

# Crypto assets in Austria: robust evidence from HFCS wave 5 on ownership, motives and portfolio implications

In Austria, 161,000 households (3.9%) hold crypto assets (median value: EUR 3,000). A typical crypto asset owner is rather young, male, educated and urban. Most owners entered crypto asset markets a few years ago, with new entries peaking during the COVID-19 pandemic. About 80% of Austrian crypto asset owners hold bitcoin and roughly 40% hold ether. The 2023 Austrian Household Finance and Consumption Survey (HFCS) featured a crypto asset module. The results are the basis for the estimates we present in this paper.

## Authors

**Pirmin Fessler**  
Oesterreichische Nationalbank, Research  
[pirmin.fessler@oenb.at](mailto:pirmin.fessler@oenb.at)

**Beat Weber**  
Oesterreichische Nationalbank, EU and  
International Affairs  
[beat.weber@oenb.at](mailto:beat.weber@oenb.at)

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### Limited prevalence of crypto assets in Austria

3.9% of Austrian households hold crypto assets. Holders are mostly male, and younger and more educated than the average household. Their crypto asset holdings rarely exceed 20% of their total financial assets. There is no evidence that debt-financing of crypto asset purchases is widespread.



### Part of asset portfolios, not a payment device

Among the motives crypto asset owners cite, investment, speculation and following a social trend dominate. Holding crypto assets to make payments is a rare motive. Systemic risks from direct household exposure to crypto assets appear limited, but behavioral risks and peer dynamics merit monitoring.



### Better data on crypto assets' role in the economy

Including crypto assets in carefully crafted regular household wealth surveys offers a rich source of unique data that are essential for seeing households' crypto asset holdings in a balance sheet context. They go way beyond what data from blockchain, online flash surveys or institutional reporting can offer.

Opinions expressed by the authors of studies do not necessarily reflect the official viewpoint of the Oesterreichische Nationalbank or the Eurosystem.

## Abstract<sup>1</sup>

Using the 2023 Austrian Household Finance and Consumption Survey (HFCS), which featured a dedicated crypto asset module, we provide the first probabilistic, nationally representative estimates of Austrian households' crypto asset ownership in a balance sheet context. Weighted results show that 3.9% of Austrian households (i.e. about 161,000) hold crypto assets. Crypto asset ownership is concentrated among younger (8% under 30), male (5.4% vs. 2.9% female), highly educated (7.6% vs. 0.3% less well educated), self-employed (13.3%) and urban holders. Most households entered the crypto asset market during 2019–2021, with a peak in 2020, and 75% acquired crypto assets via crypto exchanges. Bitcoin is held by about 80% and ether by roughly 40% of crypto-owning households. Median holdings are EUR 3,000, rising to EUR 20,000 at the 95th percentile; in most cases, crypto assets account for less than 20% of households' financial assets. The most frequently cited motivations are investment and/or speculation (40%), curiosity (24%) and trend participation (16%). Hardly any crypto asset holders intend or expect to use crypto assets to make payments. Portfolio analysis shows that crypto assets complement traditional risky assets, raising risky asset participation from 16.6% to 39.0% among holders and constituting the main risky exposure for many lower-wealth households. We also relate our results to other sources, including data on customers of crypto intermediaries and on taxable revenue, which offer complementary perspectives without allowing for direct empirical alignment.

## 1 Introduction

After a period of trading below their last historic peak, which was reached in 2021, crypto asset markets have reached new peaks in market prices and public attention in 2024 and 2025, in a context strongly shaped by policy actions. Recent policy and regulatory initiatives in major jurisdictions are purported to reduce legal uncertainty surrounding crypto activities and their relation to financial sector activities.<sup>2</sup> In the United States, such initiatives have also created expectations that both public and private sector institutions beyond specialized crypto intermediaries might start to join households as regular participants in crypto asset markets, potentially affecting the future size, structure and prices of global crypto asset markets, their interconnections with the financial sector and the financial stability risks arising from them.<sup>3</sup>

For central banks' task of monitoring financial stability risks, the growing involvement in crypto asset markets of regulated entities subject to reporting requirements bears the promise that aggregate data on crypto activities that are available for monitoring activities may improve. In an effort to prioritize the

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<sup>2</sup> Notably, the EU has adopted the Markets in Crypto Asset (MiCA) Regulation, US authorities have enabled the launch of bitcoin exchange-traded funds (ETFs) and the new US administration has announced its ambition to create a regulatory framework for crypto assets, prioritizing US dollar-based stablecoins backed by government bonds, to explore ways to hold crypto assets in the public sector and to prohibit central bank digital currencies. The Basel Committee has published regulatory equity and liquidity requirements for banking activities in crypto asset markets.

<sup>3</sup> Lagarde (2025).

availability and improve the reliability of microdata on crypto asset ownership, a number of central banks and supervisors have already started to collect data from household surveys to determine financial stability risks associated with the volatile crypto sector. Direct household exposure to the crypto sector may increasingly be supplemented by indirect exposure.<sup>4</sup> The way in which different segments among households are affected and how they can be expected to take, create, absorb and transmit financial risks associated with crypto assets will remain a key information for financial stability monitoring, and high-quality household surveys will be required to deliver this information.

Unlike data collected by a dedicated statistical agency on the basis of mandatory reporting requirements, data on crypto asset ownership by households currently stem from several public and private sector sources that differ in purpose, methods, quality and results.

Measuring household crypto asset holdings bears conceptual and methodological challenges. Chain-based and available administrative data sources, while often granular in transaction-level details, fail to identify crypto asset holders and therefore also fail to capture their socioeconomic context, behavioral motives and broader portfolio composition. Such data are structurally incapable of informing questions about distributional risk, indebtedness, liquidity or intergenerational asset shifts. Survey-based approaches, in contrast, can contextualize crypto assets in households' balance sheets and financial behavior – but their accuracy critically depends on the sampling methodology, instrument design and interview mode applied.

Crucially, only surveys based on truly probabilistic sampling – where a priori inclusion probabilities are well defined – permit valid population inference and support transparent error estimation. Nonprobabilistic surveys, such as commercial online panels or opt-in web surveys, tend to overrepresent technology-savvy respondents and often lack transparency with respect to the underlying sample frame. Even when reweighted, such surveys generally cannot correct for biases that stem from uncontrolled selection mechanisms.

Given the small share of crypto-holding households and the evolving nature of crypto assets, such methodological clarity is particularly critical. As shown in earlier pretest work (Fessler and Weber, 2024) variations in survey design can significantly affect reported crypto asset ownership rates. These effects are not merely technical: They have direct implications for the credibility of cross-country comparisons, the calibration of financial literacy initiatives and the targeting of supervisory scrutiny. High-quality representative survey data are therefore indispensable – not only for understanding who holds crypto assets and why, but also for informing macroprudential oversight and the ongoing debate on the role of crypto assets in the monetary and financial system.

The 2023 wave of the Austrian Household Finance and Consumption Survey (HFCS) marks the first nationally representative and methodologically rigorous implementation of crypto-related questions in Austria. In close cooperation with the Crypto-Asset Monitoring Expert Group (CAMEG)<sup>5</sup> in the Eurosystem, this effort builds on lessons learned from the Austrian pretest conducted in 2022 (Fessler and Weber, 2024) and earlier instruments (see e.g. Stix, 2021). It introduces refined questions on ownership, valuation, acquisition methods and motivations, embedded within a high-quality probabilistic sample and supported by a well-documented weighting and imputation strategy.

This article makes a fourfold contribution. First, it delivers the first nationally representative, probabilistic sample estimates of households' crypto asset ownership in Austria, showing that 3.9% of households

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<sup>4</sup> In 2024 in the EU, the combined reported value of investment funds providing exposure to crypto assets, exchange-traded products (ETPs) and derivatives contracts with underlying crypto assets was estimated at below EUR 20 billion (ESRB, 2025).

<sup>5</sup> For more information, see e.g. CAMEG (2025).

(about 161,000) hold crypto assets, with significantly higher rates among younger men, the self-employed and highly educated households. Second, it documents the composition, value and portfolio share of these crypto asset holdings – a median value of EUR 3,000, 80% of crypto asset owners holding bitcoin and 40% holding ether (the crypto asset associated with the Ethereum network<sup>6</sup>) – along with marked heterogeneity across the distribution. Third, it traces acquisition timing and channels, identifying the pandemic years 2019–2021 as the key entry window and crypto exchanges as the overwhelmingly dominant acquisition method. Fourth, it integrates novel evidence on household motives and situates these within broader household balance sheets, showing that crypto assets typically complement rather than replace traditional risky assets and that they can represent the main risky exposure for lower-wealth households. By embedding these results in a discussion of survey methodology and measurement bias, we are confident that this paper provides valuable input to ongoing debates on how to integrate crypto asset modules into high-quality household wealth surveys and how these modules can contribute to the monitoring of crypto asset markets (see CAMEG, 2025).

