Final report

Project information and reporting objectives

Project information

Project number:	309855
Project title:	Individual Investors and Asset Prices
Activity / Programme:	FINANSMARK
Project manager:	Knüpfer, Samuli
Project owner:	STIFTELSEN HANDELSHØYSKOLEN BI
Project period:	2020.02.15 - 2023.03.31

Reporting objectives

1.	**Main page of the progress report:** Update progress report up to project completion date.	**Completed**
2.	**Final accounts:** Give a summary of the financial status of the project	**Completed**
3.	**Outcomes and impacts:** I understand that the information entered into the field for Outcomes and impacts will be made publicly accessible*	**Completed**
4.	**Results report:** Attach results report	**Completed**
5.	**Special reports:** Any requests for special reports must be fulfilled. Have special reports been submitted?	**Not applicable**
6.	**Final data management plan:** Has the final data management plan been uploaded?	**Not applicable**

Final accounts

Actual cost plan (Amount in NOK 1000)

Account	2023	2022	2021	2020	Total sum
Payroll and indirect expenses	111	523	549	758	1,941
Procurement of R&D services	0	0	0	0	0
Equipment	0	0	30	0	30
Other operating expenses	0	130	256	177	563
Sum	111	653	835	935	2,534

Actual cost code (Amount in NOK 1000)

Account	2023	2022	2021	2020	Total sum
Trade and industry	0	0	0	0	0
Research institutes	0	0	0	0	0
Universities and university colleges	24	275	446	349	1,094
Other sectors	0	0	0	0	0
Abroad	87	378	389	586	1,440
Sum	111	653	835	935	2,534

Actual funding plan (Amount in NOK 1000)

Account	2023	2022	2021	2020	Total sum
The Research Council	24	179	239	457	899
Own financing	24	181	202	171	578
Public funding	0	0	0	0	0
Private funding	0	0	0	0	0
International funding	87	269	305	396	1,057
Deviation	24	-24	-89	89	0
Deviation basis	111	653	835	935	2,534
Sum	135	629	746	1,024	2,534

Comment

Payroll and indirect expenses ended 73tNOK higher than planned. This is due to the increase in own-financed researcher time from Tilburg, as well as reallocation from other operating expenses to cover hours for a research assistant.

270tNOK were reallocated from Equipment to other operating expenses to cover data collection costs.

Of the 899tNOK funded by RCN, this is the distribution between partners:
BI: 516tNOK of which 126tNOK were payroll and indirect expenses, and 390tNOK were other operating expenses.
Tilburg: 383tNOK of which 179tNOK were payroll and indirect expenses, and 204tNOK were other operating expenses.

Impacts and effects

Anticipated outcomes and impacts - from the grant application form

Answers to our research questions will inform academics, practitioners, and policy makers about the determinants of investor behavior and its implications for asset price formation. Establishing a research group at the intersection of asset pricing and household finance can put Norway at the forefront of this new line of research. Our project can also help individuals and the asset managers advising them to design and recommend more appropriate financial portfolios.

Achieved and potential outcomes and impacts - based on the project results

The main contribution of this project is on shedding new light on whether and how individual investors affect asset prices. This contribution has implications for academics, individual investors, asset managers, and policy makers. The work on investor factors, drivers of volatility, and household portfolio efficiency inform academics about the drivers of asset prices and household investment decisions. These drivers are also important inputs for individual investors and asset managers in their investment decisions and for regulators in their attempts in setting optimal policy. All in all, the project's results inform us about how financial markets function and their consequences for households.

Results - Summary

Uploaded results - summary

Original filename: Final report 2024.pdf

File reference: RESULTAT_Sluttrapport11856313.pdf

Message to the Research Council of Norway

Special reports

Comment

Uploaded file

Final data management plan

Uploaded final data management plan

Progress report

Project information and reporting objectives

Project information

Project number:	309855
Project title:	Individual Investors and Asset Prices
Activity / Programme:	FINANSMARK
Project manager:	Knüpfer, Samuli
Project owner:	STIFTELSEN HANDELSHØYSKOLEN BI
Project period:	2020.02.15 - 2023.03.31
Report period:	2022.10.01 - 2023.03.31

Reporting objectives

1.	**Popular science presentation:** I understand that the text of the popular science presentation will be made publicly available*	**Yes**
2.	**Results:** Has information on publications been provided?	**Yes**
3.	**Performance indicators:** All results data that have emerged from the project are to be reported. Has this been done?	**Yes**
4.	**Fellowship grants:** Information regarding all fellowship grants must be complete and correct. Have you updated the man-months and other information for each fellowship-holder?	**No**
5.	**International cooperation:** The extent of international cooperation is to be indicated. Has any international cooperation taken place during the report period?	**Yes**
6.	**Special reports:** If any requests for special reports have been put forth by the case officer at the Research Council, these must be fulfilled.	**No**

