U.S. Fixed Income Markets

Transformative Technology and its Economic Impact

- Advances in generative artificial intelligence heightened the potential impact of technological advancement into the mainstream in recent months.
- Our HilltopSecurities market experts highlight some of the more transformative technologies they are seeing in their respective sectors.

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Experts Consistently Underestimate the Rate of Science

During the 1893 World's Fair in Chicago leading experts and leaders were asked to give their predictions about how life was likely to change in the next 100 years. Some of the forecasts were so incorrect they seem outlandish today. Others, such as Felix Oswald's who said, "Transcontinental mail will be forwarded by means of pneumatic tubes," were interesting but still missed the mark. The predictions shared one common theme: "They consistently underestimated the rate of progress of science," according to theoretical physicist and futurist Michio Kaku.

For many of us, the environment we operate in today is much different than it was even five or 10 years ago, much less 130 years ago. Much of this variation in day-to-day life is a result of the increasing pace of technological change. For some the pace of technological change is worrying, if not frightening. Others embrace the release of new technology, cannot wait to put it to use, and are inspired by the progress. Whether change is embraced or opposed, advancements in technology are inevitable.

Examples of Transformative Technology According to HilltopSecurities

Source: HilltopSecurities.

Please see disclosure starting on page 14.

It is also inevitable that transformative technology will have an economic impact. Our HilltopSecurities market experts set out to identify leading edge examples of transformative technology currently being used or on the verge of being implemented. In some examples, the themes we highlight are already having a fiscal impact. In others, the magnitude of the financial influence will likely increase in the near to medium term. Time will tell if we are underestimating the rate of scientific progress as the experts were guilty of in 1893. It is unlikely, however, we are underestimating the potential economic impact transformative technology can have over time.

Our HilltopSecurities market experts set out to identify leading edge examples of transformative technology currently being used or on the verge of being implemented. In some examples, the themes we highlight are already having a fiscal impact.

Examples Identified by HilltopSecurities Experts

- As technological change advances, U.S. industry and its workforce responds and evolves. "The hope is that automated tools will allow humans to focus on value-adding tasks, allowing companies to increase production even as the pool of available workers continues to contract," writes Scott McIntyre in **Automation Likely to Continue to Provide a Boost to Worker Productivity**.

- The speed and velocity of how investment dollars can now move from investment option to investment option helped shape one of the more impactful chain of events in the financial services industry in 2023. "As commonly seen with new technology, the benefits of revolutionary ideas are often accompanied by unintended consequences," according to Kris Johnson, and John Neubauer in **The Impact of Technology on the "Speed" of Money**.

The speed and velocity of how investment dollars can now move from investment option to investment option helped shape one of the more impactful chain of events in the financial services industry in 2023.

- Utilities across the country are constrained in various ways. Walter Kunisch writes about how electric utilities are using artificial intelligence to analyze data and make smart grids more effective in **How Artificial Intelligence is Making Electricity Delivery Smarter**.

- For years we have heard of congestion pricing being considered for downtown areas inundated with motor traffic. Ted Chapman reviews New York City's Central Business District Tolling Program which is set to begin in 2024 in **The Impact of Managed Lanes and Congestion Pricing Algorithms on Toll Roads**.

- Roughly 75% of the value that generative AI use cases could deliver falls into four areas: customer operations, marketing and sales, software engineering, and research and development, according to McKinsey. Tom Kozlik indicates that, "Technologists and leaders in government and business are coming to terms with how helpful or disruptive AI technology could be in coming years," in **Use of Artificial Intelligence Across Most Industries, Public Finance Still in its Infancy**.

- The experimental demonstration of quantum supremacy was reached in 2019, but the potential for a quantum computer revolution is still likely years away. Tom Kozlik addresses the potential impact quantum computers could have and whether they could cause Silicon Valley to become the next "rust belt" in **Quantum Computing is Another Game Changing Technology**.

The experimental demonstration of quantum supremacy was reached in 2019, but the potential for a quantum computer revolution is still likely years away.

- Innovations that accelerated because of COVID-19 shifts are changing the face of the non-profit healthcare sector. "Management at many health systems believe that telehealth has made healthcare delivery more efficient and has produced expense reduction," wrote Doug Nelson in **Tech Change in Health Care: The Impact of Telehealth, Virtual Care and Digital Medicine**.

Management at many health systems believe that telehealth has made healthcare delivery more efficient and has produced expense reduction.

