

DISCOVERING INSTITUTIONAL DEMAND FOR DIGITAL ASSETS IN DACH REGION

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Demelza Hays
Head of Research

Cointelegraph

Dr. Philipp Sandner
Professor

Frankfurt School
Blockchain Center

Dr. Alfred Taubes
Professor

Austrian Blockchain
Center



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DEMELZA HAYS

Head of Research at Cointelegraph

Demelza Hays is the director of research at Cointelegraph, Forbes 30 Under 30, U.S. Department of State Fulbright Scholar, and former fund manager of two regulated crypto funds.

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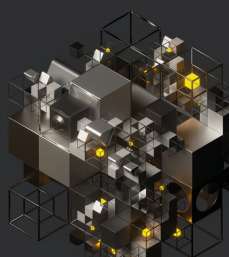


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Dear Clients, Investors, and Friends

Cointelegraph Research proudly presents the first Discovering Institutional Demand for Digital Assets Report. To gain a deeper understanding of how professional investors feel about blockchain assets, this 70+ page research report written by eight authors in four countries highlights which crypto assets wealthy investors in the German-speaking regions already own and which ones they plan to buy in the coming months. The 1990s Internet boom attracted talented labor and capital from all over the world to California. In a similar fashion, the German-speaking region is one of the main hubs of blockchain innovation due to regulations built with the entrepreneur in mind, capital from investors, and banking access for blockchain companies.

Some investors hold cryptographic assets for speculation rather than for use as a medium of exchange. They hope to “front-run” Wall Street and other big pockets by buying in before they enter the market. Putting the fear of missing out aside, there are genuine reasons to be excited about institutional investors joining the space. Institutional investors hold the majority of the world’s wealth. The sheer size of the wealth managed by professional investors like pension funds, university endowments, and insurance companies is enough to have a dramatic impact on the entire digital asset industry if they enter the market. For years, there have been rumors that institutional investors were starting to buy cryptocurrencies, and now, the academic survey contained in this report provides evidence that this rumor is true.

Please enjoy reading the first research report ever written on the level of interest in blockchain assets by professional investors in the German-speaking regions of Europe. This is Cointelegraph Research’s 5th report published in 2020. Cointelegraph Research helps blockchain companies communicate their cutting-edge research to the world by writing, designing, and publishing professional reports. We help companies gain wider audiences by developing educational materials in the form of in-depth reports. Our team of academics and seasoned blockchain technologists can cover a diverse range of topics including tokenomics, macroeconomics, legal, tax, central bank digital currencies, decentralized finance, supply chain logistics, and venture capital. To work with Cointelegraph Research’s team on creating a one-of-a-kind report, contact us at research@cointelegraph.com.

Sincerely, Demelza Hays
Head of Research at Cointelegraph

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SECTION 01

INTRODUCTION

Institutional investors hold the majority of the world's wealth. Their interest in digital assets is a fundamental driver of trading volume, prices, and innovation. To understand the demand for institutional-grade and blockchain-inspired investment vehicles, Cointelegraph and the Crypto Research Report present a landmark study on over 55 registered professional investors including pension funds, insurance companies, banks, asset managers, and family offices. We discuss how much professional investors have already invested, how much they expect to invest over the next year, and what sectors of the industry are attracting the most investment. In juxtaposition to the demand, the report covers the supply of investment vehicles in the crypto asset space by documenting what products exist, what their assets under management are, returns and risks. This helps investors to learn about the products that are currently available and which ones are the most popular. This report can also help business development teams that are considering entering the cryptocurrency space by highlighting the gaps in product offerings. There are several products that are being demanded by institutional investors that are not currently on the market. The report also highlights how current products can improve in order to better suit institutional needs.

HIGHLIGHTS

- The total assets under management managed by the 55 asset allocators that participated in the survey is over €719 billion, which is more than double the entire market capitalization of the digital asset market. Out of those professional investors, 36% already have blockchain-inspired assets in their portfolio either through direct investment in cryptocurrencies, stablecoins, and security tokens or via funds, structured products, or futures.
- The respondents in the survey are managing at least €6 billion in blockchain investments or roughly 2% of the entire digital asset market capitalization.
- Out of the remaining 64% that have not yet invested, 39.29% plan to invest. This results in 61.15% of professional investors in the survey either already owning digital assets or planning to buy in the future.
- Bitcoin and Ethereum are still the most dominant cryptocurrencies. Around 88% and 75% of respondents exposed to cryptocurrencies have invested in these cryptocurrencies, respectively. However, institutional investors appear to be increasingly interested in security tokens. Out of the 39% of investors that plan to invest in the future, security tokens were more popular than Ethereum and other alternative coins.
- Smaller asset allocators, such as family offices and boutique wealth management companies, are more likely to invest in digital assets than larger financial service providers, such as banks and pension funds.
- There is still unmet demand for financial services and products. Survey results indicate that investors would be willing to pay for insurance for the loss of private keys if such products existed. Additionally, investors mentioned the desire to invest in blockchain-based venture capital funds and derivatives, although few products exist on the market currently.
- When comparing structure and strategy, the financial product that has attracted the most capital is a passive, single-asset structured product available for retail as well as professional investors.
- Professional investors are primarily interested in Bitcoin. The regulated crypto fund in the DACH region with the highest AuM relies on Bitcoin futures (no self-custody) and also only has exposure to bitcoin. No UCITS funds give the majority of the fund to cryptographic assets, and the UCITS that do have exposure to digital assets do not have direct exposure, but through futures or structured products. There is only one actively managed structured product for retail investors, the rest are for professional investors.
- The 1990s Internet boom attracted labor talent and capital from all over the world to California. In a similar fashion, the DACH region is one of the main hubs of blockchain innovation due to regulations built with the entrepreneur in mind, capital from investors, and banking access for crypto companies.

We thank the [SIX Digital Exchange](#), [Blocksize Capital](#), [BlockFi](#), [Bitmain](#), [Nexo](#), [Coinfinity](#), [Cache Gold](#), [SEBA Bank](#), [Sygnum Bank](#), [Bitpanda](#), [CCFE](#), [Riddle & Code](#), and [Iconic](#) for their support of this research report.

EXECUTIVE SUMMARY

Germany

With approximately 5.5 million potential digital asset retail investors and an average investment amount of €2,546, Germany's addressable market for retail investment is over €14 billion, making it Europe's largest market for retail investment products in the digital asset space. Germany is mainly focused on Bitcoin, whereas Switzerland is increasingly interested in Ethereum, and ERC-20 tokens.

Switzerland

Despite Switzerland's smaller number of potential cryptocurrency investors, the investment amount per adult capita in alternative assets is almost 10x higher in Switzerland (€12,212 per capita) than in Germany (€1,248). This provides evidence that professional and qualified Swiss investors may have more of an appetite for digital assets than their counterparts in Germany. Switzerland is home to several crypto banks, a feat that the US has still not been able to achieve.

Liechtenstein

Liechtenstein is small but very active. Many of the funds covered in this report are not only banking in Liechtenstein, they are also registered in Liechtenstein. As a member of the European Economic Area, funds registered in Liechtenstein have the unique ability to sell to Swiss clients and to seek the passporting of their prospectus to countries within the European Union.

Austria

Unlike Switzerland, Liechtenstein, and Germany, Austria does not have a single bank offering custody of digital assets. There are also no regulated fund products domiciled within the country. However, Austria is home to one of Europe's fastest growing digital asset exchanges, indicating that there is a home-grown desire to gain exposure to blockchain-related assets.

Compliance

The two main policies that impact companies working with digital assets in Europe including the Financial Action Task Force (FATF) originating in France and the EU's Fifth Anti-money Laundering Directive (5AMLD). FATF's Travel Rule recommends that financial institutions should execute a know your customer (KYC) check of the customer when they engage in digital asset transactions worth at least 1,000 euros. In addition to FATF, the EU's 5AMLD requires digital asset exchanges and custodian wallet providers to monitor transactions and to fill out suspicious activity reports (SARs) when clients cannot prove where funds originate from or when they do transaction amounts over a certain threshold. The 5AMLD also states that any companies that hold or exchange digital assets on the behalf of clients are "financial institutions" and must register their business with local authorities.

Tax

Although many people believe that Liechtenstein and Switzerland have the lowest taxes on digital assets for individuals and companies, this is a myth. As long as an investor in Germany or Austria holds onto their digital assets personally (not within a company structure) and for longer than one year, they actually have lower taxes than investors in Switzerland and Liechtenstein. This is because of the pesky wealth tax in Liechtenstein and Switzerland. If investors in Germany with a personal tax rate above 26.375% and in Austria with a personal tax rate above 27.5% hold digital assets for less than a year, then there are tax benefits of investing in structured products and funds.

SECTION 04

THE DEMAND

PROFESSIONAL DEMAND FOR DIGITAL ASSETS

Despite millions of euros and Swiss francs invested in digital assets by investors across Europe, there have only been a few reports that survey the demand for cryptocurrencies by professional investors. So far, only two surveys of professional demand for digital assets in Europe have been conducted. The first study was not focused on the German-speaking countries, and the second has not been published yet.

Between November 2019 and early March 2020, Greenwich Associates under the auspices of Fidelity Digital Assets, Fidelity Center for Applied Technology, and Fidelity Consulting interviewed almost 800 investors across the U.S. and Europe¹. **Across the U.S. and Europe, 36% of the survey's 774 respondents said they own cryptocurrencies or derivatives.** The results show that over a third of institutional investors own digital assets. According to the survey, European investors generally have a more progressive view of digital assets, made evident when comparing the responses across all categories. **Interestingly, this study found the same result: 36% of the survey's 55 asset allocators said they have exposure to cryptocurrencies in the portfolio already.**

The one survey that has targeted institutional demand for cryptocurrencies in the DACH region is BaFin's survey of crypto asset derivatives². The German financial market regulator conducted a survey in late 2019; however, they have not published the results yet. In the survey's preliminary research report, BaFin reported that there has been enormous growth of certificates that hold digital assets and contract for difference trading. **Over 1,000 different certificates are on the market that have exposure to digital assets, and contracts for difference trading volume grew from €10 billion a month in August of 2018 to over €15 billion a month by January of 2019.**

This study marks the first comprehensive survey of institutional investors on the topic of digital assets ever conducted across the German-speaking regions. The analysis contains key highlights of the survey's results in addition to commentary from Crypto Research Report and Cointelegraph Research. Our experience combined with the proprietary dataset drives the unique perspective on the industry's trends presented in this report.

36%

of Fidelity's survey of
774 respondents said they own
cryptocurrencies or derivatives

36%

of this survey's 55 respondents
also said they own
cryptocurrencies or derivatives

¹ <https://www.fidelitydigitalassets.com>

² <https://www.bafin.de>

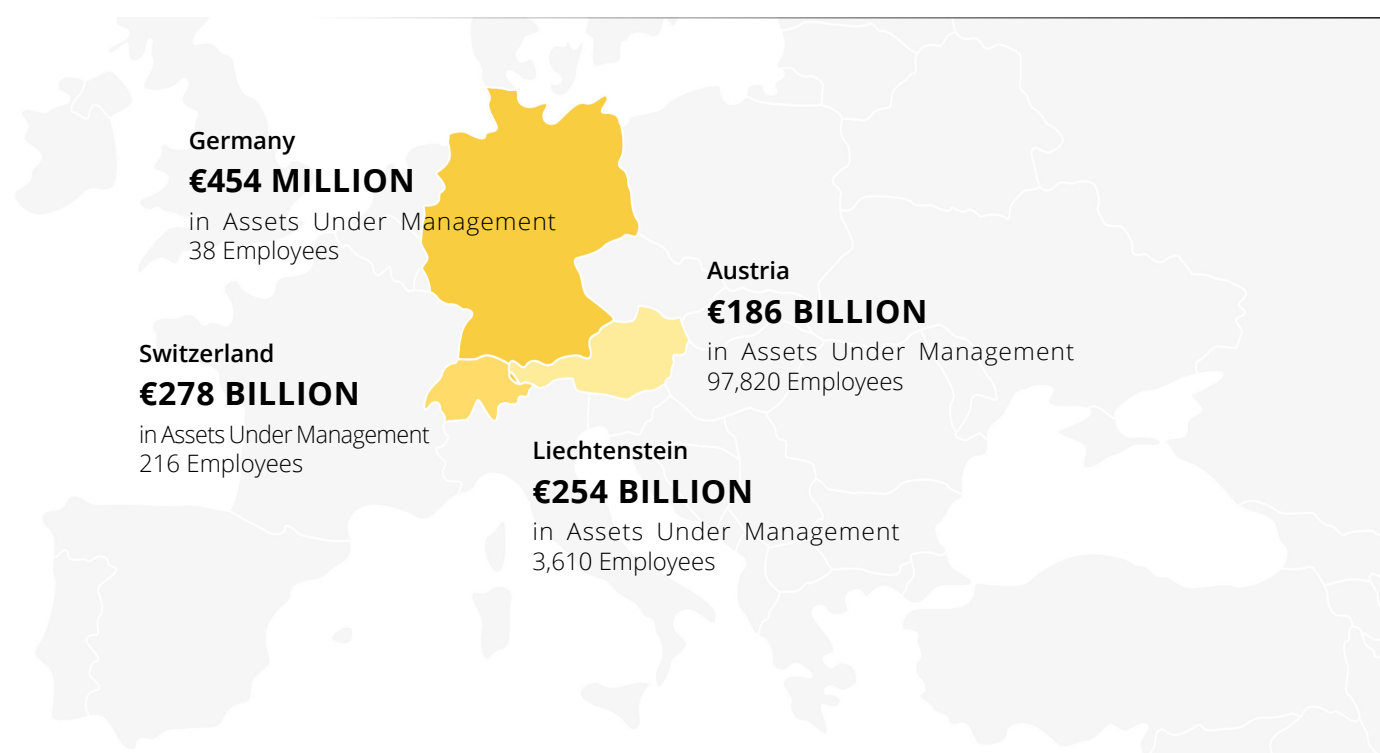
METHODOLOGY

This survey had 55 responses from professional investors across the German-speaking countries including 44 online interviews and 11 case studies via telephone. Respondents included traditional banks, asset managers, and pension funds. This report focuses on buy-side, not sell-side asset allocators. Therefore, we did not send this survey to crypto funds that are invested 100% in digital assets. The goal of this report is to gauge the demand for digital assets from traditional financial intermediaries.

The survey was delivered via email to all registered professional investors with BaFin (Germany), FMA (Austria), FINMA (Switzerland), and the FMA (Liechtenstein) between the months of June to September of 2020. With the help of local banking associations, the survey was also sent out to the members of the BVI Deutscher Fondsverband

and BAI in Germany, the Austrian Bankenverband, the Liechtensteinischer Anlagefondsverband, and members of SFAMA in Switzerland.

The majority of the respondents came from Switzerland (16) followed by Austria (10), Germany (7), and Liechtenstein (6)³. When sorting the survey results by country, the respondents from Switzerland managed the most assets with €278 billion. Austria's respondents worked in firms with the highest headcount. The majority (83%) of the respondents worked in firms with less than 50 employees. Only three women that were in charge of asset allocation decisions at their company responded to the survey compared to 39 men.⁴ The median age of the respondent was 47.5 years old.



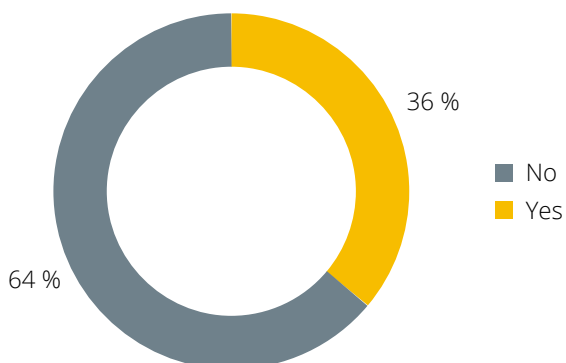
Source: Cointelegraph Research

³ Five respondents did not specify their location, and four worked for companies located outside of the German-speaking regions. Their answers are not included in this chart.

⁴ One respondent did not specify their gender.

CURRENT EXPOSURE

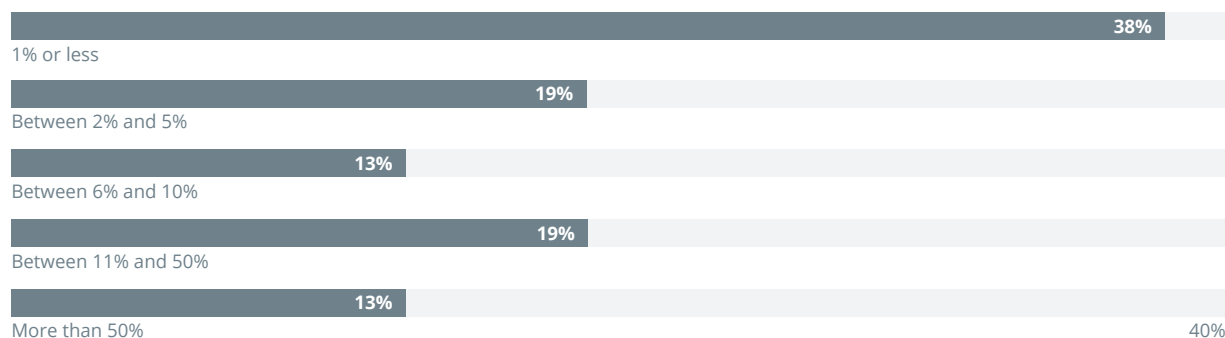
QUESTION Has your company invested in crypto assets in the past?



Source: Cointelegraph Research

Over a third of the surveyed asset managers have invested in digital assets, while about 64% of respondents have not invested yet. Among the institutional investors who have had exposure to digital assets, approximately 69% of respondents have 10% or less of their assets under management in crypto assets. Notably, over a third of those surveyed have only 1% or less of their assets under management in crypto assets.

QUESTION What percentage of your company's assets under management are invested in crypto assets?



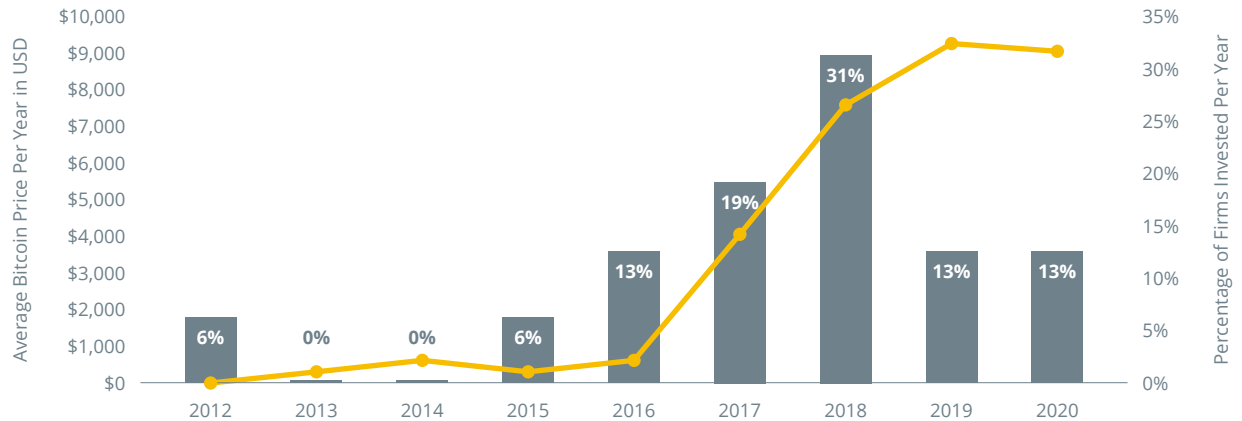
Source: Cointelegraph Research

This survey was conducted during the 2020 shutdown of the economy due to the government's response to the Corona virus. During mid-March, many investors de-risked their portfolios and went into cash. From peak (February 19, 2020) to trough (March 17, 2020) Bitcoin lost 50% of its value, and briefly trading in the high 4000s. Since then, the price has recovered 115% to above \$10,000. Bitcoin

has performed better than equities, fixed income, real estate, and gold year to date (as of October 8, 2020). If governments continue to stimulate the economy with newly created money, then this trajectory is expected to continue. If the fiat faucet is ever turned off, there will likely be an ensuing correction in all asset classes.

TIMING THE MARKET

QUESTION What was the first year your company invested in digital assets?

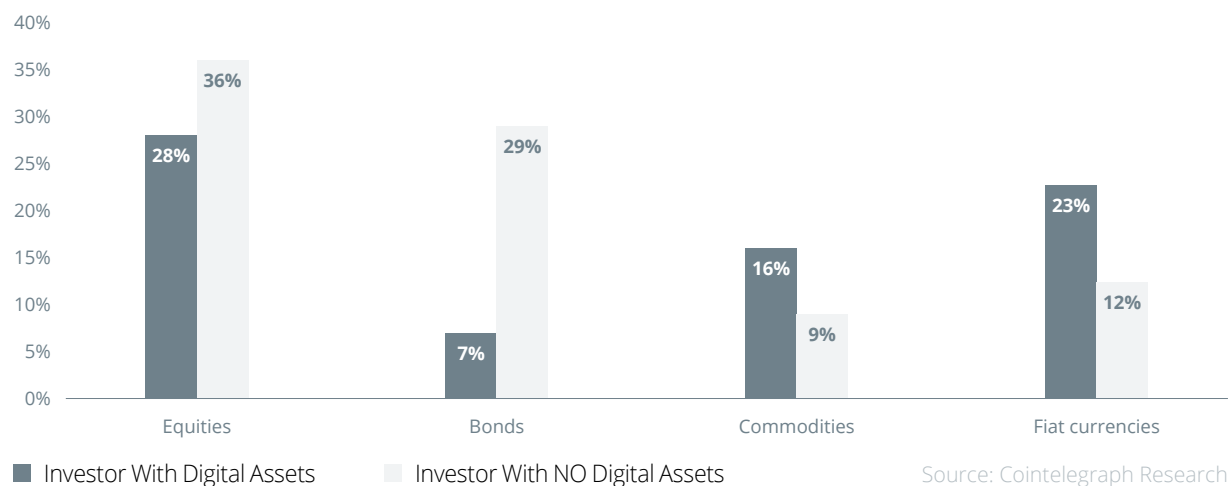


Source: Cointelegraph Research, Bitcoin average yearly price data from Coinmarketcap.com

The majority of investors gained exposure to digital assets for the first time during the past two years. Nearly 31% of those surveyed invested in crypto assets in 2018 — after Bitcoin's all-time high in mid-December 2017, when the price was almost \$20,000 per coin and Bitcoin had a \$334 billion market capitalization.

An important observation is that institutional investors that have invested in digital assets have distinctly different portfolios compared to ones that have no exposure to this asset class. Digital asset investors have significantly fewer bonds, more commodities, and more cash reserves than investors with no exposure to digital assets. This is in line with the ethos of the industry — lower trust in government bonds, higher trust in sound money, and growing cash reserves in expectation of a recession.

