What do people in Austria think about green finance?

Andreas Breitenfellner, Heider Kariem[1]
Refereed by: Laurent Millischer, Joint Vienna Institute

This paper analyzes the results of a representative survey of Austrian households (OeNB Barometer) on green, i.e. sustainable, finance. This fast-growing market segment is receiving increasing attention from financial regulators and supervisors. A majority of respondents expect climate change to bring about a continuous deterioration in their financial situation over the next 15 years. At the same time, the answers to the questions specific to green finance suggest that respondents have mainly positive opinions and attitudes about sustainable financial products and businesses. We find this attitude to be more widespread among women as well as people with higher levels of education, middle incomes and higher saving rates. By contrast, age, job status, the size of the city or town where people live and financial literacy appear to play a rather minor role. The impact of these demographic and socioeconomic variables has, for the most part, been confirmed by regression analysis. Looking at actual demand, we find that there is low interest in green financial products, which is consistent with comparable Austrian and international studies. Some answers can be interpreted as evidence that at least a relatively small part of respondents is prepared to do a certain amount of research and even accept lower returns on sustainable investments. That said, contradictory answers suggest that some respondents struggle to understand green finance and related concepts. We also see skepticism about the credibility of financial products marketed as sustainable. Given that greenwashing can undermine the trust of (potential) customers and may consequently jeopardize confidence in the financial sector and financial stability, it is something that should be addressed by financial supervisors.

The financial sector is expected to take into account sustainability risks and make a significant contribution to financing the climate transition (NGFS, 2019). These challenges cannot be resolved by technocrats disregarding people's expectations, hopes and needs. This study outlines the key results of a representative survey on green finance and sustainable financial markets and puts them into context. The survey (OeNB Barometer) was conducted by the Institut für empirische Sozialforschung (IFES) on behalf of the Oesterreichische Nationalbank (OeNB).[2]

Despite the intrinsic difficulty in defining the term, sustainability is becoming more and more important in the financial world.[3] At the international level, financial service providers use ESG (environmental, social and governance) criteria to identify sustainable products, services and practices. In this paper, we will use the term

green finance synonymously as it stresses environmental sustainability and, in particular, climate action, both of which require enormous amounts of funding. Even though some segments of the Austrian green finance market have grown out of their niche (Ćetković and Zhan, 2023; FNG, 2023), green finance is still in its infancy measured by the amount of resources that need to be allocated away from high-emission industries and toward low-emission and green sectors (Breitenfellner et al., 2020).[4]

For central banks and other supervisors, managing physical and transition climate and ESG risks takes center stage (NGFS, 2019).[5] In a delayed, slow or disorderly transition, financial risks can arise when the development of green finance is not in line with a corresponding decarbonization of the real economy (Claessens et al., 2022). Depending on the direction of the imbalance, this can lead to a brown or a green speculative bubble. Greenwashing, i.e. a gap between claims of sustainability and the actual positive impact on the environment, represents another realistic risk.[6] Ritsch and Prantner (2022) suggest that exaggerated marketing claims by financial service providers often meet with unclear and/or unrealistic customer expectations. In this regard, Gangl et al. (2023) found in a representative survey in Austria that half of respondents have insufficient sustainability-related financial literacy. Investigating the attitudes of (potential) consumers toward sustainable investment products therefore contributes to analyzing the growth and risk potential of green financial markets, to building trust in financial markets in general, and, consequently, to ensuring their functioning and stability.[7]

Against this backdrop, we analyze the survey results looking for answers to the following questions: Is climate change perceived as a financial threat? To what extent do people understand and accept green financial products? Is greenwashing recognized as a risk? What are the factors influencing people's answers? Can we identify trends when we compare the latest results with those of previous surveys? The results of the OeNB Barometer survey confirm that the majority has a positive opinion and attitude about sustainable financial products and sustainable financial companies. People expecting climate change to have an increasing negative impact on their personal financial situation, representing most respondents, are more likely to be in favor of green finance. In addition, we analyze the specific answer frequencies with regard to demographic, socioeconomic and financial literacy-related characteristics. This study is a shorter version of a forthcoming full report that discusses the results of the survey in more detail.[8]

The remainder of this paper is structured as follows: Section 1 describes the survey, including relevant demographic data. In section 2, we present the key results of the survey regarding climate change and financial prospects as well as the

---

[4] The International Energy Agency (2023) estimates in its Net Zero Emissions by 2050 Scenario that more than USD 4.5 trillion in annual global clean energy investments will be needed by 2030.

[5] Physical risks of climate change relate, among other things, to natural disasters like droughts and flooding and also to migration and pandemics. Transition risks are caused by abrupt changes in climate policies, technology and/or and consumer preferences.

[6] InfluenceMap (2021) found that 71% of 593 equity funds in a broad ESG category, with over USD 265 billion in total net assets, have a negative Portfolio Paris Alignment score.

[7] The relationship between green finance and financial system stability is complex. Sustainable investments can diversify risks, support long-term thinking, mitigate climate risks and promote transparency.

[8] To be released in the OeNB Reports series in German.

environmental sustainability of financial products. Section 3 provides, on the basis of fundamental statistical variables, a descriptive analysis of factors having an impact on responses. Section 4 puts the findings into context, compares them with similar surveys, and aims to identify trends. Finally, in section 5, we draw tentative conclusions for researchers, supervisors and financial educators. Regression analysis in the annex corroborates the observations discussed in section 3.

1 Background information on the OeNB Barometer survey

The OeNB Barometer is a survey regularly conducted on behalf of the Oester-reichische Nationalbank. It is a repeated cross-sectional survey representative at both the federal and the regional levels. The OeNB Barometer we analyze was a survey of 1,431 residents of Austria aged 16 and above that was conducted by IFES from May 23 to August 16, 2022. It featured a total of 49 questions, many of which contained subquestions about further details. The main purpose of the survey is to obtain information about people's attitudes toward the OeNB and personal wealth, inflation expectations, and other economic behavior and attitudes relevant to central banks.

The survey was conducted using two methods: 953 interviews were conducted as computer-assisted personal interviews (CAPI) at the homes of respondents, and the other 478 interviews took the form of online computer-assisted web interviews (CAWI). Survey participants were selected by stratified multistage clustered random sampling; additional participants were selected at random from a permanent IFES pool.

