

How Do Firms From Expectations of Aggregate Growth?
New Evidence from a Large-scale Business Survey in Germany

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Main Contributions and Results

- Using new survey data on quantitative growth expectations of firms in Germany, we show that expectations are highly dispersed and firms rely heavily on their individual economic situation when forming expectations.
- Very few studies focus on macroeconomic expectations of firms and are able to cover a wide range firm sizes and sectors.
- Quantitative responses allow us to exploit true heterogeneity in expectation formation across agents.
- The study contributes to a better understanding of how macroeconomic expectations of relevant agents are formed and which alternatives to full information rational expectations (FIRE) are promising to model this process.

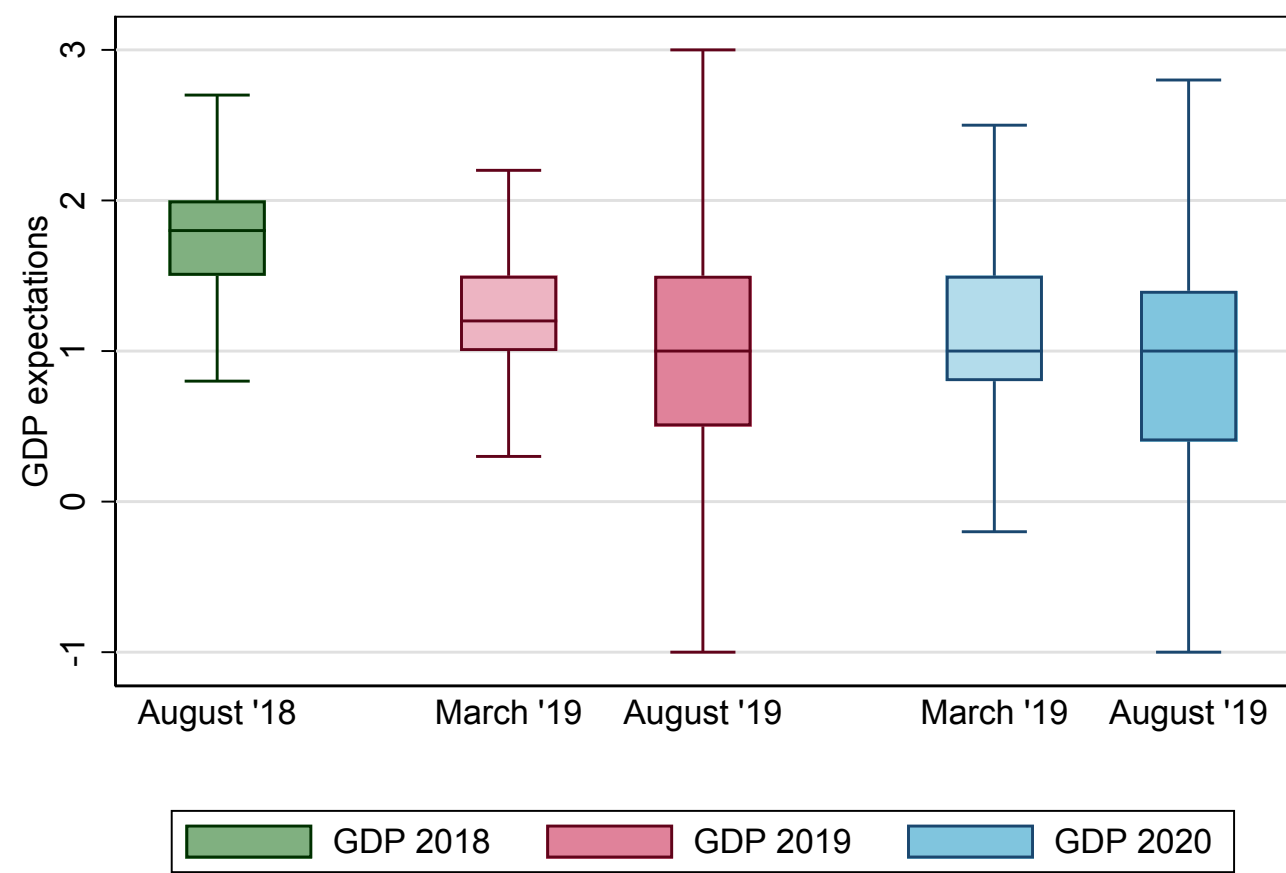
- We find that the degree of dispersion in expectations depends on firm size and how important the general economy is for the business of a firm.
- An unfavourable economic environment at a firms location is associated with more pessimistic growth expectations.
- Individual business assessment and perceived uncertainty drive the level of growth expectations.
- Firms that are optimistic about future growth are more likely to expect their future employment and investment to grow.
- Our results suggest that firms strongly rely on rational inattention motives when forming their growth expectations.

