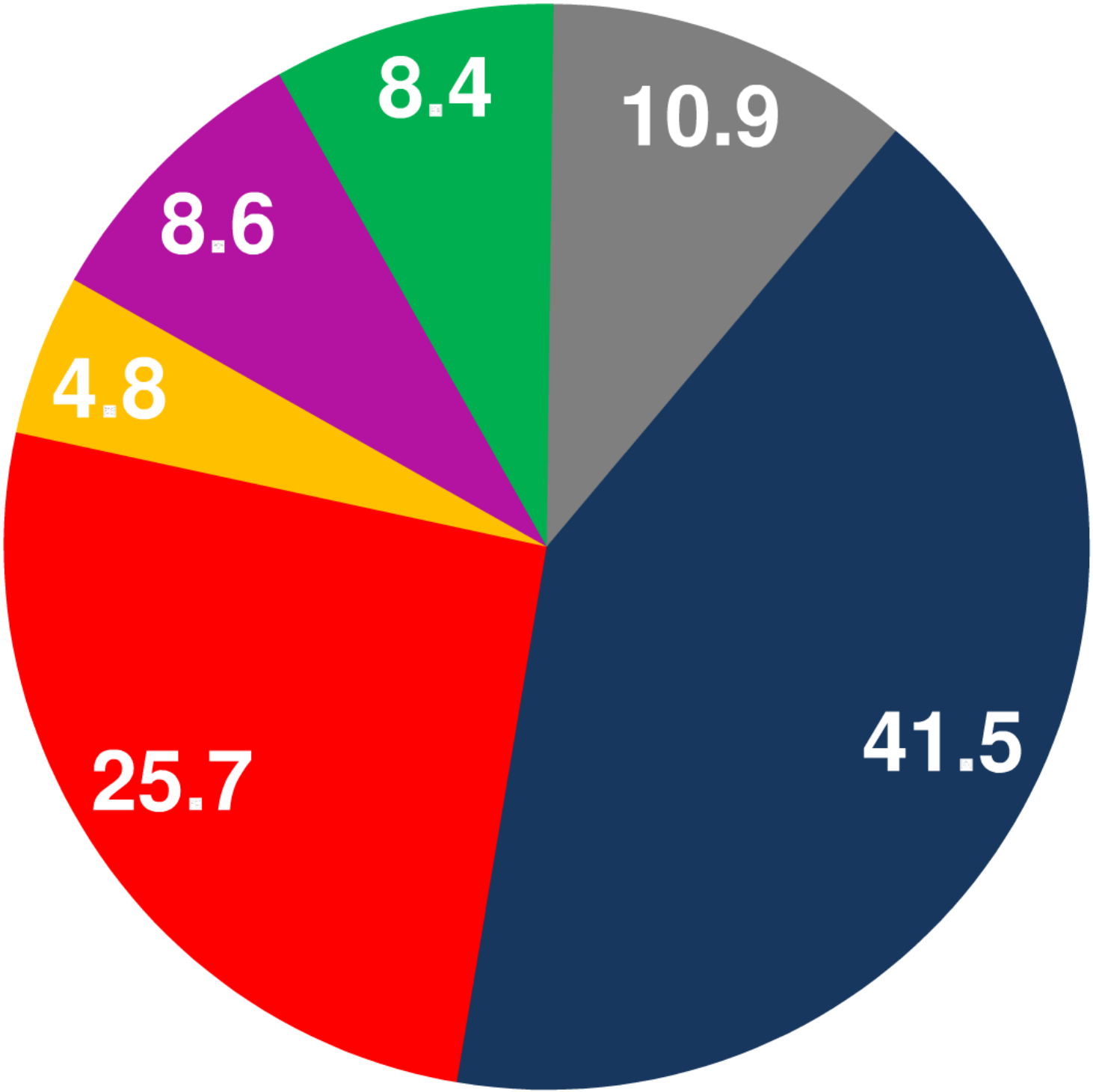
Wise Crowds vs. the Pollsters

Christian Ganser and Patrick Riordan
LMU Munich

Rational-Choice Sociology, Venice 2013

Forecasting the 2013 Election to the German Bundestag Using Vote Expectations


8.4
10.9
8.6
4.8
41.5
25.7

Motivation and Theory

What's Wrong with Polls?