The following demographic characteristics were surveyed: gender, age, education, profession, social class (A to E), personal and household income, size of municipality, province, media preferences, and political preferences.[9] We have weighted all results to remove effects like the overrepresentation of older cohorts in the dataset, which is due to the fact that compared to working people, senior citizens are more likely to be at home when contacted by interviewers. We are aware that the data contain many details that are beyond the scope of this short paper, and we will take a closer look at them in a full version.

2 Main survey results about green finance

This section describes the key results of the survey. Before analyzing environmental sustainability in financial markets, we will first look at climate-related income effects. Plenty of research has been conducted on the economic impact of climate change. However, we are not aware of any survey that looks at whether climate change has an impact on people's personal financial prospects. Chart 1 shows that a majority of respondents expect their financial situation to deteriorate in the next 15 years as a result of climate change.[10] As people look further into the future, larger majorities agree with that statement, which appears reasonable given scientific

---

[9] 52% of respondents are female, 48% are male. On average, they are 55 years old. 75% of survey participants graduated from a secondary school and/or have completed vocational training. 17% have a university degree or equivalent. Fewer than 8% have only the minimum amount of education prescribed by law (nine years of compulsory education), or less. The average monthly net household income is approximately EUR3,028 (Siuda and Zörner, 2023).

[10] Unless otherwise stated, this descriptive analysis adds up the fairly positive/negative ("probably better off/worse off") and strongly positive/ negative ("better off/worse off") answers. This is done to improve comparability.

Chart 1

Expected impact of climate change on personal financial situation

Question

worse off / probably worse off / neither worse nor better off / probably better off / better off / No answer
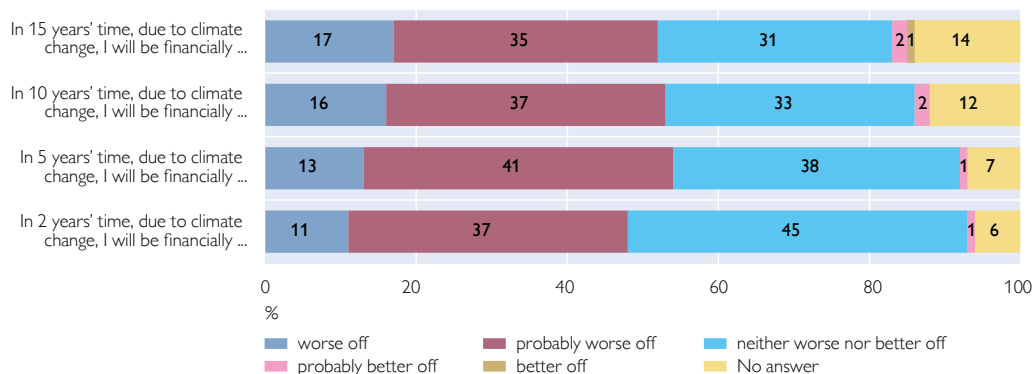
Source: IFES, OeNB.

evidence about the medium- and long-term impact on productivity and capital assets. While only a relative majority of 48% expect that they will be probably or definitely financially worse off in 2 years' time, more than 50% of respondents expect to be worse off in 5, 10 or 15 years' time. However, a statistical uncertainty of 2.7% needs to be taken into account.[11] Almost no one expects climate change to improve their financial situation. Most of the other respondents say that their situation will neither improve nor deteriorate. As the questions look further into the future, the share of people giving this answer goes down.

The questions about the role of green finance are divided into two groups, with the first six questions relating more to opinions and the other eight relating more to attitudes. It is not easy to make this distinction, but it is useful: Opinions tend to be fact-based and related to specific situations, while attitudes tend to be of a more fundamental nature and often influence people's behavior.

Chart 2 shows the questions relating to opinions, some of which can also be viewed as questions about sustainable finance literacy (Gangl et al., 2023):

1) About two-thirds of respondents say that the financial sector has a responsibility to contribute to the transition to a low-carbon economy. This seems reasonable because the financial sector allocates resources to the wider economy, which means it has an important impact beyond its direct carbon emissions, which are quite low compared to other sectors.

2) Greenwashing appears to be a concern for 60% of respondents, who say that the financial sector cultivates an image of sustainability only in order to maximize profits. Given that the word "only" is used in an exclusive manner, it is remarkable that so many respondents agree with this statement.

3) 58% of respondents, also quite a large majority, consider sustainable businesses to be more profitable in the long run, a statement on which we have been unable to a identify a clear consensus among researchers (Atz et al., 2023).

---

[11] *The fact that the number of respondents expecting climate-related losses in two years (48%) is not much higher than those expecting losses in 15 years (52%) might suggest that they have static views on climate change.*

Chart 2

Opinions on sustainability in the financial sector

Question: How well do these statements reflect your views? Please give your answer on a scale of 1 to 5, where 1 is "absolutely true" and 5 is "not at all true."
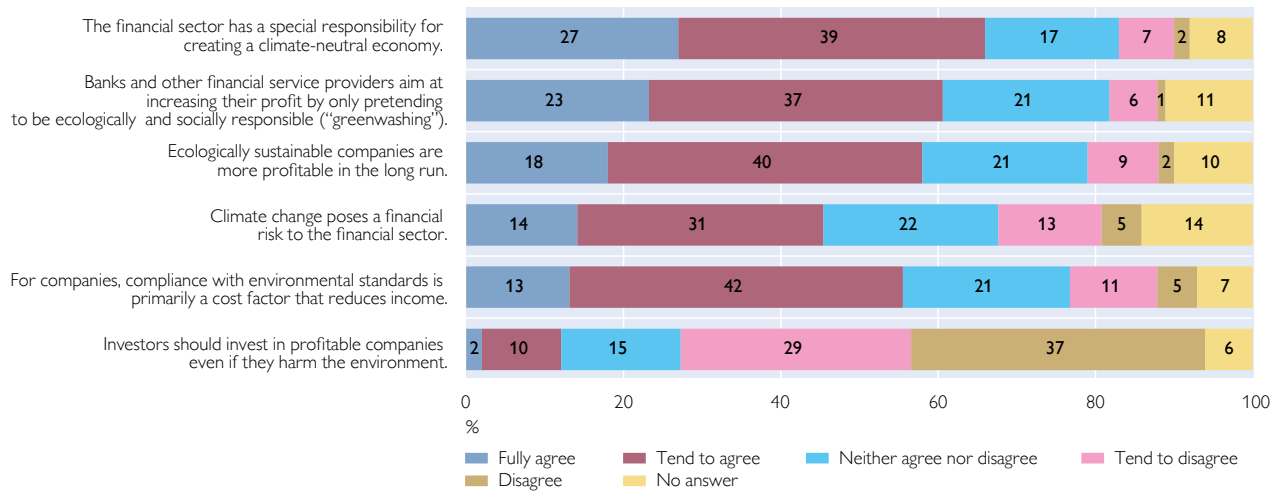
Source: IFES, OeNB.

