

# Swiss Finance Institute Roundups

## FinTech— A Fast-Moving Frontier

### Editorial



The intersection of finance and technology is transforming the financial world. An explosion of innovations promises to make financial intermediation more efficient, transparent, and accessible for clients. This SFI Roundup brings together experts from academia and industry to discuss these sweeping changes. How will the business opportunities and the competitive landscape in banking and finance be affected? Is data becoming a new marketable commodity? Are the inherent risks to privacy and financial stability being properly assessed and managed? And how should the regulatory framework evolve?

We wish you an enjoyable read.

A handwritten signature in blue ink, appearing to read 'F. Degeorge', with a horizontal line underneath.

**Prof. François Degeorge**  
Managing Director

# Contributors

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Jochen Dürr is the Chief Risk Officer and a member of the Executive Board at SIX, as well as a member of the Foundation Board of the Swiss Finance Institute. Prior to joining SIX, he was a management consultant at McKinsey & Company, serving a global clientele in the areas of risk management and capital market business. In addition, he held various leadership positions in risk management at State Street Corporation. Jochen holds a PhD in Credit Risk Management from the University of Rostock.

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Marianne Wildi is the Chief Executive Officer of the Hypothekarbank Lenzburg AG and a member of the Board of Directors of the Swiss Bankers Association. During her extensive career, she created Switzerland's first open banking platform, and her bank was among the first in Switzerland to offer blockchain and crypto company accounts. She holds a Bachelor of Business Administration from the Zurich University of Applied Sciences.

# Recent Technological Developments in Finance

## What do you see as being the most significant technological innovations in finance?

▶ **A. Fuster:** While the term "FinTech" became popular around 2014 to refer to the use of new technology to facilitate financial business, technological innovations in finance have a much longer history. Coins and banknotes, the telegraph, ATMs, credit cards, and electronic stock markets have all had major impacts on the way financial transactions are executed.

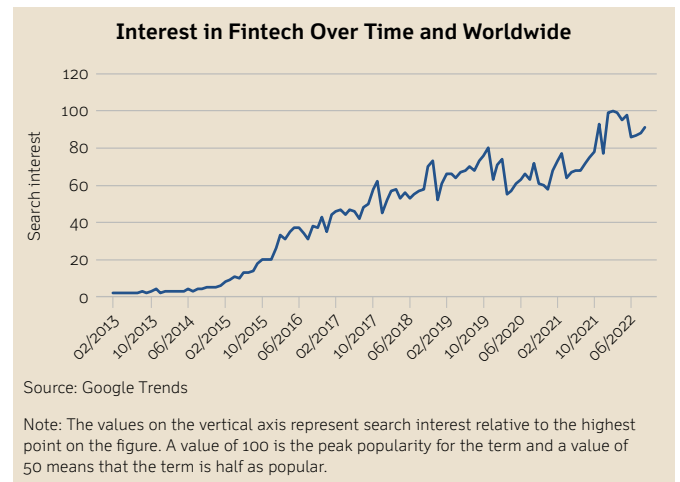
▶ **J.-C. Rochet:** Focusing on more recent innovations, I find that mobile and internet-based instant payment systems, such as M-Pesa in Africa, Pix in Brazil, and AliPay or WeChat in China, have been positive game changers for millions, if not billions, of people who were previously excluded from any banking system. Blockchain is a potential game changer as well, although its benefits are, in large part, still to be seen.

▶ **S. Wickihalder:** From an industry perspective, application programming interface (API) frameworks and cloud solutions have helped raise the interactions among computers to the next level. The financial industry and its clients obviously benefit from the resulting increase in flexibility and collaboration.

## What are the latest trends in FinTech?

▶ **J. Dürr:** The collapse of several cryptocurrencies during the summer of 2022 is shaking out the unregulated parts of that market. The benefits of digital asset and blockchain technology will become increasingly evident in the near future, which will allow regulated players to pave the way toward a system built around Decentralized Finance (DeFi).

▶ **S. Wickihalder:** In Switzerland, the main focus now is on data; a prominent example is the new regulation, currently under public review, on electronic identity (e-ID) and data protection. Once this legislation is implemented, the increased clarity will allow the financial industry to move forward regarding data identity and everything related to it. Other important FinTech and data-related topics are ESG data, transparency requirements, and open finance.