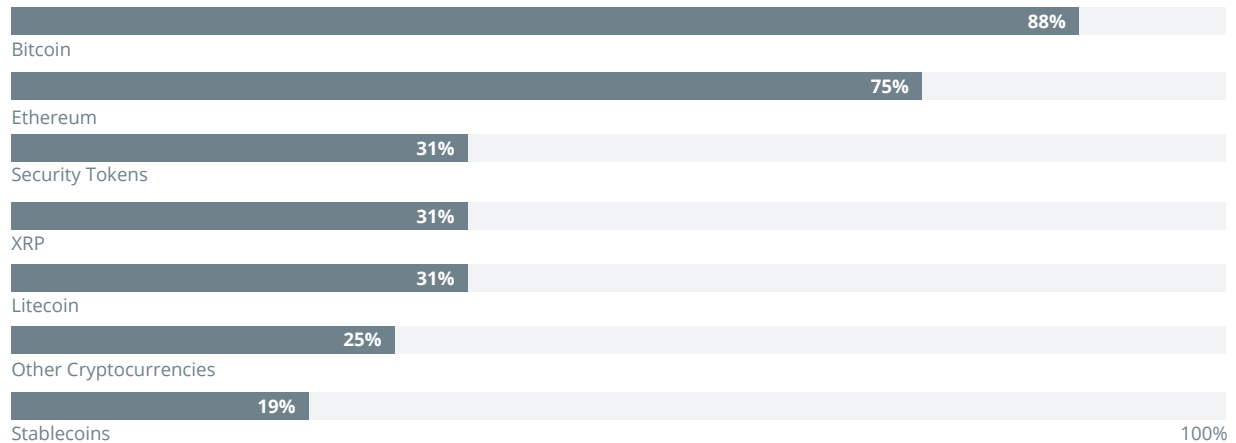
Average Asset Allocation of Institutional Investors



Source: Cointelegraph Research

CRYPTOCURRENCIES ARE MORE INTERESTING THAN STABLECOINS AND SECURITY TOKENS

QUESTION Which types of digital assets has your company invested in?



Source: Cointelegraph Research

Bitcoin and Ethereum are still the most dominant cryptocurrencies. Around 88% and 74% of respondents exposed to cryptocurrencies have invested in these cryptocurrencies, respectively. Respondents have a clear preference for Bitcoin and Ethereum, as only 31% have invested in Litecoin and XRP. A quarter of the respondents answered that they had invested in "other cryptocurrencies". Tezos, EOS, Stellar, Binance Coin, Cardano, Bitcoin Cash, and Bitcoin Satoshi's Vision were among some of the other cryptocurrencies mentioned.

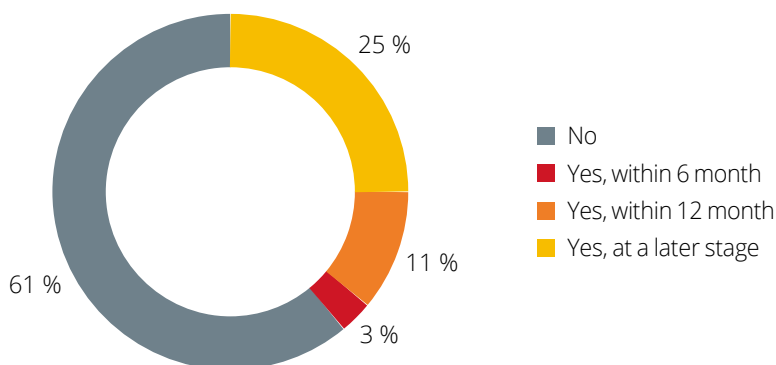
Stablecoins have become the most highly traded digital asset when measured by daily exchange-traded volume. On-chain trading activity grew over 800% between April 2019 to April 2020. However, only 19% of respondents own stablecoins, **indicating that institutional investors may not be the dominant force responsible for stablecoin daily trading volumes.** Notably, 31% of

investors that have exposure to digital assets answered that they have invested in security tokens. This indicates that security tokens are on the radar of professional and qualified investors. Although venture capital was not a multiple choice option, two banks that manage over €350 billion in total mentioned that although the financial institution they work for has not invested directly in digital assets, **they have invested in the equity of blockchain-related startups.**

The European Union rolled out negative interest rates in 2014, and Switzerland has had them since January 2015. As Fidelity's report on institutional demand from earlier this year pointed out, a common objection against investing in gold and Bitcoin is that they don't produce an annual yield. However, in the current environment, these assets can help investors protect their wealth from inflation and negative interest rates.

FUTURE DEMAND

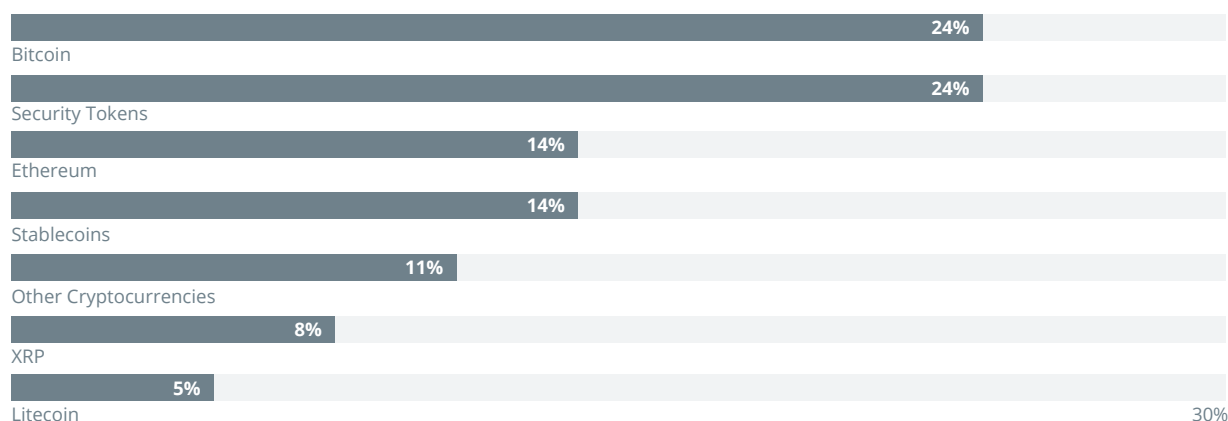
QUESTION Is your company planning to invest in the future?



Source: Cointelegraph Research

Among the 64% of investors who currently do not have cryptocurrencies in their investment portfolios, 39% plan to add them to their portfolio eventually. A quarter of the professional investors plan to buy cryptocurrencies at a later stage, and 14% of them plan to do so in the next 12 months.

QUESTION Which digital assets would your company be interested in investing into in the future?



Source: Cointelegraph Research

Regarding the future demand for cryptocurrencies among professional investors, Bitcoin and security tokens are the assets in which investors are most interested. Surprisingly, there is more interest in security tokens and stablecoins amongst institutional investors than in cryptocurrencies such as Ethereum and XRP. This may be explained by the regulated nature of security tokens, as investors' assets are often ring-fenced on the balance sheet of the issuer and rights in case of insolvency are explicitly mentioned in the prospectus. Furthermore, disputes can be settled by courts and contract law that the digital asset space is still building precedence for.

"One could imagine a world in which securities lending, repo, and margin financing are all traceable through blockchain's transparent and open approach to tracking transactions."

— Kara M. Stein, US Securities & Exchange Commissioner

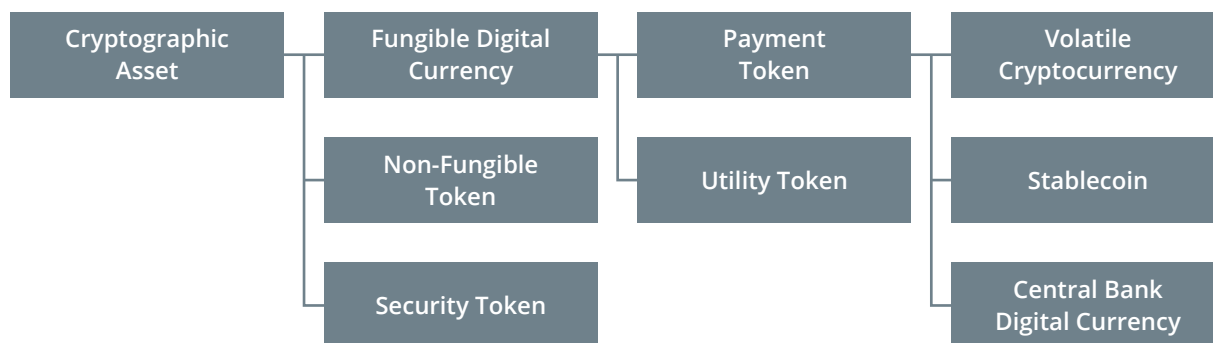
TYPES OF DIGITAL ASSETS

But what are digital assets? Digital assets, or cryptographic assets, are tradable and digital representations of value that rely on decentralized consensus mechanisms for settlement.

According to the Basel Committee on Banking Supervision, the three distinguishing factors of cryptocurrencies are their digital nature; their use of cryptographic primitives, such as hash functions to verify the integrity of the data and symmetric encryption to create public and private keys; and decentralized record keeping and decision making.

Although there are over almost 7,000 cryptocurrencies listed on Coinmarketcap.com, not all of them serve the same purpose. Some are volatile digital currencies, such

as Bitcoin, others are stablecoins that are pegged to the dollar, such as Tether. Generally, crypto assets fall into three categories including fungible digital currency, non-fungible tokens, and security tokens. Cryptocurrencies, stablecoins, and Central Bank Digital Currencies (CBDCs) are all forms of digital currency. Digital currency can also include online bank deposits issued to customers by banks, such as UBS or Deutsche Bank. The possession of digital currency often creates a legal claim against the electronic money issuer. However, this is not often the case with cryptocurrencies. In addition to fungible digital currency, non-fungible tokens can be used to represent unique assets, such as the Mona Lisa painting. Finally, security tokens often represent investment contracts, and they are regulated by securities laws.



Source: Cointelegraph Research



In addition to stablecoins pegged to fiat currencies, another class of tokens is gaining traction, whereby each token represents a commodity. For example, [CACHE](#) is a provider of regulated, transparent and redeemable tokens backed by gold stored in accredited vaults around the world. CACHE uses [GramChain](#), a revolutionary new Proof of Reserve system, that enables the public to view photographs and see real-time status updates for each bar in each vault. CACHE provides fast, flexible redemption at scale with the option to sell the underlying gold for fiat currency. Based in Singapore, CACHE's partners include vaults and gold dealers such as Brink's, Dillon Gage, Loomis, Silver Bullion, and The Safe House as well as custody provider Onchain Custodian and digital asset exchange Bithumb Global. The CACHE team draws

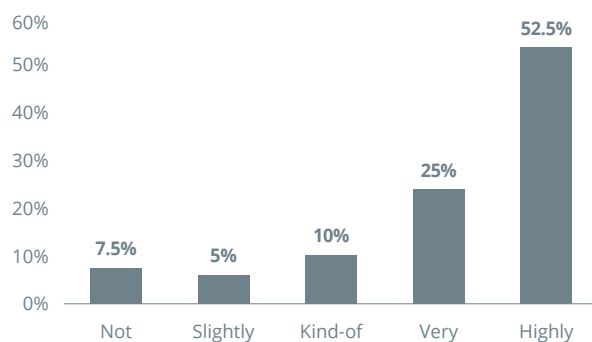
on decades of experience in the precious metals and vaulting industry as well as legal, compliance, blockchain and cryptocurrency expertise. Each CACHE Gold token is backed by one gram of pure, investment-grade physical gold. CACHE Gold tokens can be redeemed for physical gold at any time. In amounts as small as 100 grams, redeemed gold can be sold for US dollars, shipped to the token holder's address or collected in person at select vaults. Token holders have full control over their assets. No centralized third party can freeze or confiscate tokens. CACHE Gold tokens are deployed on the Ethereum public blockchain using the ERC-20 token standard. Bithumb Global and Bittrex Global both enable CACHE Gold token trading.

RETURN ON INVESTMENT

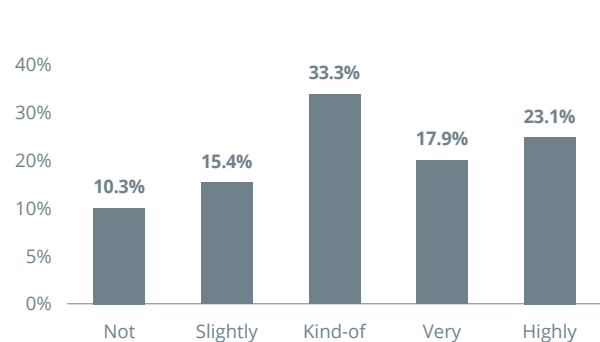
According to the survey results, the most important consideration for investing in digital assets is their risk-return ratio, as 53% of respondents rated this characteristic as “very important”. Most of the responses to “diversification” and “my company is convinced that the technology will be important in the future” are clustered in the middle and slightly skewed to the right of the importance spectrum,

meaning that these factors are moderately important. Notably, the survey shows that clients requesting digital assets is not very relevant to the asset managers' decision to invest in these assets. As one respondent pointed out, clients requesting digital assets would be their number one reason for investing, but so far, none of their clients had requested digital asset exposure.

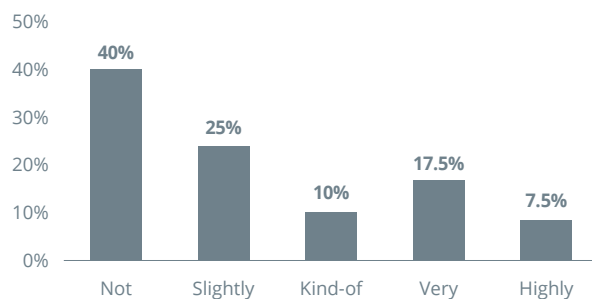
Risk-return ratio



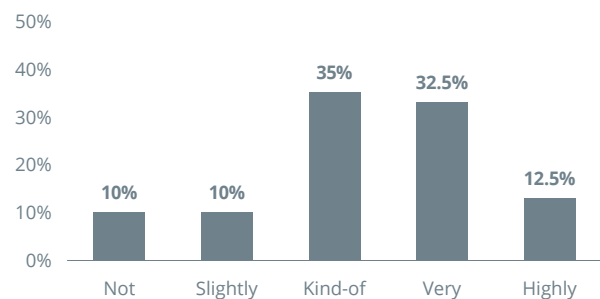
Diversification



My clients ask for exposure to Crypto-Assets



My company is convinced that the technology will be important in the future



Source: Cointelegraph Research

“For the past decade, low yields on these fixed-income allocations have depressed the overall rates of return on portfolio assets. As a result, almost 60% of the German institutions participating in the 2019 Greenwich Associates study cite rate of return and funding issues as the biggest challenge facing their portfolios this year, dwarfing all other concerns.”

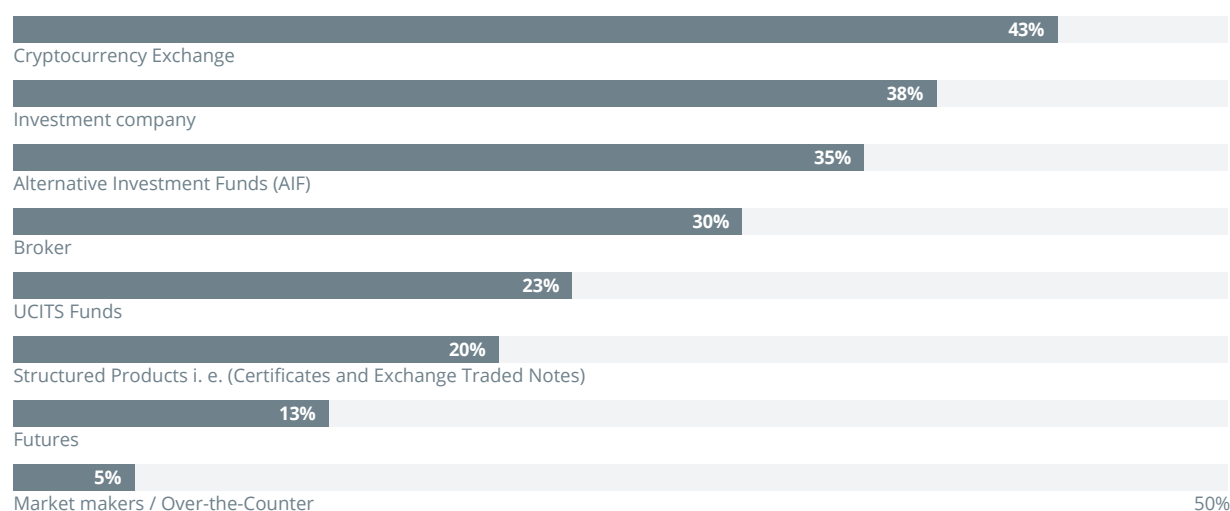
— Mark Buckley, Markus Ohlig, Greenwich Associates

PROFESSIONAL INVESTORS PREFER DIRECT INVESTMENT

The target group for blockchain-inspired financial products include pension funds, insurance companies, university endowments, high-net-worth individuals (HNWI), family offices, asset managers, banks, and fund of funds from around the world. Usually, these investors are asking for a regulated and easy-access approach to crypto exposure. Some of them want to invest in a new asset class with a great risk-return profile, others want diversification.

There are many regulated investment products that give investors exposure to digital assets including long-only single asset or index products, derivative products, bank accounts for prop desk trading, and much more. This report found that professional investors prefer to invest directly in digital assets by buying them on an exchange. Interestingly, professional investors prefer to buy a regulated alternative investment fund before using a broker.

QUESTION What is your company's ideal way to gain exposure to crypto assets?



Source: Cointelegraph Research

“Exchanges are changing their focus from retail traders to institutional traders, providing such customers better ability to customize the front end of their trading platforms and providing APIs that better suit what institutional traders are used to.”

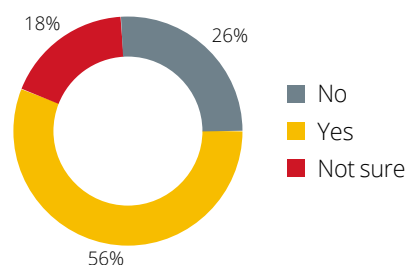
— Kari S. Larsen, partner at Perkins Coie

DIGITAL ASSET SERVICE PROVIDERS

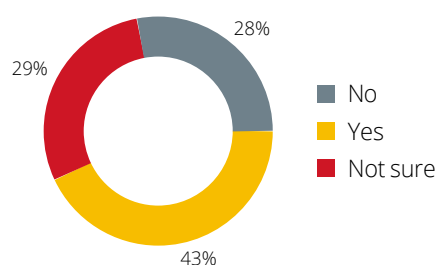
When asked about their use of specialized services for digital assets, respondents were most interested in data. 62% of respondents are interested in using data on digital assets at their company. Leading data providers in the digital asset industry include Coinmetrics (also sold by Messari), Coinmarketcap.com, and Cryptocompare. However, closer to home in Europe, Santiment and IntotheBlock also provide data on a monthly subscription basis. The next most sought after service is trading of digital assets on a digital asset exchange. In the German-speaking region, the only digital asset exchange owned locally is Bitpanda, which is headquartered in Austria. In Germany, Bitcoin.de is a peer-to-peer exchange, which is mostly used by

retail investors. However, there are several exchanges that serve Europe including Kraken, Binance, Bitfinex, Bitstamp, and Crypto.com. Over half of the respondents (54%) are interested in using an over-the-counter desk for the digital asset transactions. The largest OTC-desk operating in Europe is B2C2, based in London. Many brokers in the German-speaking countries offer over-the-counter services but use B2C2 or Cumberland for final execution. Notably, 48% are interested in using smart order routing software. Smart order routing software includes companies such as Blocksize Capital, based in Frankfurt, and CoinRoutes, based in the US.

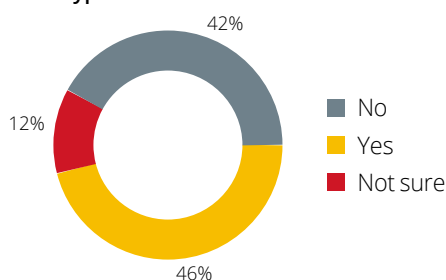
Is your company interested in using crypto asset exchanges?



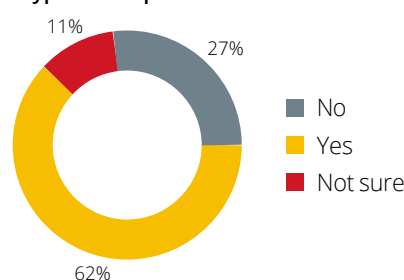
Is your company interested in using crypto asset custodians?



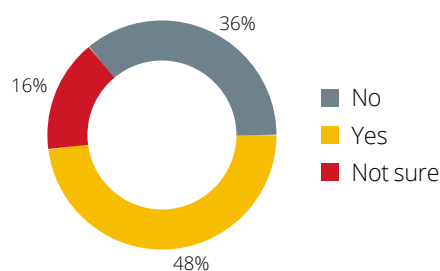
Is your company interested in using crypto asset brokers?



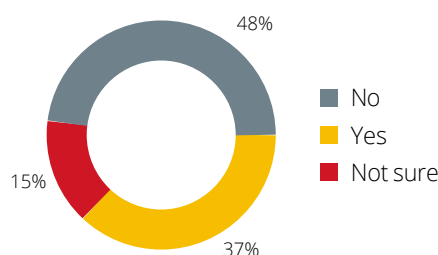
Is your company interested in using crypto asset providers?



Is your company interested in using crypto asset smart order routing softwares?



Is your company interested in using crypto asset tax and accounting software?



Source: Cointelegraph Research

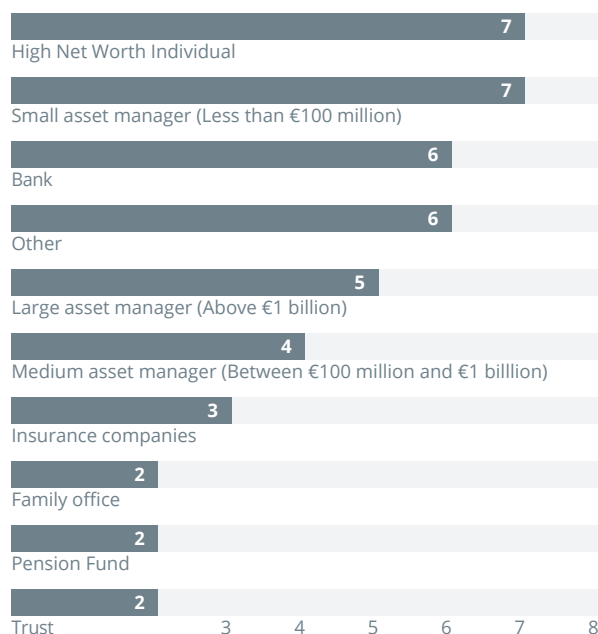
SIZE MATTERS

Multiple types of professional investors responded to this survey including trusts/foundations, small asset managers (less than €100 million), medium asset managers (between €100 million and €1 billion), large asset manager (above €1 billion), insurance companies, pension funds, high-net-worth individuals, family offices, and banks. The majority of respondents are small asset managers and high-net-worth individuals, both of whom account for about 32% of the total respondents.