In Germany: "Sonntagsfrage"

- Many respondents are not sure whom they would give their vote to and say so.
- The resulting missing values are not missing at random.
- The pollsters try to adjust for these missing values.
- These procedures are not scientifically transparent.
- Last-minute swingers

Why Vote Expectations?

- Crowds are "wiser" than individuals, i.e. individual errors cancel each other out leading to better assessments (e.g. Forsythe et al. 1992, Surowiecki 2004).
- Indirectly, information is based on a much larger sample than those questioned (Rothschild/Wolfers 2012).
- Everybody can make an estimate.

Whose Expectations Are Best?

- Hong/Page (2004): In groups, diversity trumps ability.
- Lewis-Beck/Tien (1999): Individuals' political participation, involvement and participation as well as education lead to better forecasting ability.
- Huber et al. (2009): Voting as rational decision process

Hypotheses

- H1: Vote expectations lead to a) different and b) better forecasts.
- H2: Regular political information improves forecast.
- H3: Organizational membership improves forecast.
- H4: Intention to vote improves forecast.
- H5: Education improves forecast.
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- H7: a) Party identification and b) party preference impair forecast.
- H8: Diverse groups make better forecasts than able groups.

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State of Research

USA

- Vote expectations work pretty well for forecasting who will be elected President (Graefe 2013, Lewis-Beck/Tien 1999, Rothschild/Wolfers 2012).
- It is even possible to estimate vote shares from expectation surveys (Rothschild/Wolfers 2012).

UK

- Vote expectations work pretty well for forecasting who will be elected Prime Minister (Lewis-Beck/ Stegmaier 2011).
- The expectations of groups outperform individual expectations (Murr 2011).

Germany

- GLES includes vote expectation questions.
- Faas/Schmitt-Beck (2007) find effect of polls on expectations.
- BUT: To our knowledge no empirical studies employing vote expectation surveys among random samples to predict election results in Germany.
- Different focus than in USA and UK: The share of second votes ("Zweitstimmenanteil") for each party is the primary outcome of elections in Germany.

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Data

Telephone Survey

- Telephone survey of random sample of German eligible voters in private households (N=1,000)
- 4 weeks prior to the election
- Vote expectation question
  - Task: Distribute 100 points to the parties read to you by the interviewer.
- Interviewer read out remaining points after each response (after pretest: works)

Online Panel

- 2-wave online survey with participants in the access panel www.soscisurvey.de
- N=807 with data in both waves
- Non-random: Over-representation of highly educated individuals
- 4 and 2 weeks prior to election
- Same questions as in telephone survey
- Goal: Explore the temporal variability of vote expectations

Operationalization 1

- Random split for parties
- "Live"-feedback of remaining percentage points to distribute (telephone: interviewer; online: live calculation)
- Respondents were told to reach exactly 100.
- Exclusion of cases (177 / 231) by two criteria:
  - Sum of expected vote shares for all parties not 100
  - Expected vote share for at least one party above or below that party's mean by at least 3 SDs (extreme outliers)

Operationalization 2

- Root mean squared error (RMSE) and mean absolute percentage error (MAPE) over all parties as dependent variable in individual-level regressions
- Group comparisons:
  - Calculate the vote share predicted by the group as mean of the expected vote share for each party,
  - then calculate RMSE and MAPE over all parties from these group expectations.

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"Was glauben Sie, wie wird die Bundestagswahl ausgehen, wie viel Prozent werden die verschiedenen Parteien bekommen? Stellen Sie sich dazu vor, Sie hätten 100 Punkte, die Sie auf die Parteien CDU/CSU, SPD, FDP, Die Linke, Grüne, Piraten, AfD und Sonstige verteilen können. Um Ihnen die Verteilung dieser 100 Punkte zu erleichtern, werde ich Ihre Angaben mitrechnen und Ihnen vor jeder weiteren Partei den Zwischenstand mitteilen. Sie können Ihre Angaben auch nachträglich noch einmal korrigieren."