Section 2 presents the data and methods, including a discussion of why representative sampling and questionnaire design are essential for credible crypto asset measurement. Section 3 analyzes the prevalence of crypto asset ownership across Austrian households and individuals, with a focus on demographic and socioeconomic correlates. Section 4 explores patterns in crypto asset holdings, including their absolute value and portfolio share. Section 5 investigates acquisition timing and channels, highlighting key behavioral patterns. Section 6 examines household motives and perceptions, drawing comparisons with earlier data collections. Section 7 situates crypto assets within the broader household portfolio, assessing correlations with traditional asset classes and discussing potential substitution or crowding-in effects. Section 8 concludes with policy implications, summarizing the findings and reflecting on the role of high-quality data in understanding financial innovation.

## 2 Data and methods

Subsection 2.1 discusses the importance of probabilistic sampling for obtaining unbiased estimates of rare behaviors such as crypto asset ownership. Subsection 2.2 reviews the main institutional and private surveys that report on crypto asset holdings, highlighting key differences in methodology and their implications for data quality. Subsection 2.3 briefly describes the design, fieldwork and weighting procedures of wave 5 of the Austrian HFCS, which provides the empirical basis for our analysis.

### 2.1 Why sampling matters

The validity of empirical conclusions from surveys hinges on the foundations of sampling theory. Only surveys rooted in truly probabilistic sampling – where each unit in the target population has a known, non-zero inclusion probability – enable statistically sound population inference and transparent error quantification. This principle is not a matter of academic purism but a cornerstone of scientific integrity. Without it, reported crypto asset ownership shares risk becoming artifacts of the data collection process rather than reflections of the actual population (see Groves et al., 2009, and Bethlehem, 2009).

Nonprobability surveys – such as commercial online panels or opt-in web questionnaires – do not meet this standard. They are characterized by uncontrolled self-selection mechanisms and unknown sample inclusion structures. Even with sophisticated poststratification or calibration techniques, biases arising

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<sup>6</sup> Note that the term “Ethereum” was used in the HFCS questionnaire to ensure respondent comprehension, as it is the designation most commonly used in media coverage and by trading platforms (e.g. “Ethereum price”). For reasons of consistency, we retain this terminology when reporting results in figures. In the main text, however, we use the technically correct designation ether (ETH) to refer to the crypto asset on the Ethereum blockchain.

from the unobserved selection process in such surveys cannot be adequately corrected. As a result, nonprobability surveys often systematically overrepresent technology-savvy respondents – an especially severe problem in the case of crypto assets, where digital affinity is directly correlated with the variable of interest.

By contrast, the Austrian implementation of the HFCS employs a stratified, probabilistically drawn gross sample that permits the ex ante definition of inclusion probabilities. Moreover, it uses auxiliary information on the full sample frame to construct calibrated nonresponse weights (see Albacete and Lindner, 2025). This allows for the analytically meaningful correction of unit nonresponse and ensures that survey estimates reflect the distributional structure of the target population.

The importance of this approach is amplified in the context of crypto assets, which remain a marginal but rapidly evolving phenomenon. Because only a small share of households hold crypto assets, sampling noise and misreporting can substantially distort both prevalence and value estimates if not properly addressed. While mode effects can be partially anticipated and documented, the absence of a known sampling frame in a survey precludes any systematic treatment of selection bias.

The HFCS framework, by contrast, combines controlled sample design, rigorous field protocols and consistent questionnaire modules across countries. It allows crypto asset ownership to be studied in the context of full household balance sheets, debt portfolios and income flows – an analytical depth that no ad hoc or convenience-based survey can match.

Representative probabilistic surveys such as the HFCS provide the most robust foundation for valid inference about population-wide behaviors. While model-based methods can, in principle, extract insights from nonprobability data under strict assumptions, these approaches are especially prone to bias when behaviors are rare. This is particularly relevant for crypto asset ownership, where technological novelty, low prevalence and social desirability interact to exacerbate known measurement challenges. In such contexts, scientific standards should not be compromised for convenience or cost. As Cornesse et al. (2020) note,

*“Probability sampling theory is well established and based on sound mathematical principles, whereas nonprobability sampling is not.”*

They conclude that although nonprobability samples may be defensible in specific circumstances, they rest on strong and untestable modeling assumptions and generally produce lower accuracy than probability samples. Reviewing the empirical evidence, the authors find no support for the claim that declining response rates erode the advantages of probability surveys, and they recommend continuing to rely on them.

## 2.2 Survey landscape

Within the Eurosystem, a number of surveys are currently being employed for various purposes, offering information on crypto assets in household portfolios as well.

They show a striking divergence in headline figures for shares of the population owning crypto assets. This divergence is driven by differences between surveys with regard to their purpose, methodology and survey questions.

For example, the ECB’s Consumer Expectations Survey (CES) is a high-frequency, online panel covering individuals aged 18–70 in eleven euro area countries (ECB, 2023). It is designed to track short-term developments in consumer sentiment and expectations, and offers timely behavioral insights. While the

CES sample, when pooled across countries and weighted, aligns well with external benchmarks for key characteristics such as employment status, housing tenure and household size, it is important to note that it also relies on nonprobabilistic recruitment via commercial access panels. These panels are based on self-selection and lack a defined sampling frame and a priori inclusion probabilities, precluding valid inference on population-level estimates. This limitation is particularly relevant when assessing the prevalence and intensity of crypto asset holdings.

Similarly, the study on the payment attitudes of consumers in the euro area (SPACE), also coordinated by the ECB, uses a mixed-mode approach combining random digit dialing (RDD) by phone and access panel-based online interviews (ECB, 2020). While RDD is sometimes considered a probabilistic method, it does not provide a comprehensive sampling frame or allow for a clearly defined gross sample with traceable inclusion probabilities. Interviews are typically concluded upon reaching a target net sample size, and detailed auxiliary information for constructing nonresponse weights is generally unavailable. The online component of SPACE, like CES, is not problematic due to its web-based mode (computer-assisted web interviewing – CAWI) per se, but rather because it draws on commercial access panels selected through nonprobabilistic methods.

In addition to these institutional efforts, a growing number of private sector surveys – some commissioned by crypto firms – produce headline figures on ownership. These surveys often lack transparency regarding sampling design, weighting procedures and questionnaire implementation. While their methodological details are rarely disclosed in full, their reliance on opt-in online samples strongly suggests a nonprobabilistic nature, rendering their findings unfit for rigorous population-level analysis.

All of these surveys serve legitimate and often complementary goals. Their low cost, rapid implementation and publication and their behavioral richness make them valuable tools for exploratory or high-frequency monitoring. However, when the objective is to estimate population parameters such as the share of households holding crypto assets (extensive margin) or the amount held relative to income or financial assets (intensive margin), a different methodological standard is required. Only probabilistic surveys with documented sampling frames, validated weighting strategies (especially with regard to nonresponse), high-quality imputation and harmonized instruments – such as the HFCS – allow for unbiased inference and transparent error quantification.

Several countries in the euro area are currently exploring the regular inclusion of data on crypto assets as part of their national HFCS. However, these data are not part of the HFCS core variable definitions (yet) and they are usually not included in the Eurosystem HFCS data provided by the ECB. If comprehensive coverage across countries and a harmonized approach to the design of crypto-related questions could be achieved, the high methodological standards of these surveys (probabilistic sampling, comprehensive weighting strategies, quality-controlled fieldwork and sound imputations) could contribute to reducing an important data gap in financial stability monitoring and with respect to various analytical purposes.

While probabilistic surveys are essential for direct inference on population parameters, some policy or research applications may rely on model-based estimation or statistical matching. In these cases, sample representativity is less critical – provided the model is correctly specified and relevant socioeconomic covariates are observed. This approach, however, entails strong assumptions and is sensitive to omitted variables, particularly in the context of rare behaviors such as crypto asset ownership. The transparent communication of such limitations is therefore crucial.

### 2.3 HFCS Austria: wave 5

Following the previous methodological discussion, wave 5 of the Austrian HFCS exemplifies the application of high-quality probabilistic sampling in practice. Fielded between March 2023 and March 2024 by the Institute for Empirical Social Research (IFES), wave 5 of the Austrian HFCS was conducted using a stratified two-stage cluster sampling design, with postal addresses serving as the sampling frame. Stratification was based on NUTS-3 regions under the EU's Nomenclature of Territorial Units for Statistics (NUTS) standard and on municipality size, resulting in a gross sample of 7,636 addresses across 192 strata. The survey achieved 2,849 completed interviews, yielding a response rate of 39%.