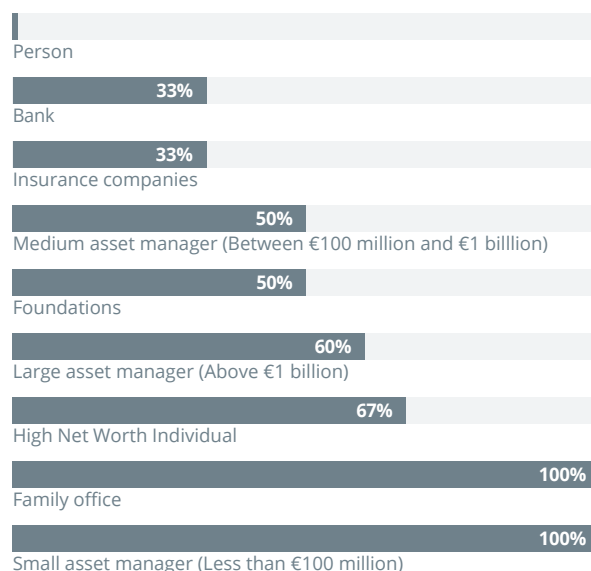
Smaller asset allocators, such as family offices and boutique wealth management companies, are more likely to invest in digital assets than larger financial service providers, such as banks and pension funds, according to the survey results. All 14 of the small asset allocators and family offices responded that they already own or plan to own digital assets in the future. This is compared to zero out of the two pension funds, one out of the three insurance firms, and two out of the six banks that were surveyed.

QUESTION

What type of investor is your company?



Percentage of Each Investor Group that Owns or Plans to Own Digital Assets



Source: Cointelegraph Research

“The institutional space for crypto is going through a period of incredible growth. Many still don't realize it. Coinbase Custody now has close to 200 institutional customers, onboarding hundreds of millions of US dollars in crypto a week.”

— Brian Armstrong, CEO Coinbase

USING EXISTING INFRASTRUCTURE OR WORKING WITH A BROKER?

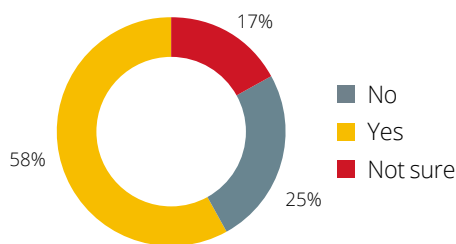
Many banks stated that they would like to offer their clients the ability to buy and sell digital assets; however, the decision that needs to be made by the C-Suite executives is whether to build up their internal infrastructure or outsource the trading and custody to a third-party broker or exchange.

For example, the Swiss giant in core banking systems, Avaloq, was mentioned multiple times by respondents. Avaloq is offering trading and custody solutions for investing in digital assets. If a bank buys the Avaloq digital asset module, the ability to invest in digital assets could be expanded to the bank's entire customer base, and

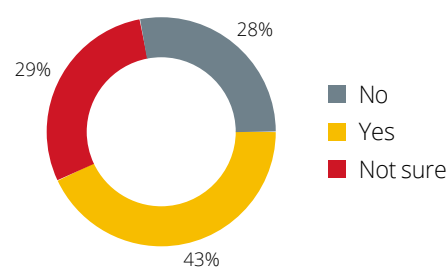
retail clients would even be able to buy and sell via their e-banking and mobile-banking applications.

However, the banks said they are hesitant to purchase software solutions to bring digital asset investing to their clients. The infrastructure and services are considered to be too expensive still. Custody solutions in particular are comparatively expensive. The main reason for this is believed to be a lack of competition. The banks would need to have significant demand for digital assets from their clients in order to justify the expense. As more traditional players enter the digital asset industry, prices should fall in this regard.

Does your company feel that crypto asset custody companies are charging too much for their services?



Is your company interested in using crypto asset custodians?



Source: Cointelegraph Research

“Investing in crypto assets is at the moment only possible on unregulated exchanges or on exchanges that fall under the Financial Anti-Money Laundering Act in Austria. However, there are few regulated platforms for the exchange of crypto assets which are comparable to stock exchanges for buying and selling financial instruments, for example, Börse Stuttgart.”

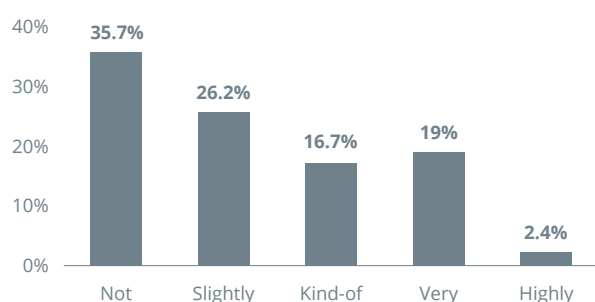
— Oliver Völker, Stadler Völkel Rechtsanwälte GmbH

BANKS ARE INVESTING IN BLOCKCHAIN EDUCATION

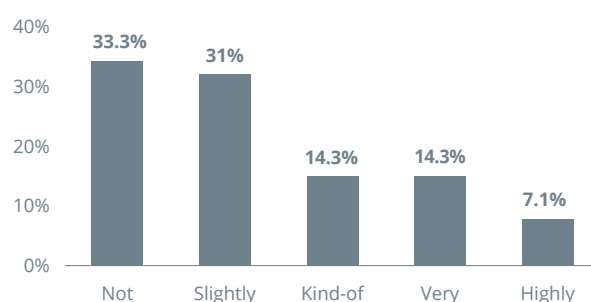
When asking about how financial intermediaries learn about blockchain, the highest ranked sources included encouraging employees to research the topic during working hours and an individual within the firm is spearheading the internal dialogue. Participation in conferences

and webinars on crypto also promotes interest in the subject. There is also a general openness to educational training concerning digital assets, but the survey participants generally do not rely on hiring external consultants or attending university courses in order to learn more.

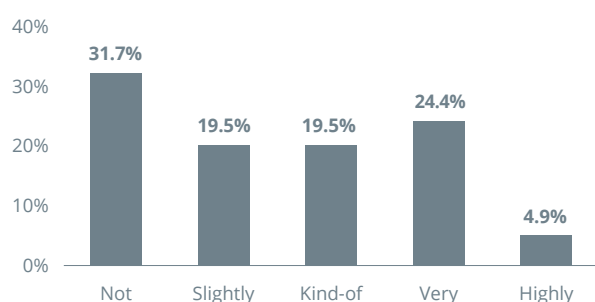
Attending conferences on the topic of crypto assets



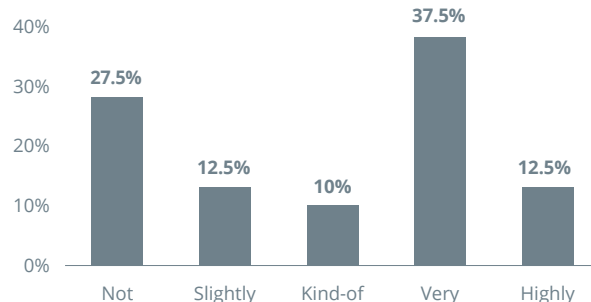
Sending employees to universities or seminars that have crypto asset information



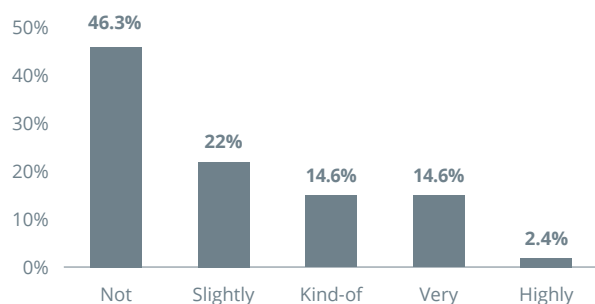
Webinars pertaining to crypto assets



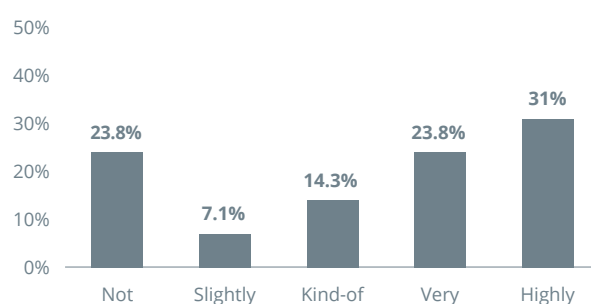
Encouraging research, studying, etc. of crypto assets during work hours



Engaging consultants for training on the topic of crypto assets



An individual within the firm that has knowledge of crypto assets and spearheaded the initiative within the company to investigate crypto assets and potentially invest



Source: Cointelegraph Research

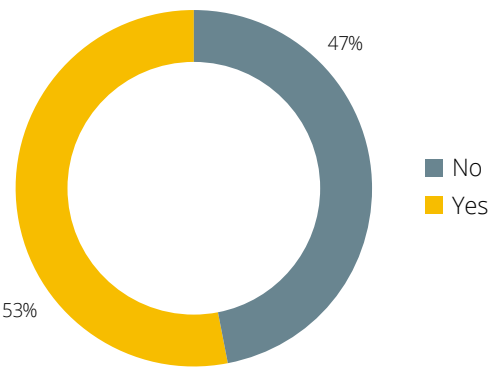
DIGITAL ASSETS FOR ME, BUT NONE FOR THEE

Several of the case study respondents stated that they had privately invested in Bitcoin and other digital assets, while their institution had not yet made any direct investments. However, the majority of the respondents had a high level of decision-making ability within their

firm. A possible explanation for this can be that asset allocators are investing with more risk aversion when investing on the behalf of others than when investing their own wealth.

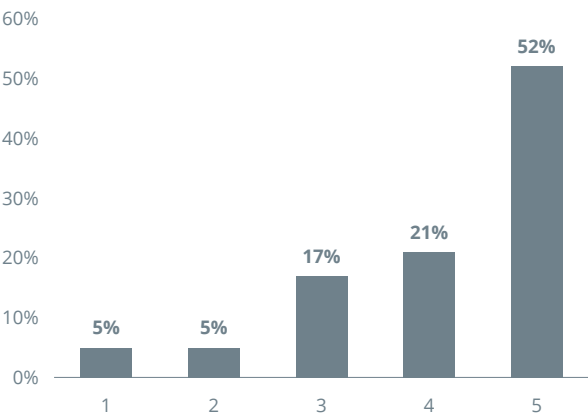
QUESTION

Are you personally invested into crypto assets?



Source: Cointelegraph Research

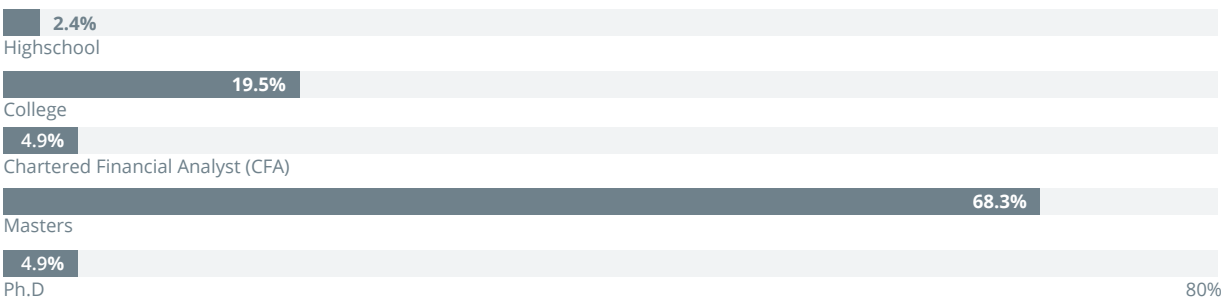
How much decision making ability do you have within your company concerning what investments to make?



Source: Cointelegraph Research

The majority of the respondents had a master’s degree or above in formal education.

QUESTION What level of education have you completed?



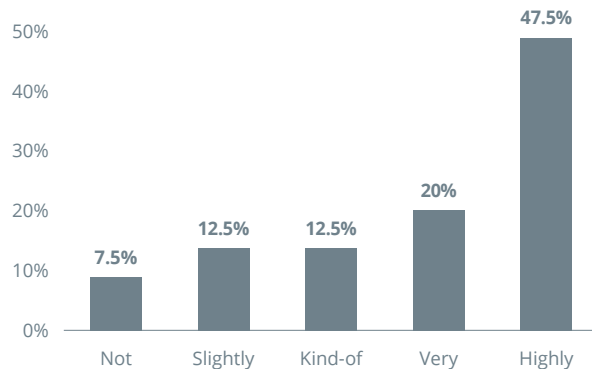
Source: Cointelegraph Research

OBSTACLES TO INVESTING

Several of the asset managers in the survey mentioned that digital assets are too risky for them. However, financial institutions already invest in risky investments in the

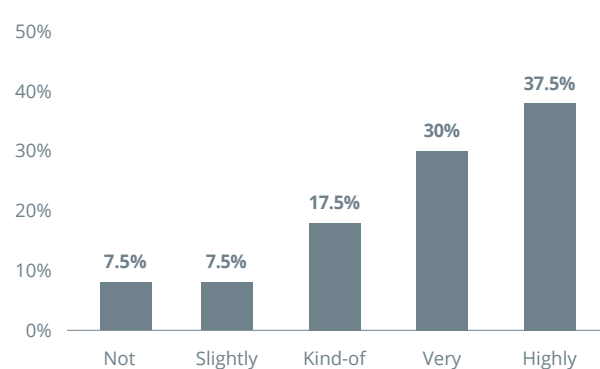
traditional financial markets, such as insurance-linked securities, sub-prime mortgages, emerging market treasury bonds, junk bonds, and much more.

Cyber-Crime and Fraud



Source: Cointelegraph Research

Operational Risks (e.g. Technological risks)



Source: Cointelegraph Research

So why are digital assets different? According to some respondents, in the traditional world, there are indeed investments that are risky. However, they are part of the traditional system and, therefore, cannot fall to zero without causing fundamental problems for the financial system as a whole. Digital assets, on the other hand, **deliberately exist outside the traditional world**, which is their purpose. Consequently, they are even riskier. Essentially, the asset managers are saying that

traditional assets are too big to fail, the central bank and government gives them an implicit safety net in the lower-bound of the price of the asset. However, if a large financial intermediary supports digital assets and digital assets fail spectacularly, the government might actually let that business fail just to show what happens when you invest in a technology that challenges the government's monopoly on money production and monetary policy.

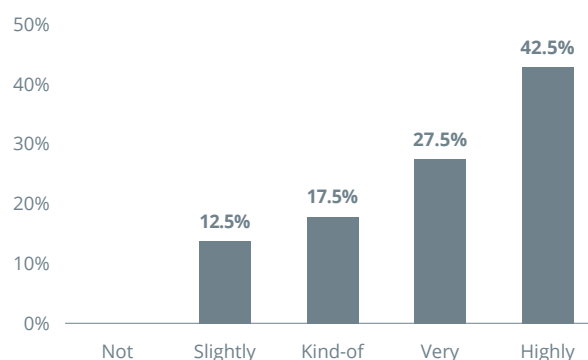
“Investors are well served when innovation flourishes. I recognize that innovation involves risks, but it is investors who should get to choose the winners and the losers of the market. Regulators should not impede investor choice; rather, they should ensure that investors have access to accurate disclosures about the range of available products, including their risks.”

— Hester Pierce, Securities Exchange Commissioner

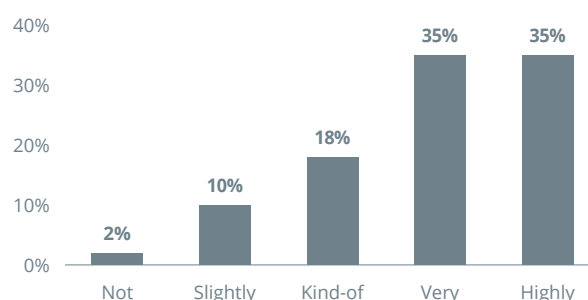
Asset managers were asked to rate the importance of perceived risks when investing in crypto assets; the possible risks were the following: market risks (e.g. volatility), liquidity risks, operational risks (e.g. technological risks), cyber crime and fraud, and regulatory risks. All of the risks mentioned are in the “important spectrum” of the charts. However, the most important risk for those surveyed was regulatory risk, as almost 80% of the sample fell in the “important region” of the graph. With approximately 71% and 70% of responses in the “important region”, market risk and liquidity were ranked as the second and third most important risks, respectively. Operational and cyber crime risks have the same number of responses in the “important region” (~ 68%).

A specific risk was mentioned that is not related to digital assets, but rather to the bank's entire business model. Some banks fear that if they offer bank accounts to blockchain-based companies and offer clients the ability to invest in digital assets, they would lose their US dollar correspondent banks. This is a relevant concern as some banks have already lost their US dollar correspondent bank because they moved into the digital asset space. One respondent mentioned that their correspondent bank softly warned them that if they were to invest in digital assets, their banking relationship with the correspondent bank would be damaged or even terminated. It's probably not a coincidence that these correspondent banks have the most to lose if digital assets eclipse the dollar.

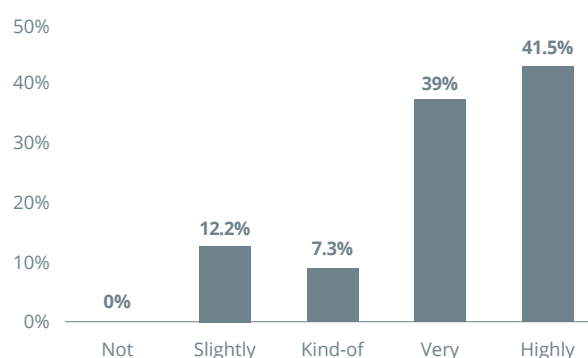
Market risks (e.g. Volatility)



Liquidity risks



Regulatory Risks



Source: Cointelegraph Research

“If cryptocurrencies fail to provide easy liquidity, then they fail as mediums of exchange, one of the principal roles of money.”

— Michael Parsons, Former Cardano Foundation Chairman

RAIFFEISEN BANK INTERNATIONAL SEES POTENTIAL IN DIGITAL ASSETS AS A NEW REVENUE STREAM

Eleven case studies with asset allocators at pension funds, banks, insurance companies, and family offices were conducted via phone calls in addition to the survey sent out to all registered professional investors across the German-speaking regions. Although many of the respondents opted to remain anonymous, some allowed us to publish the results of their interviews including Mr. Stefan Andjelic from Raiffeisen Bank International (RBI).

RBI has over 16.7 million customers, more than 46,000 employees, and €152 billion in total assets.⁵ Mr.

Stefan Andjelic from RBI's Blockchain Hub accepted to be interviewed by Professor Dr. Alfred Taudes from the Vienna University of Economics and Business for this report. He discussed with us how the digital asset market no longer refers only to Bitcoin, **but rather has expanded into a broad array of assets**. He also mentioned that as investors are becoming more informed about the potential of this emerging asset class, they are not being as easily persuaded by the negative connotation that traditional media usually attaches to cryptocurrencies.

“As investors are becoming more informed about the potential of this emerging asset class, they are not being as easily persuaded by the negative connotation that traditional media usually attaches to cryptocurrencies. Contrastingly, they also assess the potential that digital assets and blockchain technology in general can bring to society in the long term.”

— Stefan Andjelic, Raiffeisen Bank International

Although RBI is not currently invested, Andjelic feels positively about digital assets. As someone working in the field, Mr. Andjelic sees the potential for digital assets to be offered by incumbent financial players as an alternative investment vehicle that would allow them to create new streams of revenue. From a purely technological point of view, he also believes that digital assets can be a trigger for many traditional fields of finance to improve in the future.

When asked why RBI has not invested in digital assets yet, Andjelic said that the lack of regulatory clarity around

what services financial institutions are allowed to offer in this field is still a major barrier. That said, there are still a lot of compliance topics to be clarified in these regards.

Once the regulatory framework related to digital assets is established, either by local jurisdictions or on an EU-level, financial institutions will be able to accurately assess the opportunities in this field and potentially invest in digital assets. On that note, the European Parliament is currently working on a digital assets framework. According to their timeline, in Q4 of this year, a framework should be in place.

⁵ <https://www.rbiinternational.com/en/investors/reports/annual-reports.html>

Regarding timeline and which types of digital assets RBI would be interested in, Andjelic says, "I believe there is a much higher likelihood that we as a financial institution, once there is a full regulatory clarity, would initially focus on tokenized traditional assets, such as tokenized commodities, stocks, funds, etc. Potentially, we might also decide to offer some of these products ourselves based on both internal business decisions and a market demand. RBI currently has 1% of their assets under management in alternative assets which, in absolute terms, equals to approximately €1.5 billion. If RBI were to invest in crypto assets, several key decisions would need to be made. For instance, RBI would need to decide on whether the entity would aim to invest directly and store the digital assets itself, or would do so by teaming up with third-party service providers. In addition, if RBI decides to start offering crypto assets to its clients, then the decision would have to be made whether the bank

wants to build the entire infrastructure on its own or to team up with an already existing crypto assets provider in the market. One option on how such constellation would work is that the third-party service provider would be connected through APIs to RBI's infrastructure, while RBI's banking platform would be the face to its clients. In such scenario, the digital assets would be stored by the service provider instead of RBI. This would allow RBI to ensure that clients can only buy and sell their digital assets through Raiffeisen banking platform without being able to transfer them outside of the ecosystem. This would help Raiffeisen keep control on whether these digital assets are being used for any kind of illicit activities. RBI did make a successful venture capital investment into Bitpanda GmbH, via the SpeedInvest venture capital fund. Bitpanda is a licensed digital asset exchange operating in multiple countries across Europe.

€1.5 billion

or 1% of RBI's assets under management are in alternative assets

€15 million

would be invested in digital assets if RBI allocated 1% of their alternative asset portfolio



bitpanda pro



PENSIONS ARE NOT STOPPED BY REGULATIONS

Bringing a different perspective to the discussion, Professor Dr. Michael Hanke from the Liechtenstein-based pension fund Stiftung Personalvorsorge Liechtenstein explained that although regulations are not holding them back from investing in digital assets, there are other problems. Hanke points out that pension funds

invest on the behalf of pensioners, but they have no way of gauging what the pensioners want them to invest in unless the pensioners actually call up on the phone or send an email requesting their pension to invest in crypto assets.