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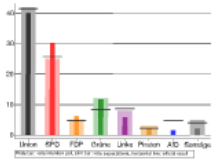
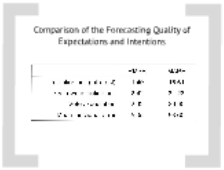
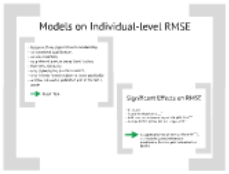
Results

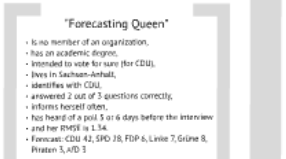
Descriptive Results





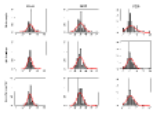
Individual-level Results



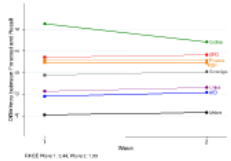


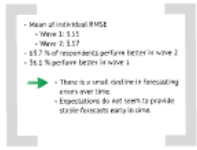
Group-level comparisons

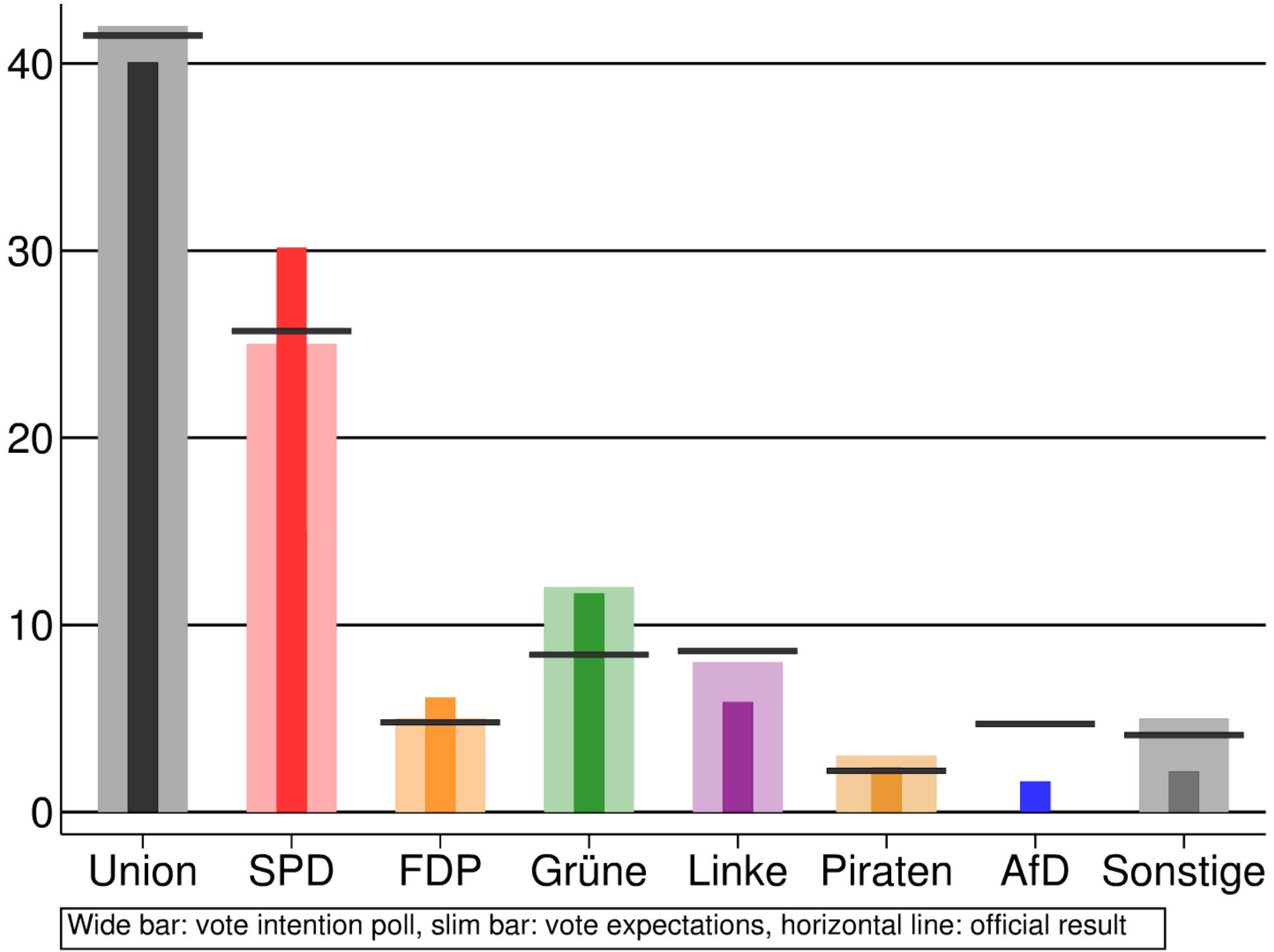
	RMSE	MAPE
Whole sample	2.82	29.80
Well informed only	2.57	28.48
Academically educated only	2.57	29.28
High political knowledge only	2.58	28.90



