,14.406]
Controls		✓		✓
Observations	433	433	433	433
Adj. R^2	0.032	0.282	0.004	0.128

Heterogeneous Treatment Effects: The Role of Biased Information Processing

	Households		Experts	
	$\pi^{e,12m}_{post}$	$\pi^{e,12m}_{post}$	$\pi^{e,12m}_{post}$	$\pi^{e,12m}_{post}$
$\pi^{e,12m}_{prior}$	0.739***	0.747***	0.907***	0.844***
	[0.617,0.861]	[0.625,0.869]	[0.687,1.128]	[0.619,1.070]
Forecast	1.633**	1.783**	0.078	-0.200
	[0.176,3.089]	[0.335,3.230]	[-2.597,2.753]	[-2.917,2.518]
Forecast Risk	2.423***	2.304***	3.025***	3.135***
	[0.940,3.906]	[0.836,3.771]	[0.815,5.235]	[0.992,5.278]
Energy Risk	-0.446	-0.541	-0.297	-0.421
	[-1.919,1.027]	[-2.029,0.948]	[-2.537,1.944]	[-2.764,1.922]
Forecast x $\pi^{e,12m}_{prior}$	-0.392***	-0.416***	-0.040	0.004
	[-0.572,-0.211]	[-0.595,-0.236]	[-0.456,0.376]	[-0.418,0.426]
Forecast Risk x $\pi^{e,12m}_{prior}$	-0.477***	-0.464***	-0.396**	-0.398**
	[-0.663,-0.291]	[-0.648,-0.281]	[-0.722,-0.070]	[-0.711,-0.085]
Energy Risk x $\pi^{e,12m}_{prior}$	0.041	0.043	0.141	0.165
	[-0.144,0.226]	[-0.143,0.230]	[-0.184,0.467]	[-0.179,0.509]
Risk Aversion	-0.174**	-0.159**	-0.007	-0.052
	[-0.319,-0.029]	[-0.306,-0.013]	[-0.192,0.178]	[-0.248,0.144]
Risk Aversion x $\pi^{e,12m}_{prior}$	0.007	0.004	0.001	0.005
	[-0.010,0.024]	[-0.013,0.022]	[-0.023,0.026]	[-0.020,0.030]
Forecast x Risk Aversion	0.262**	0.232**	0.231	0.290
	[0.054,0.471]	[0.026,0.438]	[-0.184,0.646]	[-0.133,0.712]
Forecast Risk x Risk Aversion	0.109	0.117	-0.224	-0.255
	[-0.106,0.324]	[-0.095,0.330]	[-0.580,0.132]	[-0.590,0.079]
Energy Risk x Risk Aversion	0.146	0.153	-0.040	-0.014
	[-0.067,0.359]	[-0.061,0.368]	[-0.398,0.319]	[-0.382,0.354]
Forecast x $\pi^{e,12m}_{prior}$ x Risk Aversion	-0.023*	-0.019	-0.034	-0.042
	[-0.048,0.002]	[-0.044,0.006]	[-0.096,0.028]	[-0.105,0.021]
Forecast Risk x $\pi^{e,12m}_{prior}$ x Risk Aversion	-0.003	-0.004	0.022	0.025
	[-0.030,0.023]	[-0.030,0.022]	[-0.028,0.072]	[-0.021,0.071]
Energy Risk x $\pi^{e,12m}_{prior}$ x Risk Aversion	-0.007	-0.006	-0.000	-0.004
	[-0.033,0.019]	[-0.033,0.020]	[-0.050,0.050]	[-0.055,0.048]
Constant	2.844***	3.476***	1.031	1.808
	[1.829,3.860]	[2.265,4.688]	[-0.472,2.533]	[-1.657,5.273]
Controls		✓		✓
Observations	2554	2554	586	586
Adj. R^2	0.539	0.544	0.696	0.699

Conclusion

1. Biased expectations: Risk-averse individuals systematically overestimate inflation
2. Evidence for physical information avoidance causing the bias
3. No evidence for biased information processing
4. No evidence for reverse causality: Information treatments on future inflation do not impact stated risk preferences (not shown)

$\Rightarrow$ Reducing biases in inflation expectations due to risk preferences seems to work best when confronting individuals with easily interpretable information they cannot avoid

Thank you for your attention!