Data collection relied on face-to-face computer-assisted personal interviewing (CAPI), supported by extensive interviewer training and a rigorous contact protocol involving up to five personalized attempts per household. Participation was incentivized by a small monetary voucher, and quality control measures included real-time data validation, consistency checks, telephone back-checks and follow-up calls for clarification.

Unit nonresponse was addressed through a two-step weighting procedure. First, design weights derived from the stratified gross sample were adjusted for differential response probabilities using a nonresponse model based on rich auxiliary information for the full gross sample. The nonresponse model includes variables related to interview context and neighborhood characteristics (e.g. interview order, building type and condition, urbanicity, neighborhood graffiti), interviewer characteristics (e.g. gender, age, education, experience) as well as contextual indicators at the municipality level (e.g. income, employment structure, education, unemployment, age) and the district level (e.g. crime rate). Second, calibrated poststratification aligned the adjusted weights with known population margins from administrative data sources. Item nonresponse was handled via multiple imputation using chained equations with five imputates. Variance estimation can be performed using a bootstrap approach with 1,000 replicates and finite population corrections. This rigorous methodology ensures valid inference for the full household population of Austria (approximately 4.1 million households) and enables the reliable estimation of detailed balance sheet components, including the newly introduced crypto asset variables. All details on survey production can be found in the methodological notes (see Albacete and Lindner, 2025).

In the Austrian HFCS wave 5, crypto asset ownership was captured through a dedicated question module embedded in the core wealth section of the questionnaire. Respondents were first asked whether they or any other household member owned crypto assets, including indirect holdings via funds or derivatives. Follow-up items collected information on the current total value of such holdings, the year of first acquisition and the main reasons for holding crypto assets. Respondents were also asked to identify specific types of crypto assets (e.g. bitcoin, ether, others) and to indicate the primary and additional acquisition channels (e.g. crypto exchange, crypto "mining," gift). The structure allowed multiple household members to be considered, and answers were recorded either numerically, categorically or via open text fields. All questions were administered via face-to-face interviews using CAPI and subjected to the same quality control protocols as the rest of the survey. The full set of crypto-related questionnaire items is provided in the annex.

## Box 1

### Comparing the HFCS to other available crypto surveys

Understanding crypto asset ownership requires data that are both reliable and representative. However, most existing surveys reporting on crypto prevalence, be they institutional or private, rely on nonprobability samples. This includes opt-in online panels, app-based self-selection or hybrid approaches using random digit dialing (RDD) without a proper sampling frame. While such designs are often fast and inexpensive, they preclude valid population inference due to unknown inclusion probabilities, unmeasured selection effects and limited tools for addressing nonresponse.

In contrast, wave 5 of the Austrian Household Finance and Consumption Survey (HFCS) follows strict probabilistic sampling standards: a stratified two-stage design based on a national address register with documented inclusion probabilities, transparent gross sample construction and rich auxiliary data (including nonrespondents) for calibrated nonresponse weighting. The sampling design permits correct variance estimation, supports the correction of unit nonresponse via weights and of item nonresponse via multiple imputation and ensures the transparent documentation of all survey steps.

One potential concern often raised is the use of small monetary incentives, which could in principle attract more economically constrained households. However, the response model underlying the HFCS weighting strategy includes extensive contextual and interviewer-level information to account for differential response propensities, thus minimizing the risk that such incentives introduce a systematic bias. Moreover, the overall design is optimized to minimize both sampling and nonsampling errors – through quality-controlled fieldwork, face-to-face interviews and harmonized instruments embedded in a full household balance sheet survey.

Compared to other (especially commercial) crypto surveys, which often rely on self-selected respondents with high digital affinity, the HFCS stands out in its ability to generate credible prevalence estimates and distributional insights, especially for rare behaviors. Its methodological superiority combined with the availability of balance sheet data makes the HFCS the best available instrument for studying crypto asset ownership in Austria's household sector from a financial stability perspective.

## 3 Who owns crypto assets in Austria?

Subsection 3.1 presents the headline prevalence of crypto asset ownership in Austria based on weighted and imputed HFCS data. Subsection 3.2 compares these results to previous surveys. Subsection 3.3 examines the demographic and socioeconomic correlates of crypto asset ownership.

### 3.1 Prevalence of crypto asset ownership

Table 1 reports the raw, unweighted and unimputed responses from the survey sample of 2,849 households. Among these, 81 households (2.8%) reported that the respondent personally owns crypto assets, 17 households (0.6%) reported ownership by another household member and 3 households (0.1%) reported joint ownership by the respondent and at least one other member. The vast majority – 2,744 households (96.3%) – reported no crypto asset ownership, with only 4 cases (0.1%) responding “Don't know” and none “No answer.”

Table 1

### Raw answers: Do you or does any other household member own bitcoin or similar crypto assets?

	Number of observations	% of total observations
Yes, I do	81.0	2.8
Yes, (at least) another household member	17.0	0.6
Yes, both I and (at least) another household member	3.0	0.1
No	2,744	96.3
Don't know	4.0	0.1
No answer	0.0	0.0
Total	2,849	100.0

Note: These are sample statistics for the raw unweighted and unimputed data.

Source: Eurosystem HFCS Austria 2023, OeNB.

Table 2 translates these responses into population-level estimates using full survey weights and multiple imputation. The results indicate that approximately 3.9% of Austrian households (about 161,500 households in absolute terms) hold crypto assets, either directly through the respondent or through other household members. Specifically, 3.0% of households report personal ownership by the respondent, 0.8% ownership by another household member and 0.1% joint ownership.

Table 2

### Household population estimate: Do you or does any other household member own bitcoin or similar crypto assets?

	Number of households	% of households	95% confidence interval	
			Lower bound	Upper bound
Yes, I do	123,700	3.0	2.3	3.7
Yes, (at least) another household member	31,906	0.8	0.3	1.2
Yes, both I and (at least) another household member	5,917	0.1	-0.0	0.3
No	3,933,826	96.1	95.2	96.9
Total	4,095,350	100.0		

Note: Population-weighted, multiple imputed data. Standard errors based on replicate weights to take into account complex survey design with 500 replicates.

Source: Eurosystem HFCS Austria 2023, OeNB.

Our estimate is broadly in line with recent international evidence on household-level crypto asset ownership, which finds similarly low but nonnegligible prevalence rates in advanced economies (Balutel et al., 2024). It is also consistent with evidence from other euro area countries using probabilistic high-quality household surveys, such as Italy, where Survey on Household Income and Wealth (SHIW) data indicate a similarly small share of households holding crypto assets.

## 3.2 Comparison with previous studies

Table 3 provides a comparative overview of available estimates for the share of crypto asset holders in Austria, covering both recent and earlier sources.

The most methodologically rigorous and recent estimates come from this paper based on the Austrian HFCS wave 5 (2023). Using a high-quality, probabilistic household sample and carefully calibrated weights, the survey estimates that 3.0% of individuals and 3.9% of households hold crypto assets.

These findings are broadly consistent with the 2022 HFCS pretest, which yielded individual and household-level crypto asset ownership rates of 3.0% and 4.0%, respectively. The slightly wider confidence intervals in the pretest reflect the smaller sample size and exploratory nature of that earlier fieldwork including the mode and sampling experiment conducted (see Fessler and Weber, 2024).

In contrast, earlier academic studies and commercial estimates show a wider and more dispersed range of values. For instance, Stix (2021) – based on individual-level data from 2018–2019 – reports a significantly lower prevalence of crypto asset ownership of 1.6%. This is likely to indicate both a real increase in crypto asset ownership since then and differences in survey design and question framing.

By comparison, Abramova et al. (2022) and industry estimates suggest a considerably higher or lower prevalence of crypto asset ownership, respectively (7% and 1.3%, respectively). Ciaian et al. (2024) estimate a 2.9% prevalence, a value that is somewhat aligned with that resulting from the Austrian 2023 HFCS.

Table 3

### Comparison with other available estimates of the share of crypto asset holders in Austria

	Reference year for estimate	Estimated share of crypto asset holders, %	95% confidence interval	
			Lower bound	Upper bound
HFCS 5th wave, individual	2023	3.0	2.3	3.7
HFCS 5th wave, household	2023	3.9	3.1	4.8
HFCS crypto pretest, individual	2022	3.0	1.5	4.4
HFCS crypto pretest, household	2022	4.0	2.3	5.7
Stix (2021), individual	2018/2019	1.6	1.2	2.2
Abramova et al. (2022), individual	2021	7.0	n.a.	n.a.
Ciaian et al. (2022), individual	2019	2.9	2.5	3.3
Industry estimate	2023	1.3	n.a.	n.a.