4) 45% view climate change as a financial risk, an opinion that is largely accepted by researchers, practitioners and supervisors. Only 18% of respondents take the opposite view.

5) 55% regard compliance with environmental standards mainly as a cost factor that reduces profits. The use of the word "mainly" shows a degree of inconsistency with statement 3 (sustainable businesses are more profitable).

6) However, a large majority of almost two-thirds give a negative answer to the normative control question about whether investors should focus more on profits than on protecting the environment.

All in all, opinions on green finance are positive but greenwashing and regulatory costs are identified as problems.

Next, we will analyze the questions about attitudes, which can be seen in chart 3. They differ from the questions about opinions by using the first person to refer to respondents.

1) 52% consider it important that their insurance company phase out investments in coal. In fact, a large number of insurance companies are already committed to that goal, which puts them ahead of many banks.[12]

2) An almost equal number of respondents want their bank to be climate-neutral by the middle of the century. Indeed, more and more banks are already committing to the Paris climate targets.[13]

3) A relative majority of 48% do not want their money to be invested in fossil fuels.

4) 54% prefer financial companies with clear ethical and environmental positions.

[12] https://global.insure-our-future.com/

[13] https://www.bmk.gv.at/green-finance/alliance.html; https://www.unepfi.org/net-zero-banking/

Chart 3

Opinions on sustainability in the financial sector

Question: How well do these statements reflect your views? Please give your answer on a scale of 1 to 5, where 1 is "absolutely true" and 5 is "not at all true."

Statement	Fully agree	Tend to agree	Neither agree nor disagree	Tend to disagree	Disagree	No answer
It is important to me that my insurer phases out investments in coal mining and coal-fired power generation.	24	28	19	9	7	12
It is important to me that my bank becomes climate-neutral by the middle of the century.	24	27	22	9	8	9
It is important to me that my money is not invested in fossil fuels like coal, oil or natural gas.	23	25	21	9	8	14
I prefer financial companies (banks, insurers or mutual funds) that are committed to clear ethical and environmental standards.	22	32	25	6	5	11
When deciding what financial product to invest in, I would consider several options to ensure that ethical, social and environmental criteria are fulfilled.	19	27	23	11	7	13
I want to know whether my invested money contributes to climate and environmental protection.	18	26	20	11	9	16
I have already invested in one or several financial products that actively contribute to climate and environmental protection.	12	11	22	12	16	26
I am willing to accept lower interest rates if it means my money is invested in sustainable, green and humanitarian projects.	9	20	19	17	25	8

Source: IFES, OeNB.

5) A relative majority of 44% want to know whether their money makes a contribution to protecting the environment.

6) However, only 46% are prepared to make an extra effort to obtain the information they need to make sure that their investment complies with sustainability criteria. This question can hence be considered to be designed to assess consistency with the answer to the previous question.

7) Only a minority of 23% say that they have already chosen to invest in low-carbon and/or green financial products; the fact that 22% answer "neither agree nor disagree" suggests that they might have difficulty understanding the question. This may also be true for the 26% that do not answer the question.

8) As many as 29% of respondents say they are prepared to accept lower returns on money invested in sustainable, green and/or humanitarian projects. However, more than 40% are not prepared to do so.

All in all, positive attitudes to green finance are somewhat less pronounced than positive opinions, which is not particularly surprising given that the former have a more specific impact on respondents' behavior. A social desirability bias, i.e. respondents providing answers that are favorably viewed by others, might also play a role, which could further reduce the validity of positive attitudes. There is a limit to the extent that people are prepared to make an effort and/or incur costs to achieve their personal green finance goals.

3 What factors shape opinions and attitudes?

The perceived economic impact of climate change and attitudes to green finance may vary by demographic and socioeconomic characteristics. As far as the former is concerned, we are particularly interested in the impact of age, especially given that current science says climate change will have a greater objective impact on younger generations. Accordingly, we are focusing on the 15-year time horizon, the most distant point in the future that the survey considers. Chart 4 shows small differences between age groups along an inverted U-shaped curve when both answers with an expected deterioration are added up (including "probably worse off").[14] While the middle cohort appears to be the most pessimistic one at 54%, the oldest cohort is the group that is least concerned at 36%, followed, surprisingly, by the youngest cohort at 42%.
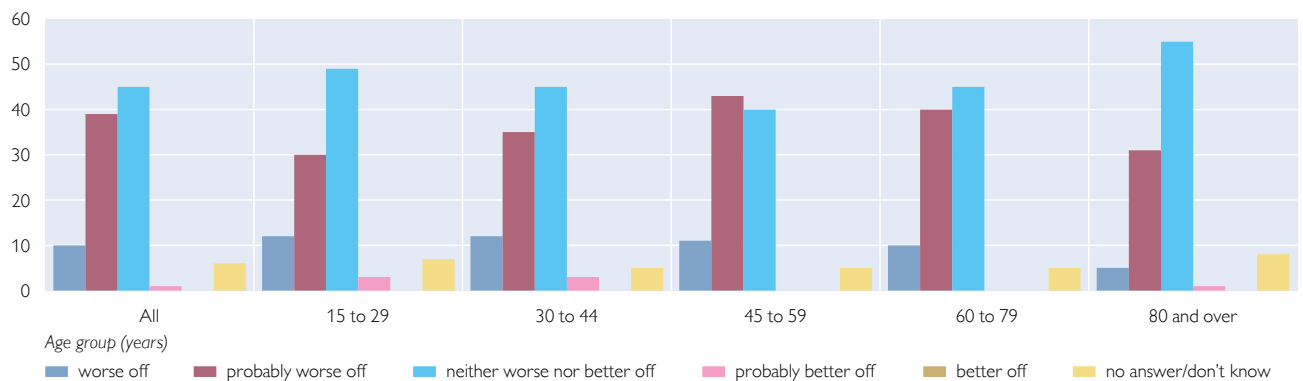
Various factors can influence people's attitudes to and interest in sustainable financial products. We will now analyze several characteristics that, based on an analysis of data in table form, appear to be meaningful in explaining differences in attitudes to green finance. Chart 5 only shows those values of the variables that separate the samples closest to their respective medians. The horizontal axis shows the percentage deviations from the average survey result for the 14 questions on opinions and attitudes.[15] In most cases, positive deviations can be interpreted as being pro-green finance.[16]

1) The income level stands out as being particularly important. We are looking at everyone up to the middle-income group that has up to EUR 2,000 in monthly personal income. On average, the answers that this group gives are 9 percentage points more pro-green finance than those of the overall sample.

