Bit by Bit: Household Characteristics of Cryptocurrency Owners — Early Evidence From the 2019 Survey of Consumer Finances

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Developments in financial technology over the past decade have increased the importance and use of cryptocurrency, though not much is known about the characteristics of cryptocurrency owners. Data on the ownership of cryptocurrency by U.S. households has recently been made available via the 2019 Survey of Consumer Finances. In the present research we identify key aspects that differentiate cryptocurrency owning households from those that do not. We find that households owning cryptocurrency tend to have a higher risk profile, especially pertaining to decisions concerning other investments, and demonstrate more financial acumen than households that do not own cryptocurrency. This has important implications as cryptocurrency ownership becomes more mainstream.

Keywords: cryptocurrency, household, Survey of Consumer Finances

INTRODUCTION

Cryptocurrency has gained traction as an investment in recent years. Investors can trade cryptocurrency in the marketplace indirectly through stocks of companies that own cryptocurrency or directly through online websites and mobile applications. This digital currency can also be exchanged for goods and services in locations in the United States and globally. Thus, understanding who currently participates in this market and why they participate is crucial to understanding the systematic behaviors the overall cryptocurrency market displays.

Prior research has suggested that retail investors strongly affect cryptocurrency markets and trading (Jain et al., 2019). However, there remains truly little specific information pertaining to these retail investors and their financial activities. The recent 2019 Survey of Consumer Finances (SCF) has provided one of the first glimpses into these retail investors, as it is the first year that cryptocurrency was added to the list of miscellaneous items a household could consider as an asset. The present research seeks to fill this gap in the literature by analyzing this new data and shedding light on the characteristics of U.S. households that choose to own cryptocurrency.

LITERATURE REVIEW AND HYPOTHESES

Satoshi Nakamoto created Bitcoin in 2008 and has become one of the most widely used and well-known cryptocurrencies (Chohan & Chohan, 2022). Since its creation however, the literature concerning this new type of asset remains quite sparse. Even so, cryptocurrency appears be taking on the characteristics of more traditional assets. "A cryptocurrency is a medium of exchange and a store of value, just like fiat currencies, though legally it is a security, and may be thought of as an asset class" (Das, 2019). Cryptocurrency markets generate returns just like other asset markets, and recent research has shown that these markets can be driven by momentum from investor's attention. Investors may buy more and thus increase the price when markets are performing well, or good news occurs; investors may also sell out of fear when markets perform poorly, or shocking news occurs (Subramanium and Chakraborty, 2020). The risk of cryptocurrency comes not from its production, but from the networks attached to its use (Liu and Tsyvinsky, 2021). This may be due in part to high trade volumes, especially by retail investors on the weekends (Jain et al., 2019). High trade volumes may also be due to the open manipulation of the cryptocurrency market to increase prices to facilitate large wealth transfers despite people's knowledge of substantial risk and high reward; this occurs because their risk-loving preferences are attributed to overconfidence and perception of investing as gambling (Dhawan and Putnins, 2022). Kim et al. (2022) also find cryptocurrency is more likely among overconfident investors. However, as demonstrated in Europe, this can be mitigated with smaller bid-ask spreads to improve market quality and increase decimal places to enhance price competition (Foley et al. 2022). Research also has demonstrated a high correlation among the returns of various cryptocurrencies (Hu et al., 2019).

Given the substantial risk and high reward nature of cryptocurrency due to its volatility in both price and volume, we hypothesize that households owning cryptocurrencies may also be retail investors interested in trading. Since this asset is so new and subject to more volatility in returns and risk, we also expect households who choose to invest in cryptocurrency to have a higher risk profile than other, more risk-averse investors, and thus households investing in cryptocurrencies may make bolder, and perhaps wiser, financial decisions since some financial acumen is required to attempt to understand this relatively newer (since 2010s) financial instrument.

DATA AND METHODOLOGY

The SCF attempts to collect a representative sample of diverse households through multistage area-probability sampling, using geography and an additional supplemental sample of wealthy households due to wealth inequality. The survey, however, may not be fully representative since there are no replacements included if households decline or do not complete the interview process.