Note: n.a. = not available. Population-weighted, multiple imputed data. Standard errors based on replicate weights to take into account complex survey design with 500 replicates (HFCS fifth wave estimate and confidence interval).

Source: Eurosystem HFCS Austria 2023, OeNB.

While all the previously discussed estimates are derived from studies that, in principle, aim to meet certain statistical standards, there are also industry-sponsored figures that are hard to interpret. Based on an online survey conducted by YouGov with 1,021 participants drawn from its nonprobabilistic panel, one study claims that a much higher share of Austrians than estimated by any of the noncommercial surveys discussed above did invest in crypto assets at some point in the past.<sup>7</sup> Given the methodological limitations – most notably the use of self-selected online panel participants without a defined sampling frame – and the broadening of the definition of “ownership” to include people who may have left the market in the meantime, taking this figure as a reasonable approximation of current ownership likely represents a strong overestimation (see also Cornesse et al., 2020). If all of the gap in point estimates between the YouGov survey and our results could be explained by the former’s broadening of the ownership category to include former crypto asset owners, it would mean that five times as many individuals gathered experience in the crypto asset market that led them to decide to leave the market rather than stay and continue to hold or trade crypto assets.

<sup>7</sup> See information and links provided in Geld Magazin (2024).

### 3.3 Demographic and socioeconomic correlates

Crypto asset ownership in Austria is highly unequally distributed across demographic and socioeconomic groups. Table 4 shows that younger, male, highly educated, urban and self-employed individuals are disproportionately likely to hold crypto assets.

Among households headed by individuals under 30, more than 8% hold crypto assets – a value well above the population average of 3.9%. The crypto asset ownership rate in Austria declines steadily with age and effectively drops to zero (no observations for holders) in the 75+ age group, confirming the generational skew observed in earlier studies. Gender differences are also pronounced: While women head a majority of Austrian households in the HFCS, their crypto asset ownership rate is just 2.9%, compared to that of 5.4% recorded among men.

In households with highly educated reference persons, 7.6% hold crypto assets, whereas the rate drops to 0.3% among those with low formal education.

Self-employed individuals stand out, with a crypto asset ownership rate of 13.3%, by far the highest rate recorded among different occupational groups. Unemployed and worker households also show above-average ownership rates. In contrast, crypto assets are almost absent among retirees, despite their significant weight in the population.

As expected, larger households exhibit higher crypto asset ownership rates simply because they comprise more individuals, which increases the likelihood that at least one household member holds crypto assets. Households in urban areas (with more than 20,000 inhabitants) are more likely to own crypto assets than those in smaller communities, which may result from factors like greater exposure to peer influence, financial innovation and better access to financial infrastructure.

Taken together, the data show that crypto asset ownership is concentrated among younger men with higher education – groups that in general tend to be more digitally integrated and financially engaged. The finding that young men are more likely to hold crypto assets fits in with a well-established pattern that has been observed in other euro area countries (Hermans et al., 2022) as well as in previous studies for Austria (Stix, 2021; Fessler and Weber, 2024) and it is also confirmed by brokerage account analyses (Hasso et al., 2019).

Table 4

### Share of crypto asset holders by socioeconomic characteristics

	% of households	% of crypto asset holders in this group
<b>Age</b>		
16-29	7.0	8.2
30-39	12.3	6.9
40-49	17.4	6.8
50-64	29.8	3.5
65-74	18.7	1.7
75+	14.7	0.0
<b>Gender</b>		
Women	58.2	2.9
Men	41.8	5.4
<b>Education</b>		
Low	14.4	0.3
Medium low	38.6	2.5
Medium high	33.6	5.7
High	13.3	7.6
<b>Occupation</b>		
Self-employed	0.4	13.3
Worker	11.1	6.3
Employee	32.4	5.5
Civil servant	2.6	4.5
Farmer	0.9	0.0
Retired	42.2	1.6
Unemployed	3.3	4.6
Other	3.7	0.6
<b>Household size</b>		
1 person	38.1	3.4
2 persons	35.9	3.8
3 persons	10.8	4.2
4 persons	10.6	6.0
5 or more persons	4.6	5.0
<b>Tenure type</b>		
Owner	48.2	4.3
Renter	46.0	3.7
Free user	5.9	2.7
<b>City dummy</b>		
Less than 20,000 inhabitants	58.1	3.3
More than 20,000 inhabitants	41.9	4.8

Note: Population-weighted, multiple imputed data.

Source: Eurosystem HFCS Austria 2023, OeNB.

## 4 Patterns in crypto asset holdings

Subsection 4.1 looks at the value distribution of crypto asset holdings. Subsection 4.2 assesses their share in total financial assets. Subsection 4.3 details the composition of crypto asset holdings by token type.

### 4.1 Value of crypto asset holdings

Our findings suggest that the market value of crypto assets held by Austrian households at the time of HFCS wave 5 was around EUR 880 million.

When put in perspective with the help of external data, this figure represents approximately 0.1% of the EUR 850 billion of total gross financial assets (comprising bank accounts, funds, bonds, shares etc., see table 5) owned by the Austrian household sector<sup>8</sup> in 2023 (OeNB, 2024).

For placing national crypto-related activity in a macroeconomic context, tax data may serve as a useful complementary source to surveys like the Austrian HFCS, particularly by providing information on realized gains. According to the Austrian Ministry of Finance, declared revenues from crypto assets held in the private sector amounted to EUR 14.6 million in 2023 and EUR 35.6 million in 2022 (BMF, 2025). While these figures are not directly comparable to estimates of asset stocks – since they reflect only realized gains subject to taxation – they nevertheless illustrate that measurable crypto activity occurs on a scale broadly consistent with the presence of nonnegligible holdings in the household sector.

The distribution of reported crypto asset values among the 3.9% of Austrian households holding crypto assets is highly skewed, with a small number of households holding relatively large positions. As chart 1 shows, the median value of crypto asset holdings comes to EUR 3,000, while the upper percentiles increase steeply. At the 90th percentile (P90), holdings exceed EUR 13,000, and by the 95th percentile (P95), they are at EUR 20,000, with wide confidence intervals suggesting considerable heterogeneity at the top. Given the volatility and speculative nature of crypto assets, such concentration raises important questions about exposure to financial risk, especially for households with limited asset diversification.

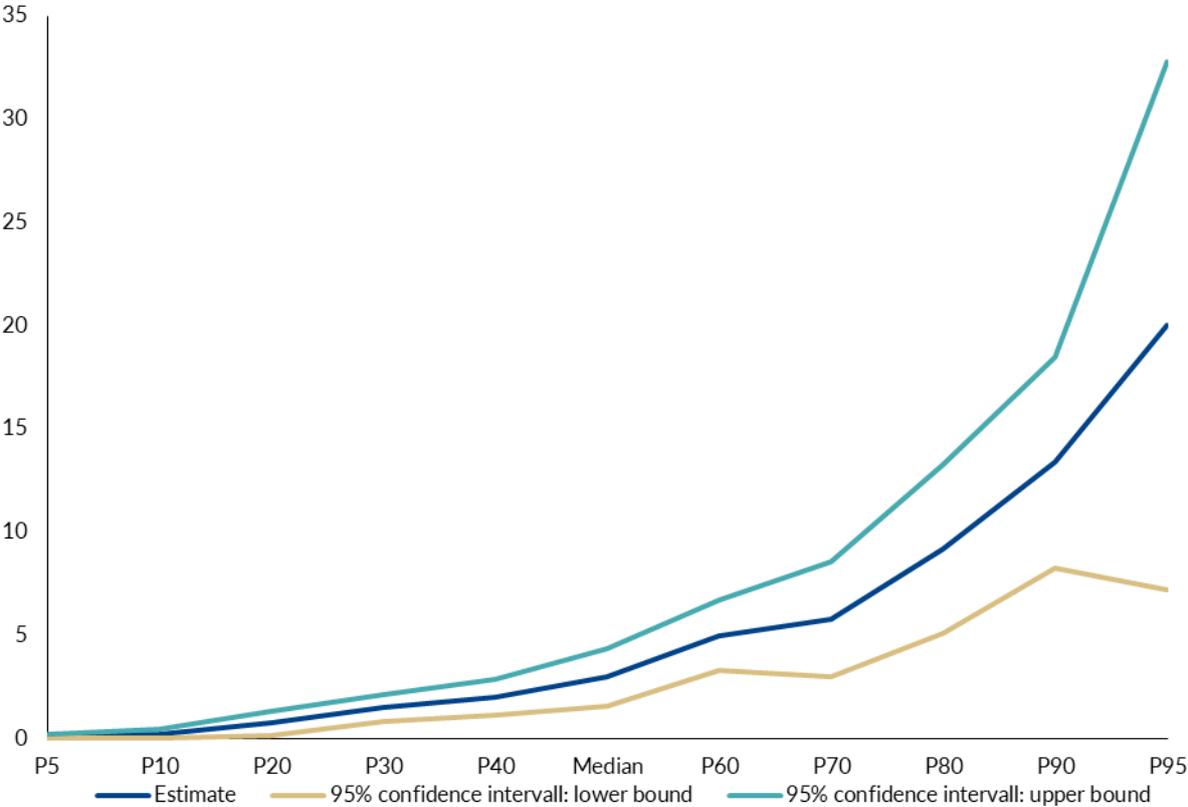
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<sup>8</sup> In the financial accounts, the household sector includes not only households in the narrow sense (as included in the HFCS) but also nonprofit institutions serving households (NPISHs), private foundations and unincorporated self-employed enterprises (e.g. sole proprietorships and partnerships without legal personality).