Temporal Variability






40
30
20
10
0
Union
SPD
FDP
Grüne
Linke
Piraten
AfD
Sonstige
Wide bar: vote intention poll, slim bar: vote expectations, horizontal line: official result

Comparison of the Forecasting Quality of Expectations and Intentions

	RMSE	MAPE
Intention poll (Infratest)	1.49	16.61
Our own intention poll	2.42	31.23
Vote expectation	2.62	29.90
Mean individual error	5.05	53.60

Models on Individual-level RMSE

- Person with no organizational membership,
- no vocational qualification,
- no vote intention,
- no preferred party or party identification,
- from West Germany,
- who answered no question correct,
- who informs herself seldom or never politically
- and has not seen a published poll in the last 4 weeks

→ RMSE: 7.64

Significant Effects on RMSE

- R^2: 0.138
- Academic education: -1.11*
- Additional correct answer in political quiz: -0.45***
- Seen published poll within last 4 days: -0.95**

→ No significant effect of: membership (MAPE**), vote intention, party preference or identification, East Ger., political information (MAPE*)

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"Forecasting Queen"

- Is no member of an organization,
- has an academic degree,
- intended to vote for sure (for CDU),
- lives in Sachsen-Anhalt,
- identifies with CDU,
- answered 2 out of 3 questions correctly,
- informs herself often,
- has heard of a poll 5 or 6 days before the interview
- and her RMSE is 1.34.
- Forecast: CDU 42, SPD 28, FDP 6, Linke 7, Grüne 8, Piraten 3, AfD 3

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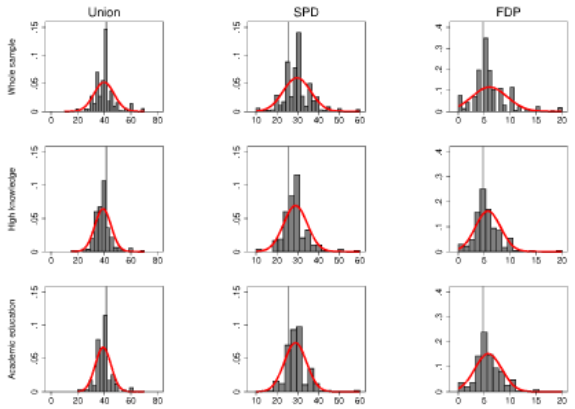