EBDC Business Expectation Panel / ifo Business Survey

Our analysis is based on a special question included in three waves – August 2018, March 2019 and August 2019 – of the ifo Business Survey. Firms in the three sectors manufacturing, trade and services were asked to report their expected annual GDP growth rate. On average, about 80% of firms who returned a questionnaire answered our special question.

Q: “By what percentage, according to your estimates, will the real gross domestic product in Germany in 2018/2019/2020 change in comparison to the previous year (2017/2018/2019)?”
A: _____

Answers GDP Growth Expectation					
Wave	Aug. '18	Mar. '19	Aug. '19	Target Year	
Target Year	2018	2019	2020	2019	2020
N	4641	4833	4779	4821	4795
Median	1.8	1.2	1.0	1.0	1.0
SD	1.3	1.4	1.5	1.5	1.7

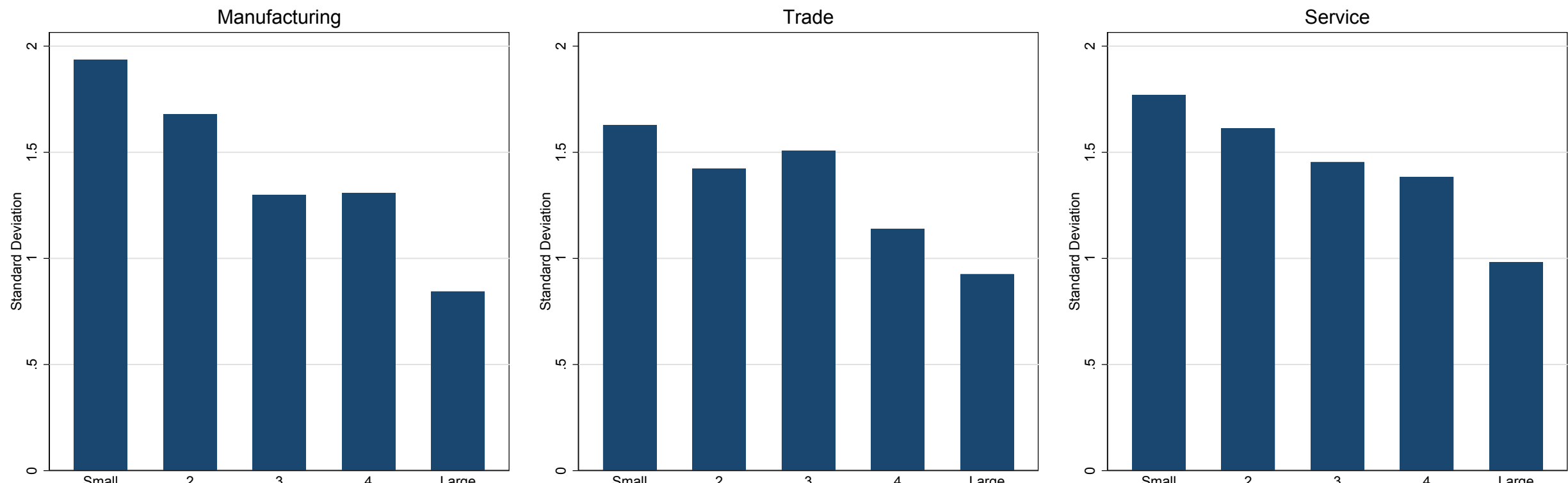


Dispersion of Firms' Growth Expectations

Findings:

- Much higher levels of dispersion among German firms than those found in surveys of professional forecasters.
- Expectations of smaller firms are generally more dispersed.
- Dispersion is larger for firms that state that the German economic development is not important for their business situation.