- Student enrollment drives the higher education sector and is a zero-sum game. Technology utilized by universities impacts enrollment and overall credit quality. HilltopSecurities' Yaffa Rattner writes, "Reinvention anchored in technology and virtual learning platforms to attract a percentage of international learners has been percolating in the industry," in **Technology in Higher Education**.

- Machine readable text such as XBRL will now a be a reality for municipal bond disclosure. Yaffa Rattner lays out the pros and cons for public finance. "Will The Financial Data Transparency Act (FDTA) result in an exodus of issuers from the public markets to the private placement market to avoid the time and financial burden of implementation? Will the final product be worth the cost?" writes Yaffa Rattner in **Machine Readable Disclosure Requirements - Outcomes Versus Costs**.

Will The Financial Data Transparency Act (FDTA) result in an exodus of issuers from the public markets to the private placement market to avoid the time and financial burden of implementation? Will the final product be worth the cost?

- Municipal platforms have been relatively slow to adopt electronic bond trading. However, Phil Villaluz writes, "Notwithstanding the complexities that make the municipal bond market quite different than the government and corporate bond markets, the benefits and opportunities of electronic municipal bond trading are compelling," in **The Electronification of Municipal Bond Trading**.

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Automation Likely to Continue to Provide a Boost to Worker Productivity

Author: **Scott McIntyre,** Senior Portfolio Manager

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The disconnect between job openings and available workers began long before the pandemic, COVID only worsened and drew attention to the problem. There are a number of factors to blame for the imbalance, but the most obvious is demographics. The last of the baby boom generation will turn 65 in 2030 and if history holds, only 19% of this cohort will continue to work. In the 50-year period between 1950 and 2000, the U.S. birth rate fell from 24 births per 1,000 to 14. Without splitting hairs there simply are not enough new workers to replace those exiting the labor force. In a more perfect world, productively would accelerate to fill the gaps, but nonfarm labor productivity growth has fallen from a +2.9% annual pace in the 10-year period before the onset of the Great Recession to average +1.5% from 2008 to 2020. After an enormous two quarter surge in the summer and fall of 2020 as Americans were forced to embrace work-at-home technology, productivity gains inexplicably turned negative over the next two years before a surprising +3.7% quarter-over-quarter annualized gain in the second quarter of 2023. This data series can be volatile, and a single quarter does not make trend, but it feels like we could be at a productivity turning point.

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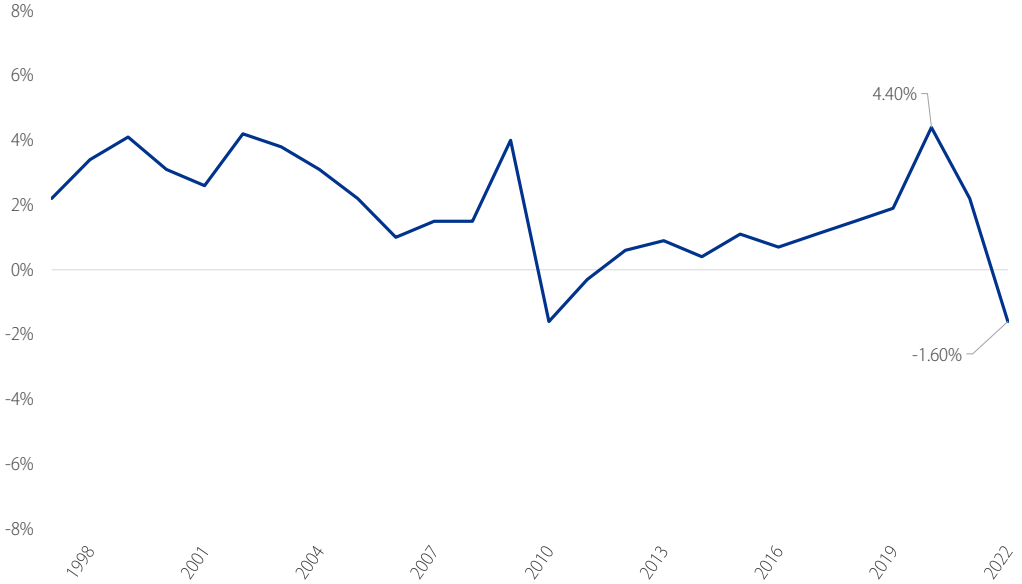
A report from the McKinsey Global Institute back in 2017 had indicated between 400 million and 800 million people around the world could be displaced by automation by 2030. Most of the expected displacement was in major manufacturing regions outside the U.S., but technological advancement in the workplace was viewed through a cautious lens. The labor-starved, post-COVID era has prompted a rethink. We'll now more fully embrace technology … because we have little choice, and rather than substituting technology for employees, companies will add automation to boost productivity of existing workers. The hope is that automated tools will allow humans to focus on value-adding tasks, allowing companies to increase production even as the pool of available workers continues to contract. Increased efficiencies would lower production costs, which should boost corporate profits and exert downward pressure on consumer prices.