The current SCF and data can be found at: https://www.federalreserve.gov/econres/scfindex.htm. To replicate the study, one would download all three data files from the Federal Reserve's website and merge them using the y1 and yy1 variables. The first file to start from (assuming one is using STATA) is rscfp2019.dta. Before proceeding, ensure the max number of variables is increased substantially (ex. 10,000). Merge this file with the file p1916.dta one-to-one by observation. Drop the _merge variable. Finally, merge the merged file with p19_rw1.dta one-to-one by the variables y1 and yy1. After dropping the _merge variable again, this process should yield 28,885 observations with 7,680 variables. Nielsen (2015) provides further information regarding this process in STATA.

As part of the survey, an interviewer asked each household to list other valuable assets they owned but were not previously mentioned, listing up to three additional assets. Using SCF questions 4020(#1), 4024(#2), and 4028(#3), a cryptocurrency indicator was created if the variable contains the code 85, which was used to denote cryptocurrency. SCF questions 4022(#1), 4026(#2), and 4030(#3) include a response for the total dollar value of the asset in question, for both the interviewee and the family living in the household. Note, there are no other previous findings as this is the first time the SCF has asked this question.

All survey responses are provided by the respondents to the surveyors, so their recollection is what the data are collected and therefore coded as such. For example, a respondent may state they have no

cryptocurrency but may have some, while another respondent may state they have a certain amount of cryptocurrency but be overstating or understating the amount. Thus, the data is by no means perfect in this regard but given the reputation and sampling techniques of this longstanding survey, we trust the data provided and understand there may be errors. This bias is reduced by the sampling size and other techniques discussed throughout the remainder of the paper.

We choose many of our variables following what the Federal Reserve summary reports from their website concerning the Survey of Consumer Finances. After summarizing the data in a format like other Federal Reserve reports, we attempt to discover what variables are most important concerning cryptocurrency ownership and valuation. We conduct t-tests of the means to see if there is really a difference in the variable value whether the household holds cryptocurrency or not. Once we distinguish a statistical difference in these measures individually, we consider groups of independent variables to assess to see what matters in a multivariate context to attempt to model the real world. We attempt to accomplish this by using ordinary least squares regression and probit regression for independent variables that are continuous and discrete in nature, respectively.

RESULTS

Table 1 describes the data concerning cryptocurrency. Of the total 28,885 observations, 0.2% of respondents indicated they had cryptocurrency as their largest other asset, 0.1% of respondents indicated they had cryptocurrency as their second largest other asset, and only two respondents identified cryptocurrency as their third largest other assets. The reported invested values of cryptocurrency ranged in U.S. dollars from 350 to 2.17 million.

TABLE 1
SUMMARY STATISTICS OF CRYPTO OWNERS

Cryptovalue	Observations	Minimum ($)	Median ($)	Mean ($)	Maximum ($)	Standard Deviation
SCF X4020 = 85 SCF X4026	80	500	10,000	1,499,588	2,170,000	5,261,963
SCF X4022 = 85 SCF X4028	25	350	1,200	26,739	130,000	52,698
SCF X4024 = 85, SCF X4030	2	5,000	5,000	5,000	5,000	0
Total	107	350	4000	1,127,528	2,170,000	4,588,055

The SCF added cryptocurrency to question codes X4020, 4022, and 4024 with the number 85. The respective values of cryptocurrency invested are reported in X4026, X4028, and X4030 corresponding to a household's other first, second, and third largest asset, respectively.

Table 2 describes the summary statistics of the dataset by comparing the means of owners versus non-owners of cryptocurrency on each variable. Of the 28,885 observations in the public data set, only 107 households reported owning any cryptocurrency. Interestingly, no females interviewed responded that they owned cryptocurrency. All crypto households reported having other nonfinancial assets, and all reported using online banks.

Younger heads of household were more likely to report owning cryptocurrency with 60% under the age of 45. It may be that these heads of household might be less likely to be married and/or not as far along in the family life cycle as demonstrated by the statistical significance of the famstruct variable. These heads of household also have a higher level of educational attainment than their counterparts. This is further

demonstrated by many crypto owners working in upper management or professional jobs. Also, most crypto owners were in the highest percentile category for income.