Appendix

Role of Forecast Uncertainty

	(1)	(2)	(3)	(4)
	Households			
	$\pi^{e,12m}_{prior}$	$\pi^{e,12m}_{prior}$	$\pi^{e,12m}_{post}$	$\pi^{e,12m}_{post}$
Risk Aversion	0.013	-0.089**	0.066	0.040
	(0.035)	(0.041)	(0.068)	(0.068)
$\sigma^{\pi^e,12m}$	0.207	0.074	1.173**	1.251**
	(0.664)	(0.621)	(0.597)	(0.590)
Risk Aversion x $\sigma^{\pi^e,12m}$	0.271***	0.254***	-0.052	-0.065
	(0.093)	(0.087)	(0.074)	(0.073)
Constant	7.360***	10.904***	6.296***	8.057***
	(0.237)	(0.889)	(0.546)	(0.859)
Controls		✓		✓
Observations	1933	1933	1933	1933
Adj. R^2	0.071	0.150	0.076	0.116
	Experts			
	$\pi^{e,12m}_{prior}$	$\pi^{e,12m}_{prior}$	$\pi^{e,12m}_{post}$	$\pi^{e,12m}_{post}$
Risk Aversion	0.096**	0.016	0.147	0.067
	(0.046)	(0.057)	(0.110)	(0.116)
$\sigma^{\pi^e,12m}$	-1.666**	-1.546**	2.063***	1.789**
	(0.716)	(0.710)	(0.702)	(0.761)
Risk Aversion x $\sigma^{\pi^e,12m}$	0.306**	0.283**	-0.087	-0.079
	(0.134)	(0.133)	(0.123)	(0.126)
Constant	6.350***	9.951***	5.020***	9.085***
	(0.221)	(1.434)	(0.616)	(1.382)
Controls		✓		✓
Observations	433	433	433	433
Adj. R^2	0.048	0.150	0.188	0.255

Reverse Causality

	Households		Experts	
	Risk Aversion	Risk Aversion	Risk Aversion	Risk Aversion
Forecast	-0.134	-0.120	0.377	0.178
	(0.141)	(0.123)	(0.260)	(0.233)
Forecast Risk	-0.089	-0.071	0.098	0.026
	(0.138)	(0.125)	(0.281)	(0.253)
Energy Risk	-0.093	0.001	-0.290	-0.343
	(0.140)	(0.123)	(0.257)	(0.231)
Constant	6.630***	5.489***	4.804***	3.865***
	(0.099)	(0.422)	(0.188)	(1.072)
Controls		✓		✓
Observations	2554	2554	586	586
Adj. R^2	-0.001	0.216	0.006	0.255