▶ **L. Frésard:** FinTech is no exception to the trend of data-driven technology. As in many other industries, more and more data is becoming available, and data is being used, more and more often, to make predictions. The explosion in the volume of data available has caused an abnormal amount of funding to be routed toward the tech sector, particularly by private equity firms and venture capital firms. Time will tell whether or not these investments were based on rational decisions.

## Which are better at financial innovation: banks or non-banks?

▶ **M. Wildi:** At the individual level, the most innovative people I have met are ex-bankers working for non-banks such as startups and neobanks. But let's be fair: The level of innovation across the finance industry overall is appallingly low. I see a lot of effort being made to provide a new design, a new feel, or a new process. But rarely a new service or a new product.

▶ **S. Wickihalder:** Banks and non-banks can be equally competitive. The determining factor here is how much risk each player is willing to bear. Banks, particularly in Europe, are currently lacking a North Star to guide them forward.

▶ **L. Frésard:** Research finds that both banks and non-banks are innovative, each in their own way. Twenty or so years ago, banks, particularly big banks, acted as incumbents. As theory predicts, they waited and watched. Data shows that they were right to do so, as many of the successful FinTech startups ultimately partnered with banks or were purchased by them.

► **J. Dürr:** Banks, particularly those in Europe, are falling behind in the FinTech race, as most still continue to operate in the "business as usual" mindset. They urgently need to become more agile and to act with open minds, as the non-bank FinTech firms represent a concrete threat to them in this context.

#### How important are patents in FinTech?

► **M. Wildi:** Patents have very limited value in the banking sector, as copying is a widespread practice. It is very difficult to imagine any form of protection beyond a brand name, for example.

► **L. Frésard:** Data shows that the number of patents within the overall financial sector has exploded over the past 20 years. While it is true that a patent is a key component of a contract, I can't envision a strong court case proving that a competitor has copied a line of "patented" software. Some research suggests that this increase in patent activity is essentially driven by FinTechs seeking to attract funding.



# FinTech and the Economic Value of Data

## What is data? And what is its value?

▶ **L. Frésard:** Basically, data is a collection of facts being analyzed to make assessments and predictions. Today, everything revolves around data. The question to ask is, simply, "why is that the case?" The answer, I believe, lies in the fact that data is actually a by-product of economic activity. The tracking and recording of data have gone up, just as the possibilities of storing and analyzing it has. As data is a key component of predictions, when the demand for better predictions increases, so does the demand for—and therefore the value of—data. It is not a coincidence that data-rich companies, such as Alphabet, Amazon, and Meta, are among the most highly valued companies on the stock market today. And it is not surprising that legal decisions which restrict data storage or usage, or calls to make data public, significantly impact the market capitalization of those firms.

▶ **A. Fuster:** How to assess the financial value of data is still a very open question. One explanation for the high valuation of FinTech firms such as Paypal and Stripe Payments, in my opinion, is the high option value of the data they possess but don't yet fully exploit.

▶ **S. Wickihalder:** Interestingly, the value of data rises in phase with an increase in data-sharing opportunities. But sharing data requires infrastructure to process the data correctly, while, to retain its value, data needs to remain up to date, which is costly. We, as a society, need to learn to work with data better, addressing ethical and regulatory factors, as well as the impact of data use.

## Do data protection laws fulfill their goal of protecting consumers? How do they affect firms?

▶ **J. Dürr:** Data protection laws are beneficial for society at large, overall, and in particular for the consumers. But these laws can be a burden for industry, at times, hindering both the agility and creativity of firms. In this context, I find it interesting to observe the differences between the laws being drafted in Europe and North America and those in the Asia-Pacific region.

▶ **L. Frésard:** Thinking about regulation raises interesting questions concerning who owns the data and who should benefit from it. The user or the consumer? Or the firm that can store and analyze it? By tradition, banks have been highly regulated, which made it easy to place further restrictions on them with regards to data. But from a market perspective, it doesn't seem fair to have two

types of rules for the same type of business. Fortunately, banks and non-bank financial players are increasingly facing the same regulatory constraints, which is reflected in a convergence in the cost of services of banks and non-bank FinTechs.

## Large quantities of data go unused due to confidentiality and regulatory requirements. Do solutions exist to make such data usable?

▶ **M. Wildi:** Data handling is complex, and the industry clearly has a lot to learn in this area, particularly when it comes to understanding new technology and implementing regulatory requirements. Deleting data, for example, is a tedious task, because of the multiple layers of backups. The fundamental questions of what purpose data is collected for and to whom it belongs need to be rethought.