“Pension fund management is different from other asset management, like fund management, because with funds, you manage the money of clients that have voluntarily selected to invest in your strategy, so you know that they are okay with your asset allocation and strategy.”

— Dr. Michael Hanke, Stiftung Personalvorsorge Liechtenstein

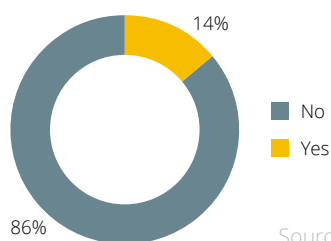
The general public is still very skeptical about digital assets. If pension funds were to invest in assets that are still viewed critically in the eyes of the general population, they risk damaging their reputation, especially if something goes wrong. After all, pensioners cannot choose their pension fund themselves — the choice is made by the employer — which is why this duty of care is required. Hanke also discussed how pension funds in Liechtenstein are not held back from investing in digital assets by regulators. As a second tier pension fund in Liechtenstein, the laws that impact them are set at the federal level in Liechtenstein.

Pension funds, in particular, have another argument

against digital assets: Apart from the liquidity that an asset class has to provide to a pension fund, they **invest with a very long time horizon**. However, the crypto world still seems to be characterized by short-term hypes, rapid incidences of success but also sudden loss stories. In this sense, according to the perception on the part of pension funds, the world of digital assets does contradict the long-term view of pension funds.

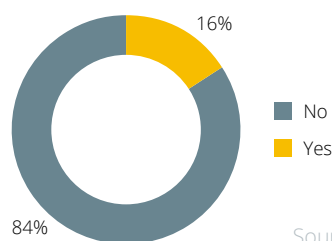
Stiftung Personalvorsorge Liechtenstein is managing CHF 1.2 billion, and Hanke says it would take between 18 months to 24 months before they could actually invest, if they decided to invest, due to the administrative processes that exist when adding a new investment.

Would you like to invest more but are bound by internal company restrictions?



Source: Cointelegraph Research

Would your company like to invest more but are bound by regulatory restrictions?



Source: Cointelegraph Research

Not being held back by regulations was also echoed by the survey respondents. Rather, asset allocators felt more constrained by their own employer than by government policies.

Cryptocurrency Mining (DACH Region)

Cryptocurrency mining holds an important role in the blockchain industry and continues to be a highly regarded investment opportunity when compared to traditional investment options. In Europe, cryptocurrency mining has been increasing over the years as favorable electricity prices and policies attract new investors into the market.

Such favorable policies are particularly notable in Kazakhstan, where the government plans to double investments into cryptocurrency mining by the end of 2020. The country also has established tax-free crypto mining to promote the industry.

Data Centers in Europe:

Selecting the location of the data center is important, as electricity prices, temperature, and government policies are variables that can affect the efficiency and profitability of operating a mining farm.

Average Electricity Prices		
Country	2019 Electricity Price kWh (USD)	2020 Electricity Price kWh (USD)
US	0.04	0.04
China	0.04	0.04
Iceland	0.043	0.041
Kazakhstan	0.0275	0.0275
Nordic Region	0.04	0.01 – 0.02

The data above are the average electricity costs and may vary from different locations

In Nordic regions such as Sweden and Norway, electricity prices can be purchased at futures prices or purchased at spot prices, allowing mining facilities to lock down prices and mitigate risk.

Facility Size (MW)	Miner Cost (USD)	Daily Net Profit (USD BTC Rewards- Electricity Costs)	Nordic Region		China, Kazakhstan	
			Traditional Facility (USD)	Antbox (USD)	Traditional Facility (USD)	Antbox (USD)
5	\$3,498,462	\$9,798	\$1,500,000	\$750,000	\$43,0000	\$215,000
10	\$6,996,923	\$19,597	\$3,000,000	\$1,500,000	\$86,0000	\$430,000
50	\$34,984,615	\$97,983	\$15,000,000	\$7,500,000	\$4,300,000	\$2,150,000
100	\$69,969,231	\$19,5966	\$30,000,000	\$15,000,000	\$8,600,000	\$4,300,000
Facility + Miners ROI (Days)			510	434	410	379

The data above are based on using electricity prices of USD 0.03 kWh. Price of BTC block rewards are based on 07.28.20 and may vary from BTC price changes. Other results may vary from data location costs. Operations costs are not included and may vary based on location. Please contact our sales team for consulting.

A well-managed data center is profitable based on the size and location. As seen from the table, a 100 MW facility utilizing Antminer's latest models (Antminer S19 Pro — 110 TH/s) can have a daily net profit of around 196,000 USD. The payback period of the miners, including the facility (Traditional/Antbox), can be achieved within a span of 510 and 434 days, respectively.

For easier and more convenient setup of a mining facility, Antbox is the latest practical movable mining farm. Antbox can accommodate up to 180 miners of the latest Antminer series and is able to meet the high-end customization needs of global miners. Antbox not only helps to quickly deploy high hash rate, low power consumption mining farms but also provides comprehensive, integrated mining solutions that significantly reduce costs. It offers up to 50% savings in the construction costs of setting up a mining farm.

In Europe, mining farm operators continue to increase and improve output by purchasing and upgrading to the latest miners and by enlarging facilities. Antminer sales across Europe, the Middle East, and Africa and the Commonwealth of Independent States (CIS) regions have increased by 148% based on a comparison of H1 2019 to 2020. This demonstrates continuous growth of investment in this segment.

Company	Etix Everywhere Borealis	Advania Datacenters	Electro Farm	Bitluck-Cloud Mining	Nordic Blocks AS	DTM
Location	Iceland	Iceland	Kazakhstan	Kazakhstan, Russia	Norway	Sweden
Total Capacity	55 MW	70 MW	43 MW	>1 GW	2 MW	4.4 MW
No Miners 2019	18,000	35,000	6,000	90,000	700	504
No Miner 2020	25,000	35,000	12,000	120,000	1000	844

The data above may be comparable to similar products from other suppliers, contributing to up to 90% of the Total Hash rate network.



-  Stackable
-  Moveable
-  Large-Scale Capability
-  Up to 50% Construction Costs Savings

Antminer Investment:

The actual circulation value of mining hardware is affected not only by the quality, age, condition, and warranty period of the machine but by fluctuations in the digital currency market. When the price of a digital currency rises sharply in a bull market, it can cause a shortage of miners and generate a premium for hardware. This premium is often proportionally higher than the increase in the value of the digital currency itself, leading many miners to directly invest in mining instead of cryptocurrencies. Likewise, when the value of a digital currency is in decline and the price of mining hardware in circulation begins to fall, the value of this decrease is often less than that of the digital currency.

We entered a new cycle after the last halving that took place on May 11, 2020, which changed the Bitcoin block reward price from 12.5 to 6.25 BTC. This will have an effect, as miners utilizing older, less-efficient models with higher electricity costs will reach a “shutdown price”. Older generation models will become unprofitable when compared with other miners who have access to cheaper electricity and more efficient models.

Shutdown Price of Miners				
Model	Hashrate TH/s	Power Consumption (W)	Electricity Price USD kWh	BTC Price Shutdown
S9K	13.5	1,148	\$0.04	\$11,000
S11	20	1,400	\$0.04	\$8,800
T15	23	1,541	\$0.04	\$8,500
S15	27	1,539	\$0.04	\$7,200
T17	40	2,200	\$0.04	\$6,950
S17	50	2,250	\$0.04	\$5,700
T17+	58	2,900	\$0.04	\$6,320
S17+	70	2,800	\$0.04	\$5,050
S17 Pro	50	1,975	\$0.04	\$4,980

The data above may be comparable to similar products from other suppliers, contributing to up of 90% of the Total Hash rate network.

This would usher new opportunities into the market, as the division of older generation models contributes up to 90% of the current total Bitcoin network hash rate. If BTC prices continue to decrease, less efficient models will eventually exit the market while new generation miners will have the opportunity to receive more BTC block rewards.

For mid- to long-term investment, it is important to choose a miner with extremely low power consumption and stable operation. The Antminer 19 series is comprised of selections tailored for this type of investment. A notable highlight is the current chip technology equipped in the 19 series, which is the most advanced technology at present. With the total production capacity of mining hardware manufacturers today being limited, the existence of Moore's Law leads to an increasing physical iteration cycle of the chip, which in theory will make an increased lifecycle available to new hardware.

Other alternatives to building a data center would be BitDeer, a computing power-sharing platform that enables global users to mine in a transparent, reliable, and convenient way. This platform simplifies the process of mining by offering various mining plans where individual users can select and begin mining with just one click.

Antminer S19			
Mines	Plan Duration (Days)	Hash Rate (TH/s)	Breakeven (Days)
Bitcoin	300	2,000	232.29
Fee Per Day	Return Per Day	Profit Ratio	Annual Return
\$134.4	\$61.40	69.94%	69.94%

Antminer S19 Data are based on Theoretical output from BTC.com | For more information on other plans, please visit: www.bitdeer.com

For consultation regarding the DACH region, kindly contact marketing@bitmain.com

SECTION 05

THE FINANCIAL LANDSCAPE

FINANCIAL LANDSCAPE

The European Securities and Market Authority (ESMA) reported that investment in alternative investments across Europe was €4.9 trillion in 2019.⁶ According to Preqin's 2019 study on alternative investments in Europe, Germany has €58 billion invested in alternative assets.⁷ The largest sector of Germany's alternative investments is private equity and venture capital, accounting for 23.4%. This is followed by real estate (13.5%), hedge funds (12.2%), infrastructure (5.1%), and private debt (2.9%). Per adult capita, Germany's investment in alternative assets is approximately €1,248. In comparison, Switzerland has approximately €60 billion in assets under management dedicated to alternative investments.⁸ Hedge funds are the most attractive investment vehicle for Swiss investors representing 24.9%. This is followed by private equity and venture capital (14.4%), infrastructure (12.3%), private debt (5.0%), and real estate (2.1%). Per adult capita, Switzerland's investment in alternative assets is approximately €12,212. **Despite Switzerland's smaller number of potential cryptocurrency investors, the investment amount per adult capita in alternative assets is 10x higher in Switzerland than in Germany.** This provides evidence that Swiss investors may have more of an appetite for digital assets.

In the USA, some institutional investors have already invested in financial products that give them exposure to digital assets. **Two pension funds** in Virginia including the Fairfax Police Officer's Retirement System and Employees' Retirement System **invested \$55 million (€46.2 million) in Morgan Creek's cryptocurrency fund in October of 2019.**⁹ Yale University invested in two cryptocurrency funds during 2018 including Paradigm's \$400 million (€336 million) fund and Andreessen Horowitz. The University of Michigan's endowment also invested \$3 million (€2.5 million) in the Andreessen Horowitz cryptocurrency fund. Other university endowments including Harvard, Stanford, Dartmouth, Massachusetts Institute of Technology (MIT), and the University of North Carolina have all invested into digital assets via various financial products.

This section discusses **how investors in the DACH region actually gain access to cryptocurrencies** and highlights the most popular crypto asset investment vehicles for professional investors in each region.

10x

more investment in alternative assets per adult capita in Switzerland compared to Germany

€4.9 trillion

is invested in alternative assets in Europe. If 1% was allocated to digital assets, this would increase the crypto market cap by 13%

⁶ <https://www.esma.europa.eu>

⁷ <https://docs.preqin.com>

⁸ <https://docs.preqin.com>

⁹ <https://finance.yahoo.com>

GERMANY

The recent developments in Germany show that financial intermediaries are heavily investing in blockchain infrastructure. In early 2020, over 40 German financial intermediaries applied for a license from BaFin to be allowed to take custody of digital assets.¹⁰ This represents over 2% of Germany's 1,800 banks.¹¹ The license costs approximately €175,000,¹² which indicates that many banks are banking on blockchain-based systems becoming the infrastructure technology of future financial markets. For this reason, the legislator is creating the necessary regulatory requirements and engaging in discussions that will decisively shape the financial market of tomorrow. Regarding the development of the necessary regulatory framework for digital assets, two aspects stand out. First, in December 2019, crypto asset custody was incorporated as a financial service in the German Banking Act (KWG) and, therefore, requires authorization from the financial market authority, BaFin, since January 1, 2020. Second, the German legislator published a draft bill in August 2020, **which intends to abolish the mandatory paper-based certificate for securities**. This development can be regarded as revolutionary — as it signifies a break with a system that is over a hundred years old.

However, besides the regulatory development, companies that actively offer products and services are the

foundation for driving the adoption of blockchain technology. **For this reason, we provide an overview of the companies in Germany that enable institutional investors to access crypto assets, such as Bitcoin and Ethereum.** The analysis shows that the current market is already more fragmented than one may think.

The German legislator has created a regulatory framework that enables financial institutions to invest in crypto assets. At the same time, several companies and banks have also set up the appropriate technical infrastructure for the professional trading of Bitcoin & Co. In sum, this leads to an increased and more differentiated offering around crypto assets. Financial services in the crypto segment have, for some time, included instruments which, for example, reflect the price of Bitcoin or market places for retail investors. **Now, however, fully regulated trading venues for professional investors like BSEDEX are emerging. Also, some banks are establishing themselves as a BaaS platform. Solarisbank AG and Bankhaus von der Heydt, for instance, provide other financial institutions with the regulatory and technological infrastructure to enable access to crypto assets for their customers.** It will be exciting to see how the market develops, given the fact that BaFin will issue first licenses for crypto custody later this year.

2%

of German banks have applied
for a digital assets license

€175,000

estimated cost for applying for
a license to operate with digital
assets in Germany

¹⁰ <https://finance.yahoo.com>

¹¹ <https://corporatefinanceinstitute.com>

¹² <https://www.bafin.de>

GERMANY'S TARGET MARKET IS INTERESTING FOR RETAIL AND PROFESSIONAL INVESTORS

In 2018, the German retail bank Postbank surveyed 3,100 Germans and found that 29% of Germans believe that cryptocurrency is a desirable investment opportunity.¹³ This number is high given that the survey was conducted between February and March of 2018 when Bitcoin was in a bear market. The study found that **6% of respondents in the 18 to 34 year old group own cryptocurrencies and that 14% planned to buy cryptocurrencies during the next 12 months.** This is in contrast with the 3% of the whole survey sample that owned cryptocurrencies.

A survey carried out half a year later by the German Consumer Centers of Hesse and Saxony found similar results to the Postbank survey.¹⁴ **In this study, 28% of respondents from the age group 18 to 29 were interested in buying cryptocurrency.** The survey polled 1,000 Germans in Hesse and Saxony.

Blockchain Research Lab conducted a survey of German cryptocurrency adoption in 2019 and found that 87% of Germans had heard about cryptocurrencies.¹⁵ **According to the study, 24.8% of respondents had invested in cryptocurrencies.** 14.1% owned cryptocurrencies at the time of the study, and 10.7% owned cryptocurrencies in the past. The overwhelming interest was in Bitcoin. Out of

the 14.1% of respondents that held cryptocurrencies, 85% of the respondents were invested in Bitcoin. Ethereum was the second largest coin held by respondents (30%) followed by Litecoin (23%) and Bitcoin Cash (20%). The survey had a sample of 3,059. In the sample, German investors trusted Bitcoin.de the most, followed by Coinbase and Kraken. The average size of a respondent's original investment was €2,546.

ING Bank also published a survey that asked 12,813 people across Europe what their perception of cryptocurrencies were.¹⁶ German respondents had a more friendly attitude toward cryptocurrencies than Austrians with 20% of Germans saying they found cryptocurrencies to be positive compared to only 13% in Austria. **Interestingly, ING Bank found that 12% of Austrians wished that banks would offer cryptocurrency-enabled accounts.**

In early 2020, the market research institute Intervista and Migros Bank in Switzerland published a survey showing that **13% of investors under 30 believe that Bitcoin and altcoins will play a more prominent role in their basket of savings.**¹⁷ The survey also reported that around 7% of Swiss people have invested in crypto. The survey studied Swiss aged 18 to 55.

6 – 24.8%

of Germans have
invested in digital assets

7%

of the Swiss have
invested in digital assets

12%

of Austrians are interested
in owning digital assets

¹³ <https://www.postbank.de>

¹⁴ <https://cointelegraph.com>

¹⁵ Report Series No.3. The State of Cryptocurrency Adoption: Germany Q4 2019. Retrieved from <https://www.blockchainresearchlab.org>

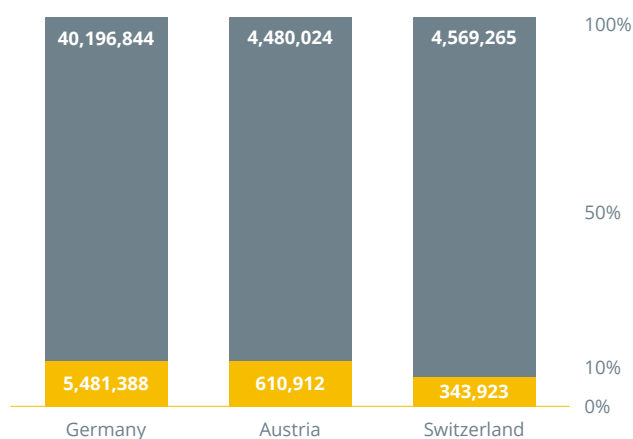
¹⁶ <https://think.ing.com>

¹⁷ <https://blog.migrosbank.ch>

DACH region adressible market for retail cryptocurrency investment products

■ Target adressible market, persons

Source: Cointelegraph Research, Postbank, Blockchain Research Lab, Migros Bank, Official population estimates



To summarize the surveys, retail ownership of digital assets ranges from 6% in 2018 to 24.8% in 2019 in Germany and 7% in Switzerland. In Austria, the estimate is 12%. Taking the average of the two German surveys, the current size of the target addressable market for retail cryptocurrency in investment products is approximately 15.4% of the adult population aged 18 to 59. This is approximately 5.5 million potential clients out of Germany's 46.05 million adults. Relying on the only survey of average investment amount that was conducted by the Blockchain Research Lab, **this gives an estimate of an addressable market worth over €14 billion in Germany alone.** The current size of the target addressable market in Switzerland is approximately 7% of the adult population or 343,923 people. The current size of the target addressable market in Austria is approximately 12% of the population aged from 18 to 59 or

657,766 people, and it is the second-largest addressable market for retail cryptocurrency in investment products in the DACH region.

In conjunction with improved technological solutions, companies are now offering institutional investors the appropriate setting for professional crypto trading without needing to hold on to private keys. The Börse Stuttgart Digital Exchange (BSDEX), for instance, targets financial institutions and is offering the first regulated trading venue for crypto assets in Germany. For its trading platform, BSDEX partnered with Solarisbank AG, which holds a full banking license and, therefore, handles the bank accounts, as well as blocknox GmbH, responsible for the custody of crypto assets. Currently, institutional investors can trade Bitcoin against the euro, and the addition of more digital assets is planned.

€14 billion

target addressable market for digital assets in Germany

5.5 million

potential clients in Germany



ICONIC

FUNDS

ENABLING INSTITUTIONAL GRADE CRYPTO INVESTMENTS

A mere 1% allocation to a basket of crypto assets over the past few years would have nearly doubled the risk-adjusted return of almost any traditional investment portfolio type, according to a recent empirical research study. It is no wonder the likes of billionaire hedge fund managers like Paul Tudor Jones are now investing heavily into Bitcoin and Nasdaq-listed institutions such as MicroStrategy have adopted it as their primary treasury reserve asset.

Amidst the backdrop of a global pandemic, seemingly endless money-printing and an increasingly digitized economy, now, more than ever, investors are demanding exposure to crypto assets.

Iconic is a firm that is bridging the traditional and crypto investment world, offering an array of crypto investment strategies through traditional and regulated investment vehicles. Investors may diversify their exposure into crypto through passive index products or seek alpha through quant and hedge strategies on Iconic's newly launched Multi-Manager platform.

The marriage of state-of-the-art technology, innovative investment products and uncompromising professionalism places Iconic at the vanguard of crypto asset management. Learn more at <https://funds.iconicholding.com/>.

	Reference Index	1% Rebalancing	3% Rebalancing	5% Rebalancing
Traditional stock bond portfolio (50/50)	6,8109	8,7668	9,7907	9,7122
Traditional stock bond portfolio (80/20)	6,6564	8,1671	9,5328	9,7860
Balanced portfolio	3,9965	6,2045	8,1212	8,5975
Endowment model	4,6509	6,4220	8,2163	8,7601
Pension Fund model	4,1144	6,1022	8,0165	8,5699
Family Office model	2,7565	4,5318	6,7274	7,6785

Source: Iconic. Sharpe Ratio Results from the Iconic Funds' commissioned empirical study "The Impact of Crypto Currencies on the Sharpe Ratio of Traditional Investment Models"

STRUCTURED PRODUCTS ARE PROLIFERATING

Many institutional investors cannot or do not want to invest in digital assets directly. To meet this demand, there are several products that enable participation in price trends without holding onto a private key including Exchange-Traded Notes (ETNs). Börse Stuttgart, for example, offers several ETNs which mimic the price

development of Bitcoin and Ethereum. Another financial instrument that allows investors to participate in price developments are certificates. The certificate from Bank Vontobel with Bitcoin as an underlying is, for instance, available at Börse Stuttgart and Börse Frankfurt.



Martin Schmidt, Partner

Source: Postera Capital

In addition to structured products, investors can invest in regulated fund products that give exposure to digital assets, such as the alternative investment fund (AIF) offered by Postera Capital in Düsseldorf. The company was founded in 2017 and deals exclusively with crypto assets and blockchain. Postera is the initiator of the Postera Fund — Crypto I, the first regulated crypto fund in Europe. The fund invests directly in crypto assets such as Bitcoin, Ethereum, and Dash. Since its launch in April 2018, the fund's investment universe has been steadily expanded and currently comprises 15 crypto assets. The portfolio is actively managed, with individual positions being over- or underweighted based on fundamental data, technical analysis, and AI-supported sentiment analysis. The fund is aimed at professional investors and is approved for sale in Germany, Liechtenstein, Great Britain and Switzerland.



Katarina Gehra, CEO

Source: Immutable Insights

Another fund offering an actively managed AIF in the DACHLI region is Immutable Insights' hedge fund. The hedge fund applies proprietary on-chain-analytics to generate a trading signal for the first BaFin registered Crypto Hedge Fund from Germany — the Blockchainfonds I GmbH & Co. KG for professional investors only. Different from other funds, it does not hold Bitcoin but instead focuses on the underlying value of tokens and the potential of the applications on the Ethereum blockchain. The fund applies a very conservative risk management and aims to achieve superior risk-adjusted returns that are catering to the needs of fiduciary asset managers with a view on the overall portfolio allocation and balanced risk. It also applies its own proprietary anti-money-laundering and compliance detection analyzes, making it as safe and clean as possible to invest in the new asset class. The fund is up 20% year to date.