Popular science presentation

Popular science presentation (Norwegian)

En sentral del av finansiell økonomi dreier seg om prisdannelse i markedet. I dette prosjektet analyserer vi samspillet mellom individuell investoratferd og aktivapriser. Vår artikkel "What do the portfolios of individual investors reveal about the cross-section of equity returns?" viser at investorer med samme sosiodemografiske karakteristika, som for eksempel alder og formue, investerer i like aksjer. Vi finner at en over tid oppnår høyere avkastning enn det kapitalverdimodellen tilsier ved å overvekte aksjer som i stor grade eies av eldre velstående investorer og undervekte aksjer som i stor grad eies av unge og gjerne mindre velstående investorer. Vi kaller porteføljen basert på en slik strategi for "investor-faktoren". Vi finner at i tillegg til alder og formue så øker eksponeringen mot "investor-faktoren" med erfaring i aksjemarkedet mens den avtar med husholdningens systematiske lønnsinntektsrisiko. Samlet indikerer resultatene våre at både personlige atferdstrekk og personlige risikofaktorer påvirker porteføljevalg.

Popular science presentation - Updated (Norwegian)

Understanding how asset prices are determined is at the heart of financial economics. This project empirically analyzed the interplay between individual investor behavior and asset prices. It generated three papers.

The first paper shows that the portfolio decisions of individual investors can be summarized by a few investor characteristics, in particular investor’s age and net worth. A portfolio constructed from taking a long position in stocks disproportionately held by older and wealthier investors and a corresponding short position in stocks held by young and less wealthy investors delivers high risk-adjusted returns relative to the market and established factor models.

The second paper studies the impact of individual investors on stock prices. Although recent episodes in stock markets suggest individual investors may significantly move prices, there is little systematic evidence on their importance. Our findings show that households play an outsized role. Their ratio of impact to ownership surpasses that for other investor groups, including institutions, banks, foreign investors, and the government.

The third paper revisits the portfolio efficiency of households by analyzing household portfolio efficiency in Nordic countries. We find that the average diversification losses across the countries are broadly similar. Household portfolios have approached the efficient frontier in recent years. These results have implications for the equity premium attainable by the households that do not participate in the risky asset market.

Popular science presentation (English)

Understanding how asset prices are determined is at the heart of financial economics. This project empirically analyzes the interplay between individual investor behavior and asset prices. The working paper "What do the portfolios of individual investors reveal about the cross-section of equity returns?" shows that the portfolio decisions of individual investors can be summarized by a few investor characteristics, in particular investor's age and net worth. A portfolio constructed from taking a long position in stocks mainly held by older and wealthier investors and a corresponding short position in stocks held by young and less wealthy investors deliver high risk adjusted returns relative to the market and established factor models. This "investor factor" is more likely to be held by experienced stock market investors and those with less cyclical labor income. Overall, the results are consistent with theories that relate both sentiment and non-tradable income risk to the portfolio decisions of investors.

Popular science presentation - Updated (English)

Understanding how asset prices are determined is at the heart of financial economics. This project empirically analyzed the interplay between individual investor behavior and asset prices. It generated three papers.

The first paper shows that the portfolio decisions of individual investors can be summarized by a few investor characteristics, in particular investor's age and net worth. A portfolio constructed from taking a long position in stocks disproportionately held by older and wealthier investors and a corresponding short position in stocks held by young and less wealthy investors delivers high risk-adjusted returns relative to the market and established factor models.

The second paper studies the impact of individual investors on stock prices. Although recent episodes in stock markets suggest individual investors may significantly move prices, there is little systematic evidence on their importance. Our findings show that households play an outsized role. Their ratio of impact to ownership surpasses that for other investor groups, including institutions, banks, foreign investors, and the government.

The third paper revisits the portfolio efficiency of households by analyzing household portfolio efficiency in Nordic countries. We find that the average diversification losses across the countries are broadly similar. Household portfolios have approached the efficient frontier in recent years. These results have implications for the equity premium attainable by the households that do not participate in the risky asset market.