## What are the positive and negative aspects of the increase in data collection? Who are the winners and losers in the data race?

▶ **J.-C. Rochet:** There are many dimensions at play here. On the positive side, tech firms typically offer consumers free services in exchange for permission to sell their data to third parties. All-in-all, this sounds like a win-win situation. Economic theory predicts that appropriate data usage not only offers a better quality of service, but also increases market competition. But there is a negative side. The underlying scalability requirements of the tech market structure imply that only a couple of firms can thrive and will ultimately dominate the market. This oligopolistic situation means that traditional banks, which offer bundled services, are under considerable pressure from non-bank FinTechs, which offer single services extremely efficiently and aggressively. Let us also remember that data usage by BigTechs allows them to extract rents on each and every consumer.

▶ **A. Fuster:** Overall, early adopters of data-driven technology are typically the winners. In credit markets, for example, technologically savvy lenders tend to be able to distinguish the most reliable borrowers; these borrowers enjoy a better credit experience and, as expected, better credit rates. US student loans are also interesting in this respect, as the private sector has captured the best profiles, who typically have the lowest default rates, and left the less appealing ones to the government.

### Is artificial intelligence (AI) as intelligent as it sounds?

▶ **J.-C. Rochet:** It is hard to disentangle all the variables at play here, as they are evolving at tremendous speeds. But empirical research supports the idea that the future of FinTech—for example, when providing credit to small-to-medium enterprises—lies more in the quantity and quality of the data itself, than in the AI algorithm crunching the data.

▶ **L. Frésard:** Better data, better algorithms, and better computational power obviously provide better predictions. But consumers and investors need to consider whether a better prediction is truly useful, and at what cost. Sometimes doing things the old way is actually better for business. Even the fastest cars get stuck in traffic...

▶ **M. Wildi:** AI clearly helps certain aspects of the banking business—even the regulators have approved its use in various bank operations. For example, when detecting money laundering or fraud, the volume of data is so bulky that AI provides a clear benefit.

▶ **S. Wickihalder:** The answer here is very heterogeneous. In the medical sector, there are numerous good cases of proficient AI usage. But within the financial sector, currently there are not many good uses of AI for end clients. One of AI's major constraints today, irrespective of the sector, is the lack of a holistic vision.



# Technology in the Retail Credit Market

## What are the most visible effects of technological developments in credit markets?

▶ **L. Frésard:** The credit market is genuinely a prediction business. The most visible development here is the improvement in the interactions between borrowers and lenders. Borrowers can rapidly compare rates, and lenders can obtain, in an efficient manner, data on the risk profiles of potential clients. Over the long term, such solutions will break down the small monopoly power of local banks.

▶ **M. Wildi:** In Switzerland, with its (until very recently) negative interest rate environment, I believe that potential lenders who rely on non-bank FinTech solutions to find borrowers often aren't assessing the default risk properly and therefore aren't getting rewarded as they should. Banks are still the most proficient and largest players in the credit market. They can, when needed, adopt technological developments reasonably easily. I don't anticipate major shifts in the way banks do business, and I don't anticipate banks will be pushed out of the credit business any time soon.

## How different is the data used in FinTech-based lending versus traditional lending?

▶ **A. Fuster:** Digital footprints—such as the type of IT device you use, or whether you use your actual full name in your email address—are becoming interesting complements to the standard data used to estimate your probability of delinquency when applying for a loan. A lot of such data has been collected; the challenge now is to determine how best to use it.

▶ **M. Wildi:** The two key components of any lending deal are the financial capacity of the borrower and the value of the collateral. In Switzerland, regulators have a say in how these figures are defined and can be maxed out, meaning that the data used by all Swiss banks, whether they use a FinTech-based approach or a traditional one, will lead to similar credit offers.

## What solutions will FinTechs next deliver in the lending business?

▶ **A. Fuster:** In developing economies, non-bank FinTech firms, such as Alibaba, have already expanded financial access to many borrowers who were underserved by the conventional banking system. Using the data collected by their online sales platforms, such firms gain excellent insight into the business models of their clients and can consequently provide appropriate credit lines.

▶ **M. Wildi:** In Switzerland, FinTech is essentially limited to brokerage platforms, which facilitate the match between borrowers and lenders. The same can be observed in the insurance-tech sector. Overall, we're far from doing anything revolutionary.