CRYPTO-ENABLING INFRASTRUCTURE PROVIDERS

As already implied in the service offerings above, **some banks are also positioning themselves in the Banking-as-a-Service (BaaS) segment.** For this purpose, these companies provide the regulatory and technical infrastructure for trading crypto assets. This allows other financial institutions to integrate these products into their existing offerings.

Already embedded as a BaaS platform in the German ecosystem for crypto assets is Berlin-based **Solarisbank AG.** Its white-label platform for digital banking services is implemented by companies like BSDEX, BISON, and Bitwala. Furthermore, Solarisbank AG founded the subsidiary Solaris Digital Assets GmbH in December 2019 to also provide the technical and regulatory infrastructure for crypto asset custody.

Another infrastructure provider offering regulatory and technically compliant white-label solutions is the **Bankhaus von der Heydt.** With its experience in the structuring of financing solutions, Bankhaus von der Heydt now offers a digital platform for the issuance of security tokens, crypto custody, and fiat-on-ramp. The latter enables its B2B and B2B2C clients to trade crypto assets into euros.

Fidor Bank AG, which also provides BaaS, however, offers access to crypto assets for retail and B2B clients alike. Its solution for financial institutions enables trading of Bitcoin against the euro with SEPA transactions. Also, Fidor Bank AG offers corporate bank accounts for crypto exchanges as well as for investors and companies conducting ICOs.

TEN31 Bank, a venture of the fully regulated German **WEG Bank AG,** works on a bridge for payment processing between digital currencies and the euro. Together with its partner Salamantex, a provider for PoS terminals, consumers will be enabled to pay with, e.g., Bitcoin, while the merchant receives euros. Also, TEN31 partnered with NimiQ enabling its clients to trade crypto assets against the euro by using SEPA bank accounts. Both services are, nevertheless, still subject to regulatory approval.

Another bank actively working on innovative, blockchain-based solutions for the capital market is Bankhaus Scheich. In February 2020, Bankhaus Scheich declared the successful replication of a DAX share as a digital security

on the blockchain together with Cashlink and Finoa. **Now, in August 2020, Bankhaus Scheich announced to offer trading of Bitcoin & Co. to professional investors in cooperation with the German crypto custodian Finoa.** The service offering seeks to enable in-custody trading, without exposing clients to transaction and counterparty risks of multiple trading venues.

For the retail segment, several players can also be found. Here, offerings have been available for some years. **Nevertheless, it can be assumed that increasing investor protection and more user-friendly products will be beneficial for the retail market in general.** Via **Germany's oldest exchange bitcoin.de,** for instance, retail clients can trade crypto assets in a regulated environment provided by Fidor Bank AG. While bitcoin.de provides the peer-to-peer marketplace and the custody of crypto assets, Fidor Bank enables the corresponding SEPA transactions for customers.

Also, **BISON,** backed by Börse Stuttgart, provides an application that aims at retail clients and offers trading of Bitcoin, Ethereum, Litecoin, and Ripple. As for its institutional counterpart BSDEX, the solution includes the partners Solarisbank AG and blocknox GmbH.

Another player targeting retail clients is **Bitwala.** In this offering, customers are required to set up a SEPA bank account with Solarisbank AG in order to trade Bitcoin and Ethereum. Also part of this cooperation is BitGo, which is responsible for the management of private keys. Bitwala also offers debit cards to its customers, which can be used by converting crypto assets into euros.

100,000 +

**users of the German crypto
phone app within 1.5 years**

THE CUSTODY OF CRYPTO ASSETS — NEXT-GENERATION TECHNOLOGY ON THE HORIZON

In the research for this article, a new tendency regarding crypto custody could be observed. As described above, the custody of digital assets has been a much-discussed topic due to the regulatory initiative in Germany. Therefore, several startups have focused on this subject. However, the custody of crypto assets can be carried out by applying very different technological solutions.

The majority of the custody startups, e.g., Finoa, Tangany, and Upvest, rely on so-called hardware security modules (HSMs) for the storage of crypto assets. The main task of an HSM is to generate, store, or manage cryptographic keys and to protect them from unauthorized access. **Established banks such as Solarisbank AG and Bankhaus von der Heydt, however, already utilize the next technological generation for crypto custody called multi-party computation (MPC).** Also, CommerzVentures, the corporate venture arm of Commerzbank, invested in the Series A funding

round of the custody startup Curv, which specializes in MPC. Simply put, MPC is a cryptographic mechanism that requires multiple instances to sign a transaction. Therefore, such a solution eliminates the single point of attack for hackers.

Regardless of the technological stack, however, one problem currently appears to be common to all players. **Insurances that protect investors against any form of loss of crypto assets are too expensive. This can be seen as the missing piece of the puzzle for comprehensive investor protection.** Insurance premiums for assets under custody are currently around 1% for cold storage solutions and between 2% to 3% for MPC-based solutions. In the next few years, however, insurance providers will probably acquire more technological know-how for risk assessment so that lower insurance premiums can be expected.

1%

premium can be charged for
insurance on cold storage solutions

2% – 3%

premium can be charged for
insurance on MPC solutions

Another rising trend is phone applications that enable investment in digital assets. One such application out of Switzerland is Relai, which has become one of the hottest trending apps on the Android app store. The Relai app allows anyone to buy Bitcoin without giving up their identity. The phone app works with one of the first Swiss regulated crypto companies, Bity, in order to buy Bitcoin. In addition to requiring no KYC, the phone app does self-custody, so there is no need to trust coun-

terparties with private keys. This app has made Bitcoin ATM transactions possible within the privacy of one's own home and internet connection. In Relai's first three months, they had more than 2'000 app downloads in 20 different EU countries, more than 1'000 investments per month, and more than €500'000 in volume. This is a good innovation as many Bitcoin ATMs in Germany have had to shut-down due to Germany's new licensing raj.

SMART ORDER ROUTING WITH BLOCKSIZE CAPITAL

Blocksize Capital powers the upcoming digital finance revolution by providing financial institutions with fully compliant, secure and robust infrastructure to analyze, trade and manage digital assets.

Financial markets are evolving towards digital assets. Cryptocurrencies, in particular, are set to become a recognized new asset class. They are the entry door for this new wave, attracting significant attention from

institutional investors. With our infrastructure, your organization will be able to meet new customer demands and provide digital assets-related trading services to existing and new clients.

With our high-end, low-latency SaaS solutions, we can transform your business quickly and efficiently to embrace the digital transformation.

TECHNOLOGY AS A GATEWAY TO NEW GROWTH OPPORTUNITIES

We live in a new era, where disruptive technologies are drastically challenging the status quo of capital markets and leading to new customer demands. As leading software providers for digital assets, we understand this change as an opportunity.

Blocksize Capital trading infrastructure helps financial institutions to access the potential of digital assets and tap into new growth opportunities. We are committed to our customers' success and stand for technological competitive advantage.

WE CONNECT DIGITAL ASSETS

Blocksize Matrix™

Trade smarter, understand the market and aggregate all your accounts.

A dynamic and modern trading terminal with cutting-edge tools for investment professionals. One single point of access to turn essential market knowledge into highly profitable investments.

Blocksize Core™

Access deep liquidity, trade smarter and optimize your trading costs.

Single access end-to-end institutional trading module, enhancing legacy infrastructure with low-latency, real-time crypto-financial data.

Quant SDK

Execute sophisticated quantitative trading strategies.

Access robust historic and real-time data to back-test your strategies, improve your returns through simulated trading and data-driven insights to execute quantitative low latency trading strategies.

“Depending on the type of investor, different solutions are available. Typically, an order routing system is required to execute orders on a larger scale, so that prices are not affected due to low market liquidity. These systems become even more powerful if they are connected to institutional-grade crypto custodians that provide reliable storage and security services for the purchased assets.”

— Professor Dr. Philipp Sandner, Christian Labetzsch, Thomas Faber

Switzerland and Liechtenstein are the furthest ahead in terms of digital asset adoption, infrastructure, and regulatory support. The regions are most well-known for their “crypto banks”. With five banks in Switzerland offering clients the ability to invest in digital assets including Sygnum Bank AG, SEBA Bank AG, Swissquote, Vontobel, and Maerki Baumann, and one bank in Liechtenstein, Bank Frick, the region is benefiting from free market competition. Bitcoin Suisse AG is on the way to becoming the fifth bank, and there are many more that may be announced soon including Gazprombank. Instead of being pushed away by banks in most countries, blockchain-based companies can have their choice of banking partners in the Alps.

On 26 August 2019, Sygnum Bank AG and SEBA Bank AG received their banking and securities dealer license from Switzerland's regulator FINMA, making Sygnum and SEBA the first native digital asset banks. This is a feat that even the US has not accomplished yet, as Caitlin Long's Avanti Bank is still in the process of launching. The digital asset exchange Kraken has recently announced that they are the first crypto company to receive a banking charter in the US.

Bank for the Digital Future

Sygnum was conceptualized at the end of 2017 and incorporated in early 2018. Its focus was on developing the strategy, plans, and infrastructure needed to be a regulated bank. On 26 August 2019, Sygnum received its

banking and securities dealer license from Switzerland's regulator FINMA. Sygnum also holds a capital markets services (CMS) licence for asset management in Singapore.

Sygnum's offering

Sygnum offers a portfolio of regulated banking services for the universe of digital assets. The offering includes: Accounts and custody, brokerage, lending, asset management, business-to-business banking services as well as services in the field of tokenization.

Sygnum's digital asset custody solution is designed and built with a multi-layer security framework and seamlessly integrates traditional fiat currencies and digital assets in one account. Clients' assets are held in individually segregated wallets and private keys are stored in our independently-controlled secure banking infrastructure co-developed with Swisscom, eliminating the need for them to be personally secured and maintained.

Through Sygnum's fiat-digital asset gateway, clients can use their deposited CHF, EUR, SGD, and USD to securely buy and trade an expanding range of digital assets anytime and anywhere. Currently, these include Bitcoin, Bitcoin Cash, Ethereum, and XRP as well as a digital CHF token issued by Sygnum for instant settlements. Soon clients will also be able to buy and trade a diverse range of asset tokens.

To enable clients to respond quickly to market developments, Sygnum offers Lombard loans providing fiat

USD 24 trillion

by 2027

liquidity against the value of pledged digital assets. Loan-to-value (LTV) terms can be adjusted to requirements and interest is only charged on the amount drawn, resulting in flexible and scalable liquidity.

On the asset management side, Sygnum provides a range of high-quality digital asset investment products, including a Multi-Manager Fund and Sygnum Platform Winners Index

ETP. These innovative products offer diversified, convenient, and secure exposure to the emerging digital asset megatrend.

The tokenization solution is built to bring issuers and investors together. For issuers, it offers

new and efficient ways to raise capital through the issuance of tokenized securities, as well as automatic execution of corporate actions and share registry updates through smart contract capabilities. For investors, it provides access to a broader set of investable assets to further diversify investment portfolios, which will be accessible through a digital asset trading facility.

Sygnum earns fees for its various products and services such as custody, brokerage, and asset management, while interest is charged on Lombard loans. Sygnum also partners with other financial institutions, enabling them to offer digital asset products and services to their own clients, including tokenization.

Partners not clients

Sygnum's overall philosophy is very much aligned with the crypto world. The crypto bank sees the future of

finance as being characterized by an open, agile, and non-hierarchical ecosystem. As such, Sygnum prefers to speak of its clients as partners. Just like Sygnum, they believe in the value of digital assets to create new business opportunities and transform the financial industry. Sygnum, therefore, strives to empower institutional and private qualified investors, corporates, banks, and other financial institutions to invest in the emerging digital asset economy with complete trust.

Future plans

The overarching goal of Sygnum is to build a global, trusted, and regulatory compliant digital asset ecosystem, which is critical to realizing the next wave of financial innovation – asset tokenization. This market is forecast to be worth USD 24 trillion by 2027 and has the disruptive potential to reshape the securitization business model in the coming years.

Sygnum is already working with issuers to tokenize their shares and raise capital in a fully digital manner. It also recently received regulatory clearance from the Swiss regulator FINMA for its digital asset trading facility (OTF), a central element of its end-to-end tokenization offering which covers primary issuance, settlement, custody, and now, secondary trading.

Sygnum is innovating within today's regulatory frameworks in reputable financial hubs to shape the development of the emerging digital asset ecosystem together with our strategic partners such as Swisscom, and other industry leaders. Sygnum is part of two digital asset joint ventures (JVs) with Swisscom, Custodigit and daura, the latter one also involving Swiss exchange, SIX.

“Within a few years, a younger generation of financial services customers are going to be able to walk into a bank and gain access to credit products, savings accounts and investments that can host both crypto and fiat assets. In fact, the inroads that will allow for all of this to happen are already breaking ground.”

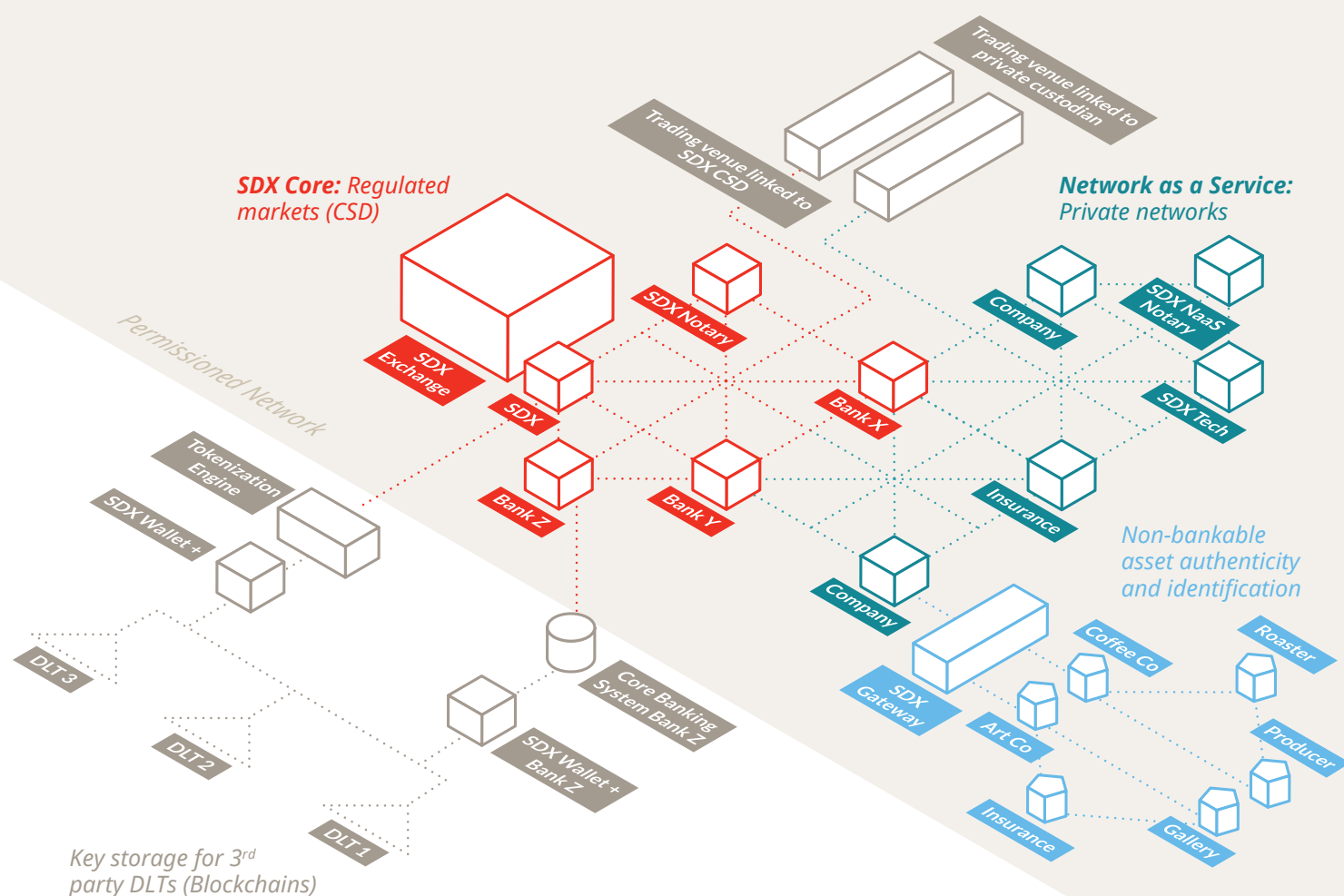
— Mark Binns, Cointelegraph

Infinite Possibilities.

Next generation digital
market infrastructure.



SIX Digital Exchange Ecosystem



As the first end-to-end DLT-infrastructure, SDX takes care of the issuance, trading, settlement and custody of digital assets.

The Swiss company offers its customers a secure platform to create new business models, products and services.

From the world's leading regulatory environment, SDX works together with its customers to create the next generation global financial market ecosystem.

A MARKETPLACE FOR SECURITY TOKENS AND DIGITAL ASSETS

Although there are many security tokens coming to the market, there is still not an easy way for professional traders to trade security tokens. However, the SIX Digital

Exchange owned by the SIX Group is working on solving this problem.

“Blockchain technology has the potential to modernize, simplify, or even potentially replace current trading and clearing and settlement operations.”

— Mary Jo White, U.S. Securities and Exchange Commission Chairwoman

In addition to the SIX Digital Exchange, Liechtenstein also has a token issuance platform, called area2invest. As a tied agent of Bank Frick & Co. AG, the fintech company built a network of banks, brokers, asset and fund managers in order to become Europe's first marketplace for securities and token issuances.

Another one of Switzerland's banks that are involved in crypto is Swissquote Group Holding SA. Professional and retail traders can trade Bitcoin and 11 other cryptocurrencies. In 2020, the bank started offering regulated institutional cold storage, and it is already used by WisdomTree and other institutional clients. In terms of the custody solution, one of Swissquote's technology partners is Switzerland's Crypto Storage AG, which is a subsidiary of Crypto Finance AG. While Crypto Storage's solution has been used as the foundational layer, Swissquote has built its own additional security layers upon it. The other main pillar is Swissquote's trading platform. Swissquote has an API (FIX and Websocket), so its institutional clients are able to access liquidity. API's are Application Programming Interfaces that allow trusted larger partners to communicate directly with one another super quickly and without barriers — like having a phone line that is always open. FIX is what traditional financial institutions generally use for the electronic transfer of financial data. Websocket is a more modern version of FIX that is often preferred by crypto funds. For larger orders, the bank also supports OTC trades.

Currently, Swissquote's DLT/Blockchain team already counts twenty team members, reassuring that all the different processes and procedures work just fine — be it in the front office, development, compliance or risk. Concerning fees, Swissquote's crypto retail pricing is, on the face of it, more expensive than most of the unregulated exchanges. Fees range from 0.50 and 0.99 percent. This is due to a combination of reasons, including the fact that Swissquote is a highly regulated Swiss bank with operating costs much higher than most of its crypto exchange competitors. Oftentimes traders use different exchanges to send crypto assets around. This costs additional gas fees, which can make the overall transaction cost of trading through “cheaper” unregulated exchanges just as expensive as using a regulated platform such as Swissquote.

Staying within Swissquote's ecosystem will save a trader these kinds of fees. On the institutional side, the fees are very competitive and they can be tailored to an institution's needs. Interestingly, Swissquote has quite some plans for the future regarding blockchain and crypto assets. As a matter of fact, the bank wants to expand into Bitcoin futures and options, tokenized securities and staking. Many of these new features are planned for Q1 of 2021.

REGULATED CRYPTO FUNDS

One of the most famous crypto funds in the world hails from the Swiss firm Crypto Finance AG. Crypto Finance AG is a fintech company that provides institutional and professional investors with products and services in the digital asset space. Founded in June 2017, the Zurich-based company has 40 employees and three operational subsidiaries including Crypto Fund AG, Crypto Broker AG, and Crypto Storage AG. With just over 50% of the overall Crypto Finance Group business linked to international clients, Crypto Finance is continuing international expansion and product and service development.

Crypto Fund AG offers an active as well as a passive investment approach for crypto assets. The passive approach tracks the performance of the Crypto Market Index 10 (the “CMI10”), which is independently calculated and maintained by the SIX Swiss Exchange. The Index does not include privacy coins like Monero, indexed crypto assets, or pegged crypto assets, such as gold-backed stablecoins. Indexed crypto assets refer to crypto assets which are, for example, based on a basket of other crypto assets

such as a “fund token” or similar. These are excluded as they are an indirect representation of other assets, similar to pegged assets. Furthermore, crypto assets which cannot be safely stored in an institutional-grade storage solution are also excluded. This may be an issue when a crypto asset based on a new blockchain would be eligible for an index where storage of that asset is only possible via exchanges.

The fund employs a strategy involving automated trading algorithms that take long and short positions on Bitcoin. Assets under management in the active strategy are currently at €25 million, and the year to date return is between 33% and 40% — dependent on the share class. The active strategy is deployed with Bitcoin futures only. Crypto asset custody is, therefore, not a necessity. For the passive strategy, crypto assets are stored with the depositary, Bank Frick. The fund does not self-custody any crypto assets. Both funds are alternative investment funds (AIFs) administered by CAIAC Fund Management AG in Liechtenstein.



Jan Brzezek, CEO

Source: Crypto Finance AG

€25 million

in assets under management in an actively managed crypto fund



120%
return year to date

Désirée Velleuer, CEO

Source: SwissRex AG

Domiciled in Liechtenstein, SwissRex AG operates a crypto fund with a British Virgin Islands (BVI) structure and a tracker certificate setup by GenTwo Digital AG and MTCM Investments AG. The main advantage of the certificate is that it can be subscribed without any problems via any bank thanks to its Swiss VALOR number. The VALOR number, which is incorporated in the Swiss ISIN number, is a code which uniquely identifies listed securities and financial instruments in Switzerland. Both products are distributed to qualified investors by Crypto Consulting AG in Switzerland.

Fundamental analysis of crypto tokens forms the basis for the investment decisions of their actively managed crypto fund. The strategy gives the investor access to a diversified basket of Bitcoin and altcoins (alternative coins). The tokens are analyzed on a daily basis, and the positioning is actively managed. The strategy takes care of the timing for the investor. The exposure is determined on the basis of valuation models and the cycle model described below and ranges between -20% and 120%. In February, the allocation was reduced to 50% due to a slight overvaluation and the hype around the Bitcoin halving. It was increased to 100% again during the correction that the Corona crisis caused. In addition, the choice of individual tokens is of great importance. The largest 50 tokens are analyzed, and a fair value is calculated. On this basis, 10 tokens, of which the greatest potential is expected, are purchased and stored safely. The asset allocation mixed with the right choice of altcoins contributed to a fund performance of 120% in 2020 (net in CHF as of July 28, 2020). Bitcoin generated a return of 49% over the same period. The AUM now stands at CHF 8 million.