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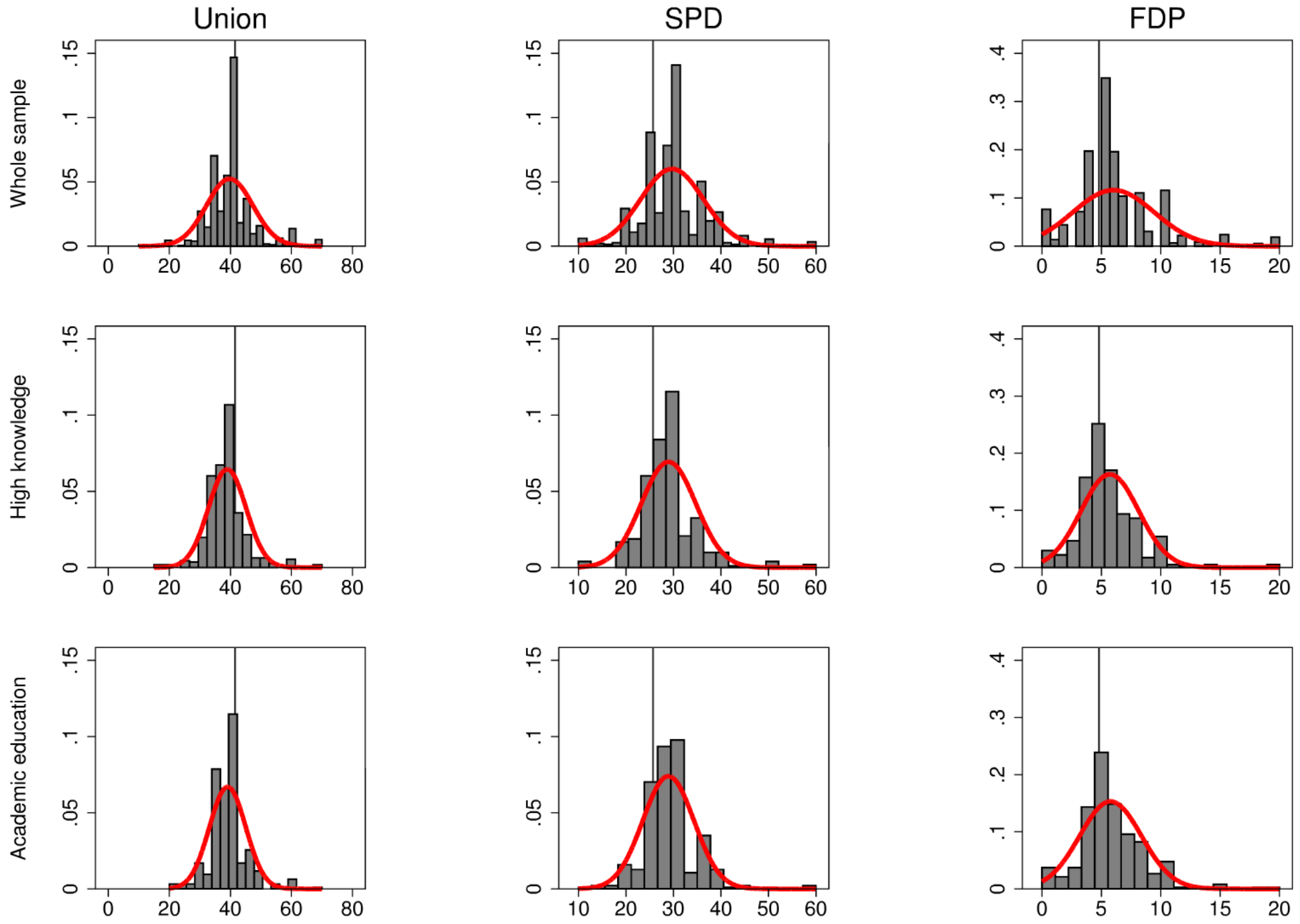
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Whole sample
High knowledge
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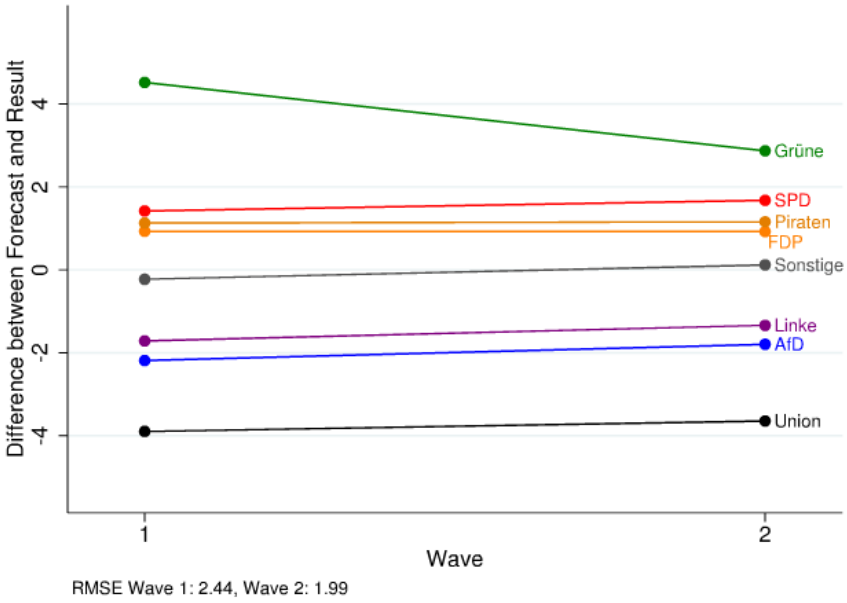