## Does FinTech-based screening of borrowers supersede traditional screening methods?

▶ **A. Fuster:** New data sources like digital footprints to some extent level the playing field between banks, which have a long history of data on their consumers, and nonbank FinTechs, which don't. However, although digital footprints do carry information on the probability of default, research suggests that they are not quite as powerful as the traditional credit-rating models banks use. In my view, banks can still catch up with non-banks, with regard to innovation in the lending business, if they are able to overcome their legacy system and to work closely with regulators. That said, in the US more and more non-bank FinTechs are becoming banks to access cheap and stable deposit funding. So while banks will likely remain important for the foreseeable future, they may not look like the traditional banks of yesteryear.

## What do traditional banks need to be cautious about?

▶ **M. Wildi:** In my opinion, the threat lies not so much in the FinTechs themselves, but in large retail groups with vast client bases and in insurance companies with strong balance sheets. Imagine the potential that retail stores such as Coop and Migros would have if they were to consolidate the data they have on their consumers from their traditional retail stores, online stores, banks, and credit card services. They would be close to knowing just about everything about just about everyone. Finally, insurance companies have very strong balance sheets and don't face the same regulatory credit constraints that banks do. It still surprises me that insurance companies are not more active in the credit business, as they have the potential to know their clients as well as banks do, given the financial planning they already manage.

**At the end of the day, who benefits most from FinTech lending?**

▶ **A. Fuster:** On average, both borrowers and lenders benefit from FinTech lending, but there are nuances to keep in mind. Prime borrowers will benefit from having more sophisticated techniques to assess default risk, while borrowers with poor profiles will face higher interest rates or may be pushed out of the market

completely. In that sense, FinTech lending may increase dispersion in credit market outcomes. On the other hand, well-calibrated automated lending has the advantage of not being subject to the conscious or unconscious discriminatory biases that human loan officers might be prone to.





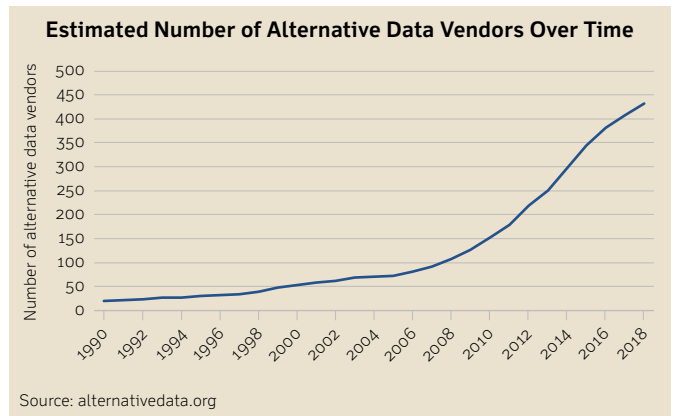
# Financial Forecasting and the Role of Alternative Data

**The quantity of available data has exploded over the past two decades. What explains this rise in alternative data? What can be said about its quality?**

▶ **A. Fuster:** To explain the explosion in the quantity of data, I see two main factors. First, people are spending more and more time online, which means that they generate more and more data. Second, computing power has increased substantially, in both storage and processing capacities. Regarding its quality, this novel data certainly has a lot of potential, but filtering out the "noise" is a major challenge for all FinTechs.

▶ **L. Frésard:** The financial sector has used traditional data, such as the financial statements of firms, for centuries. What is new is the use of alternative data, whether they are issued voluntarily by firms (such as CO2 emissions) or produced by individuals, business-to-business activity, or sensors (such as maritime vessel tracking solutions or satellite imagery). Alternative data can be a very good complement to traditional data when making predictions. For example, hedge funds in the 1970s hired college students to count the number of cars in supermarket parking lots to predict consumer purchases. This method proved to be a valid metric for predicting the next quarter earnings and profits of retail stores. Over time, live satellite imagery replaced the students, making this metric more affordable and less rare. More recently, employee review data has been found to predict the overall dynamic of a firm, and thus its short-term financial performance.

▶ **M. Wildi:** There is indeed a lot of data available, but the challenge is to find relevant data and to make good use of it. If you think about the real estate market, for example, no two properties are identical. The same is true about every firm and every financial asset. Being able to grasp all the nuances is what divides good financial decisions from bad ones.