TABLE 2
DIFFERENCES IN MEANS BETWEEN CRYPTO OWNERS AND NON-CRYPTO OWNERS

Variable	No Crypto (n=28,778)	Own Crypto (n=107)	T-stat
Income	971646.3	706346.4	0.3
Networth	13500000	6942906	0.9
Levratio	30.9	0.5	0.2
Agecl	3.4	2.2	8.3*
Edcl	3.1	3.7	-6.5*
Racecl	1.3	1.3	0.7
Occat1	1.8	1.6	2.4
Occat2	2.3	1.4	7.9*
Ninccat	3.7	4.3	-3.5*
Housecl	1.3	1.3	-0.6
Nwcat	3.1	3.4	-2.1
Famstruct	3.6	3.1	4.2*
Fin	4781491	1633926	1.0
Liq	359885.3	189289.1	0.8
Cds	54942.22	424051.3	-0.5
Savbnd	1726.7	0	0.5
Bond	168857.8	0	0.7
Stocks	1192869	582048.6	0.6
Nmmf	1883205	513931.8	0.6
Retqliq	387026.4	314864.4	0.6
Cashli	85812.6	9859.8	0.8
Othma	548168.8	11682.2	0.6
Othfin	98997.4	1729.0	0.5
Nfin	8998967	5820821	0.5
Vehic	95862.6	39276.6	0.6
Houses	724143.8	837757	-0.4
Oresre	500270.6	377149.5	0.3
Nnresre	310256.2	57943.93	0.5
Bus	7185872	3124346	0.7
Mrthel	138499.3	381205.6	-4.8*
Resdbt	53775.2	99439.3	-0.8
Othloc	33910	3177.6	0.2
Edn_inst	7303.5	16702.8	-3.6*
Veh_inst	17047.0	4241.1	0.3
Oth_inst	9962.7	2575.7	0.2
Ccbal	2811.9	4359.8	-1.9

Odebt	34523.4	140.2	0.3
Debt2inc	1.2	2.2	-1.5
Pirtotal	0.5	0.2	0.2
Variable	No Crypto (n=28,778)	Own Crypto (n=107)	T-stat
Turndown	0.1	0.05	1.7
Feardenial	0.1	0.09	0.5
Turnfear	0.2	0.1	0.6
Late	0.1	0.09	0.5
Late60	0.04	0.05	-0.3
Hpayday	0.02	0	1.6
Bnkruplast5	0.02	0	1.4
Noccbal	0.6	0.6	0.5
Finlit	2.3	2.8	-6.0*

*Due to issues concerning the coefficients and standard errors of the model because of the sample's estimated and imputation, only t-statistics above the absolute value of three are reported significant to ensure the analysis is conservative in its claims.

Concerning debt, crypto owners had more debt in both housing mortgages and educational loans. This makes sense given we had previously determined the life cycle profile of crypto owners tends toward younger individuals who may not have children. Also, since they are younger, they may not have had as much time nor generated as much income or savings yet to pay off student loans.

Heads of household reporting cryptocurrency earnings scored higher on the BIG3 financial literacy quiz than non-crypto owners. Hackethal et al. (2022) confirm this finding with a different dataset that shows cryptocurrency investors are active traders who hold risky stocks based on technical analysis; they tend to adopt new and riskier securities more than the average investor.

Table 3 delves deeper into more specifics regarding characteristics of just the cryptocurrency owners, regardless of if the prior results demonstrated statistical significance. Panel A demonstrates all the crypto owners are under age 64 with the majority born after 1984. Panel B shows the education level of most crypto owners is at least some college with no one from the no high school diploma category. Panels C and D shows most individuals owning crypto are either employed or self-employed in managerial or professional jobs, respectively.