2) Saving patterns also seem to play a big role but might correlate with income. We show the group that is able to save at least EUR 300 a month, according to

Chart 4

Expected impact of climate change on personal financial situation by age groups

% ; question: In 15 years' time, due to climate change, I will be financially ...

Age group (years)

■ worse off   ■ probably worse off   ■ neither worse nor better off   ■ probably better off   ■ better off   ■ no answer/don't know

Source: IFES, OeNB.

[14] *The share of people answering "neither worse nor better off" to this question is particularly high and follows a U-shaped curve, suggesting, again, that respondents might have difficulty understanding the question.*

[15] *The regression analysis in the annex omits the question about greenwashing as its answers do not unambiguously indicate whether respondents have a positive or negative attitude to green finance.*

[16] *Where the questions were worded in a negative way, we have selected the negative answers.*

the survey. The average deviation that can be interpreted as a positive attitude amounts to 7.3 percentage points.[17]

3) The level of education has somewhat less of an impact. For example, respondents with upper secondary education diplomas have a positive deviation of 4.5 percentage points.

4) Next comes gender, as the answers that women give are more pro-green finance by 2.4 percentage points compared to the overall result.

5) Status of employment appears to play a minor role. People in employment show an average deviation of 1.9 percentage points.

6) Age does not seem to have much of an impact either. We find a marginally negative deviation in the responses from people under the age of 45 (–0.7 percentage points) despite positive deviations in some questions. This is in contradiction to frequent claims that many younger people, such as millennials and Generation Z, i.e. the key supporters of the environmental movement, have a stronger interest in sustainable and green investing.[18] One possible explanation might be that younger people are mainly concerned about climate change affecting their quality of life and that they start to take a greater interest in business matters and personal finance only when they have fully entered the workforce and as their wealth grows.

7) The size of respondents' city, town or village, i.e. the rural-urban variable, is equally unimportant. For respondents living in municipalities with a population below 5,000, we see a deviation by an average of –1.4 percentage points from the overall result. A striking finding is that residents of rural areas are less prepared to accept lower returns and see climate as less of a financial risk. Conversely, people in major cities appear to have a slightly more positive stance on green finance.

These potential factors, identified by means of a descriptive approach, are, for the most part, confirmed by the regression analysis in the annex,[19] which also looks at financial literacy status that was assessed by several questions of the OeNB Barometer. The results of the survey definitely offer scope for further analysis regarding correlations with other variables as well as questions about values and convictions.

---

[17] We did not include this variable in our regression analysis due to a lack of sufficient data (too many respondents failed to answer the question).
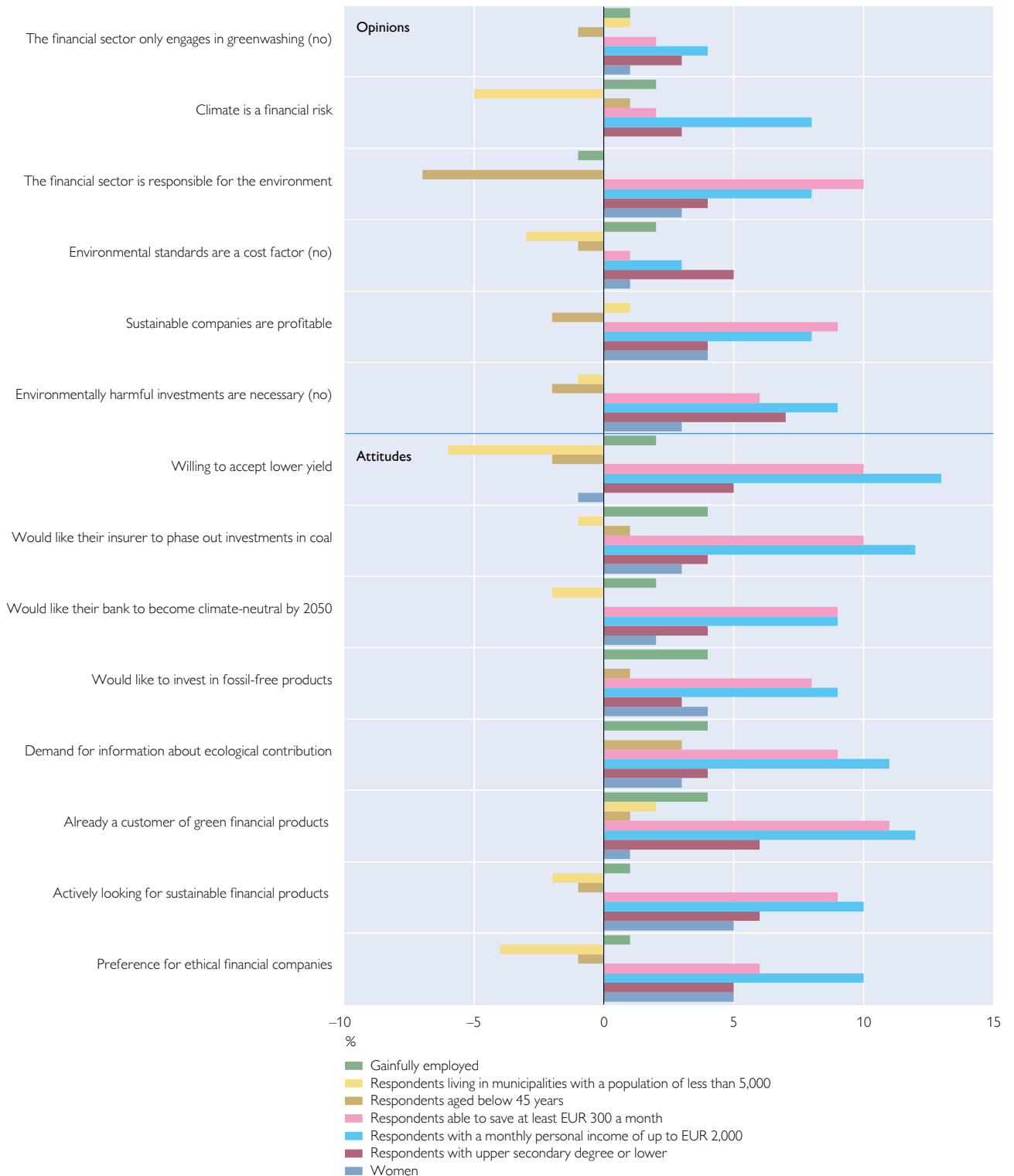
[18] Such unexpected results might be due to misunderstanding and/or differences in motive (climate vs. financial market skepticism). We are planning to investigate the matter more thoroughly in the full version of this paper.