Labor Productivity (annual output per hour)



Source: U.S. Bureau of Labor Statistics

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The Impact of Technology on the "Speed" of Money

Authors: **Kris Johnson**, Head of FICM Strategy and Analytics
& **John Neubauer**, Senior Investment Strategist

Fin Tech has created many benefits for users of financial products by making the customer experience more efficient, less costly, and easier to use.

What percentage of the population actually visits a physical bank branch more than once a year, if ever at all? How many existing bank customers know what a certificate of deposit (CD) is? Financial Technology (Fin Tech) has been a major influence in financial markets over the last decade and has evolved significantly in the past few years. Fin Tech has created many benefits for users of financial products by making the customer experience more efficient, less costly, and easier to use. It has also leveled the playing field for those with capital to commit, but are not operating at an institutional scale, by lowering the barriers to entry for investing. As commonly seen with new technology, the benefits of revolutionary ideas are often accompanied by unintended consequences.

Today, technology allows us to transfer vast sums of money between institutions from anywhere in the world, 24 hours a day, seven days a week, all from the convenience of our smartphones. As a result, a run on bank deposits can happen very quickly and simultaneously among depositors. Oversights in interest rate risk and liquidity management combined with technology, were major contributors to the failures of Silicon Valley Bank, First Republic Bank, and Signature Bank earlier this year. Outside of runs on uninsured deposits, the Federal Reserve has raised their target rate 525 basis points to 5.50% from 0.25% in March 2022, providing depositors with very attractive alternatives on where to keep their money and Fin Tech has facilitated an environment where funds are easier to move than ever before.

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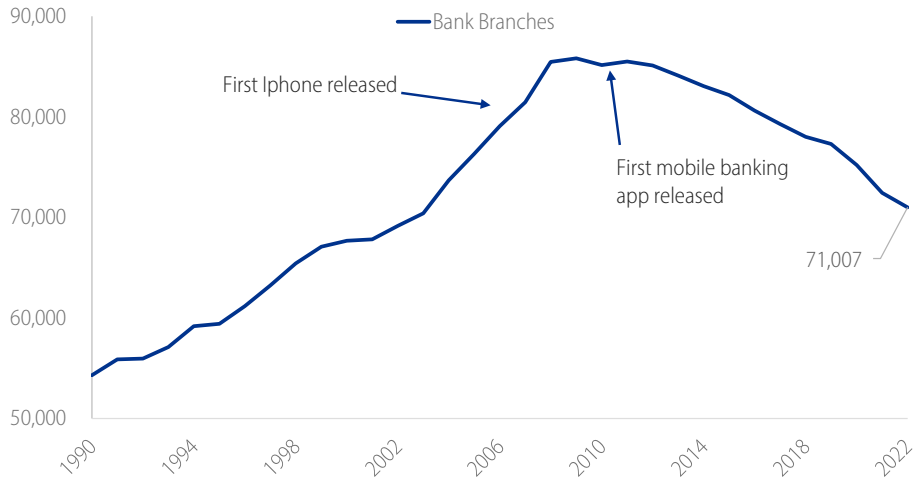
It is no surprise that banks have been consistently downsizing their brick and mortar presence since before the financial crisis in a response to customer behavior. Depositories are reacting to the impact technology has on their branch networks and overall profitability. The recent events will undoubtedly lead to a shift in overall balance sheet management and customer engagement as well. As depositories reevaluate their assumptions surrounding the stability of their liabilities, the structure of the assets they add will certainly be impacted.

Historical Number of U.S. Bank Branches



Source: FDIC and HilltopSecurities.

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How Artificial Intelligence is Making Electricity Delivery Smarter

Author: **Walter Kunisch**, Senior Commodities Market Strategist

Smart grids are networks of electrical grids that use digital technologies to monitor, manage and coordinate the transportation of electricity.

Smart grids are networks of electrical grids that use digital technologies to monitor, manage and coordinate the transportation of electricity. Key objectives of the smart grid are to increase production and distribution efficiencies and increase cost savings while reducing environmental impacts throughout the supply chain. The core of the smart grid is composed of artificial intelligence (AI) driven data mining and data analysis techniques. Using AI processes to analyze data, the smart grid helps increase system reliability, resilience, flexibility, redundancy, and stability. These benefits help reduce costs and enhance security of the nation's power delivery system by making the network less vulnerable to incidents such as cyber-attacks. All of these items are critical to supporting the domestic goal of moving to a net-zero grid by 2035 and where transmission capacity is expected to precipitously rise.