Comparison across Surveys					
Survey	Country	Subjects	Survey period	Target	SD
ifo BTS	DE	Firms	Aug. 18	Same year	1.3
ifo BTS	DE	Firms	Mar. 19	Same year	1.4
ifo BTS	DE	Firms	Mar. 19	Next year	1.5
ifo BTS	DE	Firms	Aug. 19	Same year	1.5
ifo BTS	DE	Firms	Aug. 19	Next year	1.7
Blue Chip	US	Large firms	Jan. 18	Same year	0.2
ASCB	JP	Firms	Various	4q ahead	1.3*
Firm Survey NZ	NZ	Firms	Various	4q ahead	0.5 – 1.0†
Consensus Econ.	DE	Forecasters	Aug. 18	Same year	0.1
SPF (EZB)	EA	Forecasters	Oct. 18	Same year	0.1
SPF (EZB)	EA	Forecasters	Apr. 19	Same year	0.2
SPF (Fed)	US	Forecasters	Apr. 19	Next year	0.3
SPF (Fed)	US	Forecasters	Aug. 18	Same year	0.1
SPF (Fed)	US	Forecasters	Feb. 19	Same year	0.2
SPF (Fed)	US	Forecasters	Feb. 19	Next year	0.5



Dispersion of Expectations for Different Firm Sizes and Sectors

Determinants of Growth Expectation

1. Local Economic Conditions

Firms might generalize from the local economic situation they experience in the area where they do business. We match firms with the 12-month average of the unemployment rate as a proxy for local economic conditions.
► Firms in German administrative districts with high unemployment rates have systematically lower growth expectations.

2. Individual Business Expectations and Business Assessment

Firms potentially extrapolate from their own business outlook to the national economy. Reverse causality problem: A firm might report a bad business situation because it is pessimistic about GDP growth. We address this in tree ways:

- Using “business assessment” instead of “business expectation” as the exogenous variable.
- Analysis for subsamples of firms that state that the German economy is not important to their business.
- Instrumental Variables Strategy: Instrumenting business expectations with their 24 months lag.

► Firms that report a better business situation tend to have more optimistic growth forecasts. The effect is stronger for those that depend less on German economic development.
► Instrumental variables approach confirms this result.

Effect of firms' own business expectations and situation.