RMSE Wave 1: 2.44, Wave 2: 1.99

- Mean of individual RMSE
  - Wave 1: 3.55
  - Wave 2: 3.17
- 63.7 % of respondents perform better in wave 2
- 36.1 % perform better in wave 1

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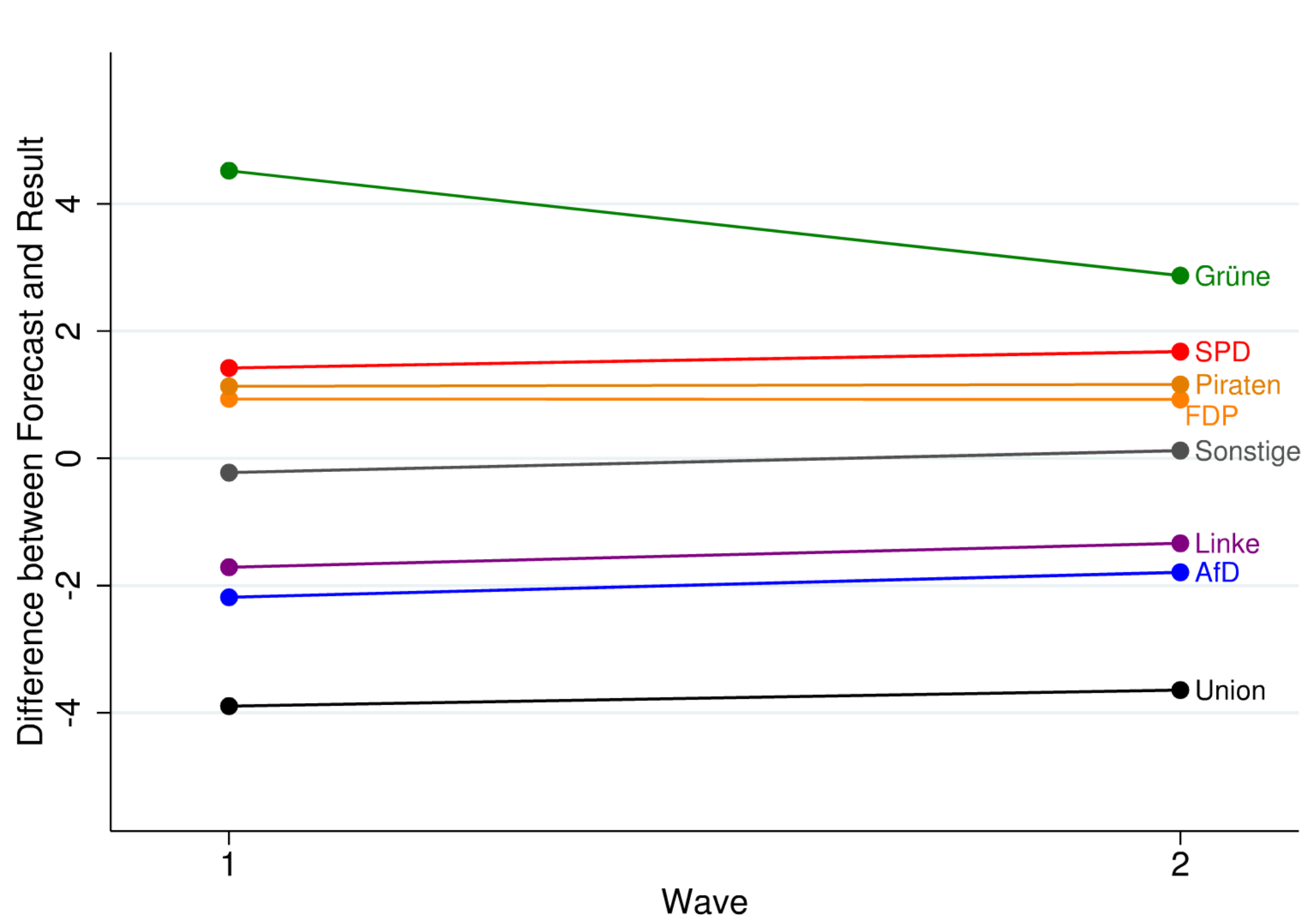
- There is a small decline in forecasting errors over time.
- Expectations do not seem to provide stable forecasts early in time.