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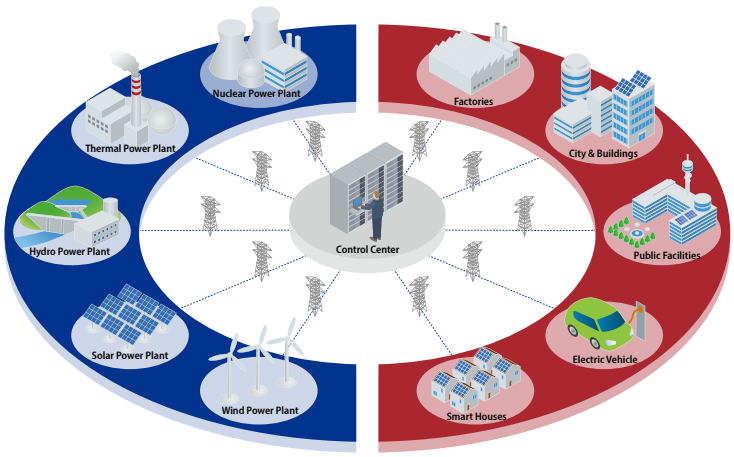
As diversification of upstream power supplies increases to incorporate different renewable sources, the number of transmission lines and complexity of the grid expands thus increasing the demand to integrate real-time AI solutions. Smart grid development and optimization is achieved through the broad implementation of data gathering devices which conduct real time data analysis throughout the power supply chain. This enhanced data monitoring is critical for achieving efficiencies throughout the power supply chain. The monitoring process is accomplished by integrating both AI software and supporting hardware into different points across the power grid to monitor downstream use, midstream distribution and upstream generation. Because the real time analysis is built around statistically driven machine learning algorithms, AI software identifies patterns across the data and to make predictions about future electricity supply and demand. These pattern recognition techniques leverage petabytes of historical data alongside real time data to make decisions. For example, In August, 2023 a tree branch in Ohio fell on a major power transmission line. Human error and antiquated software exacerbated the problem which led to more than 50 million people in the Northeast U.S. and Canada losing power. By using real time AI detection combined with proactive and flexible automated smart grid technology would have reduced the power and economic losses. At the municipal level, smart grid technology can help predict power use and offer real time solutions to reduce demand and costs.

The Smart Grid: An Overview



Source: HilltopSecurities.

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The Impact of Managed Lanes and Congestion Pricing Algorithms on Toll Roads

Author: **Ted Chapman**, Investment Banking Analyst, Public Finance

New York City recently announced it will implement congestion pricing through its Central Business District Tolling Program. The congestion toll will cost drivers below 60th Street – basically anywhere south of Central Park – up to $23 per trip starting in April 2024. The congestion pricing initiative also brought mainstream attention to a tool that first sprung up as (pejoratively) "Lexus lanes" in southern California in the mid-1990s: designated lanes on stretches of public and toll roads that are not only tolled, but the charges vary depending on real-time demand or time of day. Managed lanes were implemented to create explicit market-based pricing signals, with goals that include alleviating traffic, reducing pollution and most importantly helping to finance surface transportation improvements. The United States as of 2021, the most recent year available, had more than 710 lane-miles of what the Federal Highway Administration (FHWA) classifies as "express toll lanes."

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Almost two decades ago the FHWA noted, "The total number of vehicle miles traveled in the United States has increased more than 70% in the last 20 years. At the same time, highway capacity has only grown by 0.3%." Recent bond-funded projects to help alleviate America's traffic included a 10-mile, $670 million managed lanes extension in northern Virginia and a $414 million plan to improve seven miles of the North Tarrant Expressway in Fort Worth. Maryland is still evaluating cost-sharing and other options for the $9 billion American Legion Bridge/I-270 projects, but managed lanes are likely part of the solution. The pandemic reinforced the reality that not everyone can work remotely, and millions of Americans still sit in traffic on the way to work or elsewhere. Since these projects typically enhance existing stretches of road with proven traffic patterns, they are often rated higher than more speculative project finance deals or start-up toll roads, typically BBB+/Baa1 or better, per S&P Global.