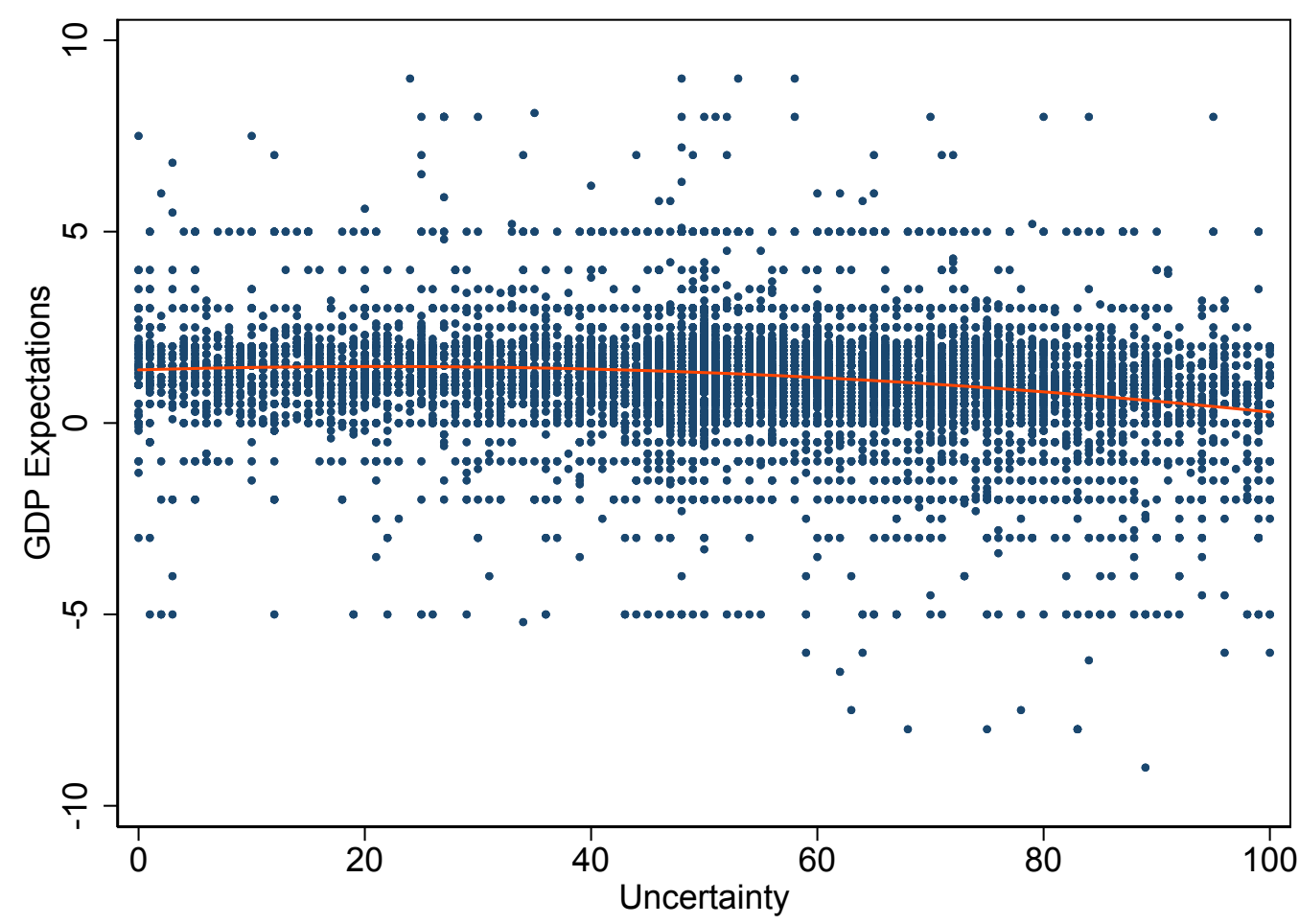
	Full sample	Importance ≥3	Importance ≥4	Foreign Sales >50	Foreign Sales >75	Foreign Sales >90	Past GDP Dependence ≤ q(10%)	Past GDP Dependence ≤ q(5%)
PANEL A								
Bus. exp.	0.54***	0.48***	0.54**	1.00***	1.11***	0.33	0.47*	0.67*
N	16085	4894	1155	1583	614	143	1080	528
R²	0.15	0.26	0.52	0.46	0.61	0.55	0.47	0.54
PANEL B								
Bus. ass.	0.32***	0.31***	0.21	0.54***	0.47*	-0.70	0.44**	-0.18
N	16085	4894	1155	1583	614	143	1080	528
R²	0.14	0.26	0.51	0.45	0.59	0.55	0.47	0.53

Notes: *** $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. All regressions include fixed effects for the respective survey wave, target year, industry (72 levels), region as well as control variables (firm size, firm age, answer online dummy, past success in predicting own business development). Standard errors are clustered by industry.

3. Uncertainty

The level of a firm's uncertainty about their own business development might affect the firms evaluation of general economic trends. It is incidental that uncertainty might play a role for firms when forming expectations of aggregate demand.

► We find that firms that report very low uncertainty levels (a value of 1) can be expected to have growth expectations that are on average 0.6 percentage points higher than a firm with maximum uncertainty (a value of 100).



Effect on Employment and Investment

Previous studies have shown that growth expectations of firms are likely to be an important driver of their business decisions (Tanaka et al., 2018). In the ifo Business Survey firms state if they expect their employment or investment to grow, stay the same or decrease in the next three months. We investigate the first answer available after each expectations survey wave.

► Our results for Germany confirm previous findings. Firms that are more optimistic about the economic development in Germany are more likely to expect their business – especially employment – to expand in the near future.