Summary Statistics Demographic Control Variables

	Households		Experts		T-Test
	Mean	SD	Mean	SD	P-Value
	N = 2554		N = 586		
Women	0.457	0.498	0.442	0.497	0.511
Age	48.877	15.035	47.75	11.596	0.089*
Income<1000€	0.072	0.259	0.003	0.053	0.000***
999€ <Income< 4000€	0.631	0.483	0.322	0.468	0.000***
Income>3999€	0.297	0.457	0.675	0.469	0.000***
No Education	0.03	0.172	0.006	0.074	0.001***
Student	0.053	0.223	0.023	0.151	0.002***
Apprenticeship	0.586	0.493	0.481	0.5	0.000***
University Degree	0.331	0.471	0.49	0.5	0.000***
Household Size	2.095	1.101	2.464	1.161	0.000***
Years of Work Experience	24.919	14.981	25.96	12.125	0.117
Responsible for Grocery Shopping	0.594	0.491	0.474	0.5	0.000***
Responsible for Durable Purchases	0.464	0.499	0.344	0.476	0.000***
Responsible for Saving Decisions	0.595	0.491	0.614	0.487	0.398
π^{p}_{prior}	8.941	2.994	8.646	1.815	.022**
Monetary Policy Literacy	0.953	1.085	2.188	1.009	0.000***
Financial Literacy	1.898	1.158	-	-	-
Self-assessed Financial Knowledge	2.641	0.754	1.941	0.732	0.000***
Trust in the Bundesbank	5.207	2.606	7.146	2.094	0.000***
General Trust	4.917	2.446	6.019	1.908	0.000***
General Optimism	14.181	4.284	16.554	3.742	0.000***
Optimism Outlook Germany	2.207	0.734	2.246	0.651	0.237
Optimism Personal Outlook	2.58	0.714	2.777	0.562	0.000***
Risk Aversion	6.55	2.433	4.859	2.262	0.000***
General Risk Aversion	6.15	2.46	4.98	2.11	0.000***
$\pi^{e,12m}_{prior}$	8.00	3.64	6.81	2.30	0.000***
$\pi^{e,5y}_{prior}$	6.34	4.19	4.31	2.31	0.000***
$\sigma^{\pi^e,12m}_{prior}$	0.28	0.45	0.24	0.55	0.050*
$\sigma^{\pi^e,5y}_{prior}$	0.33	0.47	0.21	0.41	0.000***

Balance Tests Household Sample

	Forecast Mean / SD	Forecast Risk Mean / SD	Energy Risk Mean / SD	Control Mean / SD	Forecast P-Value	Forecast Risk P-Value	Energy Risk P-Value
Women	0.438	0.497	0.463	0.499	0.283	0.858	0.697
	(0.50)	(0.50)	(0.50)	(0.50)			
Age	49.313	48.859	48.72	48.6	0.401	0.758	0.887
	(15.247)	(14.976)	(14.89)	(15.045)			
Income<1000€	0.08	0.077	0.061	0.072	0.590	0.734	0.434
	(0.271)	(0.267)	(0.239)	(0.258)			
999€<Income<4000€	0.645	0.625	0.617	0.636	0.738	0.685	0.487
	(0.479)	(0.485)	(0.486)	(0.481)			