[19] To mention a small contradiction: Chart 5 and the regression analysis both show that people who completed secondary school with a qualification for university entrance and people with a university degree give pro-green finance answers, but only a university degree has an impact that is statistically significant, according to the regression analysis.

Opinions and attitudes about green finance by demographic and socioeconomic factors

Deviations from survey results in percentage points; standard answer is yes
Summary of answers

Source: IFES, OeNB.

- Gainfully employed
- Respondents living in municipalities with a population of less than 5,000
- Respondents aged below 45 years
- Respondents able to save at least EUR 300 a month
- Respondents with a monthly personal income of up to EUR 2,000
- Respondents with upper secondary degree or lower
- Women

4 Comparison with similar surveys

The findings of the previous sections lend themselves to comparison with similar surveys in Austria; some studies based on these surveys were already discussed by Breitenfellner et al. (2020). Two representative household surveys conducted by Gallup (2018 and 2021) and commissioned by the Austrian Ecolabel (Österreichisches Umweltzeichen) both found that 40% of respondents consider it very important or somewhat important to take into account green and social aspects when making investment decisions.[20] Fessler et al. (2020) observed in a previous OeNB Barometer survey that more than two-thirds of respondents prefer financial companies with strong ethics.[21] This question is equivalent to the fourth question we analyzed in chart 3, where, however, only 54% of respondents gave a similar answer. The previous survey also found that the preference for ethical companies increased with age – contradicting widely-held views that millennials are very concerned about sustainability.[22] Another result was that women and people with higher levels of education were more interested in the ethical attitudes of financial companies. Looking at income, the survey found that low- and high-income earners but not middle-income earners tend to be more interested, a pattern that was not replicated by the latest OeNB Barometer survey. According to a more recent representative survey by Market Institut (2021), 61% of respondents were more or less convinced that banks should take greater responsibility in the transition toward sustainability. This is a similar percentage as in chart 2 (66%), and in both surveys, it increases with age and education. Market Institut (2021) also found that 48% want "banks to swiftly get out of the coal, oil and gas business"; the same percentage as the equivalent in chart 3 (third question).

Other surveys are not directly comparable to the OeNB Barometer survey analyzed here but do provide answers to three essential questions: To what extent are people aware of green finance? What motivates them to invest in green finance? And what is the expected impact of green finance? Gallup (2018 and 2021) found that even though awareness of sustainable financial products went up from 23% to 39%, a majority had still never heard of them. Regarding the motivation to make sustainable investments, an experimental study that Riedl and Smeets (2017) conducted in the Netherlands came to the conclusion that intrinsic social preferences (and reputation as well as, to a lesser extent, financial motives) are the main factor. This would also manifest itself in a willingness to accept lower yields, a phenomenon that was also observed in the OeNB Barometer (chart 3, final question). As for the impact of green finance, only 9% of Austrian respondents in a Eurobarometer survey (European Commission, 2020) believe that creating greener banking and insurance systems can be an effective way to address environmental problems.[23]

---

[20] 13% considered it very important in 2021, up from 8% in 2018.

[21] This survey, conducted by IFES in 2019, includes the Austrian Survey of Financial Literacy (ASFL), which contributes to OECD/INFE's International Survey of Adult Financial Literacy Competencies.

[22] These survey results should be treated with caution because, among other things, predefined answers and socially desirable statements can lead to bias; also, cohort effects can create myths about generations that disappear over time in longitudinal studies, and millennials are unable to test their stated preferences in practice due to a lack of excess capital.

[23] However, the survey gave respondents the option to choose several other methods, many of which they considered more appropriate.

Similarly, the economists Kölbel et al. (2020) arrive at the conclusion that sustainable investing can promote good business practices but cannot "save the world" in the absence of appropriate political action. Doubts about its positive impact are not only due to greenwashing, i.e. companies more or less intentionally deceiving the public, but also due to gaps in the data and methodological complexity. This complexity is, among other things, due to the need for additionality, i.e. reductions in greenhouse gas emissions have to come on top of the decrease that would have occurred anyway in the absence of the climate action funded by sustainable investments. In addition, most investors would need to have pronounced green preferences in order to achieve a positive impact on the environment which could otherwise be canceled out by less ethical investors using arbitrage. All in all, the survey that we analyze shows that people are not very willing to accept lower returns to help the environment, which seems to indicate that most investors do not have the green preferences that would be required. However, negative attitudes to green finance can be due to two different motivations: one that is rooted in doubts about climate change and one that comes from the conviction that there are better ways to resolve the climate crisis. The regression analysis in the annex shows that positive attitudes to green finance are associated with respondents' expectations that climate change will have a negative impact on their financial situation in the future. This also suggests that negative attitudes appear to be more strongly related to climate-skeptical motivations.

5 Conclusions for research, supervision and education

Like other sustainability issues, climate change is a critical concern for financial stability as it involves various risks, including physical impacts, such as extreme weather events, as well as transition risks related to climate policy. Stranded assets, market shocks and credit risks linked to high-carbon industries further underscore the urgent need to consider sustainability in risk management. Adequate disclosure and reporting standards are crucial in addressing transparency concerns. Failure in this regard could not only jeopardize investments but also cause reputational damage and lead to stakeholder pressure.