SwissRex distinguishes four phases in the cycle of crypto tokens: the beginning of a bull market, the outper-

formance of altcoins, the hype, and the bear market. When investors seek exposure to crypto again after a prolonged downtrend, they typically buy Bitcoin, as it is the most liquid and best known of all tokens. Since Bitcoin is one of the few tokens that are trending up in this first phase, altcoins are sold and the correlation between Bitcoin and altcoins can be negative for a short period of time. Through these shifts, high quality altcoins become bargains and value investors make their first purchases. Individual altcoins show better returns than Bitcoin in this second phase. As soon as Bitcoin reaches a new high, the third phase begins; the masses start buying crypto. Since Bitcoin already seems expensive, purchases are made in the second and third phase.

The most important decision is when to exit the market in order to have as little exposure as possible in the fourth phase, the bear market.

SwissRex differentiates between three categories of tokens: stores of value, currencies, and securities. As there are no cash flows for securities and currencies, the analysis must be based directly on supply and demand. On the supply side, velocity and inflation are important, while on the demand side the adoption rate is estimated using an S curve. The fair value is calculated and multiplied by an individual success rate that weighs factors such as liquidity, trading venues, and the survival chances of the start-up. For tokens with security character, traditional valuation methods such as a dividend discount model are used.

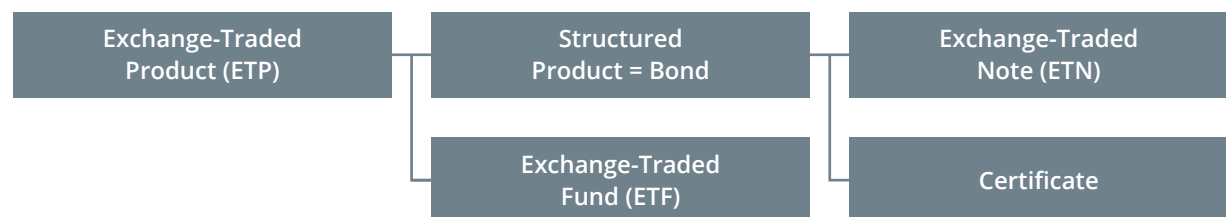
The fund's assets are held with Crypto Broker AG and Bitcoin Suisse AG on segregated accounts with individual client wallets. They also hold a small part on a few exchanges which passed their due diligence process for trades in tokens and futures that aren't covered by their storage providers.

PASSIVE RETAIL STRUCTURED PRODUCTS

If you are looking at the landscape of financial instruments with Bitcoin and other digital assets as underlyings, 21Shares created the first crypto basket ETP (exchange traded product) on the regulated market of the largest Swiss stock exchange in 2018. Since then, 21Shares has issued a total of 11 institutional-grade passive investment trackers with the largest single assets (Bitcoin, Ethereum, Ripple, Tezos, etc.), different index baskets of digital assets, and the world's first inverse Bitcoin ETP on four different stock exchanges in Switzerland and the EU.

Notably, the 21Shares crypto ETPs are the most readily available crypto products on the market, as any institu-

tion with access to Deutsche Börse XETRA or SIX Swiss Exchange can easily access the ETPs. This includes all the large Swiss and European online brokers such as Interactive Broker, Swissquote, Comdirect, etc. This is particularly relevant as it gives retail clients without the proper know-how to set up accounts with unregulated crypto exchanges the ability to participate in this novel asset class. Furthermore, all 21Shares ETPs are 100% collateralized at all times and custodied with independent custodians in order to give institutional clients safer access and reduce the counterparty risk often associated with other financial products.



Source: Cointelegraph Research

"Cryptocurrencies offer experienced investors a new way of diversifying their portfolios. With the listing, we are increasing the selection of asset classes on the Vienna Stock Exchange. Investors can also benefit from the advantages of the stock exchange in crypto trading: monitored and transparent trading with real-time information and secure processing via their securities account."

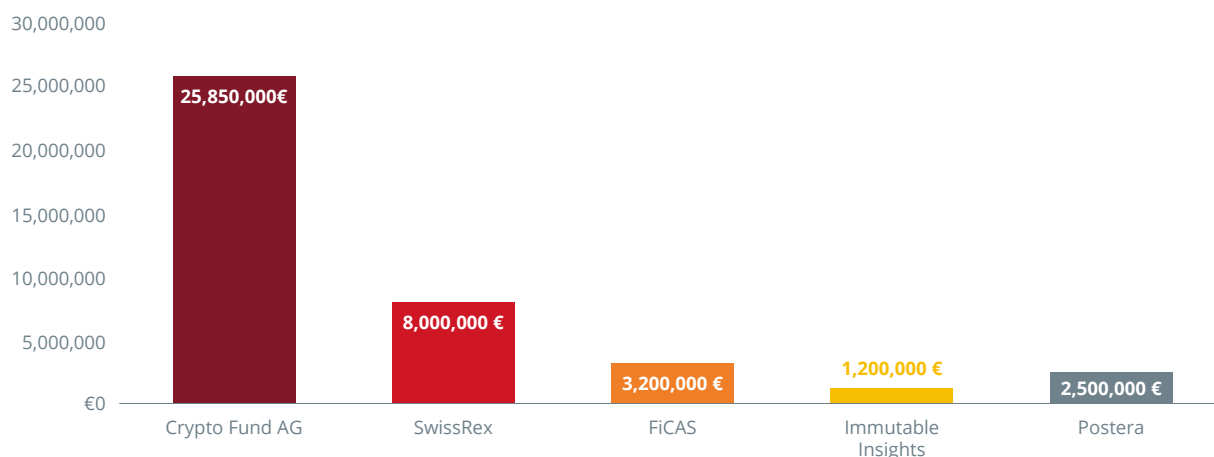
— Thomas Rainer, Head of Business Development at the Vienna Stock Exchange

RETAIL AND ACTIVELY MANAGED STRUCTURED PRODUCTS

In addition to actively managed structured products for professional investors, Switzerland has become home to **the world's first actively managed Exchange Traded Product featuring cryptocurrencies as the underlying asset class**. Launched in summer of 2020, the Bitcoin Capital Active ETP **allows retail** and institutional investors in Switzerland and, after approval of the prospectus in the EU, across selected EU jurisdictions to invest in digital

assets via a certificate structure. The product is issued by Bitcoin Capital AG and managed by FiCAS AG, a Swiss-based crypto asset manager. Its investment objective is to increase the net asset value of the ETP by trading Bitcoin against carefully selected altcoins from the top 15 coins. Their strategy also involves moving in and out of fiat depending on the trading signals they analyze.

Actively Managed Digital Asset Investment Vehicles' Assets under Management



Source: Cointelegraph Research

The product is similar to a structured product, but it is not a certificate. Unlike certificates, ETPs are also designed for retail distribution.

Exchange Traded Products are collateralized, non-interest paying debt securities designed to replicate the performance of the underlying assets. ETPs trade on exchanges similar to stocks meaning their prices can fluctuate intraday. ETPs are structured and operate very similarly to traditional Exchange Traded Funds (ETFs). However, contrary to ETFs, ETPs are debt securities issued by a Special Purpose Vehicle (SPV).

Currently, their AUM is CHF 3.2 million. They launched with CHF 2 million on July 15, 2020, so their assets have

already increased by more than 50% since their launch. On the launch date, the issue price of each security was CHF 100, and the product as of today is trading at CHF 109 representing a 9% increase in value within six weeks. [More information on the FiCAS ETP can be found on the historical chart on the SIX Swiss Exchange.](#)

Their fees include a 2% management fee per annum and a 20% performance above a high water mark (HWM). The fees will be collected quarterly and this will reset the HWM to the new level. Storage of the assets is diversified across five custodians including Crypto Broker AG, [Sygnum Bank AG](#), Coinbase, Bitstamp, and Kraken, and they plan to further diversify by adding further custodians.

ACTIVELY MANAGED STRUCTURED PRODUCTS FOR PROFESSIONAL INVESTORS



SEBA Bank AG is one of the world's first banks dedicated to the digital asset industry. In addition to [SEBA Bank AG's](#) banking services, SEBA offers a full range of products including directional exposure via tracker certificates, smart beta certificates on an actively-managed index of cryptocurrencies, and capital protected products. In addition, yield enhancement certificates like the Dual Currency Certificate, with which they started our product campaign in July 2020, are available. The relatively high volatility of Bitcoin deters many investors. Indeed, Bitcoin volatility has run as high as ten times that of equities. By the same token, by selling high volatility, a very attractive target yield can be generated. A yield enhancement product like the SEBA Bank Dual Currency Certificate on BTC/USD does exactly that: By selling a put option on

BTC/USD, it harvests the inherent Bitcoin volatility and pays it out as an attractive yield to the product holder.

As digital assets emerge as a new asset class, many professional investors like family offices, HNWIs, and independent wealth managers are looking to build exposure. This new asset class offers significant diversification benefits due to low correlations to traditional assets and entirely new performance drivers. Many professional and institutional investors thus look to invest a single digit percentage of their assets in cryptocurrencies in order to tap this new diversification and performance potential. Based on this industry tailwind, SEBA Bank has enhanced its product capabilities to offer clients a variety of investment solutions and pay-offs on Bitcoin and other cryptocurrencies.

"SEBA aims to provide corporate financing, including advising on initial coin offerings, and other cryptocurrency and banking services to traditional corporate clients and cryptocurrency groups."

— Reuters

Similar to Bank Vontobel, Leonteq is a traditional company that moved into the digital asset space with certificates. Leonteq's most popular crypto certificate is its reverse convertible on Bitcoin that can be purchased on the SIX Swiss Exchange. Reverse convertibles are particularly suitable for investors who want to generate a guaranteed income over a certain period of time. Anyone who buys a reverse convertible on Bitcoin agrees to deliver the underlying asset, such as Bitcoin, on a specific, pre-determined date in the future. At the same time, the buyer is compensated with a fixed coupon.

From the buyer's perspective, a reverse convertible on Bitcoin works as follows: If the Bitcoin price at maturity is at or above the agreed strike price, the investor gets back 100% of their initial investment, which is also called the principal. In such a scenario, the investor would be in the money. However, if the Bitcoin price is below the agreed strike price at maturity, the investor participates to a certain extent in the negative performance of the underlying asset, in this case Bitcoin. At some point, the investor will be out of the money. This is the case, when the coupon is not able to compensate for the loss that the investor is incurring on the collateral that is being eaten away by the falling Bitcoin price.

The following table should help as an illustration

Redemption at maturity			
Price Bitcoin in USD	Redemption Reverse Convertible in %	Redemption Reverse Convertible in % (incl. Coupon)	Comment
15 000	100%	115,7500%	
14 000	100%	115,7500%	
13 000	100%	115,7500%	
12 000	100%	115,7500%	
11 000	100%	115,7500%	
10 000	100%	115,7500%	
9 000	100%	115,7500%	Strike Level
8 000	88,89%	104,6389%	
7 582,5	84,25%	100,0000%	Break Even
7 000	77,78%	93,5278%	
6 000	66,67%	82,4167%	
5 000	55,56%	71,3056%	
4 000	44,44%	60,1944%	
3 000	33,33%	49,0833%	
2 000	22,22%	37,9722%	
1 000	11,11%	26,8611%	
0	0,00%	15,7500%	

Source: Cointelegraph Research

Let's suppose an investor entered a reverse convertible at a Bitcoin price of \$9,000. At maturity, if the reverse convertible is redeemed at a Bitcoin price of \$11,000, the investor gets 100% of his initially placed collateral as well as the agreed coupon. Notice that the coupon is fixed, even when the Bitcoin price rises and is higher at maturity compared to when the reverse convertible was bought. If the Bitcoin price at maturity drops below \$9,000, the investor will not be refunded the entire collateral that he put up. Up until a Bitcoin price of \$7,582, he won't lose any money though, because the agreed coupon is able to compensate for the loss he is incurring because of a falling Bitcoin price. Once the Bitcoin price drops below \$7,582 at maturity, the investor will lose money overall.

However, reverse convertibles are not only bought for speculative reasons. By buying a reverse convertible for a premium, the buyer can earn a regular income over the time the reverse convertible is running. This way, they can potentially keep their Bitcoin, granted the Bitcoin price at maturity stays at or above the agreed strike price, but still earn a yield on it.

An investment in a reverse convertible on Bitcoin thus carries the risk of a capital loss at maturity. So all of the principal or parts of it could be lost. In addition, there is also the risk that if Bitcoin experiences an increase in value and the strike price at maturity is ultimately higher than the initial price, the investor will not benefit from this price increase. The investor's total return is limited to the guaranteed interest rate of the coupon payment. Against this backdrop, it makes sense that reverse con-

vertibles on Bitcoin are primarily suitable for investors when the Bitcoin market is stagnant or slightly declining in price. Leonteq's launched structured offering was not only a novelty for Switzerland, but it was also the first reverse convertible on Bitcoin in the world that could be traded on a stock exchange, thus giving a broad investor audience access to such a product.

This innovation was launched at a time when the environment for cryptocurrencies was anything but easy. After a considerable rally in the first half of the year with a price premium of almost 200%, there was a correction to below \$7,000, but the risk profile of the reverse convertible enabled the investor to achieve an absolute return of 10% in the first three months of the year. Looking at the product from the time of issue at the end of September 2019 onwards, investors were able to contain their losses significantly compared to a direct investment thanks to the attractive coupon of the reverse convertible.

Leonteq is now one of the leading issuers of yield enhancement products listed on the SIX Swiss Exchange with a market share of around 30% ,measured by the traded turnover of products issued by Leonteq and its issuing partners). Leonteq also offers short tracker certificates on Bitcoin as well as tracker certificates and actively managed certificates on Ether, Bitcoin Cash, Litecoin, and Ripple on the SIX Swiss Exchange. Leonteq's technology platform processes more than 100,000 customer transactions with a transaction volume of over CHF 15 billion per year and has one of the largest universes of structured products with over 2,000 underlyings and 90 payoffs.

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Out of all of the countries investigated in this report, Austria may be the one with the most opportunities. According to an official survey done by the Austrian National Bank in 2018, between 2.5% and 7% of the population in Austria either owned or currently own digital assets, and they could be interested in custody services. However, no banks in Austria currently offer custody for their clients. Banks in Austria have multiple layers of approval that must be passed before they can serve their clients with digital asset products. To meet the demand for custody, Thomas Fürstner, founded Riddle&Code GmbH, a blockchain interface company which builds hardware and software stacks for different industries with financial markets being one of them. Today, Riddle&Code offers institutional storage solutions across Europe.



Thomas Fürstner, Founder and CTO

Source: Riddle&Code GmbH

RIDDLE&CODE is an award-winning blockchain interface company that builds hardware & software stacks and creates a trusted connection between data, humans and machines. The company has been at the forefront of the decentralised economy helping machines to make faster and smarter decisions, adding trust at a new scale and opening various marketplace opportunities. Headquartered in Austria but working with its tier-one clients and partners worldwide, RIDDLE&CODE continues to enable tokenisation of financial/nonfinancial assets and develop new business models to financial markets, energy distribution, mobility and the Internet of Things.

To accelerate the future of the decentralised economy, the company built a comprehensive and unified platform that solves crucial business, technical and regulatory issues that a tokenised economy has been challenged by and are essential for the development of token-based marketplaces.

The cornerstone of RIDDLE&CODE's tokenisation platform is its Digital Asset Custody solution. Digital Asset Custody, which obtained Swiss regulatory acceptance, is a powerful yet simple all-in-one solution that enables end-to-end trading, settlement and custody services for digital assets.

Three fundamental components are underpinning the Digital Asset Custody platform:

- Security by design: implementation of leading security techniques such as secure multiparty computational technology, hardware security modules (HSMs) and role-based access control.
- Built-in regulatory APIs that allow our clients to achieve and maintain regulatory compliance.
- Technical and operational flexibility to keep the pace with an ever-evolving market.

To find out more about RIDDLE&CODE and the area of its business focus and projects, please visit their website: riddleandcode.com.



BITPANDA'S SERIES A RAISED \$52 MILLION

Although the major banks have not publicly announced products for the digital asset industry, they are experimenting with blockchain technology. Raiffeisen Bank International (RBI) launched a separate blockchain hub, which has the task of analyzing how private and permissioned blockchains can be used to improve processes at the bank. In 2017, RBI joined R3's global Corda network in order to participate in international developments relating to banking in blockchain. Their current token project REST and the coin project BILLON are being tested internally to understand more about the technology and to potentially implement solutions. As discussed in the

exclusive interview with Raiffeisen in this report, they also invested in the digital asset exchange Bitpanda via the blockchain-focused venture capital firm Speedinvest. The fintech investment vehicle Speedinvest has a special position in Austria. Not only did they successfully complete three venture capital rounds, the sum of the capital employed reached approximately €190 million in the third round. As a strategic investment, Speedinvest along with RBI and Uniqa, acquired an unknown stake in Bitpanda GmbH in April 2020, propelling even stronger growth for the exchange across Europe.



Founders Paul Klanschek, Eric Demuth, and Christian Trummer

Source: Bitpanda GmbH

Founded in 2014, Coinfinity is a broker and educational center for Bitcoin and blockchain technology based in Graz. They develop products and solutions related to Bitcoin and still operate the first ever Bitcoin machine installed in Austria. In addition, they started Bitcoinbon, which allows people to buy Bitcoins quickly and securely in over 4,000 points of sale in Austria. They also advise decision-makers and offer professional support for entrepreneurs who want to accept Bitcoin as a form of payment. With their branch in Graz, they have successfully established the first Austrian "walk-in office" related to

Bitcoin, similar to numerous "Bitcoin embassies" scattered around the world. They also offer their broker services online for fully verified customers to buy and sell the most popular virtual currencies. At the same time, they personally take care of professional investors and enjoy a high quality processing standard for OTC transactions. They believe that Bitcoin and blockchain technology will change the economy and society significantly in the coming years, and their mission is to make Bitcoin as understandable as possible and to facilitate access to this technology.

4,000

shops across Austria sell Bitcoin via Coinfinity's Bitcoinbon program

€190 million

raised by a blockchain venture capital fund in Austria

Since 2016, ERSTE Group AG has been in partnership with Ripple Labs. They have been investigating how blockchain can be used for the settlement of real-time foreign currency transactions. In addition to their partnership with Ripple Labs, ERSTE conducted one of the first successful placements of a promissory note loan entirely on a private blockchain in 2018. The promissory note was issued by Asfinag, the Austrian motorway administration, and investors invested a total of €20 million. Asfinag was able to successfully sell to three customers: Wiener Städtische Versicherung, Donau-Versicherung, and Hypo Vorarlberg. In 2018, The Austrian Control Bank actually implemented a private blockchain solution notarizing services at federal bond auctions.

This was done to increase the level of data security in the bank. However, no further word on the success of the project or the expansion of the initiative has been communicated. Austrian Post AG, formerly a cooperation partner of BAWAG P.S.K., and Kurant GmbH have been in collaboration since 2019. The now leading European Bitcoin vending machine operator is active in five post office locations across Austria – spanning from Bregenz to Vienna. In terms of inhabitants, Austria has the highest density of machines in the world, which makes buying or selling Bitcoin and altcoins relatively easier. Kurant GmbH has already expanded to Spain, and they plan to further expand to Italy, Greece, and the Netherlands.

€20 million

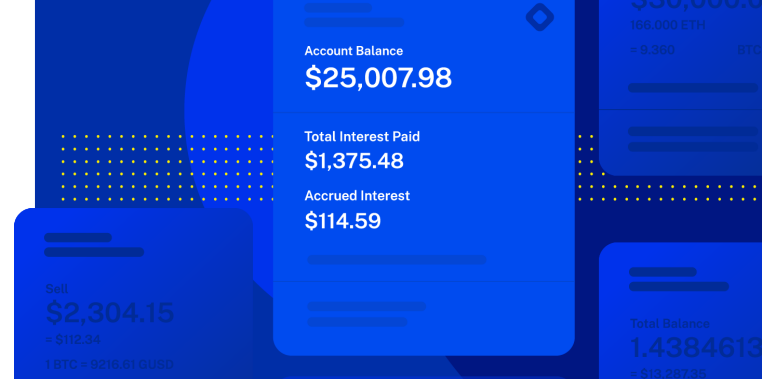
**in bonds of the Austrian motorway administration
were sold on a private blockchain**

The aversion to offering digital asset products and services may not be a coincidence. Banks in Austria are supervised by the Financial Market Authority (FMA), and the FMA has not been discreet concerning their negative views on the industry. At the beginning of 2020, the FMA actively contacted all of the banks and inquired as to their involvement in digital assets. They wanted to get an overview of which types of customers, private or companies, are directly or indirectly involved in digital assets. They also reminded the banks of the new requirement for virtual currency service providers to register with the FMA, which has existed since January of 2020. This has translated into extreme caution on the behalf of

banks. Many customers that would like business banks accounts are being turned away if they operate in the digital assets space. Although the general interest of traditional Austrian financial intermediaries has been in the technology of blockchain and not in cryptocurrencies, banks like Raiffeisen International have also engaged in venture capital investments in the blockchain space. Austrians are showing an increasing interest in digital assets, and traditional financial intermediaries must step-up to the business opportunity of offering digital asset products and services. If no Austrian provider can be found, foreign providers will most likely enter the market over the coming years.

“A critical link — perhaps the critical link — in the institutional adoption of Bitcoin is custody. When investors have ready access to regulated custodians whose security and processes they trust, the full potential of this emerging asset class and technology can flourish.”

— Adam White, COO of Bakkt



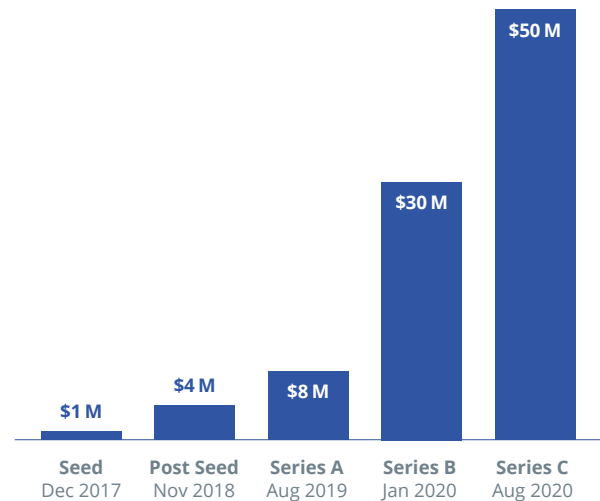
BlockFi Institutional Services provides customizable lending and borrowing of cryptocurrencies, stablecoins, and US dollars. We are powered by our retail cryptocurrency balances — the largest and fastest-growing digital asset pool on the planet. Whether you're a market maker, a hedge fund, or miner, BlockFi can provide bespoke loans of cryptocurrency, stablecoins, or USD for your institution.