Chart 1

**Estimates of the value of crypto assets invested**

EUR thousand

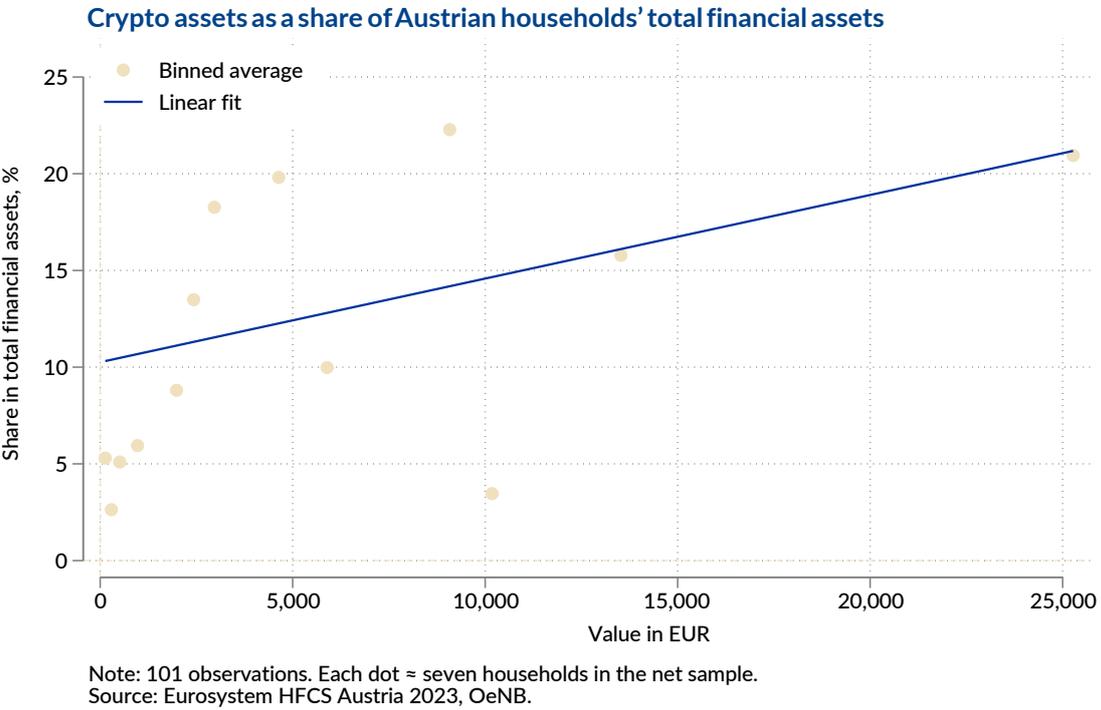


Source: Eurosystem HFCS Austria 2023, OeNB.

**4.2 Portfolio share of crypto assets**

Despite substantial variation in absolute crypto asset holdings, their share relative to total financial assets remains moderate across the distribution. As illustrated in chart 2, most households hold crypto assets amounting to less than 20% of their total financial wealth. Even for those households with larger crypto positions, the corresponding portfolio shares rarely exceed 20% to 25%. The fitted linear trend suggests a mild positive relationship between absolute crypto wealth and portfolio share, but the binned scatter remains wide and suggests high heterogeneity. These results imply that, for most Austrian households, crypto assets complement rather than dominate their financial portfolios.

Chart 2



### 4.3 Type of crypto assets

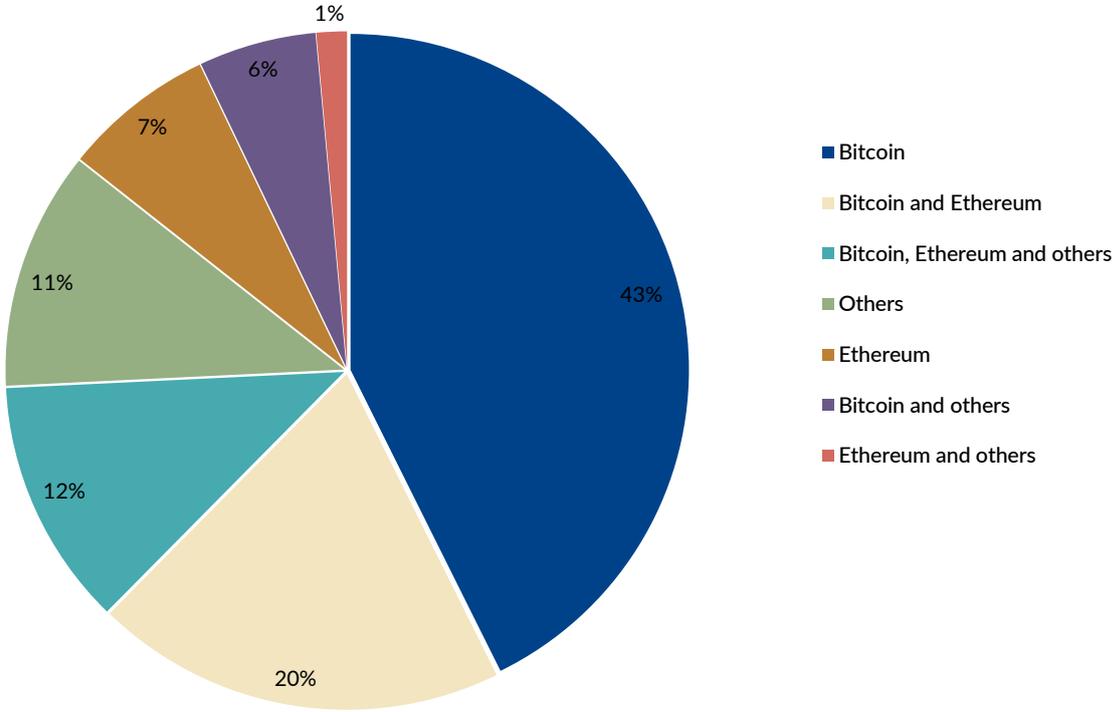
Chart 3 highlights the composition of crypto asset types held by Austrian households. While bitcoin remains the most widely held individual token, being reported as the only crypto asset held by 43% of crypto-holding households, it is also commonly held in combination with other crypto assets. Households holding both bitcoin and ether (20%) are followed by those reporting holdings in bitcoin, ether and other tokens (12%).

Ether is reported as the only crypto asset held by 7% of crypto-owning households, and as being held in other combinations, e.g. with bitcoin (20%) or with other tokens (1%), which raises its total incidence well above the share of ether-only holders. A notable 11% of households report holding only tokens other than bitcoin or ether, but remarkably, none of the other tokens mentioned include stablecoins.<sup>9</sup> Taken together, about 80% of crypto-holding households report holding bitcoin, and about 40% hold ether. This pattern suggests a strong concentration in well-established tokens.

<sup>9</sup> Stablecoins are a growing type of crypto assets that usually try to maintain a stable value in relation to means of payment in official currencies (Scotti, 2025). In the EU's Markets in Crypto-Assets (MiCA) legislative framework, these instruments are regulated as e-money tokens (EMTs).

Chart 3

**Crypto-holding households in Austria by type and combination of crypto assets held**  
% of crypto-holding households



Source: Eurosystem HFCS Austria 2023, OeNB.