TABLE 3
FURTHER CLASSIFICATIONS OF CRYPTO HOUSEHOLDS

Panel A: Agecl						
	18-34	35-44	45-54	55-64		
Total	40	25	27	15		
Percent	37%	23%	25%	14%		
Panel B: Edcl						
	HS Grad	Some college or Assoc. degree	College grad or more			
Total	10	12	85			
Percent	9%	11%	79%			
Panel C: Occat1						
	Employee	Self-Employed	Other/not working	55-64		
Total	55	47	5			
Percent	51%	44%	5%			

Panel D: Occat2						
	Managerial/ Professional	Technical, sales or services	Other occupation	Retired or other not working		
Total	87	5	10	5		
Percent	81%	5%	9%	5%		
Panel E: Nwcat						
	Less than 25	25-49.9	50-74.9	75-89.9	90-100	
Total	11	27	14	20	35	
Percent	10%	25%	13%	19%	33%	
Panel F: Famstruct						
	Single w/ children	Single, no child, age < 55	Single, no child, age >= 55	Couple w/ children	Couple, no child	
Total	2	50	5	35	15	
Percent	2%	47%	5%	33%	14%	
Panel G: Ninccat						
	Less than 20	20-39.9	40-59.9	60-79.9	80-89.9	90-100
Total	15	11	9	17	5	50
Percent	14%	10%	8%	16%	5%	47%
Panel H: Racecl						
	White non-Hispanic	Hispanic or Latino	Other or multiple races			
Total	87	10	10			
Percent	81%	9%	9%			
Panel I: Houses						
	Owner	Renter/other				
Total	70	37				
Percent	65%	35%				
Panel J: Mrthel						
	No	Yes				
Total	52	55				
Percent	49%	51%				
Panel K: Edn_inst						
	No	Yes				
Total	67	40				
Percent	63%	37%				
Panel L: Finlit						
	1	2	3			
Total	5	12	90			
Percent	5%	11%	84%			

Table 3 Panel E shows the percentile of net worth. This is relatively spread out, but the largest category is the highest decile. Panel F presents family structures. Most crypto owners are either single or the households are couples with child(ren). Panel G demonstrates income percentiles. The majority again occur in the highest decile. Thus, both households who are generationally wealthy and currently better off are more likely to engage in riskier transactions involving cryptocurrencies.

Panel H breaks down cryptocurrency ownership in terms of race/ethnicity. Most owners are White and not Hispanic. Panel I shows home ownership with the majority owning homes. Panel J demonstrates whether crypto owners have a mortgage, and this is split almost 50/50. Panel K considers whether crypto

owners have educational loans with a slight majority having none and/or recently paid them off. Panel L shows the scores from the BIG3 financial literacy quiz. While no one who failed the quiz bought cryptocurrency in 2019, the overwhelming majority of those who purchased cryptocurrency scored perfectly on the test.

We now turn to examining what causes households to engage in this risky investing behavior through the channel of buying, selling, and/or trading in the speculative cryptocurrency market. We use Pence's (2015) SCFCOMBO procedure in STATA to ensure coefficients and standard errors are corrected. In the following models, data are imputed five times and errors are bootstrapped 200 times. Since owncrypto is an indicator variable, those models will use probit regressions.

Table 4 presents the results. Note, occat2 was included but had to be dropped for the results to be run because of the bootstrapping required to achieve corrected standard errors. We also convert mrthel to an indicator variable (hmrthel) and the same for student loans (edn_inst to hedn_inst). Last, we break down the famstruct variable into two additional indicator variables: Children and Partner. There are four variables that remain statistically significant at the 5% level in a multivariate context: agecl, nwcat, finlit, and partner. As age increases, the likelihood of a household owning cryptocurrency decreases. As net worth increases, the likelihood of a household owning cryptocurrency increases. As financial literacy increases, the likelihood of a household owning cryptocurrency increases. Individuals with a partner are less likely to invest in cryptocurrency. Thus, it seems cryptocurrency markets are highly concentrated among younger individuals who are financially savvy enough to have high net worth. Therefore, we can generally say that it seems new money is entering into cryptocurrency markets. The owners of this capital are knowingly seeking higher return for higher risk and willing to do so. This will be further confirmed momentarily when we discuss other behaviors self-disclosed in the survey concerning risk tolerance and risk scenarios.