This study mainly focuses on attitudes toward those parts of the financial sector that – at least claim to – have already adapted to the challenge. But how relevant are disappointed expectations to financial supervisors? Given the small size of the market and low premiums on green financial products (greenium), a sudden repricing of assets appears unlikely to pose a substantial risk to the stability of the financial system. Nevertheless, we cannot entirely rule out that a green speculative bubble will burst, even though a brown bubble caused by stranded fossil assets seems to be a greater risk. Moreover, the risk that unfulfilled and unrealistic promises could alienate people from financial markets also has macroeconomic relevance. This means that consumer protection has implications for growth, distribution and innovation-promoting venture capital.[24] Finally, the answers in the survey discussed in this paper also show contradictions and a lack of understanding among people. Are "green businesses more successful" or are "environmental standards mainly a cost factor"? While people want investors not to invest

---

[24] An OECD (2023) report lists twelve principles providing guidance for regulators and supervisors that are responsible for financial consumer protection.

in "companies that harm the environment," they "do not want to accept lower returns" either. In addition, many "neither/nor" and "no answer" responses do not make much sense in the context of the questions. We might revisit and interpret this imprecision in the forthcoming full version of this paper. This could require a separate analysis of the answers, depending on the coherence of the statements.

In conclusion, the results of the OeNB Barometer illustrate that attitudes to green finance are determined by a complex mix of personal convictions, economic resources and access to information. It appears that there is a considerable lack of knowledge and a gap between mere awareness and the willingness to take action. Sustainable-oriented financial literacy efforts, regulatory measures, such as the disclosures required by the EU, and voluntary labels, such as the Austrian Ecolabel, can help to build trust in effectively sustainable financial products and raise awareness of the associated risks.

References

Atz, U., T. Van Holt, Z. Zoe Liu and C. C. Bruno. 2023. Does sustainability generate better financial performance? Review, meta-analysis, and propositions. In: Journal of Sustainable Finance & Investment 13/1. 802–825. https://doi.org/10.1080/20430795.2022.2106934

Breitenfellner, A., S. Hasenhüttl, G. Lehmann and A. Tschulik. 2020. Green finance – opportunities for the Austrian financial sector. In: Financial Stability Report 40. OeNB. 45–61. https://www.oenb.at/dam/jcr:314567c2-c4c9-4521-8153-bbb55150d159/05_FSR_40_Green_finance.pdf

Brundtland, G. H. 1987. Our Common Future: Report of the World Commission on Environment and Development. Geneva. UN Document A/42/427. http://www.un-documents.net/ocf-ov.htm

Ćetković, P. and J. C. Zhan. 2023. Starke anhaltende Kurseinbrüche schlagen sich im ersten Halbjahr 2022 deutlich auf das österreichische Fondsvolumen durch. In: Statistiken – Daten & Analysen Q4/22. OeNB. 61–67. https://www.oenb.at/dam/jcr:405c0378-50cd-4066-bb9c-96cdd0a39d77/09_Statistiken-q4-22_Starke-anhaltende-Kurseinbrueche.pdf

Claessens, S., N. Tarashev and C. Borio. 2022. Finance and climate change risk: Managing expectations. VoxEU column. June 7. https://cepr.org/voxeu/columns/finance-and-climate-change-risk-managing-expectations

European Commission. 2020. Special Eurobarometer 501: Attitudes of European citizens towards the Environment. March.

Fessler, P., M. Jelovsek and M. Silgoner. 2020. Financial literacy in Austria – focus on millennials. In: Monetary Policy & the Economy Q3/20. OeNB. 21–38. https://www.oenb.at/dam/jcr:d0e4d3c1-83a2-466d-8efe-6749fc075d9b/04_MOP_Q3_20_Financial-literacy-in-Austria.pdf

FNG. 2023. Marktbericht 2023 – Österreich. Nachhaltige Geldanlagen und verantwortliche Investments in Österreich. Berlin: Forum nachhaltige Geldanlagen. https://fng-marktbericht.org/oesterreich#c2648

Gallup. 2018. Nachhaltige Finanzprodukte. Repräsentative Umfrage für Umweltzeichen. Presentation slides.

Gallup. 2021. Nachhaltige Finanzprodukte. Repräsentative Umfrage für Umweltzeichen. Presentation slides.

Gangl, K., M. Seifert, F. Spitzer and K. Abstiens. 2023. Geld nachhaltig investieren: Was sollte man wissen und wie steht es um dieses Wissen in Österreich? IHS Policy Brief 3/23. https://irihs.ihs.ac.at/id/eprint/6630/1/ihs-policy-brief-2023-gangl-seifert-spitzer-et-al-geld-nachhaltig-investieren.pdf

InfluenceMap. 2021. Climate funds: are they Paris aligned? An analysis of ESG and climate-themed equity funds. Report. August. https://influencemap.org/report/Climate-Funds-Are-They-Paris-Aligned-3eb83347267949847084306dae01c7b0

International Energy Agency. 2023. World Energy Investment. Paris. https://www.iea.org/reports/world-energy-investment-2023

Kölbel, J. F., F. Heeb, F. Paetzold and T. Busch. 2020. Can Sustainable Investing Save the World? Reviewing the Mechanisms of Investor Impact. In: Organization & Environment 33(4). 554–574. https://doi.org/10.1177/1086026620919202

Market Institut. 2021. Die Einstellung der Bevölkerung zu Sustainable Finance. Ergebnisse einer österreichweiten repräsentativen Bevölkerungsbefragung. Im Auftrag des WWF. Linz. https://www.wwf.at/wp-content/uploads/2021/10/Ergebnisse-MAFO-WWF-Sustainable-Finance.pdf

NGFS. 2019. A call for action: climate change as a source of financial risk. Network for Greening the Financial System. First comprehensive report. April. https://www.ngfs.net/sites/default/files/medias/documents/ngfs_first_comprehensive_report_-_17042019_0.pdf

OECD. 2023. Financial consumers and sustainable finance: Policy implications and approaches, OECD Business and Finance Policy Papers, 32. https://doi.org/10.1787/318d0494-en

OECD. 2022. OECD/INFE Toolkit for Measuring Financial Literacy and Financial Inclusion 2022. www.oecd.org/financial/education/2022-INFE-Toolkit-Measuring-Finlit-Financial-Inclusion.pdf

Riedl, A. and P. Smeets. 2017. Why do investors hold socially responsible mutual funds? In: Journal of Finance 72/ 6. 2505–2550. https://doi.org/10.1111/jofi.12547

Ritsch, H. and C. Prantner. 2022. Nachhaltige Finanzprodukte. Vienna Chamber of Labour. https://www.arbeiterkammer.at/beratung/konsument/Geld/Geldanlage/AK-Studie_Nachhaltige_Finanzprodukte_April_2022.pdf

Siuda, F. and T. O. Zörner. 2023. Vaccination spillovers in economic interactions. WU Department of Economics Working Paper No. 347. September. https://research.wu.ac.at/ws/portalfiles/portal/46225245/WP347.pdf