Income>3999€	0.276	0.298	0.322	0.292	0.527	0.815	0.251
	(0.447)	(0.458)	(0.468)	(0.455)			
No Education	0.029	0.029	0.038	0.026	0.744	0.745	0.228
	(0.168)	(0.169)	(0.191)	(0.159)			
Student	0.064	0.053	0.045	0.047	0.187	0.625	0.866
	(0.245)	(0.225)	(0.208)	(0.212)			
Apprenticeship	0.607	0.578	0.569	0.588	0.490	0.718	0.497
	(0.489)	(0.494)	(0.496)	(0.493)			
University Degree	0.3	0.339	0.348	0.339	0.136	1.000	0.738
	(0.459)	(0.474)	(0.477)	(0.474)			
Household Size	2.102	2.093	2.059	2.125	0.716	0.608	0.295
	(1.107)	(1.073)	(1.072)	(1.153)			
Years of Work Experience	25.377	24.591	24.628	25.079	0.723	0.560	0.597
	(15.004)	(14.795)	(15.138)	(15.018)			
Responsible for Grocery Shopping	0.588	0.605	0.555	0.629	0.135	0.379	0.008***
	(0.493)	(0.489)	(0.497)	(0.484)			
Responsible for Durable Purchases	0.449	0.495	0.451	0.458	0.747	0.187	0.804
	(0.498)	(0.500)	(0.498)	(0.499)			
Responsible for Saving Decisions	0.609	0.596	0.586	0.589	0.467	0.800	0.914
	(0.488)	(0.491)	(0.493)	(0.492)			
π^{p}_{prior}	9.123	8.969	8.805	8.859	0.134	0.492	0.733
	(3.424)	(2.894)	(2.787)	(2.809)			
Monetary Policy Literacy	0.948	0.942	0.988	0.934	0.816	0.895	0.373
	(1.091)	(1.109)	(1.085)	(1.055)			
Financial Literacy	1.932	1.913	1.922	1.821	0.090*	0.156	0.122
	(1.174)	(1.149)	(1.149)	(1.160)			
Self-assessed Financial Knowledge	2.648	2.672	2.593	2.648	1.000	0.557	0.198
	(0.778)	(0.728)	(0.780)	(0.730)			
Trust in the Bundesbank	5.263	5.256	5.174	5.130	0.370	0.397	0.767
	(2.583)	(2.593)	(2.544)	(2.707)			
General Trust	4.853	4.917	4.978	4.922	0.617	0.971	0.685
	(2.503)	(2.406)	(2.461)	(2.417)			
General Optimism	13.986	14.298	14.225	14.217	0.342	0.737	0.974
	(4.268)	(4.201)	(4.261)	(4.413)			
Optimism Outlook Germany	2.207	2.211	2.173	2.236	0.490	0.542	0.125
	(0.762)	(0.724)	(0.714)	(0.736)			
Optimism Personal Outlook	2.558	2.598	2.582	2.581	0.570	0.669	0.980
	(0.727)	(0.701)	(0.713)	(0.716)			
$\pi^{e,12m}_{prior}$	8.078	8.024	7.955	7.941	0.515	0.675	0.944
	(3.969)	(3.542)	(3.501)	(3.509)			
$\sigma^{\pi^e,12m}_{prior}$	0.284	0.295	0.268	0.272	0.627	0.353	0.868
	(0.451)	(0.457)	(0.443)	(0.445)			