## 5 Acquisition patterns and timing

Subsection 5.1 covers the timing of households’ first crypto acquisitions, highlighting the pandemic-era surge in 2020. Subsection 5.2 examines acquisition channels, showing the dominance of purchases via crypto exchanges over alternative methods.

### 5.1 Year of first acquisition

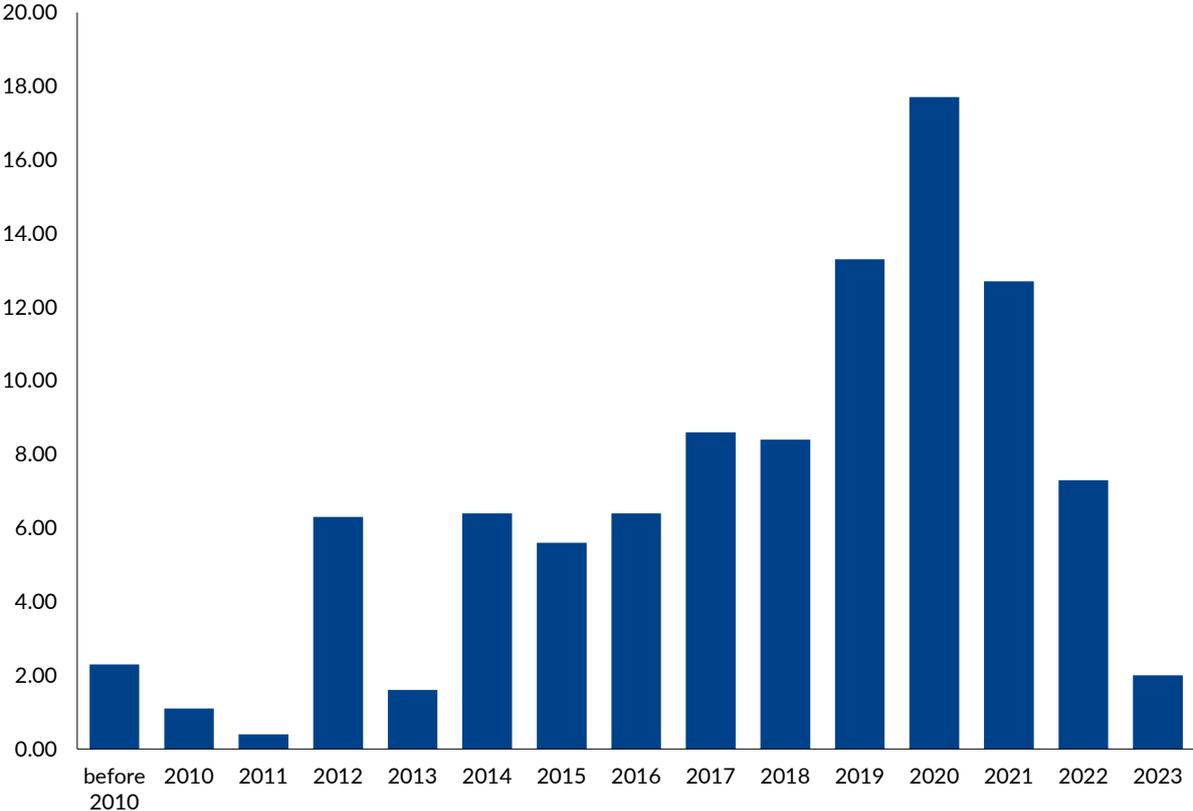
The distribution of first-time crypto purchases among Austrian households reveals a pronounced peak in 2020, followed by a gradual decline in subsequent years. Roughly one-third of crypto-holding households report their initial crypto asset market entry during the years 2019–2021, with 2020 alone accounting for nearly 18% of first acquisitions. This pattern suggests that the COVID-19 pandemic acted as a major catalyst for increasing supply and demand of novel forms of digital financial activities like trading crypto assets. Such timing is not unique to Austria: The surge in interest in online financial activities during the pandemic has been widely documented internationally; it is reflected in rising retail trading activity, including engagement in the crypto sector evidenced by record-breaking crypto app downloads, and spikes in Google searches for “bitcoin.” The sharp increase in online financial engagement during this period has been interpreted as a reaction to heightened economic uncertainty, a rise in time spent online and a general atmosphere of speculative enthusiasm. The subsequent decline in new crypto asset market

participation after 2021 may reflect market saturation, the cooling of the media hype and the onset of more bearish market conditions.

Chart 4

**Year of first crypto asset purchase by crypto-holding households in Austria**

% of crypto-holding households



Source: Eurosystem HFCS Austria 2023, OeNB.

**5.2 Acquisition channels**

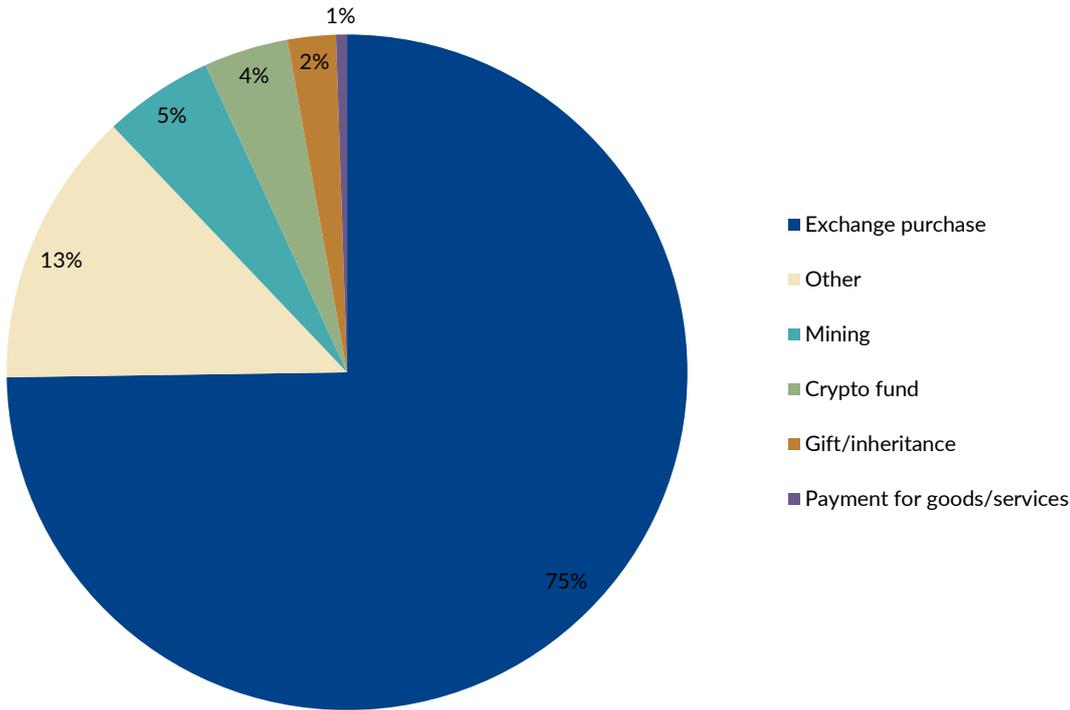
The dominant channel through which Austrian households acquire crypto assets is direct purchase via crypto exchanges, with 75% of all crypto-holding households in Austria reporting this as their primary acquisition channel. This finding highlights the central role of crypto trading platforms in facilitating household access to crypto assets. Alternative acquisition methods are comparatively rare: 5% report mining, 4% said they had purchased crypto via funds, 2% said they had received crypto assets as gifts or inheritance and only 1% said they had received crypto assets as payment for goods or services. A notable 13% report “Other” as their primary channel, which may reflect peer-to-peer transfers, the use of brokers or, most likely, misclassification (some of these respondents mention particular crypto firms or apps). Overall, the distribution suggests that crypto engagement among Austrian households is predominantly investment-oriented and channeled through specialized intermediaries rather than embedded in broader economic transactions or decentralized participation mechanisms such as mining.

The relevance of exchange-based acquisition is also reflected in administrative data. According to the Austrian Financial Market Authority (FMA, 2024), licensed virtual asset service providers (VASPs) in Austria reported around 300,000 Austrian customers in 2023, which corresponds to 3.2% of the population. While such figures include current and former customers, possibly with zero holdings, and

do not capture the Austrian clients of unregistered or foreign providers, they offer a complementary perspective to survey-based approaches. These data sources, though conceptually distinct and not representative of the overall (household) population, may prove valuable in future research for triangulating crypto asset ownership patterns and for better understanding user behavior on regulated trading platforms.<sup>10</sup>

Chart 5

**Primary channel through which Austrian households acquired crypto assets**  
% of crypto-holding households



Source: Eurosystem HFCS Austria 2023, OeNB.