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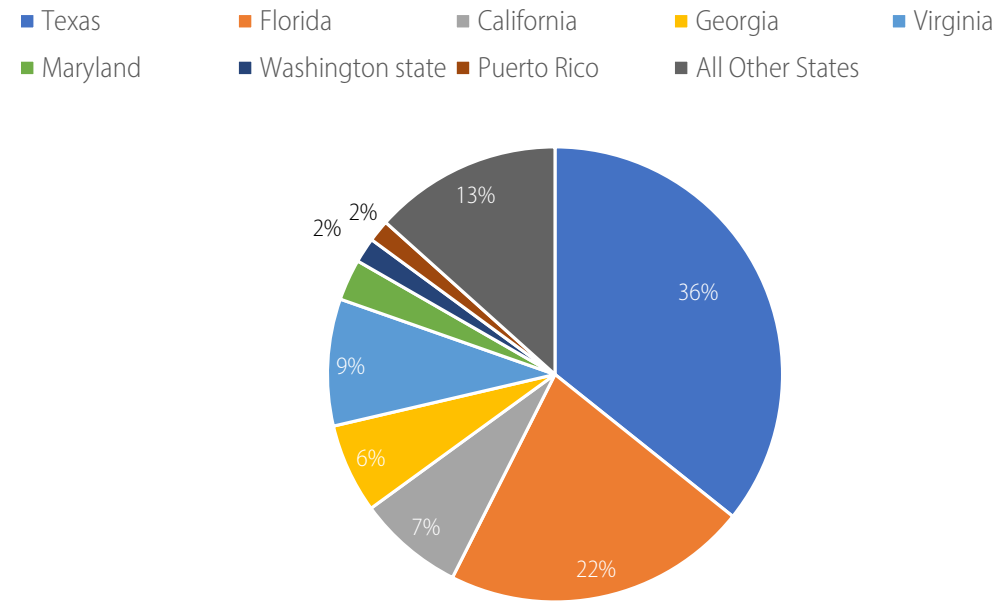
Express Toll Lane Miles by State



Source: Federal Highway Administration and HilltopSecurities.

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Use of Artificial Intelligence Across Most Industries, Public Finance Still in its Infancy

Author: **Tom Kozlik**, Head of Public Policy and Municipal Strategy

New generative AI caught the general public's attention at the end of 2022. Some technology experts called for a six-month pause on generative AI systems more powerful than OpenAI's GPT-4.

The term "artificial intelligence" was first coined in 1956 at a conference at Dartmouth. Now, there are different types of AI and various real-world general applications. Deep learning is a subfield of machine learning. Neural networks are related to deep learning algorithms. New generative AI caught the general public's attention at the end of 2022, and some technology experts called for a six-month pause on generative AI systems more powerful than OpenAI's GPT-4. Others are saying the threat to human extinction is overblown. Meredith Whittaker, tech-company President for example says, "Ghost stories are contagious. It's really exciting and stimulating to be afraid."

Technologists and leaders in government and business are coming to terms with how helpful or disruptive AI technology could be in coming years. Don Kettle wrote, "Government is lagging behind the private sector in developing AI," but he sees opportunities for efficiency despite the potential regulatory challenges. Use of AI in the public sector is sometimes related to customer service and information technology in the form of chat bots, for example. Widespread use of AI is more likely to come in the near to medium term to help with infrastructure maintenance, to assess transportation networks, aid with budgeting and forecasts, and enhance disaster preparedness and response, among other uses. We expect that cost-saving opportunities will be a driving force in the increased utilization of AI in the public sector. For now, the use of AI in the public sector is still in its infancy, but we expect it to become used at an increased pace over time because the public sector is becoming more aware of its existence and utility.

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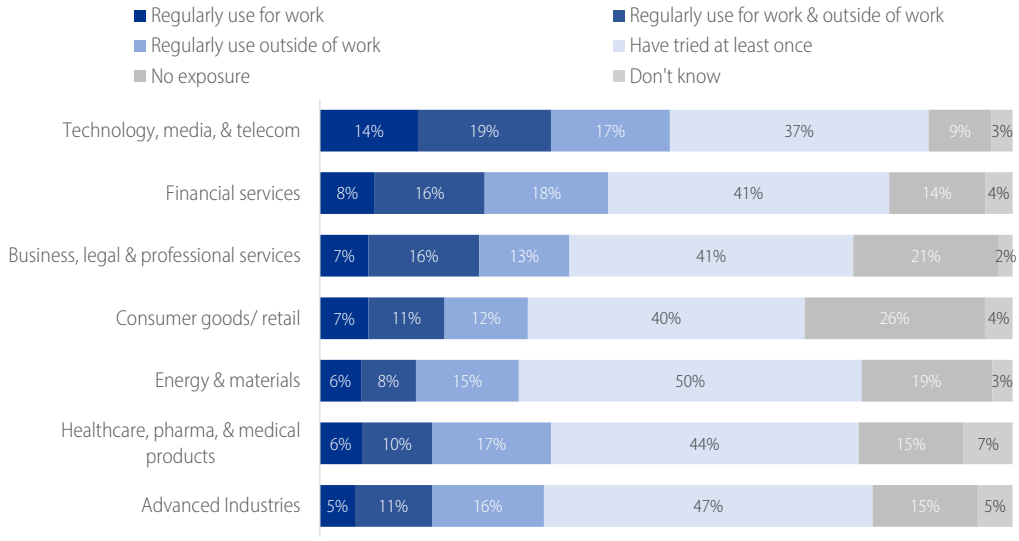
Respondents by Industry Who Say They Are Already Using Generative AI Tools