Balance Tests Expert Sample

	Forecast Mean / SD	Forecast Risk Mean / SD	Energy Risk Mean / SD	Control Mean / SD	Forecast P-Value	Forecast Risk P-Value	Energy Risk P-Value
Women	0.453	0.491	0.407	0.418	0.540	0.210	0.849
	(0.499)	(0.502)	(0.493)	(0.495)			
Age	48.358	47.378	48.726	46.584	0.187	0.576	0.113
	(11.203)	(12.152)	(10.767)	(12.174)			
Income <1000€	0.000	0.000	0.000	0.011	0.195	0.209	0.212
	(0.000)	(0.000)	(0.000)	(0.104)			
999€ <Income< 4000€	0.302	0.333	0.318	0.337	0.515	0.942	0.730
	(0.461)	(0.473)	(0.467)	(0.474)			
Income>3999€	0.698	0.667	0.682	0.653	0.404	0.801	0.600
	(0.461)	(0.473)	(0.467)	(0.478)			
No Education	0.000	0.015	0.000	0.007	0.318	0.515	0.336
	(0.000)	(0.123)	(0.000)	(0.086)			
Student	0.012	0.018	0.008	0.053	0.046**	0.111	0.028**
	(0.111)	(0.135)	(0.089)	(0.226)			
Apprenticeship	0.459	0.455	0.537	0.476	0.767	0.719	0.298
	(0.500)	(0.500)	(0.500)	(0.501)			
University Degree	0.529	0.511	0.455	0.463	0.251	0.412	0.891
	(0.501)	(0.502)	(0.500)	(0.500)			
Household Size	2.427	2.524	2.509	2.406	0.875	0.397	0.466
	(1.087)	(1.148)	(1.175)	(1.237)			
Years of Work Experience	26.124	25.708	27.175	24.920	0.398	0.592	0.112
	(11.951)	(12.403)	(11.245)	(12.807)			
Responsible for Grocery Shopping	0.481	0.417	0.452	0.542	0.289	0.032**	0.125
	(0.501)	(0.495)	(0.499)	(0.500)			
Responsible for Durable Purchases	0.319	0.290	0.413	0.358	0.474	0.214	0.335
	(0.467)	(0.455)	(0.494)	(0.481)			
Responsible for Saving Decisions	0.589	0.581	0.642	0.647	0.300	0.246	0.929
	(0.494)	(0.495)	(0.481)	(0.480)			
π^{p}_{prior}	8.682	8.660	8.828	8.429	0.212	0.274	0.068*
	(1.722)	(1.811)	(1.923)	(1.807)			
Monetary Policy Literacy	2.176	2.223	2.158	2.194	0.881	0.804	0.757
	(1.075)	(0.977)	(0.960)	(1.023)			
Self-assessed Financial Knowledge	2.062	1.879	1.866	1.944	0.160	0.458	0.371
	(0.694)	(0.737)	(0.723)	(0.763)			
Trust in the Bundesbank	7.323	7.227	7.212	6.830	0.042**	0.114	0.144
	(1.901)	(1.994)	(2.163)	(2.287)			
General Trust	6.094	6.143	5.970	5.871	0.322	0.248	0.664
	(1.820)	(1.930)	(1.773)	(2.092)			
General Optimism	16.82	16.281	16.576	16.516	0.460	0.591	0.893
	(3.521)	(3.867)	(3.971)	(3.644)			
Optimism Outlook Germany	2.322	2.158	2.293	2.206	0.110	0.521	0.243
	(0.651)	(0.672)	(0.663)	(0.611)			
Optimism Personal Outlook	2.838	2.692	2.780	2.790	0.449	0.140	0.878
	(0.552)	(0.585)	(0.557)	(0.552)			
$\pi^{e,12m}_{prior}$	6.784	6.918	6.653	6.886	0.694	0.914	0.421
	(1.828)	(2.434)	(2.307)	(2.611)			
$\sigma^{\pi^e,12m}_{prior}$	0.302	0.232	0.204	0.215	0.082*	0.725	0.830
	(0.461)	(0.423)	(0.405)	(0.412)			

Main Questions in Questionnaire

- $\pi_{prior}^{e,12m}$: What do you expect the inflation or deflation rate in Germany will be over the next 12 months? [Numeric values with one decimal place in the range of -100 to +100]

  ___ %

- $\pi_{prior}^{e,5y}$: What do you expect the inflation or deflation rate in Germany will be over the next 5 years? [Numeric values with one decimal place in the range of -100 to +100]

  ___ %

- $\pi_{post}^{e,12m}$: We are interested in your opinion on the development of the inflation rate in the next 12 months. In your opinion, what will be the minimum and maximum inflation or deflation rate in the next 12 months?

  minimum ___ %

  maximum ___ %

- $\pi_{post}^{e,12m}$: How confident are you that the average inflation rate over the next 12 months will exceed the mean value of the minimum and maximum expectations?
  - Scale: 0 (Completely uncertain) to 10 (Completely certain)