## 6 Motives and perceptions of crypto asset ownership

This section summarizes the self-reported reasons why Austrian households hold crypto assets, grouping them into economic and social motives and highlighting the predominance of investment, curiosity and trend participation over payment or ideological uses.

HFCS wave 5 asked Austrian crypto asset owners to describe their motives for holding crypto assets in their own words. Among the motives mentioned by the close to one hundred respondents surveyed, there are both economic and (inter)personal reasons that motivated them to become crypto asset

<sup>10</sup> See also Saggese et al. (2023) for recent research on methods how to assess the solvency of crypto service providers based on other data sources.

owners. Using crypto assets as an investment object and being part of a social trend were cited as the leading motives within these two categories.<sup>11</sup>

The first group of reasons and motives has a strong economic component. About half the respondents (47) that hold crypto assets see crypto assets as an investment and hope for their market value to rise. One-third of them describe this motive by using terms like “speculation” or “making a quick buck,” which may point to an engagement in trading activities with a short-term investment horizon. A few respondents (4) cite diversification and some (6) mention that they associate crypto assets with some sort of safety. Seven respondents disclose that crypto has disappointed their initial expectations.

One dozen respondents mention that their perception of crypto assets as “digital money” influenced their buying decision. No more than three respondents say that they expect crypto assets to become a means of payment in the future. Two respondents became owners due to their involvement in crypto-related business activities.

The second group of motives cited by crypto asset owners may be categorized as primarily driven by personal and social concerns rather than by economic calculations. One-quarter of respondents (24) cite curiosity, one-fifth (18) wanted to be part of (and not miss out on) a trend and one in ten (9) followed a personal recommendation of another crypto asset owner. A few respondents mention an interest or expertise in technology (4). Eight respondents own crypto assets out of a desire to avoid banks.

As in our 2022 pretest for the 2023 HFCS and in previous studies, the desire to profit from changes in market value and (technical) curiosity represent major motives among crypto asset owners. In addition, the results of HFCS wave 5 provide evidence of the strong role of social dynamics (personal recommendations and fear of missing out on a trend) in inciting crypto asset market participation. The small minority of people among crypto asset owners who want to use crypto assets to make payments or to avoid, at all costs, involvement with banks in general shows no sign of growth over time.<sup>12</sup>

## 7 Crypto assets and the broader household portfolio

This section analyzes how crypto asset ownership fits into households’ wider portfolios, comparing participation in traditional risky asset markets and real estate, and examining patterns across the wealth and income distributions.

The share of Austrian households holding crypto assets (3.9%) is broadly in line with the traditionally low prevalence of direct holdings of riskier financial assets outside a small segment of households, with stocks being held by 6.4% of households and bonds by 3.2%.

Table 5 provides a detailed breakdown of crypto asset ownership in the context of broader household portfolios. Notably, crypto asset holders exhibit a markedly higher incidence of participation in risk-oriented financial instruments than the general population. For example, while only 6.4% of all Austrian households hold stocks, nearly one in four crypto asset holders (23.0%) does. Similarly, mutual funds are held by just 11.6% of Austrian households overall but by 24.3% of crypto asset holders. Life insurance

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<sup>11</sup> Note that responses may fall in more than one category, so numbers and shares mentioned in the text do not add up to 100%.

<sup>12</sup> The major motives cited by crypto asset owners in 2022 are the speculative prospect of profiting from changes in crypto asset prices (36% of the motives mentioned), curiosity about the new technology (27%) and an attempt to diversify their portfolios of risky assets (12%) (Fessler and Weber, 2024).

contracts show a comparable pattern, with 44.2% of crypto asset holders holding such products versus only 30.4% of the general population. These patterns suggest that crypto asset ownership is not a substitute but rather a complement to existing financial risk exposures.

The share of Austrian households holding risky assets – defined as stocks, bonds and/or mutual funds – is 16.6% among non-crypto asset holders, but rises to 39.0% among households holding crypto assets. Interestingly, crypto asset holders are more likely to own other (than the main residence) real estate (18.0%) than the overall population (11.9%), suggesting that crypto investments often form part of broader asset diversification strategies that include other real estate than the main residence.

These portfolio patterns align closely with the socioeconomic profile of crypto asset holders described above. The overrepresentation of younger, male and university-educated respondents among crypto asset owners coincides with the observed inclination toward risk-bearing financial instruments. The data thus support the interpretation that crypto assets are embedded within more actively managed and financially complex household portfolios, especially among the younger, more educated segments of the population.

Table 5

#### Conditional crypto asset ownership by household portfolio components

Portfolio component		% of component holding households	% of component holders holding crypto assets	% of crypto asset holders holding components	
Real assets	Vehicles	80.5	4.7	96.0	
	Main residence	48.2	4.3	52.5	
	Other valuables	18.0	9.2	41.7	
	Other real estate property	11.9	5.9	18.0	
	Investment in self-employed business (including farms)	5.2	8.9	11.7	
Financial assets	Sight accounts	99.7	4.0	100.0	
	Savings accounts	84.1	4.4	92.8	
	Savings plans	31.0	3.5	27.2	
	Life insurance contracts	30.4	5.7	44.2	
	Voluntary private pension plans	6.1	5.8	9.0	
	Mutual funds	11.6	8.3	24.3	
	Money owed to households	5.2	7.5	9.9	
	Stocks	6.4	14.3	23.0	
	Bonds	3.2	2.3	1.9	
	Crypto assets	3.9	100.0	100.0	
	Other financial assets	3.2	20.1	16.3	
	Debt	Collateralized debt	15.1	7.2	27.6
		Main residence debt	14.0	7.1	25.0
Other real estate property debt		1.3	13.0	4.4	
Uncollateralized debt		18.0	3.9	17.6	
Overdrafts		10.5	3.4	9.1	
Uncollateralized loans		9.7	3.8	9.5	
Loans from family and friends		4.0	4.6	4.6	
Outstanding balance on credit cards	2.2	8.6	4.7		

Note: Population-weighted, multiple imputed data.

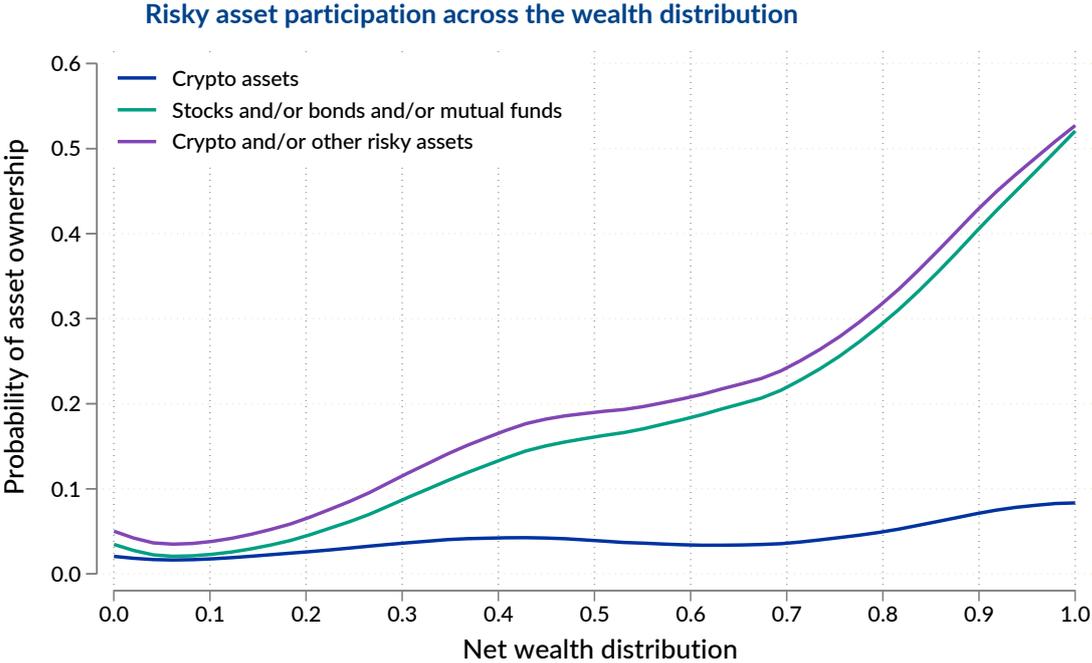
Source: Eurosystem HFCS Austria 2023, OeNB.

Charts 6 and 7 are based on local polynomial regressions of asset ownership indicators on the empirical cumulative distribution functions of net wealth and gross income, respectively. We employ degree-one local linear smoothers with bandwidths set to 10% of the sample to reduce boundary bias, applying population weights.

