



# **Research Projects for Internships at the Research Centre of the Deutsche Bundesbank**

Frankfurt am Main

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## **Allgemeine Informationen zu den Praktikumsprojekten im Forschungszentrum der Deutschen Bundesbank:**

Auf den folgenden Seiten finden Sie Projekte, für die im Forschungszentrum der Deutschen Bundesbank in Frankfurt am Main derzeit Praktikanten gesucht werden. Falls Sie sich um ein Praktikum bewerben möchten, nutzen Sie bitte den Link zum [Online-Bewerbungsformular](#) und geben Sie in der Rubrik „Sonstige Mitteilungen“ den Titel des Praktikums, für das Sie sich bewerben sowie den Betreuer des Projekts an.

Weitere Informationen finden Sie unter

<https://www.bundesbank.de/de/bundesbank/karriere/praktika/hochschulpraktika>

Für Rückfragen steht Ihnen der Betreuer des Projekts zur Verfügung.

**Non-German speaking applicants are welcome to upload their complete application credentials** (cover letter, CV, study certificates or current transcript of records and optionally letters of recommendation) **at the English version of the [online application system](#)**

Please find more information at

<https://www.bundesbank.de/en/bundesbank/career/work-placements/work-placements-for-university-students>

If you have any questions, please do not hesitate to contact the supervisor of the project you are interested in.

## **Title: Visualisation of the research programme using a JavaScript Voronoi treemap**

### **Description of the project:**

The Research Centre website displays the research programme as a Voronoi treemap visualisation containing text descriptions of research areas and details about research papers. Various layers structure the information by topic and publication format.

The visualisation is realised using the product FoamTree, a licensed JavaScript library, developed by CarrotSearch. To compile the contents, a custom .exe application runs a custom Python script, which converts the structure of the source data from an XLS file to the structure of a JSON file to be embedded into an HTML framework.

The visualised data need to be updated, which involves tasks such as writing bug fixes for and making adjustments to the Python script.

Furthermore, the treemap needs further customisation, such as a search function and dynamic redrawing triggered by users' parameter selections.

In a medium-term project, which does not necessarily fall within the scope of this internship, there are plans to merge an underlying custom database with a graphic interface such as the treemap to improve user experience and facilitate dataset updates.

### **Tasks for the intern:**

- Customising and writing bug fixes for existing JavaScript/JSON and Python scripts
- Improving technical data import procedures
- Taking the initiative and being creative to improve the data visualisation method

### **Necessary skills:**

- Advanced JavaScript and Python programming skills
- Ability to code and customise basic .exe applications
- Experience in handling (text) data in JSON and XLS formats
- Sound knowledge of and ideally experience with data visualisation methods
- Web scraping skills for supplementing existing datasets a plus

### **Benefits for the intern:**

You can apply your programming and data visualisation skills creatively using the full version of an advanced JavaScript library as a modern way to structure and display data. Meanwhile, you will gain experience in hierarchical structuring and visualising heterogeneous text data for different users.

You will get an in-depth insight into the workings of the Bundesbank Research Centre. Successful results will gain broad visibility through in-house presentations and online availability.

**Estimated starting date:** May 2021

**Duration:** 3-5 months depending on the scope of the project and subject to the intern's skills and interests

### **Project supervisor:**

Dr Stefan Ried, phone: +49 (0)69 9566 4396, email: [stefan.ried@bundesbank.de](mailto:stefan.ried@bundesbank.de)

### **Further information:**

Link to the visualisation of the research programme:

[http://www.bundesbank.de/research\\_programme](http://www.bundesbank.de/research_programme)

More information on the product can be found on the internet.

**Title: Research on Household Finance using data from the PHF-Study („Private Haushalte und ihre Finanzen“)**

**Description of the project:**

The Panel on Household Finance (PHF) is a large scale survey of households in Germany. The main focus of the survey is on household finance. It yields detailed household-level information on the wealth and its composition for over 3,500 households. The PHF is an integral part of the Household Finance and Consumption survey (HFCS), a ECB coordinated project which collects harmonized data on household finance in all euro area countries. During the initial analysis of the data several questions were raised that require a more in-depth scientific analysis.

**Task for the intern:**

The intern will collaborate with members of the PHF team on the scientific analysis of the micro-data. Potential topics for analysis are listed in the research program (see below). However, we are also open for suggestions of topics from the prospective interns.

**Necessary skills:**

Experience with the analysis of micro-data on households. Stata skills would be beneficial.

**Benefits for the intern:**

You will get in-depth insight into an interesting scientific project and the workings of the Bundesbank research centre. You will be able to learn how to use a multiple-imputed dataset. A joint publication on some of the results is an option.