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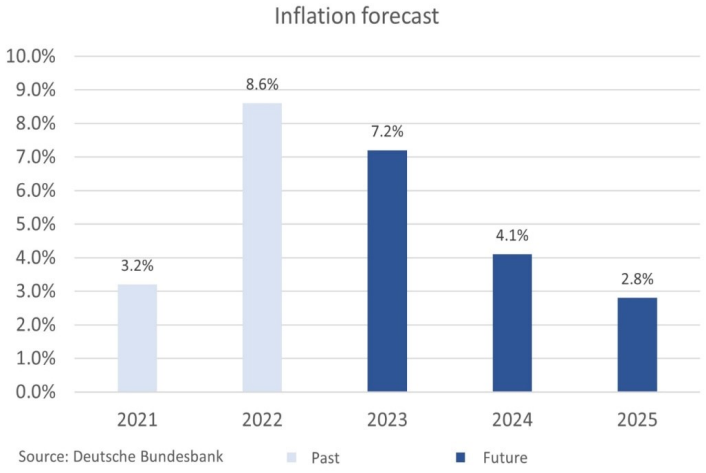
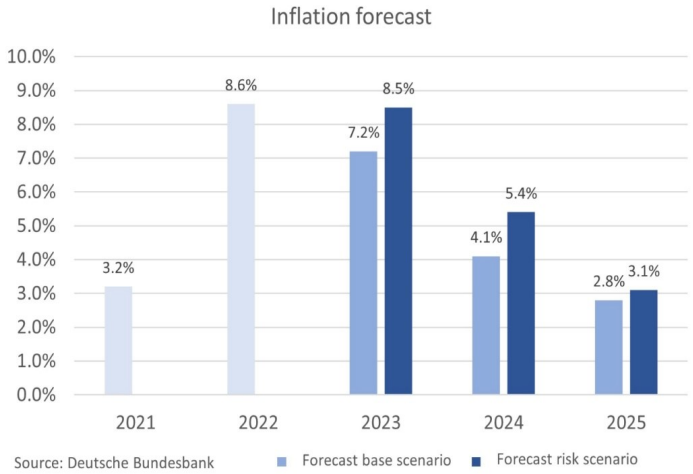
Treatments T1 & T2



In 2021, the inflation rate in Germany averaged 3.2% and in 2022 8.6%. The Deutsche Bundesbank expects average inflation rates in Germany of 7.2%, 4.1% and 2.8% for 2023, 2024 and 2025 respectively.

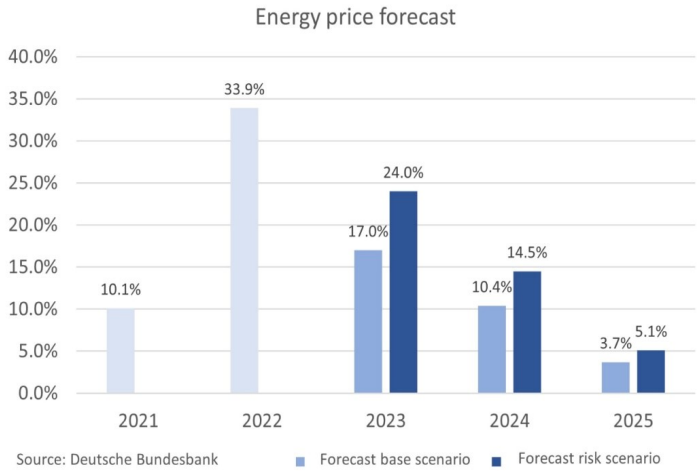
Treatment 1: *Forecast*



In 2021, the inflation rate in Germany averaged 3.2% and in 2022 8.6%. The Deutsche Bundesbank expects average inflation rates in Germany of 7.2%, 4.1% and 2.8% for 2023, 2024 and 2025 respectively.
The Bundesbank emphasizes the high level of uncertainty in forecasting inflation rates due to the war in Ukraine. In a risk scenario in which a sharper conflict with Russia and stronger geopolitical tensions are assumed, the expected average inflation for Germany for 2023, 2024 and 2025 rises to 8.5%, 5.4% and 3.1%.

Treatment 2: *Forecast Risk*

Treatment T3



In 2021, energy prices in Germany increased by an average of 10.1% and by 33.9% in 2022. The Bundesbank expects energy prices in Germany to rise by an average of 17%, 10.4% and 3.7% in 2023, 2024 and 2025 respectively.
The Bundesbank emphasizes the high level of uncertainty in forecasting energy prices due to the war in Ukraine. In a risk scenario in which a sharper conflict with Russia and stronger geopolitical tensions are assumed, the expected average energy prices for Germany for 2023, 2024 and 2025 rise to 24%, 14.5% and 5.1%, respectively.