TABLE 4
CHARACTERISTICS OF CRYPTO OWNERS

owncrypto	Coefficient	Std. err.	z	P>z	[95% conf.	interval]
levratio	-.0107493	.0401715	-0.27	0.789	-.0894839	.0679854
agecl	-.3436441	.0898383	-3.83	0.000	-.519724	-.1675643
edcl	.2781347	.1844701	1.51	0.132	-.08342	.6396895
racecl	.0296397	.2080435	0.14	0.887	-.378118	.4373974
occat1	.091176	.0737942	1.24	0.217	-.0534579	.23581
housecl	.2675912	.7330706	0.37	0.715	-1.169201	1.704383
nwcat	.1908884	.081123	2.35	0.019	.0318902	.3498866
children	-.4289482	.3125178	-1.37	0.170	-1.041472	.1835755
partner	-.5608178	.2466797	-2.27	0.023	-1.044301	-.0773346
ninccat	.0042114	.0859805	0.05	0.961	-.1643073	.17273
hmrthel	.3913857	.7364935	0.53	0.595	-1.052115	1.834886
hedn_inst	-.0217314	.1979813	-0.11	0.913	-.4097676	.3663049
finlit	.2496123	.1279054	1.95	0.051	-.0010778	.5003023
cons	-4.294368	1.768822	-2.43	0.015	-7.761196	-.8275405

We next consider specific coded questions concerning behavioral decisions households would make given certain circumstances concerning scenarios involving time and/or risk. These regressions consider four models for each question based on Likert scales. Because of this we use ordinary least squares, so the standard error bootstrap correction procedure runs appropriately. We also include the owncrypto variable to see how this interacts with behaviors.

Table 5 addresses whether a household is generally willing to take risk (x7557). Higher numbers mean more likely to take risk. There are several statistically significant variables that provide causation considerations for us to discuss. First, as age increases, the likelihood of taking risk decreases. Higher

education and/or having educational loans increases risk taking. Interestingly, race also is statistically significant, which means more non-whites and Hispanics are likely to take risk given this model. Occat2 is also significant but trends more toward individuals in management and professional roles. Individuals with houses and/or higher wealth are more likely to take risk. As families tend toward having children, risk levels increase. Higher income affords individuals to take more risk. Individuals who are more financially literate take more risk. Lastly, owning cryptocurrency increases general risk-taking. Thus, we have now seen several links connecting cryptocurrency to higher risk, both theoretically and practically.

TABLE 5
GENERAL RISK-TAKING BEHAVIORS

x7557	Coefficient	Std. err.	z	P>z	[95% conf.	interval]
levratio	-.0000594	.000124	-0.48	0.632	-.0003025	.0001837
agecl	-.3495935	.0312043	-11.20	0.000	-.4107529	-.2884341
edcl	.1375903	.0390589	3.52	0.000	.0610363	.2141444
racecl	.4234317	.063154	6.70	0.000	.2996521	.5472114
occat1	.0192393	.052103	0.37	0.712	-.0828808	.1213594
occat2	-.102255	.0424689	-2.41	0.016	-.1854926	-.0190175
housecl	.4984502	.1141761	4.37	0.000	.2746692	.7222313
nwcat	.5447982	.0428361	12.72	0.000	.460841	.6287555
children	-.3083878	.0843445	-3.66	0.000	-.4737	-.1430756
partner	.0911396	.0733778	1.24	0.214	-.0526783	.2349575
ninccat	.2429194	.0351768	6.91	0.000	.1739741	.3118646
hmrthel	.173915	.0997618	1.74	0.081	-.0216145	.3694445
hedn_inst	.2506839	.0731236	3.43	0.001	.1073642	.3940035
finlit	.2062445	.0415605	4.96	0.000	.1247875	.2877015
owncrypto	1.612654	.2545226	6.34	0.000	1.113799	2.111509
_cons	1.190773	.3421832	3.48	0.001	.5201061	1.861439

Table 6 considers if a household is willing to take risk when saving or making investments (x3014). Higher numbers mean lower risk and return expectations. Similar results hold to the previous question. Note, this question is coded in the opposite direction, so signs are opposite. Thus, higher age yields higher risk aversion when investing. Having education and/or educational loans (at the 95% confidence level) decreases risk aversion when making investments or saving. Managers and professionals are less risk averse, as are individuals with higher incomes and/or overall net wealth. Households with partners and/or children are less likely to take on more risk. Individuals who are financially literate and/or own cryptocurrency are willing to take risk for higher returns in their saving and investing decisions. This demonstrates yet another channel through saving behavior that demonstrates owning cryptocurrency is a way for consumers to satisfy their risk appetites.