Source: McKinsey & Company and HilltopSecurities.

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Quantum Computing is Another Game-Changing Technology

Author: **Tom Kozlik**, Head of Public Policy and Municipal Strategy

Mechanical tools and instruments using vacuum tubes were developed and utilized before digital computers. In a paper published in 1965, Moore's law predicted exponential growth in the number of transistors that would be able to fit on a microchip and an exponential reduction in the cost of chips. Moore's law is now facing extinction. Today, an entirely new technology – quantum computing – is set to change almost everything. Quantum computers use qubits, instead of the binary bits (1s and 0s) used by digital computers. They look like chandeliers and require very cold temperatures to operate. Quantum supremacy was achieved by Google's Sycamore processor in 2019, when it performed at a quicker pace than the world's fastest digital supercomputer. The adoption of quantum computers remains in the very early stage. Drawbacks are that current quantum technology is noisy, error-prone, and we are probably five to 10 years away from correcting mistakes specific to the technology, but it is advancing according to this report. The promise and problems of the coming quantum age are multifaceted.

Quantum supremacy was achieved by Google's Sycamore processor in 2019. That means Sycamore performed at a quicker pace than the world's fastest digital supercomputer.

Michio Kaku, theoretical physicist and futurist predicts, "As the golden age of silicon comes to an end, Silicon Valley risks becoming a rust belt." The Valley has faced differing challenges in the past such as foreign semiconductor competition, the bursting of the tech bubble, and the transition in importance of software from hardware. Industrial clustering has its challenges, but Edward Glaeser makes a convincing argument in favor of Silicon Valley succeeding despite the concentration in a single industry. In his 2011 book, Triumph of the City, Glaeser notes that, "The Valley is not concentrated in just a few firms like many rust belt cities once were." Silicon Valley has a strong educational presence, and the region's climate helps to attract a highly educated, experienced, and a wealthy workforce. Silicon Valley has the potential to continue to shift as needed as it has in recent decades compared to regions in the U.S. rust belt. It is also important to note that quantum computing technology is likely going to be phased in over decades, not just months or years.

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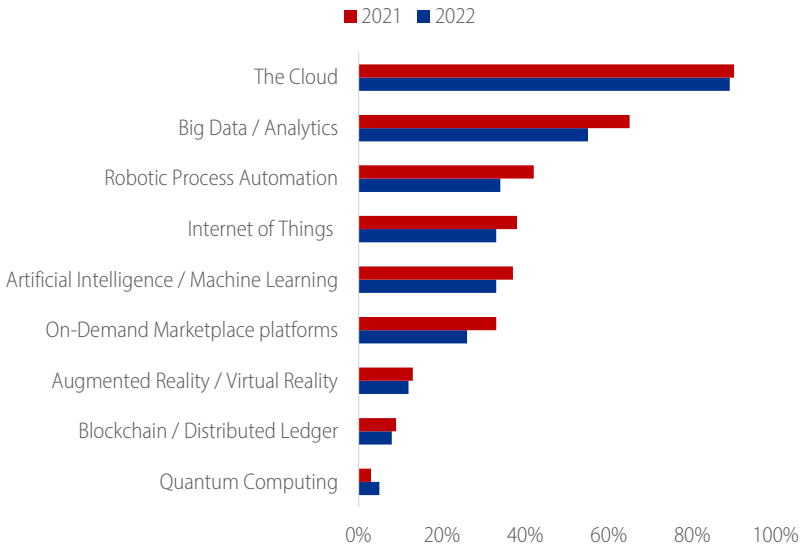
Adoption Rate of Emerging Technologies



Source: Statista survey of digital leaders and HilltopSecurities.