**Are alternative data providers becoming serious competitors to traditional data providers?**

▶ **J. Dürr:** The immense increase in the importance and usage of alternative data is shaking the data market. Sustainability metrics are a prime example: One of their commonly mentioned shortcomings is a lack of information, and data providers from all over are seeking to fill the gaps with consistent and reliable data. Established data providers, well aware of the challenges ahead, are increasingly seeking to gain market coverage by providing users with tailor-made solutions. This trend represents a significant shift from what they provided just a few years ago.

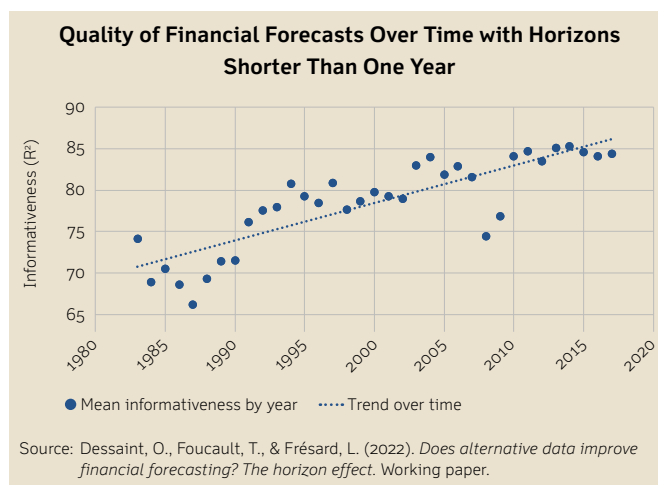
▶ **S. Wickhalder:** Banks and retail stores have a clear advantage here, as most alternative data is generated internally. But the questions of who owns the data, who owns the analysis of that data and the results of the analysis, as well as which services should be free of charge and which ones should be paid for all deserve a transparent discussion.

**Has the increase in alternative data helped market participants become better at financial forecasting?**

► **L. Frésard:** Alternative data has been shown to help make better predictions by up to eight quarters, but it has no predictive power in the longer run. If you think about it, this is not surprising. Information that is easy to measure, such as the volume of credit card transactions, has short-term implications. Information that is difficult to measure, such as shifts in a firm's strategy, has implications mainly in the long term. When the COVID pandemic broke out, quantitative funds were all over the place, because their algorithm did not know what to do with this never-before-seen situation. Discretionary qualitative funds, however, were able to see beyond the short-term data and to assess how different industry sectors would be impacted by the pandemic.

**Could this shift to higher quality short-term forecasts explain part of the observed increase in the volatility of asset pricing?**

► **L. Frésard:** There could be a link, but volatility is complex by nature. On the one hand, investors increasingly rely on signals, and the access to more data may lead them to overreact more easily. On the other hand, the increase in the accessibility of data implies that more and more people have the same knowledge, and therefore price discovery should be quicker and more fluid.



# FinTech from an Investor's Perspective

**Tech firms are omnipresent in the stock market. Within the Nasdaq-100, 42 firms are currently labeled as tech firms, and their market value exceeds USD 6.8 trillion. What do these figures imply from an investment perspective?**

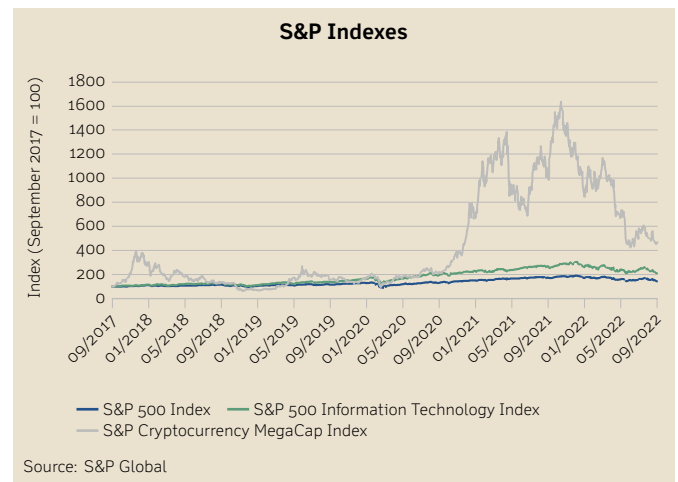
► **J. Dürr:** These figures show that the market understands that technology will continue to play an increasingly important role in our everyday lives. But as with every developing industry, there will be winners and losers within the current pool of tech firms. Not every firm on the market will become the next Alphabet, Amazon, Apple, Netflix, or Meta.