TABLE 6
RISK-TAKING WHEN SAVING OR MAKING INVESTMENTS

x3014	Coefficient	Std. err.	z	P>z	[95% conf.	interval]
levratio	.0000106	.0000438	0.24	0.809	-.0000752	.0000964
agecl	.1268578	.007833	16.20	0.000	.1115054	.1422103
edcl	-.0718094	.0099805	-7.19	0.000	-.0913708	-.052248
racecl	-.0118393	.0174485	-0.68	0.497	-.0460377	.0223591
occat1	-.024227	.0153669	-1.58	0.115	-.0543455	.0058915
occat2	.0487122	.0121663	4.00	0.000	.0248666	.0725577
housecl	-.1557737	.0301372	-5.17	0.000	-.2148415	-.0967059
nwcat	-.1422334	.0159057	-8.94	0.000	-.1734081	-.1110587
children	.0863738	.0195184	4.43	0.000	.0481183	.1246292
partner	.0478286	.0225214	2.12	0.034	.0036875	.0919698
ninccat	-.0812579	.011163	-7.28	0.000	-.103137	-.0593788
hmrthel	-.0530601	.0234384	-2.26	0.024	-.0989986	-.0071216
hedn_inst	-.0645056	.0274266	-2.35	0.019	-.1182609	-.0107504
finlit	-.0956634	.0103124	-9.28	0.000	-.1158754	-.0754514
owncrypto	-.4808791	.1204394	-3.99	0.000	-.7169359	-.2448222
_cons	3.875837	.081697	47.44	0.000	3.715713	4.03596

Table 7 asks the question about time framethe respondent is planning for in their budgeting, saving, and spending (x3008). Longer time frames are represented by higher numbers. The results demonstrate that as age, likelihood to be non-white, mortgage debt, and educational debt increases, time horizons for decisions are shorter. This naturally makes sense for age as there is naturally less time. Debt prohibits individuals from thinking longer-term. Interestingly, non-Whites and Hispanics make decisions more focused on the short-term than the long-term. Variables causing longer-term decision-making include education, net worth, family structures, income, financial literacy, owning cryptocurrency. Individuals who have the means, either through financial capital or intellectual capital through education and/or financial acumen, focus more on the long-term. Individuals who have partners focus more on the long-term whereas households with children focus more on the short-term. Once again, we see crypto owners exhibiting behaviors that embrace risk, and it is good to see these individuals are playing the long game in terms of both their saving and investing decisions. However, this is not the case as more individuals are involved in the household, particularly dependents.

TABLE 7
TIME HORIZON AND PLANNING FOR SAVING AND SPENDING

x3008	Coefficient	Std. err.	z	P>z	[95% conf.	interval]
levratio	-.0000165	.0000496	-0.33	0.739	-.0001136	.0000806
agecl	-.0341848	.0112125	-3.05	0.002	-.0561609	-.0122087
edcl	.0701465	.0158893	4.41	0.000	.0390041	.1012889
racecl	-.0938725	.0282328	-3.32	0.001	-.1492077	-.0385372
occat1	-.0406365	.0227421	-1.79	0.074	-.0852103	.0039373
occat2	-.0197182	.0200915	-0.98	0.326	-.0590968	.0196603
housecl	-.0943685	.0483551	-1.95	0.051	-.1891427	.0004057
nwcat	.2009178	.0217297	9.25	0.000	.1583284	.2435072
children	-.1799885	.033821	-5.32	0.000	-.2462764	-.1137006
partner	.0798116	.0387707	2.06	0.040	.0038223	.1558009
ninccat	.094556	.0153582	6.16	0.000	.0644545	.1246575
hmrthel	-.1147506	.0415065	-2.76	0.006	-.1961018	-.0333993
hedn_inst	-.1124772	.0363942	-3.09	0.002	-.1838085	-.041146
finlit	.0400844	.021054	1.90	0.057	-.0011807	.0813495
owncrypto	.6269879	.1712524	3.66	0.000	.2913393	.9626365
_cons	2.36844	.1147133	20.65	0.000	2.143606	2.593274