Chart 6 shows the estimated probability of asset ownership along the net wealth distribution. Participation in traditional risky financial assets, again defined as stocks, bonds and/or mutual funds, increases steeply with net wealth. Crypto asset ownership, in contrast, remains relatively flat across much

of the distribution and only begins to rise in the top wealth deciles. When combining both groups into a broader indicator of risky asset participation (crypto and/or traditional risky assets), the difference relative to traditional risky assets alone is largest in the lower half of the distribution. This suggests that crypto asset ownership contributes disproportionately to risky portfolio engagement among households with limited wealth. At the top of the wealth distribution, however, the gap narrows considerably, indicating that nearly all crypto asset holders in this segment also own traditional risky assets. Hence, among the wealthy, crypto asset holdings are fully embedded in broader risk-oriented portfolios.

Chart 6

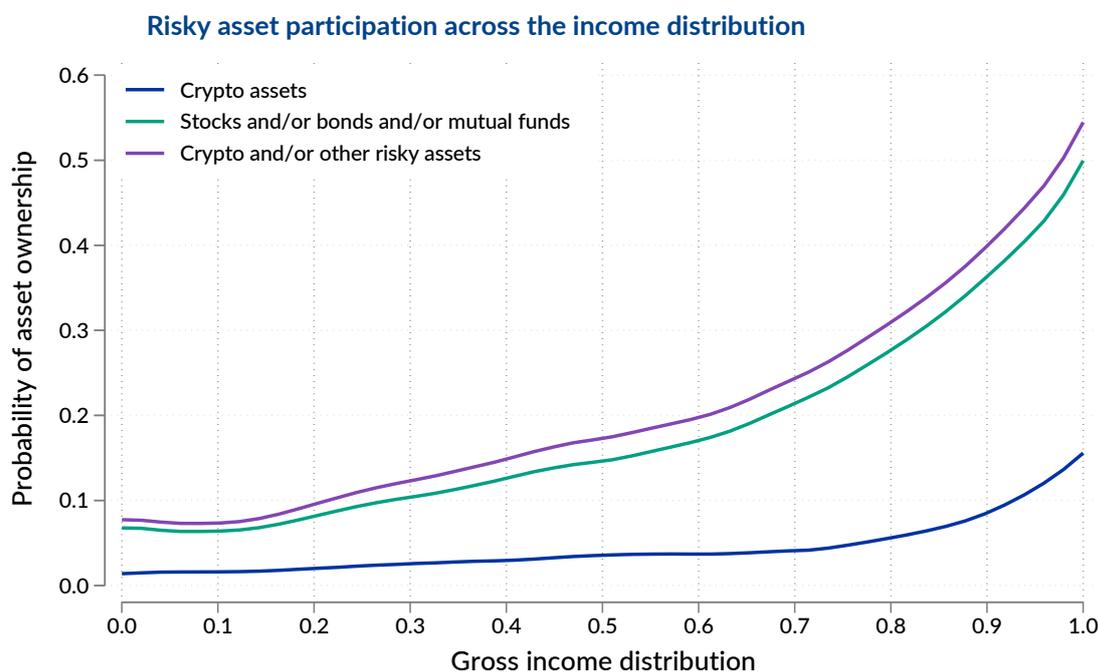


Source: Eurosystem HFCS Austria 2023, OeNB.

Chart 7 presents the same analysis along the gross income distribution. Compared to net wealth, the correlation between income and risky asset participation is more pronounced. The share of households holding traditional risky assets rises from below 5% in the lowest net wealth decile to over 50% at the top of the wealth distribution, and crypto participation increases more clearly with income than with wealth. At the top, virtually all crypto asset holders also own traditional risky assets. This underscores that crypto assets are not a substitute but an additive layer of portfolio risk exposure, particularly among higher-income households.

The evidence does not suggest that crypto asset holdings are primarily financed through debt or represent widespread speculative overreach among financially constrained households. Instead, crypto assets appear to complement rather than substitute traditional financial instruments. The observed association with higher income and wealth levels further underscores that crypto asset ownership tends to be concentrated in financially more resilient segments of the population, where it is integrated into more complex balance sheet structures that do not rely on debt finance to a significant extent.

Chart 7



Source: Eurosystem HFCS Austria 2023, OeNB.

## 8 Final remarks

This study offers the first representative evidence on household crypto asset ownership in Austria based on high-quality probabilistic wealth survey data. The main empirical findings reveal that only 3.9% of Austrian households currently hold crypto assets, with ownership being concentrated among younger, male, educated segments. Crypto asset holdings tend to be additive rather than substitutive in household portfolios, especially among higher-income and wealthier households, where crypto engagement is fully embedded in broader risk-taking behavior. Motivations for crypto asset ownership range from investment and speculation to curiosity and social dynamics – a finding that highlights the behavioral heterogeneity of the phenomenon.

Given crypto assets' low prevalence and moderate portfolio shares, direct systemic risk from households' crypto exposure currently appears limited. However, the observed correlation with traditional risk-bearing assets and signs of speculative engagement in some segments suggest that crypto may serve as both a signal of either technical or financial sophistication and a vector of behavioral risk. Continued financial education, particularly with regard to risk management and diversification, may be warranted – especially as these markets attract new cohorts of investors which are familiar with digital but not with financial activities.

From a regulatory perspective, information about crypto activities in the household sector can offer substantial benefits. Survey-based measurement remains indispensable for understanding the socioeconomic and behavioral context of participation in the crypto asset market – information that cannot be identified using blockchain data or reports by financial institutions. To this end, harmonized and representative household surveys such as the HFCS are essential complements to institutional

reporting systems, particularly as regulatory frameworks evolve and crypto assets become more integrated into mainstream finance.

Looking forward, the future role of crypto assets in household portfolios is even harder to predict from past data than other, more established asset classes, given the short history of their existence and the fast pace of change in crypto asset prices and market structures shaped by both policy and business activities. For central banks and supervisors, reliable data on households' crypto exposure will be key to monitoring emerging vulnerabilities, assessing the transmission of financial shocks and evaluating distributional impacts.

Further research should aim to track crypto asset dynamics over time, ideally through longitudinal data that allow for causal inference on crypto asset market entry, exit and crypto portfolio adjustments. In addition, greater attention to behavioral dimensions (such as motives, risk perception and peer effects) will be necessary to fully understand the drivers and implications of household participation in this – currently – rapidly evolving asset class.

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## Annex

### A.1 HFCS questionnaire items in Austria

English translation of questions on crypto assets (see [www.hfcs.at](http://www.hfcs.at) for the original questionnaire in German):

#### 4.17C AHD1720 – CRYPTO ASSETS

Do you or does any other household member own Bitcoin or similar crypto assets?

Interviewer: Please also record crypto assets held indirectly, e.g. through funds or derivatives.

- 1 – Yes, I do
  - 2 – Yes, another household member
  - 3 – Yes, both myself and another household member
  - 4 – No
  - 1 – Don't know
  - 2 – No answer
- If 4.17C = 1, 2, or 3, continue with 4.17D; otherwise skip to 4.19A.

#### 4.17D AHD1730 – VALUE OF CRYPTO ASSETS

What is the current total value of these crypto assets?

Numeric input in EUR; 9 digits.

- 1 – Don't know
- 2 – No answer

#### 4.17E AHD1740 – YEAR OF FIRST PURCHASE

In what year did you first purchase such crypto assets?

Numeric input; 4-digit year.

- 1 – Don't know
- 2 – No answer

#### 4.17F AHD1750 – MOTIVE FOR HOLDING CRYPTO ASSETS

Can you briefly explain the reason why you/your household hold(s) crypto assets?

Open-ended answer; 255 characters.

- 1 – Don't know
- 2 – No answer

#### 4.17G AHD1760x – TYPE OF CRYPTO ASSETS

Can you tell us which crypto assets you/your household hold(s)?

Interviewer: Multiple answers possible.

- 1 – Mentioned
- 2 – Not mentioned
- 1 – Don't know
- 2 – No answer

Variables:

- a - Bitcoin
- b - Ethereum
- c - Other: Open answer, list

#### **4.17H AHD1770x - ACQUISITION METHOD**

How did you/your household acquire the crypto assets?

Interviewer: Multiple answers possible. Record the most important method by value.

- 1 - Purchased through an exchange
- 2 - As payment for goods/services
- 3 - Mining
- 4 - Crypto fund
- 5 - Gift
- 6 - Other (please specify)
- 1 - Don't know
- 2 - No answer
- 4 - No further method

Variables:

- a) Main method by value
- b)-f) Additional methods

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