► **L. Frésard:** Boom and bust cycles have always occurred, and the current tech environment is no exception. Much of the current valuation is related to expectations of the actual value of the data each firm has collected and how it plans to exploit it. The dotcom bubble of the late 1990s showed us that such expectations don't always materialize. In my view, there is significant capital misallocation in the market for two main reasons. First, tech firms typically have high ESG scores, as they have low carbon emissions and pay their employees well, and they have therefore attracted capital. Second, there is an inherent hype surrounding technology, as it has a magical dimension to it. Think about how quantum computers and virtual reality compare to bricks and mortar. History has taught us that initial expectations are often too high, and that it takes time for ideas to evolve and come together.

► **M. Wildi:** I think there is a lot of overvaluation of tech firms. These figures show that tech firms are a cornerstone of our society and economy. But I can understand the critics who argue that a significant portion of this huge value is based on expectations, and it's not easy to determine when and how these expectations will be met. Investors should focus on the basics of the business model; technology itself is not a business model.

**FinTech helped create ETFs. What are the latest perspectives regarding personalized stock indices?**

► **S. Wickhalder:** ETFs and personalized stock indices are examples of FinTech providing retail investors with a more diverse, more accessible, and more affordable spectrum of financial solutions. Any move toward democratizing finance should be seen as positive.



**What are your thoughts regarding the impact of FinTech on the real estate market?**

► **A. Fuster:** In recent years, so-called iBuyers—companies with a substantial volume of real estate data and an in-house valuation model—would offer to buy property they considered underpriced. They would then act both as a middleman and a liquidity provider. Interestingly, several of these firms made substantial losses or exited this activity altogether, which suggests that data, even in vast quantities, doesn't offer protection against basic economic forces like adverse selection and market cycles.

**The cryptocurrency market has lost a significant portion of its market value. What does this tell us about the future of crypto assets?**

► **J. Dürr:** I view this market correction as a generally positive one. There was some exuberance regarding cryptocurrencies and crypto assets, which was eclipsing the true benefits that blockchain technology can provide. I anticipate that the market will grow in a more sustainable manner from this new baseline.

► **J.-C. Rochet:** The existence of crypto assets shows that some players are unhappy with the traditional payment system run by commercial and central banks. Although I agree that the current system has flaws, I fear that crypto assets may fragment the system and limit the ability of policy makers to steer the economy in one direction or another.

▶ **A. Fuster:** There has been a lot of speculation within the cryptocurrency market, which is natural for a new market. Many of the crypto assets that first boomed and then collapsed probably never had a strong value proposition. Still, it is quite plausible that the underlying blockchain technology will eventually provide valuable applications for society, whether in the area of financial services or elsewhere.

#### How will blockchain technology impact the way financial transactions occur in the future?

▶ **J.-C. Rochet:** Although DeFi means Decentralized Finance, I view it as *Defying* (Traditional) Finance. Finance was traditionally a centralized activity, usually conducted through a public exchange, and financial players were provided with identical information in a timely and efficient manner. Over the past twenty years or so, financial markets have become increasingly fragmented and opaque, and overall less efficient. This shift cannot be seen as positive. Central securities depository systems, for example, offer a proven safe, regulated, trustworthy, liquid, and efficient solution for investors to hold and trade—something decentralized blockchain solutions may not be able to offer in periods of turmoil.

▶ **L. Frésard:** I see a lot of interesting applications of blockchain technology, for example, in supply chain management or tracking the origin of a product, in the case of luxury goods. But these applications are outside of finance. Although DeFi clearly has potential, it still operates in a very circular environment, showing that there is not yet sufficient trust for the system to operate in the decentralized manner it is intended to.

▶ **S. Wickihaldler:** Today's banking environment is complex, and I am not sure whether it is possible to blend today's legacy system with DeFi. We know the strengths and weaknesses of our current financial system, based on central and commercial banks, and we know we can rely on it in times of crisis. In a fully decentralized system, commercial banks would see their role diminished, and I can't envision regulators supporting an exposed broadscale solution where governance, liquidity, leverage, and shock-absorbing capacity are unchecked. DeFi still has a long way to go...

▶ **J. Dürr:** We need to acknowledge that this field is in a transition phase. Although it is clear that early adopters of blockchain-based technology will thrive, I believe the scope of its impact will be specific to each sector. In certain sectors, having a central storage solution will remain essential, while in others, the efficiency gains will be so significant that the business models will have to adapt. By adjusting their offerings accordingly, banks could seize a valuable opportunity.