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Conclusions and Questions

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Overall Conclusions

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- Expectations do get slightly better over time.
- Projections by pollsters clearly outperform group expectations.

Why?

- Is the task too difficult?
- Does respondents' rounding of expected vote shares to the next multiple of 5 or 10 bias the results? If so, how can this be fixed?
- Might incentives (a prize for the closest prediction) help improve the forecasts?
- Question wording?
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- Faas, T., Schmitt-Beck, R. (2007): Wahrnehmung und Wirkung politischer Meinungsumfragen. Eine Exploration zur Bundestagswahl 2005. In: Brettschneider, F., Niedermayer, O., Weßels, B. (Ed.): Die Bundestagswahl 2005. Analysen des Wahlkampfes und der Wahlergebnisse. Wiesbaden: VS.
- Forsythe R., Nelson, F., Neumann, G. R., Wright, J. (1992): Anatomy of an experimental political stock market. American Economic Review 82: 1142-1161.
- Graefe, A. (2013): Accuracy of Vote Expectation Surveys in Forecasting Elections. Working Paper: http://dx.doi.org/10.2139/ssrn.2158733
- Hong, L., Page, S. (2004): Groups of Diverse Problem Solvers Can Outperform Groups of High-Ability Problem Solvers. PNAS 101: 16385-16389.
- Huber, S., Gschwend, T., Meffert M., Pappi, U. (2009): Erwartungsbildung über den Wahlausgang und ihr Einfluss auf die Wahlerwartung. In: Gabriel, O., Weßels, B., Falter J. (Ed.): Wahlen und Wähler. Wiesbaden: VS.
- Lewis-Beck, M., Tien, C. (1999): Voters as Forecasters. A Micromodel of Election Prediction. International Journal of Forecasting 15: 175-84.
- Lewis-Beck, M.S., Stegmaier, M. (2011): Citizen forecasting: Can UK voters see the future? Electoral Studies 30: 264-268.
- Murr, A.E. (2011): "Wisdom of Crowds"? A Decentralised Election Forecasting Model that Uses Citizens' Local Expectations. Electoral Studies 30: 771-783.
- Rothschild, D., Wolfers, J. (2012): Forecasting Elections: Voter Intentions Versus Expectations. Workingpaper: http://assets.wharton.upenn.edu/~rothscdm/RothschildExpectations.pdf
- Surowiecki, J. (2004): The Wisdom of Crowds. New York: Doubleday.