Message to the Research Council of Norway

Results

Category: Academic article

Author(s)	Title	Journal title	Page number, from - to	Volume	Year	ISSN /ISBN	DOI
Knüpfer, Samuli; Kværner, Jens; Sen-Dogan, Bahar; Vokata, Petra	Do Households Matter for Asset Prices?	Working paper			2023		
Breitkopf, Nikolas; Knüpfer, Samuli; Kværner, Jens; Sen-Dogan, Bahar; Rantapuska, Elias	How Costly Are Investment Mistakes?	Working paper			2023		
Betermier, Sebastien; Calvet, Laurent; Knüpfer, Samuli; Kvaerner, Jens	What Do the Portfolios of Individual Investors Reveal About the Cross-Section of Equity Returns?	SSRN			2021		

Category: New publication in the media

Author(s)	Title	Location/Type	Year	ISSN/ISBN	DOI
Hoemsnes, Anita	Nå er det vanlige folks tur ? i aksjemarkedet		2021		
Pedersen, Lisa; Nilsen, Joachim Birger	Unge tjener minst i aksjemarkedet: Dette kan være forklaringen		2021		
Amundsen, Bård	Unge tjener minst penger på aksjer		2021		

Category: Dissemination

Author(s)	Title	Journal/Publisher/Event	Year	ISSN/ISBN	DOI
Calvet, Laurent	What Do the Portfolios of Individual Investors Reveal About the Cross-Section of Equity Returns?		2023		
Kvaerner, Jens	What Do the Portfolios of Individual Investors Reveal About the Cross-Section of Equity Returns?		2023		
Kvaerner, Jens	What Do the Portfolios of Individual Investors Reveal About the Cross-Section of Equity Returns?		2022		
Betermier, Sebastien	What Do the Portfolios of Individual Investors Reveal About the Cross-Section of Equity Returns?		2022		
Betermier, Sebastien	What Do the Portfolios of Individual Investors Reveal About the Cross-Section of Equity Returns?		2022		
Betermier, Sebastien	What Do the Portfolios of Individual Investors Reveal About the Cross-Section of Equity Returns?		2022		
Calvet, Laurent	What Do the Portfolios of Individual Investors Reveal About the Cross-Section of Equity Returns?		2022		
Kvaerner, Jens	What Do the Portfolios of Individual Investors Reveal About the Cross-Section of Equity Returns?		2022		
Betermier, Sebastien	What Do the Portfolios of Individual Investors Reveal About the Cross-Section of Equity Returns?		2021		
Betermier, Sebastien	What Do the Portfolios of Individual Investors Reveal About the Cross-Section of Equity Returns?		2021		
Betermier, Sebastien	What Do the Portfolios of Individual Investors Reveal About the Cross-Section of Equity Returns?		2021		
Calvet, Laurent	What Do the Portfolios of Individual Investors Reveal About the Cross-Section of Equity Returns?		2021		
Betermier, Sebastien	Extracting Pricing Factors from Investor Portfolios		2020		
Kvaerner, Jens	Extracting Pricing Factors from Investor Portfolios		2020		
Kvaerner, Jens	Extracting Pricing Factors from Investor Portfolios		2020		

Category: Other

Author(s)	Title	Type	Year	ISSN /ISBN	DOI
Betermier, Sebastien; Calvet, Laurent; Knüpfer, Samuli; Kvaerner, Jens	Best Paper Award in Asset Pricing and Market Microstructure, Northern Finance Association Conference		2021		
Betermier, Sebastien; Calvet, Laurent; Knüpfer, Samuli; Kvaerner, Jens	Best Paper Award in Investments, Academic Research Colloquium 2021		2021		

Performance indicators

Dissemination measures for the general public

New publication in the media (newspapers, radio, TV, etc..)

2020	2021	2022	2023	Cumulative number
0	3	0	0	3

Dissemination measures for users

Reports, memoranda, articles, presentations held at meetings/conferences for project target groups (public sector, trade and industry, organisations)

2020	2021	2022	2023	Cumulative number
3	4	6	2	15

Scientific/scholarly publications

Article

2020	2021	2022	2023	Cumulative number
0	1	0	2	3

Fellowship grants

Fellowship grants funded under the project

International cooperation

International cooperation funded under the project (in NOK 1000)

Amount in NOK 1000

Country	2020	2021	2022	2023
Netherlands	444	399	594	196

Special reports

Comment

Uploaded file

Final report

Project number	309855
Project title	Individual Investors and Asset Prices
Project manager	Samuli Knüpfer
Project owner	STIFTELSEN HANDELSHØYSKOLEN BI
Project period	15.02.2020 - 31.01.2024

Background and o**bjectives**

Understanding how asset prices are determined is at the heart of financial economics. This project empirically analyzes the interplay between individual investor behavior and asset prices.

Our unique data, originating from various registers held by Norwegian authorities, allow us to follow all flows and transactions to stocks and mutual funds at the investor level. These data, combined with state-of-the-art methods, allow us to jointly characterize the characteristics of investors, the assets they hold, and the prices of these assets.

Implementation

The project succeeded well in its role as a kick-starter to a long-term research program concerned with investor behavior and asset prices. It produced three working papers.