#### What are the latest developments regarding central bank digital currencies (CBDC)?

▶ **J.-C. Rochet:** While all the major central banks are actively studying the pros and cons of CBDC, only a few have actually issued one. In my opinion, a retail CBDC system has clear benefits for consumers, not only in developing economies, but also in developed ones. What is less clear is how these solutions will operate at the macro level during periods of turmoil. Nonetheless, we are currently experiencing a period of exceptional innovation, and central banks need to be proactive to avoid letting alternative decentralized payment systems fracture the market.

▶ **M. Wildi:** Stability is key for the financial market, so I don't foresee a retail CBDC operating in a country like Switzerland, where the banking and financial system has proved, time after time, that it is resilient. Plus, I can't imagine the central bank being willing to carry the credit risk that commercial banks currently bear. But I do see a large potential for wholesale CBDC, through which liquidity and counterparty credit risk could be improved, and delivery versus payment solutions facilitated.

▶ **J. Dürr:** I would like to provide a concrete example: The Bank for International Settlements, the Swiss National Bank, and SIX have joined forces to launch "Project Helvetia." During the project's initial phase, in 2020, we explored the technical and operational factors needed to successfully settle digital assets in CBDC on our Distributed Ledger Technology-enabled Digital Asset Exchange. During the second phase, in 2021, we demonstrated the feasibility of an end-to-end integration of CBDC, issued and settled on the SIX Digital Exchange platform, into the core banking systems of the central bank and five commercial banks, alongside today's reserve balances, and also proved that CBDC is compatible with current legal settings. The five commercial banks were Citigroup, Credit Suisse, Goldman Sachs, Hypothekarbank Lenzburg, and UBS.

### Are financial players up to speed regarding cybersecurity and cyberrisk?

► **M. Wildi:** Cyberrisk and cybersecurity are of utmost importance. You cannot delegate cybersecurity, making in-house knowledge and education very important. As banks seek to get closer and closer to their customers, they increasingly expose themselves to cyberrisk. Interestingly, the prime entry point for attack is the email system.

► **S. Wickhalder:** Yet no player can tackle cybersecurity by itself, as the industry is well aware. The recently founded Swiss Financial Sector Cyber Security Centre (FS-CSC) is a valuable tool for promoting support, exchanges, and cooperation between banks, insurances, and authorities.

► **J. Dürr:** In comparison with other industries, the financial sector is ahead in terms of maturity and resilience. But cybersecurity is a field of continuous catch-up. Investments in cybersecurity need to be undertaken on a regular basis; they must be part of the "cost of doing business."

► **L. Frésard:** For an investor, the effect of cyberrisk depends on how that risk is actually assessed and priced by the various corporate and financial players. If the risk is idiosyncratic, then investors can diversify their positions and not be concerned about it, although the corporations themselves should be concerned. If the risk is systematic, then financial players and firms alike should be concerned. To my knowledge there is currently no sound quantitative model to assess the price of cybersecurity and cyberrisk.



# Technology from the Society Perspective

## If you had a unique asset or a valuable piece of information, how would you store it?

▶ **L. Frésard:** I would use a vault within a bank, simply because it is the storage solution I trust the most.

▶ **M. Wildi:** I would also choose a bank vault. This solution ensures that I (or my proxy) am the sole person who can access the asset, although others will become able to retrieve it should I not be able to. Think about how data in a cloud or on a server can easily disappear.

▶ **J. Dürr:** I would also choose a traditional offline vault, without any hesitation.

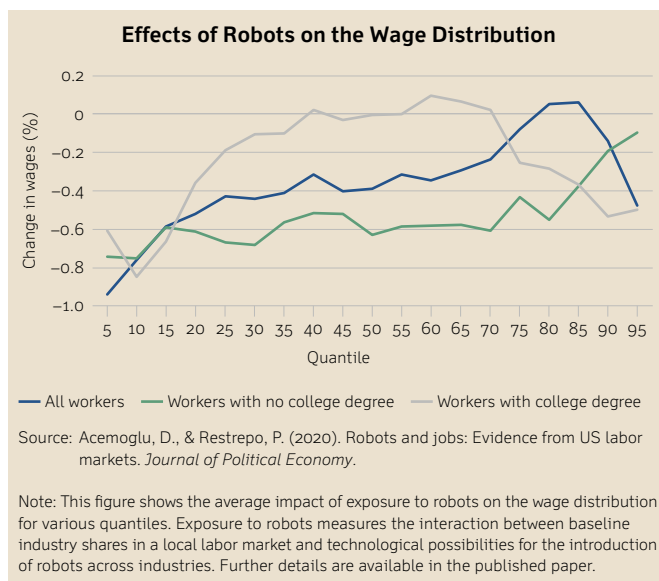
## Most technological innovations, in particular within AI, are seen as leading to increases in automation and thus a reduction in the role of labor. What are your views on this phenomenon?