**Estimated starting date:** May 2021

**Duration:**

Approx. 3 months

**Supervisor of the project:**

Tobias Schmidt, phone: 069 9566-3730, E-Mail: Tobias.Schmidt@bundesbank.de

**Further information:**

**Links to the research program and information on the PHF survey:**

[http://www.bundesbank.de/research\\_programme](http://www.bundesbank.de/research_programme)

[www.bundesbank.de/phf-research](http://www.bundesbank.de/phf-research)

## Internships in the Research Centre of the Deutsche Bundesbank

February 2020

The Research Centre of the Deutsche Bundesbank is looking for interns to work on survey methodological issues on the two surveys it runs, namely the Panel on Household Finances and the online consumer survey.

In particular, candidates are sought to work on

- variance estimation
- data editing
- other topics, preferably from September 2020 onwards, include: longitudinal weighting, statistical matching, patterns of non-response

The above topics might also be combined with other ones suggested by the candidates.

Interns may also be required to provide general research assistance, such as gathering and summarising data, preparing tables etc.

**Required competences:** Knowledge of survey methodological concepts such as weighting and variance estimation; some experience with programming in (preferably) stata or R; very good use of English. For the variance estimation project an M.Sc. student would be preferred. For the editing project a third or fourth year undergraduate would also be considered. In both cases the project could be combined with an M.Sc. thesis, if on a related topic.

**Estimated starting date:** May 2021

**Applications:** Continuously open.

**Duration:** Approx. 3 months

For **general information** on the internships please see document on "Research projects for internships at the Research Centre of the Deutsche Bundesbank":

<https://www.bundesbank.de/resource/blob/604478/19e6488fe5021b30f3c5ef92001589b6/mL/research-projects-data.pdf>

Interested candidates could apply directly, as advised in the above document, stating as project title "Research on Household Finance using data from the PHF-Study („Private Haushalte und ihre Finanzen").

## **Title: Bundesbank Online Panel on Household Expectations**

### **Description of the project:**

The Bundesbank is setting up an online panel to collect data on private individuals' expectations in Germany. The survey collects detailed information on expectations regarding inflation, house prices and general economic developments. The project started with three pilot waves in 2019, and will continue with additional waves in 2020. The data from the first three waves are available as a scientific use file. During the initial analysis of the data several questions were raised that require a more in-depth scientific analysis.

### **Task for the intern:**

The intern will collaborate with members of the online survey team on the scientific analysis of the micro-data and/or on further development of the survey design. Besides the analysis directly related to understanding the formation process and impact of household expectations, methodological research regarding different question formulations, the advantages and disadvantages of online surveys or specific sample designs is also of interest. In general, we are also open for suggestions of topics from the prospective interns. The questionnaires of the first three wave are available under the following webpage <https://www.bundesbank.de/en/bundesbank/research/pilot-survey-on-consumer-expectations>

### **Necessary skills:**

Experience with the analysis of micro-data on households or individuals. Stata or R skills would be beneficial. Working proficiency in German would be beneficial but is not required.

### **Benefits for the intern:**

You will get in-depth insight into an interesting scientific project and the workings of the Bundesbank research centre. You will be able to learn how to conduct a large scale online survey and improve your analytical skills while working on the dataset with members of the project team. Suggestions for own research project based on newly collected datasets are also welcome.

**Estimated starting date:** May 2021

**Duration:** Approx. 3 months

### **Supervisor of the project:**

Tobias Schmidt, phone: +49 69 9566 3730, E-Mail: [Tobias.Schmidt@bundesbank.de](mailto:Tobias.Schmidt@bundesbank.de)

### **Further information:**

Project Website: <https://www.bundesbank.de/en/bundesbank/research/pilot-survey-on-consumer-expectations/bundesbank-online-pilot-survey-on-consumer-expectations-794568>

Monthly bulletin article with results from the pilot waves:

<https://www.bundesbank.de/resource/blob/818958/372f4c2ddadc1e72f9e7437f554624e5/mL/2019-12-erwartungsbefragung-data.pdf>

Research Centre Research Program: [http://www.bundesbank.de/research\\_programme](http://www.bundesbank.de/research_programme)

**Title: Internship in Bundesbank's Research Centre**

**We are constantly looking for interns for**

various projects on a variety of topics in the fields of monetary macroeconomics, banking and finance, microeconomics and econometrics.

**Necessary skills:**

- Master- or PhD-students in Economics, Finance or Econometrics interested in quantitative and empirical methods.
- Knowledge of standard software packages like Stata and/or Matlab
- Experience with research projects is an advantage

**Estimated starting date:** May 2021

**Duration:** Usually three months, up to six months, depending on the project

**Further information:**

[http://www.bundesbank.de/research\\_programme](http://www.bundesbank.de/research_programme)

[Research centre](#)

**Contact person for further questions:**

christine.thaler@bundesbank.de