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Tech Change in Health Care: The Impact of Telehealth, Virtual Care and Digital Medicine

Author: **Doug Nelson**, Municipal Credit Analyst, Wealth Management

The COVID-19 pandemic forced healthcare providers to look at alternate methods of delivering health services which in turn introduced new healthcare technology into hospitals and other healthcare related facilities.

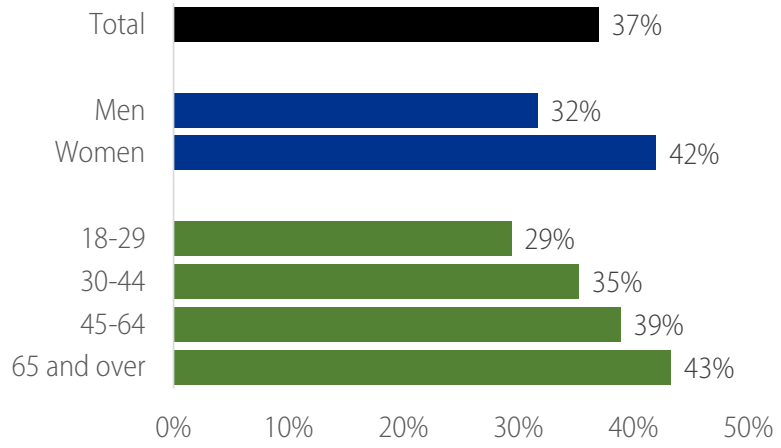
The COVID-19 pandemic forced healthcare providers to look at alternate methods of delivering health services which in turn introduced new healthcare technology into hospitals and other healthcare related facilities. Telehealth, which is defined as the use of electronic information and telecommunication technologies to support long-distance health care, increased significantly during the pandemic and is still being utilized broadly but has contracted somewhat as the pandemic has waned. A new bill has been introduced in the U.S. Congress called the "Telehealth Expansion Act of 2023," in order to establish permanent rules and regulations concerning telehealth. This is important because there has been confusion by providers concerning the restrictions around telehealth now that the national emergency declaration has ended.

Management at many health systems believe that telehealth has made healthcare delivery more efficient and has produced expense reduction. Telehealth also helps to reach younger patients who are more comfortable accessing care online. Kaiser Permanente and CommonSpirit both claim they are cutting their carbon footprint by thousands of metric tons per year through an increased adoption of telehealth and virtual care. Even with these positive attributes, there have been a few issues, such as poor or no internet connectivity (especially in rural areas) and security breaches of patient data.

Management at many health systems believe that telehealth has made healthcare delivery more efficient and has produced expense reduction.

One of the most common telehealth diagnoses are mental health conditions and the use of telehealth for mental health is growing. Reimbursements from payors for telehealth continues to evolve. Medicare reimbursements are based on eligible services. Medicaid reimbursement policies vary state to state and many commercial health plans have broadened coverage for telehealth services. Though there are issues to be ironed out and some capital outlay to be allocated, telehealth should be a credit positive for healthcare providers over the long term.

Percentage of U.S. Adults Aged 18 and Over Who Used Telemedicine in the Past 12 Months, 2021



Source: National Center for Health Statistics and HilltopSecurities.

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Technology in Higher Education

Author: **Yaffa Rattner**, Head of Municipal Credit, Debt Capital Markets

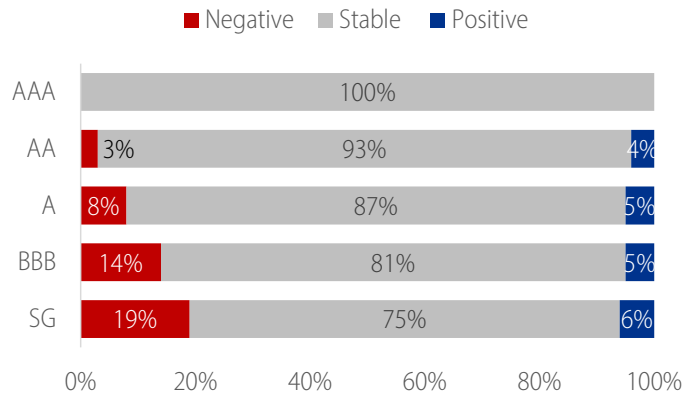
There are more than 4,000 colleges and universities in the U.S. providing degrees for post-secondary education; however, the number has declined by approximately 13% over the last five years and additional closures and consolidations are anticipated.