▶ **J.-C. Rochet:** Historically, every previous round of technological innovation—whether agricultural, industrial, technical, or scientific—has restructured our societies and economies. The current digital revolution is no exception to the Schumpeterian concept of creative destruction. Society at large, as well as individual firms, needs to prepare by training the workers of tomorrow and re-training those of today, and also by deciding how best to balance and manage the creative destruction process.

▶ **L. Frésard:** This important debate has actually been going on for at least 300 years. Today's society needs to focus on where to place the limits regarding what computers and machines can do. Ultimately this question is an ethical one, requiring a political answer. As technology can move very quickly, the decision-making process is complex and needs to include both developed and developing countries.

## What are the key professional skills the labor market of tomorrow will be seeking in regard to technology?

▶ **J. Dürr:** Knowledge of IT and data science are crucial and will keep being rewarded by the labor market. In an international perspective, Swiss universities and tech universities are currently at the forefront. But secondary education needs to rethink its curricula by tilting them more toward such topics.



▶ **S. Wickihalder:** Although good decisions require good predictions, more importantly they require good judgment skills. The leaders of tomorrow will need to be proficient in cognitive and noncognitive skills alike. Having empathy, being able to act as a team player, and being a solution-oriented strategic thinker—these social skills are just as important as numeracy. What actually makes a difference in the work environment, in my view, is acknowledging that it isn't possible for one person to master every skill.

## From a regulatory perspective, what are the most pressing social problems to be tackled regarding technology?

▶ **J.-C. Rochet:** Regulation needs to focus on ways to reduce the uncertainty of FinTech solutions. The recent collapse of certain stablecoins is detrimental, not only to investors (or speculators), but to the entire FinTech environment. Regulators urgently need to step in regarding cryptocurrencies, and in particular stablecoins, as the past few months have shown that stablecoins are not immune to runs. I don't want to see the unregulated part of the market hinder the benefits of blockchain technology.

### Where does Switzerland's edge lie in terms of FinTech?

► **S. Wickihalder:** Success in FinTech relies on scalability, meaning that Switzerland needs to align its regulatory requirements with those of the EU and other markets. There is no room for a costly and complex Swiss finish, when it comes to FinTech.

► **J. Dürr:** Firms, regulators, and the government have indeed been very proactive with regards to FinTech, which places Switzerland in a prime international position. The fact that many leading technology players chose the country to be one of their most important research and development locations shows, among other things, that Switzerland is able to provide the workforce and regulatory environment these tech firms are looking for.

► **M. Wildi:** In my view, it would make more sense, both for the Swiss economy and for financial investors, to focus on MedTech, taking advantage of the vast quantity of unexploited data, as well as the expertise of our leading pharmaceutical firms. I'm not sure Switzerland has the capability to become a large and influential player within the field of FinTech.

### Finally, what would be your words of caution regarding the future of FinTech and technology in general?

► **A. Fuster:** Technology has always created winners and losers. From a societal perspective, this fact calls for continued evaluation of how the gains are distributed among different sectors of society. From an investor perspective, there certainly has been a lot of hype in the market concerning FinTech. It seems crucial to always ask what problem a new technology is actually trying to solve, and whether there is indeed economic value in such a solution.

► **J. Dürr:** Making the right decisions in such a rapidly moving environment is indeed a challenge. Firms and regulators alike need to be flexible, put things into perspective, and ensure they always have a global strategic vision.



## Swiss Finance Institute

With support from its founders—the Swiss banking industry, the Swiss Confederation, and leading Swiss universities—the Swiss Finance Institute (SFI) competitively promotes world-class research and teaching in banking and finance in Switzerland. By combining academic excellence with practical experience SFI contributes to the strengthening of the Swiss financial center.

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