Treatment 3: *Energy Risk*

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Main Questions in Questionnaire

- $\pi_{post}^{e,5y}$: We are interested in your opinion on the development of the inflation rate in the next 5 years. In your opinion, what will be the minimum and maximum inflation or deflation rate in the next 5 years?

  minimum ___ %

  maximum ___ %

- $\pi_{post}^{e,5y}$: How confident are you that the average inflation rate over the next 5 years will exceed the mean value of the minimum and maximum expectations?
  - Scale: 0 (Completely uncertain) to 10 (Completely certain)

- Risk tolerance: In the following question, we ask you to assess your willingness to take financial risk. A value of 0 means that you are willing to take a low financial risk, typically associated with a lower return, and a value of 10 means that you are willing to take a high financial risk, typically associated with a high return. Where would you place yourself on the following scale?
  - Scale: 0 (Low financial risk) to 10 (High financial risk)

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Main Questions in Questionnaire

Monetary policy literacy: Index with values 0-3 constructed from correct answers to the following questions:

- The main target of the monetary policy by the European Central Bank (ECB) is...
  - ... the stabilization of prices for goods and services
  - ... the stabilization of prices for commercial bonds
  - ... keeping interest rates low and stable
  - ... reducing government debt
  - don't know/no answer
- Which of the following policies will most likey lead to lower inflation?
  - Increasing short-run interest rates
  - Lowering short-run interest rates
  - Lowering income taxes
  - Increasing government spending
  - don't know/no answer
- What rate of inflation does the European Central Bank aim to achieve over the medium term? [Numeric values with one decimal place in the range of 0 to +100]

  __ %

Main Questions in Questionnaire

Financial literacy: Index with values 0-3 constructed from correct answers to the following questions:

- Image you had 100 € in your account at annual interest rate of 10%. How much would be in your account after two years?
  - Slightly more than 120 €
  - Exactly 120 €
  - Exactly 200 €
  - Exactly 110 €
  - don't know/no answer
- Image that your net income (income after taxes and social security payments) in the next year would be twice as high, but prices of all goods would be twice as high, too. How much would you be able to afford then?
  - Exactly the same as today
  - More than today
  - Less than today
  - Cannot be determined with the given information
  - don't know/no answer
- Do you agree with the following statement: "It is less risky to invest into the stock of a single company than to invest into a fonds containing stocks of several similar companies"?
  - I don't agree
  - I agree
  - don't know/no answer

Main Questions in Questionnaire

- Please indicate your gender:
  - Female
  - Male
  - Diverse
- Please enter your year of birth:

  ___
- What is your highest educational or vocational qualification?
  - Currently a student
  - Currently in training or studies (no Bachelor's degree yet)
  - Completed vocational training (apprenticeship)
  - Completed vocational school (professional school, higher business school)
  - Completed training at a technical school, technical college, or professional academy
  - Completed a master's school with a long preparation time of more than 880 hours
  - Completed a Bachelor's degree, university of applied sciences degree, engineering school
  - Completed a diploma or Master's degree, teacher training completed
  - Completed a doctorate
  - Other vocational qualification
  - No educational qualification (and currently not in training or studying)
  - Other

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Main Questions in Questionnaire

- What is your household's total monthly net income?
  - under 500 Euros
  - 500 to 999 Euros
  - 1000 to 1,499 Euros
  - 1,500 to 1,999 Euros
  - 2,000 to 2,499 Euros
  - 2,500 to 2,999 Euros
  - 3,000 to 3,499 Euros
  - 3,500 to 3,999 Euros
  - 4,000 to 4,999 Euros
  - 5,000 to 5,999 Euros
  - 6,000 to 7,999 Euros
  - 8,000 to 9,999 Euros
  - 10,000 Euros or more
  - Prefer not to disclose

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