Our Institutional Services team has top-tier experience in investment banking and global capital markets. We combine financial innovation with regulatory and compliance best practices, so you're always covered.

Our business is powered by one of the largest retail cryptocurrency balances in the world — approaching \$3 billion in balances. That lets us provide solutions that meet your company's unique objectives. We customize our lending products for each client's specific business strategy, and we're ready to evolve our services to address any future needs that might arise.

With more than 40,000 daily active users and an organic growth rate of 400% per year, BlockFi is a pioneering platform, with a groundbreaking infrastructure that supports fast transaction execution, rapid onboarding, and enterprise-level reporting you won't find anywhere else. And BlockFi is much more than a lender. We're a strategic partner that delivers the insights you need to navigate the digital asset market.

Investors can borrow U.S. dollars or stablecoins against BTC or ETH up to a 70% maximum loan to collateral value. Interest rates on a loan of \$1 million range from 8 – 12% in USD and 10 – 15% in USD stablecoin. Loans



durations range from overnight to one year. With more than 150 employees around the world, including staff in New York, Argentina, Poland, London, and Singapore, transmission of crypto and dollars can occur as quickly as 30 minutes after a loan request is made.

Custody of BlockFi's digital assets is done by industry's leading custody providers including Gemini and BitGo. We are registered with the U.S. Department of Treasury Financial Crimes Enforcement Network ("FinCEN") as a money services business ("MSB"), and we hold multiple state lending licenses, and state money transmitter licenses.

Institutional investors can find out more information about BlockFi's lending and borrowing activities by emailing: institutions@blockfi.com

We partner with major institutions to provide efficient financing solutions for the digital asset industry



SECTION 06

COMPLIANCE

COMPLYING WITH ANTI-MONEY LAUNDERING LAWS FOR INVESTMENTS IN DIGITAL ASSETS

The following section contributed by Dr. Karin Lorez of [Scale Compliance GmbH](#) discusses the two main policies that impact companies in Europe that handle digital assets including the Financial Action Task Force, originating in France, and the EU's 5th Anti-Money Laundering initiative.

The subject of money laundering is often mentioned in connection with digital assets. The Financial Action Task Force (FATF), is an intergovernmental body that sets international standards worldwide for monitoring money laundering and terrorist financing. As a policy maker, the FATF is committed to national legislative and regulatory reform in the fight against money laundering and terrorist financing. Switzerland, Germany and Austria are among the 39 members¹⁸ of the FATF and have agreed to implement the FATF Recommendations. Liechtenstein is a member of MONEYVAL (Committee of Experts on the Evaluation of Anti-Money Laundering Measures), which is also a FATF member. The EU has taken into account the recommendations of the FATF in the 5th EU Anti-Money Laundering Directive, which also has been implemented into national law by the respective EU member states.

The FATF has stated in its definition of “virtual assets”¹⁹ that the risk of money laundering and terrorist financing (ML/TF) exists as far as virtual or digital assets are concerned. Countries are expected to identify the risks related to virtual assets and their service providers (virtual asset service providers — VASPs) and apply a risk-based approach to tackling ML/TF risks. The FATF Recommendations include, for example, **that a financial institution should execute a know your customer (KYC) check of the customer starting at USD/EUR 1,000**. In addition, FATF recommends that the virtual asset provider **identifies the sender and recipient of digital assets** and sends the information to the recipient or their service provider, as in the case of a bank transfer. This so-called “Travel Rule” causes some service providers

anguish, because unlike in the banking world, there is no network and standard for the transmission of such data. The FATF members were asked to implement this recommendation in national law by June 2020.

In addition to the FATF, the EU has found that service providers who switch between virtual currencies and fiat money as well as providers of electronic wallets have not been obliged to report suspicious activities in the past. As part of the 5th EU Anti-Money Laundering Directive²⁰, this has been taken into account and the scope extended to include precisely such (service) providers. With regard to the Travel Rule, the EU regulation is not quite as strict and only stipulates that KYC data should only be transferred to the financial supervisory authorities upon request. The 5th EU Anti-Money Laundering Directive was implemented by the EU Member States on January 1, 2020.

In Switzerland, it was only necessary to slightly amend the existing money laundering regulations based on the new FATF Recommendations, as Swiss regulation provides for a technology-neutral application of the law and the law, therefore, also applies to service providers in the field of digital assets. The recommendation on KYC verification from USD/EUR 1,000 was taken up by FINMA, and it was proposed to reduce the current CHF 5,000 to CHF 1,000. It is envisaged that the reduction of the threshold will come into force in the fourth quarter of 2020. In cases, where uncertainties about the applicability of the law arise in the market, the Swiss Financial Market Supervisory Authority FINMA specifies in communications and guidance the applicability of the provisions in order to provide more clarity.

Money laundering regulations must be implemented in the area of digital assets in the same way as for fiat money, both at EU/EEA level and in Switzerland.

¹⁸ <http://www.fatf-gafi.org/countries/>

¹⁹ FATF, Guidance for a risk-based approach: Virtual Assets and Virtual Asset Service Providers, Retrieved from <https://www.fatf-gafi.org/media/fatf/documents/recommendations/RBA-VA-VASPs.pdf>.

²⁰ Directive (EU) 2018/843 of May 30, 2018.

Applicability of Money Laundering Regulations

Switzerland

In principle, digital assets are divided into three token categories: payment tokens, asset tokens, and utility tokens.²¹ The Swiss Money Laundering Act (Geldwäschereigesetz — GwG) applies to payment tokens, which mainly include cryptocurrencies, such as Bitcoin. Asset tokens and utility tokens, on the other hand, are generally not covered by the scope of the GwG.

Anyone who carries out financial intermediary activities in Switzerland is subject to the GwG. A service provid-

er that keeps payment tokens for their customers is generally regarded as a financial intermediary, and the money laundering regulations thus apply to their activities. The same applies to the trader of payment tokens, who exchanges digital assets into fiat and vice versa for their customers, and to the issuer of payment tokens. The applicability of the GwG in relation to digital assets includes compliance with due diligence obligations such as the identification of the contracting party and the clarification of the asset origin (KYC).

Liechtenstein

As an EEA member, Liechtenstein has also implemented the EU Anti-Money Laundering Directive. The Token and TT Service Providers Act (Token- und VT-Dienstleister-Gesetz — TVTG) has been in force since January 1, 2020 and aims to increase legal certainty in regard to blockchains and counter the abuse of digital assets for money laundering or other criminal purposes. The implementing provisions for the 5th EU Anti-Money Laundering Directive are statutory in the Due Diligence Act (SPG) and the Due Diligence Ordinance (SPV). Service providers who, for example, offer the exchange of fiat into virtual assets or vice versa as well as operators of trading platforms for virtual currencies or tokens, and trustees fall within

the scope of the provisions. According to article 2(1)(c) TVTG, tokens are considered to be “an information on a TT system that can represent claims or membership rights towards a person, rights in property or other absolute or relative rights or that can be assigned to one or more TT identifiers.” This definition goes further than the term “virtual currency” and covers a large part of the tokens. The registration obligation as well as the due diligence obligations to prevent money laundering and terrorist financing are linked to the service provided in connection to the token and not to the classification of digital assets as payment, asset or utility tokens as such.

Germany

Germany has taken the revision of the 5th EU Anti-Money Laundering Directive²² as an opportunity to take the EU rules a step further and to fully regulate the “crypto custody business” as a financial service subject to authorization.²³ Since January 1, 2020, “cryptovalues” and the “crypto custody business” are being regulated by the German Banking Act (Kreditwesengesetz — KWG) and are subject to authorization. The crypto custody

business entails the custody, management and security of cryptovalues or private keys that serve to hold, store and transfer cryptovalues for others.²⁴ For the purposes of this act, cryptovalues are digital representations of a value that has not been issued or guaranteed by any central bank or public body. It does not hold the legal status of a currency or money but is accepted by natural or legal persons as a means of exchange or payment

²¹ FINMA, Wegleitung für Unterstellungsanfragen betreffend Initial Coin Offerings (ICOs), Ausgabe vom 16. Februar 2018, Retrieved from <https://www.finma.ch/de/~media/finma/dokumente/dokumentencenter/myfinma/1bewilligung/fintech/wegleitung-ico.pdf?la=de>.

²² Directive (EU) 2018/843 of May 30, 2018.

²³ BaFin, Merkblatt: Hinweise zum Tatbestand des Kryptoverwahrtgeschäfts, Retrieved from https://www.bafin.de/SharedDocs/Veroeffentlichungen/DE/Merkblatt/mb_200302_kryptoverwahrtgeschaeft.html.

²⁴ German Banking Act (KWG) Section 1 (11) sentences 4 and 5.

on the basis of an agreement or an actual practice. Furthermore, it serves investment purposes and can be transmitted, stored and traded electronically. **In addition to tokens with an exchange and payment function, cryptovalues also include tokens with an investment purpose, e.g., security tokens and asset tokens.**

An extension of the number of obligated parties in relation to money laundering regulations applies in particular when it comes to “virtual currencies”. Service providers offering the exchange of virtual currencies into legal tender or other digital assets are subject to money laundering regulations. Also subject to the authorization by the Federal Financial Supervisory Authority (BaFin) are service providers who direct offers from abroad

to individuals who are domiciled or habitually resident in Germany using means of distance communication (without physical presence or an intermediary).

BaFin also examines whether a token is a financial instrument in accordance with the Securities Trading Act (Wertpapierhandelsgesetz — WpHG) or the Markets in Financial Instruments Directive (Richtlinie über Märkte für Finanzinstrumente — MiFID II) or a security within the meaning of the Securities Prospectus Act (Wertpapierprospektgesetz — WpPG) or an investment under the Capital Investment Act (Vermögensanlagegesetz — Ver-mAnlG). If this is the case, there are other obligations, such as the prospectus obligation, in addition to the money laundering obligations.

Austria

As part of the implementation of the 5th Anti-Money Laundering Directive, the Financial Markets Money Laundering Act (Finanzmarkt-Geldwäschegesetz — FM-GwG) has been adapted amongst other things. The Financial Market Authority Austria (FMA) is the competent authority for the registration and ongoing supervision of service providers in the field of money laundering and terrorist financing in relation to virtual currencies. Unlike Germany, where the definition of cryptovalues also covers asset tokens, the FM-GwG defines the virtual currency as follows: a digital representation of value that is not issued or guaranteed by a central bank or a public authority, is not necessarily attached to a legally established currency and does not possess a legal status of currency or money, but is accepted by natural or legal persons as a means of exchange and which can be transferred, stored and traded electronically. The following services are covered

by the registration obligation:

- Securing of private keys to keep, store and transfer virtual currencies on behalf of a customer (electronic wallet providers);
- Exchange of virtual currencies into fiat money and vice versa; the exchange of one or more virtual currencies among themselves;
- Transfer of virtual currencies;
- Provision of financial services for the issuance and sale of virtual currencies.

The registration obliges the service provider to comply with the FM-GwG. Compliance with the FM-GwG provisions is verified by the FMA as part of its ongoing supervisory activities.

Money Laundering and Terrorist Financing Risks

In general, there are increased risks in business relationships in regard to digital assets. ML/TF risks must be identified, analyzed and ultimately contained by service providers or financial institutions. A service provider or financial institution has the risk of accepting digital assets or fiat assets that fall within money laundering or terrorist financing offences. In addition to the ML/TF risks, there is also a reputation risk to be involved in a money laundering case.

ML/TF Risk in Customer Business Relationships

Onboarding of new customers wishing to contribute digital assets or the tracing of the transferred assets resulting from the exchange of digital assets requires specific clarifications. With regards to digital assets, there are different types of customer groups that pose different risks. If a private individual invested some time ago at a low price in digital assets, held them over the years and then sold them to a broker in the DACHLI region, the ML risk is rather low. The digital assets were purchased with fiat money, e.g., via a bank transaction or a credit card. The person should be able to provide proof of this transaction and the purchase of digital assets. The increase in value of the digital assets over the last few years can be traced, and the trade at a digital asset exchange should also be traceable. Since the assets of this person's digital asset wallet as well as any transaction can be viewed and traced on the blockchain, they can also be checked for plausibility. In addition, digital assets in a wallet, unlike fiat currencies, can be examined for their risk, e.g., darknet risk, by means of a so-called wallet analysis or wallet screening. Such a case is uncomplicated and rather risk-free, but in reality, there are often far more complex cases which cannot easily be traced and where the origin of assets cannot easily be reconstructed. In such cases, it is advisable in case of doubt not to enter into a business relationship with the customer.

ML/TF Risk in Exchange Transactions

A financial institution should be aware of the risk involved in exchange transactions. Such transactions usually take place via digital asset exchanges or brokers. The choice of digital asset exchanges and brokers for an exchange transaction can pose a risk that should not be underesti-

mated. The exchange/broker risk must be analyzed both in terms of the financial institution's own transactions but also for customer transactions. In addition to the liquidity and default risk of an exchange for digital assets, there may be a significant risk of money laundering. Digital asset exchanges and brokers exist worldwide in various jurisdictions. However, the regulatory treatment of these exchanges and brokers in the various jurisdictions is not standardized and varies greatly. In certain jurisdictions, for example, digital asset exchanges fall within the regulated domain and are even subject to additional licensing, however, in other jurisdictions, digital asset exchanges are hardly regulated or not at all. The lack of licensing or regulation often means that these digital asset exchanges are not regulated in the area of money laundering. Such exchanges have an insufficient customer KYC, no or only weak transaction monitoring in place, and do not or only insufficiently clarify the origin of customers' assets. In order to assess the exchange risk, the assessment of the exchange involved in a transaction is of great importance in terms of money laundering risks. If a financial institution wants to connect to an exchange to carry out transactions directly and to make investments, a Know Your Exchange (KYE) should definitely be made on the basis of defined criteria. The following criteria are to be taken into account (this list is not exhaustive):

- Jurisdiction (FATF state vs. non-FATF state)
- Type of regulation
- Implementation of local money laundering obligations
- Execution and result of an AML audit by an external third party

If a client of a financial institution intends to invest using digital assets or fiat assets derived from the exchange, similar exchange risks may exist. The creation of a "whitelist" of exchanges, based on internally defined criteria by the financial institution, may be a risk mitigation measure. This whitelist with the names of exchanges is then communicated to the customer. This essentially means that only assets that have been exchanged on one of these exchanges will be accepted. However, this is only possible if the customer has not yet exchanged their assets. If the customer has already exchanged their

assets, they may present a detailed report prepared by a specialised service provider on the background and details of their initial investments in digital assets. If this report is positive and the risks are manageable, the customer and their assets can be accepted.

ML/TF Risk in Transactions

Transactions are exposed to the risk that terrorists and other criminals can have unhindered access to money transfers and moving assets. To prevent this, on June 21, 2019, the FATF adopted — on an international level — recommendations on financial services in the blockchain domain with regards to digital asset transfers. As in the case of a bank transfer, such transfers require the provision of information about the client and the beneficiary. This is aimed at preventing money laundering and terrorist

financing. The receiving service provider can thus check the name of the sender against sanctions lists or verify the correctness of the information on the beneficiary.

In August 2019, FINMA emphasized the technology-neutral application of the law. The Anti-Money Laundering Act has been applied to blockchain financial services from the start. The Swiss law already says that service providers and financial institutions supervised by FINMA can only send digital assets to external wallets of their own, already identified customers and can only receive digital assets from these wallets. Digital assets can only be accepted if information about the sender or recipient can be reliably transmitted in the corresponding payment system. This Swiss regulation goes further than the international FATF standard, which provides an exception for transfers to and from unidentified wallets or wallet providers.

Origin of Assets

If a customer declares the origin of their assets as “Crypto Investments” or wants to directly bring in digital assets, such a transaction constitutes a greater risk than a fiat money investment or transaction. For digital assets, however, unlike the origin of assets in fiat, there is the possibility to actually check all transactions linked to a declared wallet on the blockchain and carry out a wallet screening of the wallet.

Checking the Origin of Digital Assets

At first, the background checks do not differ significantly from traditional fiat money checks. In any case, background information on the investment or receipt of digital assets should be obtained. Among other things, the timing, size, type and service provider used for the transaction play a key role. Needless to say, it makes a difference whether, for example, assets come from a past Initial Coin Offering (ICO), from an earlier mining activity, or an earlier investment.

Wallet Screening and Analysis

In addition to the background checks, it is usually possible to analyze the wallet of the customer by means of wallet screening. So-called wallet analyses can be carried out via various providers. During such analyses, the wallet address is examined with the support of information

from databases. The wallet analysis clarifies whether the wallet holds “tainted coins”, i.e., digital assets derived from a tainted source. This could be, for instance, digital assets coming from the darknet, stolen assets, or assets coming from a wallet that is sanctioned and blacklisted. The wallet analysis specifies a risk value that can be used to assess the cleanliness of digital assets. In complex and ambiguous cases, it is worthwhile to prepare a detailed wallet analysis report or have it prepared by a provider. There are various providers that interrelate the results of the wallet screening with the background information. Such a detailed wallet analysis report not only indicates the result in the form of a risk value but also provides the appropriate interpretation of the result by including the customer’s background and information and checking for their plausibility.

Verification of the Beneficial Owner of Digital Assets

In addition to the obligation to identify the beneficial owner according to the existing money laundering regulations, verification checks must also be carried out. In practice, two methods are regularly used for this:

- Microtransactions
- Message Signing

Microtransactions are actually small payments from the customer's wallet to a wallet of the service provider or financial institution, whereby the customer proves that they have access to the private key. It is assumed that the person who has access to the private key is the beneficial owner.

The method of "Message Signing" is somewhat more complicated, but it can also be used to demonstrate that the person with the private key can control the wallet address and is thus the owner of the digital assets. When signing, the customer uses the private key to generate a message agreed in advance between him and the service provider. The service provider can then check whether the private key is really linked to the wallet by using the public key.

Conclusion

In conclusion, should a business wish to enter the digital asset market, be it to serve customers in this domain, to issue products in the form of tokens, or invest in digital assets, it is advisable to carry out an in-depth risk analysis of the new line of business. Once the risks have been identified, measures to reduce these risks have to be implemented, and existing processes as well as internal compliance directives have to be adapted. Among the greater risks in regard to digital assets are compliance risks that need to be understood before entering the market.



Banking on Crypto

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↑ \$16,129
Interest Earned Today

\$500,000
Total Interest Earned

Interest earned



Asset	Balance	Credit Line
Bitcoin		
Ethereum		
XRP		
Cardano		

\$3B+

Processed

\$800K+

Nexo users

40+

Fiat currencies

200+

Jurisdictions

SECTION 07

TAX

TAX IMPACTS ON INVESTORS INVESTING IN DIGITAL ASSETS IN THE DACHLI REGION

Although many people believe that Liechtenstein and Switzerland have the lowest taxes on digital assets for individuals and companies, this is a myth. As long as an investor in Germany or Austria holds onto their digital assets personally, not within a company structure, and for longer than one year, they actually have lower taxes than investors in Switzerland and Liechtenstein. This is because of the bothersome wealth tax in Liechtenstein and Switzerland. On the positive side, Liechtenstein and Switzerland do not have capital gains taxes unlike Germany and Austria. However, Germany and Austria do not have wealth taxes. So which one outweighs the other? The German and Austrian taxes are more onerous if assets are held for less than one year and less onerous if assets are held for over a year. This is why investors in Germany with a personal tax rate above 26.375% and in Austria above 27.5% actually have a tax advantage of holding a certificate or investing in a regulated fund product like an Alternative Investment Fund (AIF) or Undertakings for the Collective Investment in Transferable Securities fund (UCITS) fund if they want to speculate on short-term moves of the price of digital assets. If the investor's personal tax rate is lower than those rates, then there is no tax advantage of holding a fund or certificate over holding the digital assets directly.

The following section contributed by Lara Olms and Matthias Langer of actus ag outlines the tax impacts on investors investing in digital assets in the DACHLI region. By using explanatory cases, the consequences on taxation of buying and holding Bitcoin over specific time periods are explained for natural and legal persons. Furthermore, the report treats cases of investors with different residences — namely Liechtenstein, Austria, Germany, and Switzerland — and specific investment strategies and structures: investing directly, via an AIF or a certificate.

Natural and Legal Persons

First of all, the terms legal and natural person as well as the term qualified investor should be defined. For the purpose of taxation, the tax law distinguishes between natural and legal persons. Every individual is a natural person and holds rights and obligations. A legal person such as corporations in contrast arises from a legal act and is considered to be a single individual for legal purposes. Dealing with natural persons, there is another important distinction to be made: It has to be defined if the assets are part of private assets or business assets. Business assets are assets that are used predominantly and directly for the company's own business.²⁵ Consequently, private assets are defined as assets that have little or no relation to the business of the taxpayer such as his fully privately used residence.

Qualified Investors

Qualified investors are according to Section 10 (3) of the Swiss Collective Investment Schemes Act (Kollektivanlagengesetz — KAG) supervised financial intermediaries such as banks, securities dealers, or asset managers of collective investments as well as companies with professional treasury.²⁶ However, natural persons can also be classified as qualified investors. According to Section 10 (3bis) of the KAG and Section 6 of the Swiss Collective Investment Schemes Ordinance (Kollektivanlagenverordnung — KKV), high-net-worth individuals can declare that they want to be considered qualified investors.²⁷ They have to confirm in writing that they have the knowledge required to understand the risks of the investments based on personal education and have assets of at least CHF 500,000 according to Section 5 of the Swiss Financial Services Act (FIDLEG).²⁸

²⁵ Jonas, M., 2019, Wirtschaftsgüter: Unterscheidung von Privat- und Betriebsvermögen, July 20, 2020. Retrieved from <https://www.steuba.de/einkommensteuer/wirtschaftsgueter-privatvermoegen-betriebsvermoegen/>.

²⁶ Swiss Federal Tax Administration (ESTV), Kollektivanlagengesetz, July 2020. Retrieved from <https://www.admin.ch/opc/de/classified-compilation/20052154/index.html>.

²⁷ Swiss Federal Tax Administration (ESTV), Kollektivanlagengesetz; ESTV, Kollektivanlagenverordnung, July 2020. Retrieved from <https://www.admin.ch/opc/de/classified-compilation/20140344/index.html>.

²⁸ Swiss Federal Tax Administration (ESTV), Finanzdienstleistungsgesetz, July 2020. Retrieved from <https://www.admin.ch/opc/de/classified-compilation/20152661/index.html>.

Professional Investors

According to the Directive 2004/39/EC of the European Parliament and of the Council, professional investors are “entities which are required to be authorized or regulated to operate in the financial markets” like credit institutions, insurance companies, or pension funds.²⁹ In addition, large companies and “national and regional governments, public bodies that manage public debt, Central Banks, international and supranational institutions” as well as similar institutions are defined as professional investors.