Effect on Individual Expectations

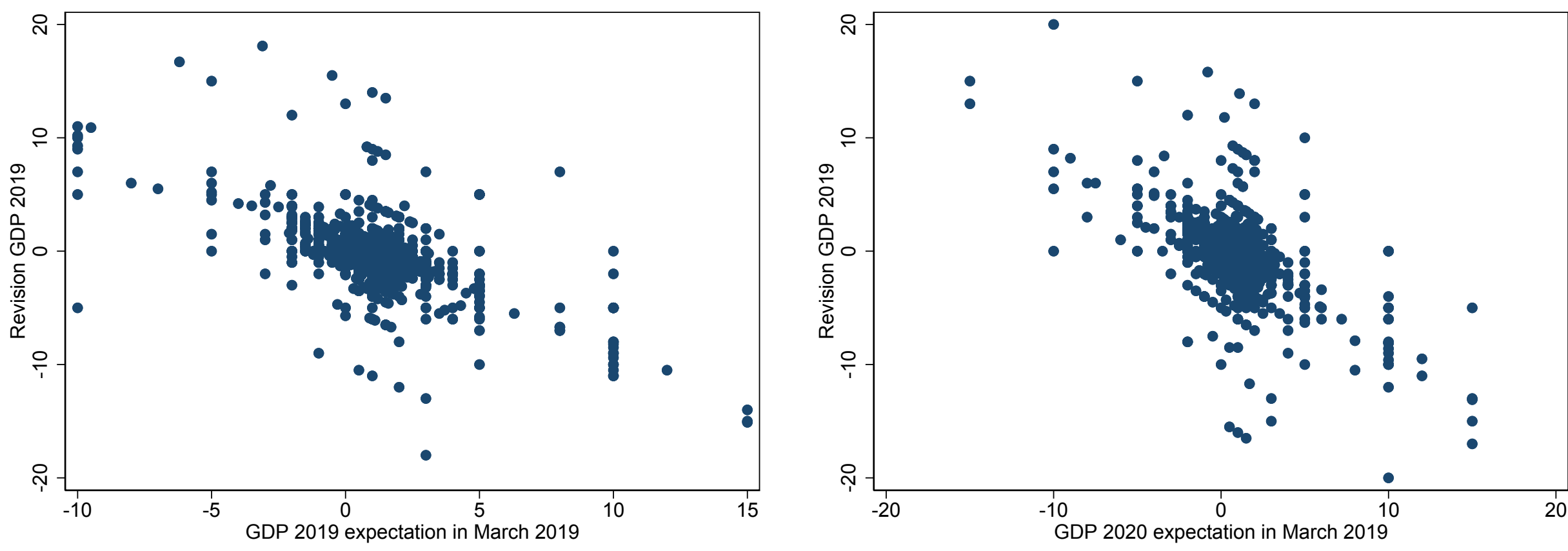
	Employment Exp.		Investment Exp.	
Growth exp.	0.012***	0.012***	0.015*	0.014*
Bus. exp.	0.210***	0.200***	0.117***	0.115***
Bus. ass.	0.184***	0.180***	0.191***	0.182***
Industry & Region FE	No	Yes	No	Yes
N	16593	15737	8657	8224
R²	0.23	0.27	0.09	0.16

Notes: *** $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. All regressions include survey wave and target year fixed effects, and control variables. Std. errors clustered by industry. Investment regressions based on data from Aug. '18 and Mar. '19, since answers on exp. investment after Aug. '19 have not been published at time of writing.

Forecast Revisions

In accordance with previous research we find that firms tend to strongly and frequently revise their expectations across survey waves (Coibion et al., 2018).

- The majority of firms does alter their expectations from March 2019 to August 2019.
- Only 17 % of the firms in the sample do not change their growth expectations at all, while about 44% revise by more than 0.5 percentage points.
- Small firms generally revise their growth expectations more strongly.
- Firms that revise strongly for the target year 2019, do so for target year 2020 as well.
- Firms with high expectations for GDP growth in March 2019 generally revise downwards and vice versa.



Conclusions

- The heterogeneity in expectations among German firms and the fact that firms strongly rely on private and local information when forming believes is in line with several other surveys that show that expectations deviate from full information rational expectations.
- High expectations dispersion is at odds with the assumption of common beliefs which is prevalent in many macroeconomic models (Coibion et al., 2018).
- Collecting information about the economy is relatively less costly for large than for small firms and results in more homogeneous economic beliefs.
- Especially firms that state that the German economic development is less important to their business heavily rely on individual business assessment in the process of expectation formation. This confirms rational inattention motives that suggest that firms should allocate less resources to tracking variables that are not important to their success.
- The fact that beliefs about future growth affect firms expectations of future employment and investment volumes confirms the importance of expectations in the macroeconomic context.

References

Coibion, O., Gorodnichenko, Y., Kumar, S., 2018. How do firms form their expectations? New survey evidence. *American Economic Review* 108 (9), 2671–2713.
Tanaka, M., Bloom, N., David, J. M., Koga, M., 2018. Firm performance and macro forecast accuracy. *NBER Working Papers* 24776, National Bureau of Economic Research.