Table 8 looks at when asset values increase if the household would plan to spend more money. Higher numbers mean a stronger "no" to this question. The only two statistically significant variables in the positive direction are age and financial literacy. Older individuals spend less in boom times, perhaps because they are on a fixed income. Individuals who have more financial knowledge also do not spend more. The opposite is true for the following variables: race, home ownership, net worth, partner, and owning cryptocurrency. Interpreting this for race means White and/or non-Hispanic individuals spend more in good economic times instead of saving. Renters also spend more. Individuals with lower net worth spend more because they feel richer. Individuals with less constrained family situations (i.e., singles) spend more. This is also true for owners of cryptocurrency. Anecdotes for this tend to make sense since booming times usually mean higher values for currencies and easier liquidity to cash out and purchase other expensive items, such as educational tuition, vehicles, or real estate.

TABLE 8
SPENDING WHEN TIMES ARE GOOD

x6789	Coefficient	Std. err.	z	P>z	[95% conf.	interval]
levratio	.0000213	.0000356	0.60	0.549	-.0000484	.000091
agecl	.0560785	.0149174	3.76	0.000	.0268409	.085316
edcl	.0112436	.016851	0.67	0.505	-.0217837	.0442709
racecl	-.1062263	.0375889	-2.83	0.005	-.1798991	-.0325534
occat1	.0187744	.0238798	0.79	0.432	-.0280292	.065578
occat2	-.0085551	.0246274	-0.35	0.728	-.056824	.0397138
housecl	-.3685772	.0506283	-7.28	0.000	-.4678069	-.2693475
nwcat	-.057947	.0192474	-3.01	0.003	-.0956712	-.0202229
children	-.043013	.0366354	-1.17	0.240	-.1148171	.0287911
partner	-.1080085	.0373745	-2.89	0.004	-.1812612	-.0347559
ninccat	-.0145198	.0175449	-0.83	0.408	-.0489072	.0198677
hmrthel	.0073511	.0420321	0.17	0.861	-.0750303	.0897325
hedn_inst	.0062596	.0461394	0.14	0.892	-.084172	.0966911
finlit	.0760051	.0163099	4.66	0.000	.0440383	.1079719
owncrypto	-.5546422	.2019243	-2.75	0.006	-.9504067	-.1588778
_cons	4.18345	.1605713	26.05	0.000	3.868736	4.498164

One last consideration to make is to ensure that this is a phenomenon all on its own. Table 9 considers crypto owners and their other investments in nonfinancial assets. We see this only occurs in 44 other instances and given this question is asked three different times and/or has three different responses, we see only 27 respondents providing an additional response besides something other than cryptocurrencies (25% of the cryptocurrency sample). By the second time the question is asked, 70 respondents have no more responses, and 100 respondents have no more responses for the third question. Those who have more nonfinancial assets typically go to gold, silver, or other metals (15). Nine have antiques and furniture. There are four last categories with five apiece that invest in items such as art, technological equipment, jewelry, and other forms of physical or digital cash, respectively. Therefore, we are confident we have a captured a separate phenomenon not documented in the literature previously concerning U.S. consumer finances.

TABLE 9
BREAKDOWN OF NONFINANCIAL ASSETS OF CRYPTO OWNERS

x4020	
Metals	10
Antiques	7
Art	5
Equipment	5
Crypto	80
x4024	
Nothing else	70
Metals	5
Jewelry	5
Antiques	2
Crypto	25
x4028	
Nothing else	100
Other cash	5
Crypto	2
Total Instances	
Metals	15
Jewelry	5
Antiques	9
Art	5
Other Cash	5
Equipment	5
Crypto	107

DISCUSSION

In this early stage of the cryptocurrency markets, we can infer households interested in this asset are those willing to take risk. These households are younger and have grown up with technology and are therefore more likely to consider this risky new type of asset. They are more likely to invest and/or have substantial amounts of cryptocurrency in their accounts. These households have some economic means because they are also invested and trade actively in the stock market, as well as the housing market, due to the significance of using mortgage debt or refinancing mortgage debt on their house or houses. They are even using this cryptocurrency to borrow even more and purchase other assets, including more cryptocurrency (Dwyer, 2021).