Furthermore, investors such as public sector bodies or private individual investors may be treated as professionals on request. To be qualified as a professional investor, they must satisfy two of the three following criteria: During the last year, the investor carried out transactions on the specific market with an average frequency of ten per quarter; the size of the financial instrument portfolio exceeds € 0.5 million (defined to include deposits and financial instruments); the investor has worked or works at least one year in a professional position in the financial sector that required knowledge of the specific transactions or services.

Bitcoin as a Payment Coin

The report will explain tax impacts using Bitcoin as an example. Bitcoin is classified as a payment token according to the Swiss Federal Tax Administration (FTA) and the European Court of Justice.³⁰ Despite the fact that a coin or token has already been qualified by the Liechtenstein or Swiss Financial Market Authority, the classification may deviate from the FTA's criteria for tax purposes. Therefore, it is important to bear in mind that when considering or examining a token from a tax perspective and evaluating the tax impacts in Liechtenstein or Switzerland, FTA's classification criteria must always be taken into account. Also, the German Federal Financial Supervisory Authority

(BaFin) has classified cryptocurrencies as billing units in accordance with Section 1 (11) of the German Banking Act (Kreditwesengesetz — KWG).³¹ This means that they are not considered to be legal tender and are, therefore, classified as private money for German tax purposes.³² Austria takes the same perspective and does not accept Bitcoin as a legal tender or financial instrument but as a virtual means of payment.³³ The FTA is necessary for Liechtenstein's value-added tax (VAT) assessment, since the Principality of Liechtenstein and the Swiss Confederation concluded the Customs Treaty on the annexation of the Principality of Liechtenstein to the Swiss customs territory on October 28, 1994. For this reason, the substantive Swiss provisions on VAT are relevant and have been incorporated into Liechtenstein law.

Payment coins or token within the meaning of the FTA may be used exclusively as means of payment for the purchase of supplies and/or services from one or more service providers. They, therefore, do not entitle the holder to receive specific or determinable services but merely represent the agreed means of payment. As Bitcoin is used as a means of payment and does not entitle the owner to receive specific services, it is classified as a payment token. Before evaluating a crypto asset and a case, the type of asset always has to be clarified, because it determines the proper sections of the law. This means that the following assessment cannot be easily transferred to another crypto asset. If assets fall under the classification of a utility or security token, this would lead to different tax assessments. For further information on the taxation of specific crypto assets, contact actus ag.

²⁹ Official Journal of the European Union, 2004, Directive 2004/39/EC of the European Parliament and of the Council of 21 April 2004, August 2020. Retrieved from <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32004L0039&from=DE>, pp. 43 – 44.

³⁰ Swiss Federal Tax Administration (ESTV), 2019, Working Paper Kryptowährungen, July 2020. Retrieved from <https://www.estv.admin.ch/estv/de/home/direkte-bundessteuer/direkte-bundessteuer/fachinformationen/kryptowaehrungen.html>; Reichlin Hess Rechtsanwälte, 2019, Besteuerung von Kryptowährungen und anderen Token: Eidgenössische Steuerverwaltung publiziert Arbeitspapier, July 2020, Retrieved from <https://www.reichlinhess.ch/2019/10/04/besteuerung-kryptowaehrungen-token-schweiz-arbeitspapier-eidgenoessische-steuerverwaltung/>; European Court of Justice preliminary ruling case C-264/14 from October 22, 2015.

³¹ BaFin, Merkblatt: Zweites Hinweis schreiben zu Prospekt- und Erlaubnispflichten im Zusammenhang mit der Ausgabe sogenannter Krypto-Token; BaFin, Kryptotoken: Beitrag aus dem Jahresbericht 2019 der BaFin, July 2020. Retrieved from https://www.bafin.de/DE/PublikationenDaten/Jahresbericht/Jahresbericht2017/Kapitel2/Kapitel2_7/Kapitel2_7_3/kapitel2_7_3_node.html.

³² Zitzmann, F., 2017, Steuerliche Behandlung der Kryptowährungen, July 21, 2020. Retrieved from https://www.haufe.de/compliance/management-praxis/steuerliche-behandlung-der-kryptowaehrungen_230130_431018.html.

³³ Austrian Federal Ministry of Finance (BMF), Steuerliche Behandlung von Krypto-Assets, July 21, 2020. Retrieved from <https://www.bmf.gv.at/themen/steuern/sparen-veranlagen/Steuerliche-Behandlung-von-Krypto-Assets.html>.

The Cases

The report will treat three different types of qualified investors in four different countries with three different investment products. The facts and circumstances always stay the same, only the residence changes. First of all, we have Lisa who possesses assets worth CHF 10 million and has declared in writing that she wants to be considered as a qualified investor. These are private assets. Her sister Sara did not make such a declaration but possesses the same amount of money. She is not considered to be a qualified investor. Secondly, there is Paul. Paul possesses assets worth CHF 20 million, but half of them are invested through a legal entity: Paul's Road to Happiness AG. Lastly, there is CryptInvest AG, a bank which buys crypto on behalf of its clients and is considered a legal person. CryptInvest has assets of CHF 50 million and charges a provision of 1% of the amount

invested for each of their clients' asset investment. In addition, the bank charges 1% of the realized capital gain at the time of the sale.

All of them want to invest 10% of their assets in Bitcoin and expect a 50% rise of the investment. However, they are not sure if they should invest this amount directly, via an AIF, or a certificate. It is assumed that they will sell the Bitcoin investment as soon as it has increased by 50%. An AIF is a collective investment that raises capital from some investors to invest it in accordance with the specific investment strategy and with the aim to generate benefits for the investors. A certificate represents the evidence of ownership of a financial security such as a bond or stock market shares in corporation. It depends on the performance of the underlying asset. Furthermore, they have to take the intended time of holding the asset into account when comparing the investment possibilities.

Liechtenstein

Lisa and Sara

Lisa has her residency in Liechtenstein and is, therefore, subject to unlimited tax liability in Liechtenstein. As she invests 10% of her assets in Bitcoin, she invests CHF 1 million in Bitcoin. Apart from wealth tax, which has to be paid on assets in Liechtenstein, individuals have to pay income tax, which will be treated in the following. However, Lisa does not have to pay taxes on her gains from the sale of the Bitcoin as capital gains are tax exempt in Liechtenstein. The duration the asset is held has no impact on taxation. The same applies to Sara. There are no distinctions between Lisa as a qualified investor and Sara as a "normal" investor. The only difference is that Lisa has more investment possibilities in general because of her classification as a qualified investor.

There are no differences if Lisa and Sara would choose to invest in an AIF or certificate as capital gains from the sale of private assets and profit shares due to shareholdings in legal entities are tax exempt.

As Bitcoin is a payment token, there is also no risk that Lisa and Sara could be subject to VAT. This results from the fact that payment tokens are a pure exchange of currencies due to the missing prerequisites of a service rendered against payment and, therefore, do not fall within the scope of the VAT.

Paul's Road to Happiness AG

Paul also has his residency in Liechtenstein. He invests CHF 2 million of the business assets in Bitcoin, so the investment is considered to be part of the business assets. As a result, the capital gains linked to the 50% rise have to be taxed with the corporate tax rate of 12.5%. This would lead to a tax liability of CHF 125,000.

If he had invested the same amount in an AIF instead, the annually realized profits of the AIF would be taxed with the tax rate of 12.5%. If the fund were only invested in Bitcoin and were equal to a direct investment in Bitcoin, it would lead to the same tax liability.

If he had invested in a certificate, which represents an investment in a financial security, and sold this certificate with a 50% increase in value, i.e., with a gain of CHF 1 million, he would also have to pay corporate tax of 12.5%. Hence, the different investment structures all lead to the same tax liability.

As Bitcoin is a payment token, there is no VAT. Payment tokens do not fall within the scope of the VAT Act as they are a pure exchange of currencies and miss the prerequisites of a service rendered against payment.

CryptInvest AG

CryptInvest AG is a legal person and has its residency in Liechtenstein. Therefore, the AG is subject to taxation in Liechtenstein. It invests CHF 5 million of their clients' money into Bitcoin and gets a profit of CHF 50,000 out of these investments plus the profit of the realized capital gain of CHF 25,000. This amount of investment reflects the income of the bank and is subject to corporate tax. The tax rate is 12.5%. Therefore, it has to pay CHF 9,375 in taxes due to the direct investment in Bitcoin. This is also the case if the bank invests in certificates.

If the bank decides to invest the money in a self-administered AIF, the results are the same. Profits from such fund investments are tax exempt. They have to tax the income coming from the general investment activity of CHF 50,000 and the profit of CHF 25,000 which would lead to taxes of CHF 9,375. The income from the AIF is tax exempt on fund level. Therefore, the tax liability equals the tax liability in case of a direct investment.

The sale of shares and the management of investment companies with fixed capital is exempt from VAT according to the VAT Act. This includes the brokerage of securities, book-entry securities, and derivatives as well as units in companies and other associations. Same applies to the sale of AIF shares. Hence, there is no VAT in this context. However, there is turnover tax that has to be paid in relation to paid transfers of shares, obligations, certificates, or shares in collective capital investments of a bank. The tax rate is 1.5%. In this context, this would amount to CHF 50.

Wealth Tax

Liechtenstein and Switzerland have a wealth tax. As part of the wealth tax in Liechtenstein, the assets of natural persons are taxed. In Switzerland, legal persons have to pay capital tax, natural persons wealth tax. Hence, natural persons that hold assets through a legal entity must also pay wealth tax for the holding of this legal entity. In Liechtenstein the tax is based on the value of the assets at the beginning of the fiscal year, in Switzerland on the value at the end of the fiscal year. Therefore, wealth tax results from holding Bitcoin. In the Principality of Liechtenstein, the assets are integrated into the income tax via the target income (Sollertrag). There is, therefore, no separate wealth tax statement as this is part of the income tax. In Liechtenstein, it ranges from 0% to 0.89% depending on the assessment rate of the specific municipality. In Switzerland, the wealth tax also depends on the respective municipality and can be between 0% and 1%.

As we examine the Liechtenstein assessment in this section and Lisa has her residency in Liechtenstein, her wealth of CHF 10 million is subject to wealth tax in Liechtenstein. She first has to determine the so-called "Sollertrag", which is 4% of the taxable wealth. In this case this would be CHF 400,000. This amount is then taxed within the income tax. The applicable tax rate in this case is 0.08% of the amount minus CHF 6,100. This leads to a tax liability of CHF 25,900. On top of this there is a municipality tax, which is at least 150%. This would lead to taxes worth CHF 38,850. In summary, a total wealth tax of at least CHF 64,750 has to be paid in this case. As Lisa has a wealth of CHF 10 million, the applied tax rate is 0.6%.

0.6%

effective tax rate for the wealth tax if the person's wealth is CHF 10 million is equal to 60,000 CHF a year

12.5%

corporate tax rate in Liechtenstein, making it one of the lowest in Europe

Switzerland

Lisa and Sara

In Switzerland, the tax rate depends on the respective canton and the municipality the person lives in. For this report, Zürich has been chosen, where income coming from the sale of private assets is tax exempt. This would mean that Lisa and Sara do not have to pay taxes on the gains coming from the Bitcoin investment as long as they are not classified as private securities dealers. However, the holding of Bitcoin is taxed within the Swiss wealth tax.

Paul's Road to Happiness AG

In Zürich, capital gains from the sale of business assets are subject to taxes. This also includes income from collective capital investments and certificates. Paul would have capital gains of CHF 1 million and a tax rate of approximately 20% would be applied, which is the profit tax rate. This leads to a tax liability of CHF 200,000 regardless of the time horizon and the investment structure.

CryptInvest AG

The CryptInvest AG is a legal entity and has to pay taxes on its profits like every other entity. As there are no tax exemptions according to the Swiss Tax Law, it also has to pay a profit tax of approximately 20% on its capital gains. In our case the amount of CHF 50,000 plus the amount of CHF 25,000 would be taxed, if we assume no further income or expenses. This leads to a tax liability of CHF 15,000. Additionally, similar to the wealth tax that natural persons have to pay, the AG is subject to capital tax. As Liechtenstein has adopted the tax norms of Switzerland, no VAT has to be paid but a turnover tax of CHF 50.

Germany

Lisa and Sara

Lisa and Sara have their residency in Germany. First of all, it can be noted that no wealth tax exists in Germany. Hence, only the income tax has to be examined in order to check if there is a possible tax liability from holding and selling Bitcoin. As explained above, Germany considers Bitcoin to be digital private money. It follows that the sale of Bitcoin is classified as a private speculation. According to Section 23 (1) sentence 1 no. 2 of the German Income Tax Act (Einkommenssteuergesetz — EStG), the sale of Bitcoin is tax exempt if the period between acquisition and sale exceeds one year. However, there is one exception: If ongoing revenue has been earned with this digital currency, the income is subject to tax at the personal tax rate plus an additional solidarity surcharge. Additionally, the speculation period is extended to ten years as the asset served as a source of income. If Lisa or Sara sell Bitcoin within one year after the acquisition, they have to tax the capital gain from the sale with their personal tax rate if the exemption limit of €600 is exceeded. If the gain of €500,000 is their only income, they have to tax it with a tax rate of 45% and subtract €17,078.4, which results in a tax liability of €207,921.6. The amount of €17,078.4 has to be subtracted as the formula to calculate the tax liability — in the case of a taxable income above €270,501 — is: $0.45 \times X - 17,078.4$ (as

2020). Furthermore, a solidarity surcharge of 5.5%, here €11,435.69, has to be paid.

If they, in contrast, invest in a certificate, they would pay a withholding tax of 25% plus a solidarity surcharge of 5.5% on the withholding tax for both — the capital gains from the sale of the certificate and the current earnings. The duration of the holding of the certificate does not affect the tax liability. The same is true if they invested in an AIF. This would result in a tax liability of €131,875. Therefore, investing via a certificate or AIF is more advantageous in case of a high income from capital gains.

Paul's Road to Happiness AG

Paul's investment is considered to be in the business assets of his business. Therefore, there is no income from private sales, but from commercial business. The capital gains have to be taxed as income of Paul's Road to Happiness AG and with a corporate tax rate of 15% plus solidarity surcharge of 5.5% of the corporate tax. This leads to a tax liability of €158,250. Nothing changes when Paul invests the money via a certificate or an AIF as the income is still considered to be income of the AG from commercial business activity.

Additionally, business tax has to be applied on the taxable income. The tax rate is a federal rate and amounts to

3.5%. The municipal assessment rate comes on top and ranges from 200% to 490% of the 3.5%, with an average rate of 380%. This leads to a tax rate of at least 7%. Hence, there are taxes from business tax worth €70,000 as a minimum. If the assessment rate of the municipality is higher, the tax liability increases as well. With regard to VAT, Germany also states that the exchange from conventional currencies to Bitcoin and vice versa is to be classified as a taxable other service, but tax exempt if used as a means of payment.

CryptInvest AG

CryptInvest AG's income is also subject to corporate tax. Therefore, the income from the initial investment activity and the income from the participation on the gains are

subject to the corporate tax of 15% plus solidarity surcharge of 5.5%. This leads to a tax liability of €11,868.75. Same as in the case of Paul's Road to Happiness AG, investing the money via a certificate or an AIF does not result in a different tax liability as the generated income is considered to be income related to business activity of CryptInvest AG.

CryptInvest AG is also subject to business tax. As it has a taxable income of €75,000, the business tax liability amounts to at least €5,250.

With regard to VAT, there is no tax liability for the initial investment of the clients' money and for the capital gains as brokerage of financial assets and income that is based on that activity are tax exempt.

Austria

Lisa and Sara

Lisa and Sara have their residency in Austria. Similar to Germany, the investment in Bitcoin is considered to be an exchange of assets. As long as there is no interest income coming from the crypto asset, as it is the case here, the sale of the asset has to be taxed using the personal tax rate as long as the time period between the acquisition and the sale is less than a year. In this case, it is considered to be a speculative trade. Furthermore, the capital gain has to be more than €440. If it is below this threshold, there is no tax liability. The personal tax rate can amount up to 55%. If Lisa and Sara hold the Bitcoins for more than a year and sell them afterwards, they do not have to pay taxes on the capital gain.

In contrast, if they invest via a certificate or a fund, they have to pay capital gains tax. The tax rate is 27.5%. As they would have capital gains of €500,000, they would have a tax liability of €137,500 when investing via a certificate or a fund. The duration of holding the certificate or fund has no impact on the tax liability.

Paul's Road to Happiness AG

Bitcoins are assets of the business and are, therefore, considered to be business assets. The income from the sale of such assets is income from business activity and

has to be taxed with a tax rate of 25% leading to a tax liability of €25,000. If the investment was made via an AIF or a certificate, the capital gains tax rate of 27.5% has to be applied. This would result in a tax liability of €275,000.

Similar to Germany, there is no VAT as the exchange of legal tenders to Bitcoin is a non-taxable activity according to the European Court of Justice.

CryptInvest AG

As a corporation, CryptInvest AG's income is subject to a corporate tax rate of 25%. Therefore, the income from the investment activity has to be taxed with 25% resulting in a tax liability of €12,500. The income from the provisions in contrast has to be taxed with 27.5%, which would lead to a tax liability of €6,875. All together the corporation has a tax liability of €19,375. It would make no difference if the investment were to be made via an AIF or a certificate as the income from this investment is still considered to be income from the normal business activity of the corporation and has to be taxed with 25% and 27.5%.

Similar to Germany, brokerage of financial assets is exempt from VAT. Hence, there is no VAT liability for CryptInvest AG.

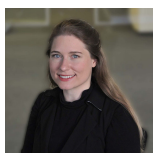
Conclusion

To summarize, Liechtenstein shows the lowest taxes on Bitcoin for natural and legal persons followed by Switzerland, which depends on the specific canton of residence. Germany and Austria have the highest taxes. However, it should be noted that in Liechtenstein and Switzerland, there is a wealth tax that can lead to high taxes if high amounts of cryptocurrencies are held. In most cases, there are no advantages of holding a certificate or AIF.

However, if the investor has its residence in Germany or Austria and holds a digital asset for less than a year, it is advantageous if they invested in an AIF or certificate as long as his personal tax rate is above 27.5% in Austria and 26.375% in Germany. If they hold the digital asset for more than a year, it is better to invest directly. It all depends on the investing horizon and the tax rate, which again depends on the personal income overall.

SECTION 08

AUTHORS



Demelza Hays

Demelza Hays is the director of research at Cointelegraph, Forbes 30 Under 30, U.S. Department of State Fulbright Scholar, and former fund manager of two regulated crypto funds.



Professor Dr. Philipp Sandner

Professor Dr. Philipp Sandner has founded the Frankfurt School Blockchain Center (FSBC). In 2018 and in 2019, he was ranked as one of the "top 30" economists by the Frankfurter Allgemeine Zeitung (FAZ), a major newspaper in Germany. Further, he belonged to the "Top 40 under 40" — a ranking by the German business magazine Capital. Since 2017, he has been a member of the FinTech Council of the Federal Ministry of Finance in Germany. The expertise of Prof. Sandner includes blockchain technology in general, crypto assets such as Bitcoin and Ethereum, the digital programmable euro, tokenization of assets and rights, and digital identity.



Professor Dr. Alfred Taudes

Professor Dr. Alfred Taudes is Professor at the WU Wien — Vienna University of Economics and Business. He has published several books and more than 150 scientific articles, among others in international top journals like Management Science or MIS Quarterly. He is heading the WU Research Institute for Cryptoeconomics since its foundation in 2018 and is the Scientific Coordinator of the Austrian Blockchain Center founded in 2019.



Pascal Hügli

Pascal Hügli is the Chief Research Officer at Schlossberg&Co, in Switzerland, and author of the book Ignore at Your Own Risk: The New Decentralized World of Bitcoin and Blockchain



Matthias Langer

Matthias Langer is a tax consultant and partner of actus ag. He studied at the Catholic University of Eichstätt-Ingolstadt and at the University of Münster. Afterwards he worked at the University of Liechtenstein as part of the project "International Tax Cooperation". The core element was the elaboration and analysis of measures for the development of a comprehensive Liechtenstein agreement network (TIEA and DTA). He then worked for six years as a tax consultant in a tax firm in the Principality of Liechtenstein before founding actus ag in 2016. He is also the author of two books (most recently "Das liechtensteinische Steuerrecht") and more than 50 papers, a lecturer at universities and universities of applied sciences, and a speaker at national and international conferences. His main areas of expertise are Liechtenstein and German tax law and cross-border tax planning. In addition, he specializes in tax and accounting consulting in the area of cryptocurrencies and blockchain-based applications. As a pioneer in this sector, he is, for example, advising the first blockchain-based company in Liechtenstein as well as the first STO in the EEA.



Lara Olms

Lara Olms works as a consultant for fintech & blockchain in the actus ag tax consultancy in Triesen, Liechtenstein. She completed her bachelor's degree at the Duale Hochschule Baden-Württemberg in the field of accounting, taxes, and commercial law and worked for three years as a dual student mainly in the controlling department at VR Smart Finanz AG. Currently she is doing her Master of Science in Finance at the University of Liechtenstein. She is not only dealing with topics concerning cryptocurrencies, fintech & blockchain within the scope of her work at actus ag and her studies but also engages herself by organizing the FinTech.li conference in Vaduz and by leading the Finance Team at START Vaduz. Furthermore, she contributes to magazines and reports about blockchain technology in the tax world and gives seminars on these subjects.



Matthias Reder

Matthias Reder (born 1978) changed "sides" after almost 20 years in the banking sector of the Sparkasse and Raiffeisen. The technological milestone of the blockchain with its first application "Bitcoin" marks a change from the value date to the value second. The graduate of the FH Wr. Neustadt (graduation 2007) has been working as Head of Compliance and AML (Money Laundering Officer) at Austria's oldest cryptocurrency broker Coinfinity in Graz since March 2018. There he is responsible for the legal implementation of anti money laundering regulations and the prevention of terrorist financing and also acts as the contact person for key accounts, banks and authorities. In addition, he is self-employed as an IT application consultant / finance blogger and helps people with the correct use of financial and crypto software and hardware.



Dr. Karin Lorez

Karin Lorez is an independent lawyer, consultant in the fintech sector, and co-founder of the crypto compliance service provider Scale Compliance GmbH (www.scalecompliance.com). In 2017, she paved the way and conducted the legal structuring and negotiations with FINMA regarding the crypto offering of the first Swiss bank to offer crypto investments. Since then, she has mainly advised banks and other financial institutions in the crypto sector. Karin Lorez is a visiting lecturer at various universities and colleges where she lectures on financial markets and blockchain technologies. She also regularly holds workshops on "crypto compliance" for regulated financial institutions. Karin Lorez runs the website Swiss Crypto Guide (www.swisscryptoguide.com), which provides information on the regulatory landscape in the crypto domain.

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