The first working paper is now **conditionally accepted**, subject to minor revisions, at the Journal of Finance. Financial economists generally view this journal as the very best journal in Finance. The second and third working papers have also been completed. Generating these results has required extensive data work and development of econometric methods not foreseen at the time of starting the project. The revision requests of the first study have also consumed resources originally intended for the other projects. The second and third working papers will thus be submitted to journals in 2024.

Results

The first paper "Investor Factors" shows that the portfolio decisions of individual investors can be summarized by a few investor characteristics, in particular investor's age and net worth. A portfolio constructed from taking a long position in stocks disproportionately held by older and wealthier investors and a corresponding short position in stocks held by young and less wealthy investors delivers high risk-adjusted returns relative to the market and established factor models. This "investor factor" is more likely to be held by experienced stock market investors and those with less cyclical labor income. Overall, these results are consistent with theories that relate both sentiment and non-tradable income risk to the portfolio decisions of investors. This paper is joint work with Sebastien Betermier from

McGill University, Laurent Calvet from SKEMA Business School, and Jens Kværner from Tilburg University.

The second paper "Do Households M**atter for** Asset Prices?" studies the impact of individual investors on stock prices. Although recent episodes in stock markets suggest individual investors may significantly move prices, there is little systematic evidence on their importance. We estimate an asset demand system using complete ownership data for the Norwegian stock market, available monthly for 14 years. Our findings show that households play an outsized role in explaining cross-sectional return variance. Although they own 18% of the market, their trading accounts for 31% of volatility. This ratio of volatility to ownership surpasses that for other investor groups, including institutions, banks, foreign investors, and the government. We trace the household impact to the wealthiest households: they explain two-thirds of the total impact of the entire household sector. This paper is joint work with Jens Kværner from Tilburg University, Bahar Sen-Dogan from Tilburg University, and Petra Vokata from Ohio State University.

The third paper "How Costly Are Investment Mistakes?" revisits the portfolio efficiency of households. Earlier work has used data from just one country, Sweden. However, economic development, institutional features, and cultural influences can make it challenging to extrapolate from one country to another. We take up this comparative challenge by analyzing household portfolio efficiency in Norway and Finland. We find that the average diversification losses in the three countries are surprisingly similar. The average risky household portfolio across the Nordic countries loses about 4% in returns compared to equally risky investment to the world index and cash. These diversification losses vary considerably over time with household portfolios approaching the efficient portfolio in recent years. These results suggest the equity premium attainable by households that do not participate in the risky asset market has increased. This paper is joint work with Nikolas Breitkopf from Aalto University, Jens Kværner from Tilburg University, Bahar Sen-Dogan from Tilburg University, and Elias Rantapuska from Aalto University.

Signi**fi**cance

The main contribution of this project is to shed new light on whether and how individual investors affect asset prices. This contribution has implications for academics, individual investors, asset managers, and policy makers.

The work on investor factors (paper 1), drivers of asset prices (paper 2), and household portfolio efficiency (paper 3) inform academics about the drivers of asset prices and household investment decisions. These drivers are also important inputs for individual investors and asset managers in their investment decisions and for regulators in their attempts to set optimal policy. All in all, the project's results inform us about how financial markets function and their consequences for households.

Dissemination

The results of this project have appeared in outlets targeted at academics and the general public. The results have been widely disseminated through many academic seminar and

conference presentations. They have also been disseminated through three media articles covering the results of this project.

The dissemination activities will continue beyond the project's final date in January 2024. We are working together with the Centre for Asset Pricing Research at BI Norwegian Business School to publicize our results as widely as possible. This centre maintains active dialogue with the Norwegian financial industry and policymakers and we will tap into their dissemination platform to disseminate our results. We will also use other dissemination resources at BI to approach media directly and to publish our results in BI Business Review, an outlet showcasing thought leadership in business.

Data management

The data set used in the project is a merger of data from several sources. We retrieve the complete record of stock and mutual fund ownership in the Oslo Stock Exchange (OSE) in 1996-2017 period from the Norwegian Central Securities Depository (VPS). We do the same for Finland based on data from Euroclear and Finnish Tax Administration in 2004-2015. For each security, we observe the anonymized personal identification number of its owners and the number of shares that each owner holds at the end of each year.

We obtain the demographic and financial characteristics of individual investors from Statistics Norway (SSB) and Statistics Finland (SF). The bulk of the data is collected by the Norwegian and Finnish tax administrations and includes a breakdown of individuals' balance sheets. We merge the SSB and SF data with the stock and mutual fund ownership data.

The resulting database of securities and their owners is stored on a secure computer with restricted access. The contracts between the project members and the data providers stipulate how the data should be managed and how long the data can be stored.

The database is not directly accessible to other researchers. This restriction emanates from the individual privacy concerns that govern the contractual terms between the project members and the data providers. However, other researchers can request access to the data by applying directly to the data providers.