Annex

Regression analysis of factors influencing opinions and attitudes on green finance

We conduct a regression to examine whether empirical results support the descriptive analysis in section 3.[25] The regression equation is as follows:

$$index_i = age_i + age_i^2 + income_i + edu_i + female_i + finlit_i + \\ + msize_i + climatepessimist_i + \varepsilon_i$$

Index is a dependent variable measuring pro-climate views and behavior by the individuals in the sample. It is dependent on the following variables: *edu* for the level of education completed, *age* for age, *income* for income, *female* for gender, *finlit* for financial literacy, *msize* for the population of the municipality of residence, *climatepessimist* for the attitude on the financial impact of climate change; ε is the error term. We use three regression models on the basis of the following three indices:

---

[25] *The answers are weighted, as in the descriptive evaluation, which impacts the results only marginally.*

- Overall index on opinions and attitudes: the sum of all questions measuring respondents' opinions and attitudes, with one point being assigned for each "green" answer. There are a total of 13 questions, hence 13 is the maximum number of points in the index. In other words: the higher the score, the higher respondents' affinity for green finance.
- Opinions subindex: the sum of the five questions we classify as opinion questions, i.e. questions that do not imply consequences in respondents' behavior. There are a total of five questions, hence 5 is the maximum number of points in the index.
- Attitudes subindex: the sum of all eight questions we classify as attitude questions, i.e. questions that concern respondents' personal views in relation to their behavior. There are a total of eight questions, hence 8 is the maximum number of points in the index.
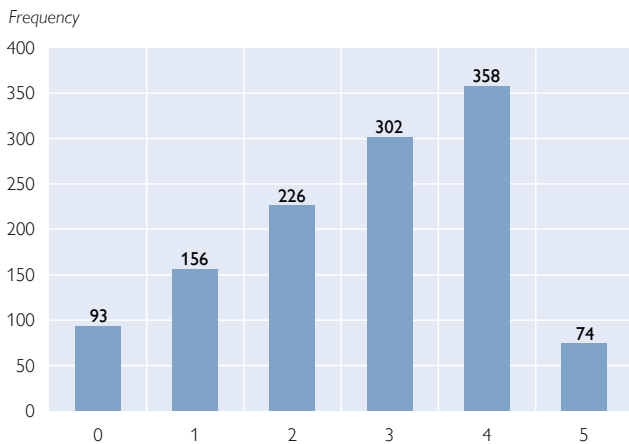
Descriptive statistics on the overall index and subindices

The panels of chart A1 illustrate how the frequency of answers that imply a positive stance on green finance is distributed among all respondents. More precisely, the
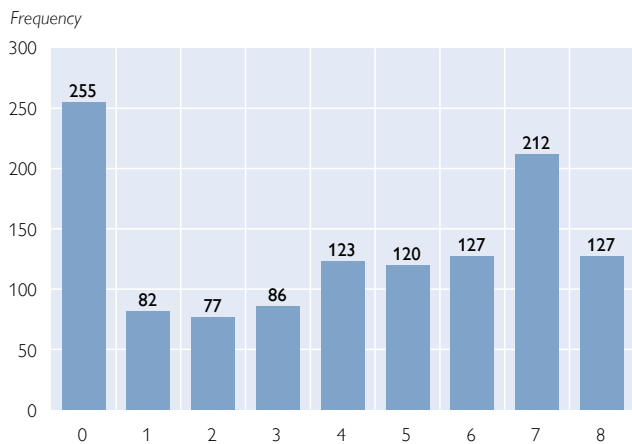
Chart A1

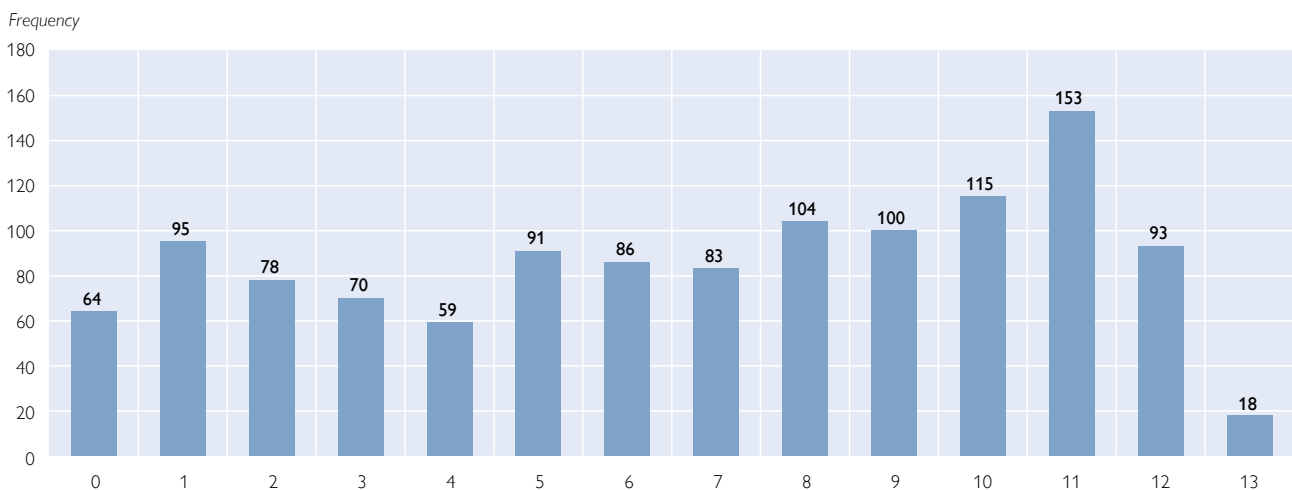**Histograms depicting the distribution of pro-green answers**

Distribution of the opinion index

Frequency

Distribution of the attitude index

Frequency

Distribution of the overall index

Frequency

Source: IFES, OeNB.

three histograms show the distribution of the overall index and the two subindices (opinions and attitudes), respectively. The x-axis shows the number of answers interpreted to be "green" in ascending order, whereas the size of the bars (y-axis) represents the frequency of the number of "green" answers.

The histograms show that by and large, the indices are evenly distributed, that is, there are no extreme concentrations that would affect a regression analysis. Looking at the histograms in greater detail, we see that the opinions subindex shows, on average, a stronger inclination toward "green" than the attitudes sub-index. This seems plausible, given that, compared to opinions, attitudes imply a greater willingness to change one's own behavior. For the opinions subindex, the median is 3 out of 5 points, while the median of the attitudes subindex is 4 out of 8 points. When we merge these two indices, we obtain the overall index, whose median is 7 out of 13 points, highlighting the aggregate perspective on respondents' opinions and attitudes.