There are a couple of major takeaways from the findings. First, individuals involved in personal financial advising should note that their clients who have a high-risk tolerance may be interested in investing with cryptocurrency. This information can be used to create a portfolio that includes diversification with cryptocurrency of potentially both indirect exposure by investing in stocks of companies who hold cryptocurrency and direct exposure by directly investing in a variety of cryptocurrencies or a basket of them. Second, regulators should note this population is willing to take considerable risk in hopes of achieving a higher reward. While this is not necessarily the case, this type of behavior needs careful

consideration from regulators to ensure a fair marketplace and to prevent individuals from taking advantage of novice retail investors. While the current marketplace for cryptocurrency seems like gambling now due to high volatility (Liu & Tsyvinski, 2021), this will not always be the case and the government along with other lawmakers should ensure fair marketplace practices exist to ensure efficient markets and prevent an environment where fraud is rampant to ensure price discovery can be achievable. Otherwise, a market collapse would be detrimental to these investors in both losing their wealth but also their faith and trust in both the financial system and government.

CONCLUSION

As cryptocurrency becomes more mainstream, it will be interesting to see if households gain a wider acceptance of this new investment or if the trends will continue and exacerbate over time, further widening the gap of the financially literate or households' willingness to take on risk. Future studies should compare with other data, like the triennial SCF, to see what more we can glean from household characteristics of cryptocurrency owners. Also, it will be interesting to see how the economic values of their actual ownership and investment in cryptocurrency have shifted since 2019 due to the COVID-19 pandemic and other trends that have taken place since, such as more active day trading and the decentralization of finance through other phenomena, such as Reddit or other guru investors.

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APPENDIX

VARIABLE DEFINITIONS

Variable	Definition
Owncrypto	Indicates if the household owns any crypto
Cryptovalue	Amount of cryptocurrency (in dollars) the household owns
Income	Total family cash inflows
Networth	Total assets minus total debt of the family
Levratio	Total family assets divided by total family debt multiplied by 100
Agecl	Cluster of the respondents' ages
Edcl	Cluster of the respondents' highest level of education achieved
Racecl	Cluster of the respondents' race and/or ethnicity
Occat1	Current work status of the head of household
Occat2	Current occupation of the head of household
Ninccat	Percentile of usual income
Housecl	Housing status
Nwcat	Percentile of net worth
Famstruct	Family structure of the household
Fin	Any financial asset
Liq	Transaction accounts
Cds	Certificates of deposit
Savbnd	Savings bonds
Bond	bonds
Stocks	Stocks
Nmmf	Pooled investment funds
Retqliq	Retirement accounts
Cashli	Cash value life insurance
Othma	Other managed assets
Othfin	Other financial assets
Nfin	Any nonfinancial asset
Vehic	Vehicles
Houses	Primary residence equity
Oresre	Other residential property
Nnresre	Equity in nonresidential property
Variable	Definition
Bus	Business equity

Mrthel	Primary residence debt
Resdbt	Other residential property debt
Othloc	Lines of credit not secured by residential property
Edn_inst	Education loans
Veh_inst	Vehicle loans
Oth_inst	Other installment loans
Ccbal	Credit card balances
Odebt	Other debt
Debt2inc	Debt to income ratio median
Pirtotal	Payment to income ratio median
Turndown	Turned down for credit
Feardenial	Did not apply for a loan out of fear for denial
Turnfear	Turned down or did not apply out of fear for denial
Late	Late on payments
Late60	Late on payments 60 days or more
Hpayday	Payday loan
Bnkruplast5	Declared bankruptcy in the past five years
Noccbal	Use credit cards for convenience only
Finlit	Score on the BIG3 personal financial literacy quiz
Children	Household has dependents under the age of 18
Partner	Respondent has a significant other living with them