Regression results for the overall index and the subindices

Table A1 shows the regression results based on equation 1. We conducted a total of three regressions: one for the overall index, one for the opinions subindex and one for the attitudes subindex. Model 1 in the second column of table A1 shows the results for the overall index, which will be the focus of our interpretations.

The variable $income_i$ is shown as a factor variable with six categories covering individual net income intervals from EUR 0 to EUR 900, EUR 900 to EUR 1,350, EUR 1,350 to 1,650, EUR 1,950 to EUR 3,000, and over EUR 3,000. Note that all categories, except for the first three ones, are significant at the 1% level. The EUR 1,950 to EUR 3,000 category has a particularly high impact on the index. This suggests that the index increases with rising incomes up to a net income of EUR 3,000. Beyond that, the index no longer increases but goes down, approaching the level seen for the EUR 1,650 to EUR 1,950 category. This underlines how income has an impact on the index up to a certain level; after that, we see some saturation.

The variable edu_i for education describes the highest level of education achieved by respondents. *"Low secondary"* is assigned to respondents who have completed their education after nine years of compulsory schooling or after that without a qualification for university entrance; *"high secondary"* is assigned to respondents who completed school with a qualification for university entrance; *"tertiary education"* is assigned to respondents with a university degree. Model 1 suggests that a university degree has a significantly positive impact on the overall index, while all other categories are not significant. This indicates that, according to model 1, a university degree is associated with a considerable positive shift in the index; by contrast, the other education variables do not have a statistically significant impact on the index.

The dummy variable *female* denotes female respondents. The coefficient of this variable is positive in all three models, statistically significant and shifts the index by one point in model 1.

The variable *finlit* represents financial literacy and describes an index which may take values between 0 and 3 based on three questions on financial literacy, with 0 standing for no financial literacy skills at all and 3 for very good financial literacy skills. Here, "medium," that is, 2 out of 3 points, is significant, indicating a clearly positive impact on the index. This implies that, according to the model,

Regression results for three indices

Term	Dependent variable		
	Total index, model 1 (1)	Opinion index, model 2 (2)	Attitude index, model 3 (3)
age	0.028	0.003	0.025
	(0.037)	(0.013)	(0.028)
age^2	−0.0003	0.0001	−0.0003
	(0.0003)	(0.00001)	(0.0003)
income 0-900	0.433	0.005	0.428
	(0.868)	(0.354)	(0.694)
income 900-1350	0.418	−0.208	0.626
	(0.736)	(0.308)	(0.619)
income 1350-1650	1.258	0.165	1.094*
	(0.765)	(0.311)	(0.630)
income 1650-1950	1.882**	0.301	1.580**
	(0.767)	(0.303)	(0.629)
income 1950-3000	2.670***	0.487	2.183***
	(0.726)	(0.296)	(0.603)
income 3000+	2.067***	0.545*	1.522**
	(0.791)	(0.318)	(0.656)
low secondary	−0.109	−0.108	−0.001
	(0.365)	(0.144)	(0.286)
high secondary	0.201	0.063	0.138
	(0.374)	(0.149)	(0.287)
tertiary education	1.128*	0.354*	0.775**
	(0.504)	(0.190)	(0.386)
female	1.019***	0.300***	0.720***
	(0.263)	(0.098)	(0.196)
finlit low	1.251	0.653	0.599
	(1.214)	(0.478)	(0.862)
finlit medium	2.420**	0.825**	1.595**
	(1.076)	(0.409)	(0.756)
finlit high	1.838*	0.673*	1.165
	(1.069)	(0.404)	(0.749)
msize 5000-1Mio	0.086	−0.010	0.095
	(0.294)	(0.109)	(0.218)
msize 1 Mio+	0.420	0.223**	0.196
	(0.309)	(0.112)	(0.242)
climatepessimist	1.805***	0.664***	1.141***
	(0.259)	(0.098)	(0.197)
constant	0.104	0.807	−0.702
	(1.365)	(0.541)	(1.013)
Observations	1,209	1,209	1,209
Log likelihood	−3,352.349	−2,148.086	−3,012.238
Akaike information criterion	6,742.698	4,334.171	6,062.476

Source: Authors' calculations.

*Note: *p<0.1; **p<0.05; ***p<0.01.*

better financial literacy skills are associated with a stronger positive shift in the index. That said, the level of financial literacy surveyed is very high overall, hence the differences between the categories are very small.

The variable *msize* represents the population of the municipality respondents live in. There are three categories: a population of 0 to 5,000, 5,000 to 1 million, and over 1 million (which is only Vienna). We see that the only positive coefficient is the one for the "over 1 million" category. Hence, a city of residence with more

than 1 million inhabitants (i.e. Vienna) has a positive impact on the index in our model. All other categories do not appear to have a significant impact.

The variable *climatepessimist* is a dummy variable reflecting the attitude of those who expect that climate change will adversely affect their financial situation (chart 1). It is significant at the 1% level in all three models and has a higher positive impact on the index than gender or a university degree.

Except for the regressions shown in table A1, we have conducted several regression variants excluding insignificant indicators (e.g. whether respondents have savings).[26] We did not find substantial changes in the coefficients and significance levels, which we consider to be indicative of the robustness of the results shown in the table.

In sum, the empirical results essentially support our descriptive analysis in section 3.[27] Income and education level have a high and significant impact on opinions and attitudes, with women tending toward greener attitudes. Age is not significant in all three models; financial literacy and the availability of savings seem to have a small influence on respondents' attitudes. What does seem to have a considerable impact (independent of all variables mentioned), by contrast, is whether people fear their financial situation might be adversely affected by climate change in the medium term.

[26] *Since the variable on the basis of one open question about monthly savings, which was used in chart 5, seemed unsuitable because of too few data points, we used a variable called savings in the estimation, which is based on a question about effective liquid savings (e.g. for repairs) in predefined ranges.*

[27] *Stepwise regressions could be used to check whether controlled variables would cause a change in correlations. The effect of individual regression coefficients could also be analyzed on the basis of the complete dataset, e.g. with charts showing average marginal effects, where estimated effects are displayed for individual variables. We chose not to include such a representation, given that it is possible to clearly interpret the variables' effects, and the factors impacting opinions and attitudes are discussed in section 3.*