There are more than 4,000 colleges and universities in the U.S. providing degrees for post-secondary education; however, the number has declined by approximately 13% over the last five years and additional closures and consolidations are anticipated. Although many factors including reputation, cost, size, demographic trends, and location have contributed to enrollment pressure in the sector, acceptance of on-line learning and increased technology availability have accelerated this trend. There is, of course, a distinction between larger universities with strong reputations and enrollments of over 2,500 and smaller institutions that do not benefit from significant selectivity or other stabilizing factors such as a strong balance sheet or philanthropic board. In fact, S&P Global's ratings zeroes in on this point in their 2023 outlook where they detail that 19% of their Speculative Higher Education ratings have a "Negative" outlook while none of their "AAA" rated institutions and only 3% of their "AA" rated institutions have "Negative" outlooks. Truly, we believe this allocation of "Negative" outlooks underscores the bifurcation of pressures that some institutions are experiencing.

To combat enrollment and associated revenue pressure, many institutions have begun to implement revised strategies to reinvent themselves to the new generation of learners.

There is no doubt for many institutions operating margins have narrowed and the financial imbalance between operating revenues and operating expenses is not sustainable. To combat enrollment and associated revenue pressure, many institutions have begun to implement revised strategies to reinvent themselves to the new generation of learners. Some of these pivots include certification programs, new amenities, sports programs, or offering new majors; however significant discussion of reinvention anchored in technology and virtual learning platforms to attract a percentage of international learners has been percolating in the industry. While this approach may benefit those entities that were first out of the gate with strong technology platforms as well as benefit some universities with premiere names that may offer global learning opportunities, it is not likely that all similar approaches will prevail. This approach may also further dilute attraction of expensive smaller schools with lower selectivity. There is no doubt that technology has the ability to help certain institutions of secondary learning; however, it also has the ability to negatively affect the operating platforms of second tier schools with more challenged operating profiles and will not always result in a successful rebrand. Nonetheless, technology in the higher education sector is a trend to watch and projections of success are going to differ.

Higher Education Sector Rating Outlook Distribution



Source: S&P Global and HilltopSecurities.

Significant discussion of reinvention anchored in technology and virtual learning platforms to attract a percentage of international learners has been percolating in the industry.

Machine Readable Disclosure Requirements - Outcomes Versus Costs

Author: **Yaffa Rattner**, Head of Municipal Credit, Debt Capital Markets

The goal of the FDTA is laudable, increasing data transparency, readability and comparability of municipal financial documents. However, it will come with a cost.

The Financial Data Transparency Act (FDTA) was passed in December of 2022 as part of the National Defense Authorization Act for FY 2023. According to the Census of Government Organization there are more than 90,000 units of government in the US with diverse disclosure types depending on state, size, and amount of debt outstanding. As a result, the goal of the FDTA is laudable, increasing data transparency, readability and comparability of municipal financial documents. However, it will come with a cost. This is because not all local units of government use Generally Accepted Accounting Principles (GAAP) and even in states where GAAP principles are generally utilized, not all categories are used precisely the same. In addition, we understand that there is a dearth of auditors available to assist smaller units of government and late financial reporting has perpetuated as a result.

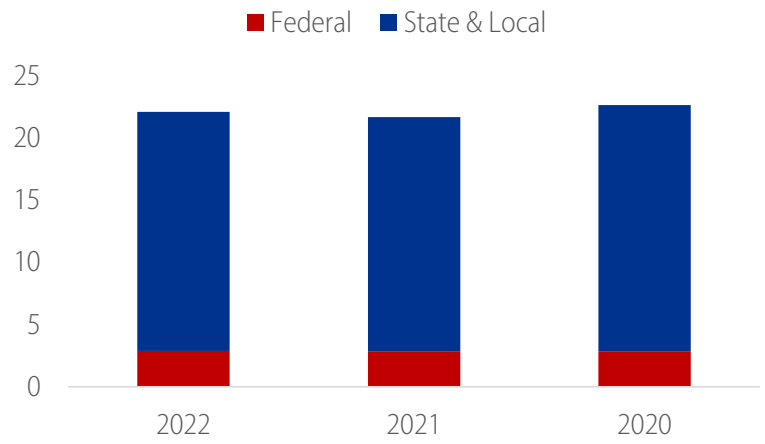
While the FDTA does not mandate new disclosure, it will require market participants to establish data standards in 18 months; and, in December 2024 (24 months after passage) final rules will need to be promulgated.

While the FDTA does not mandate new disclosure, it will require market participants to establish data standards in 18 months; and, in December 2024 (24 months after passage) final rules will need to be promulgated. Implementation will start in 2027, two years following the data standard promulgation. There is no doubt that increasing data readability and comparability is a laudable goal. Investors, government watch groups and even academics will have data that is comparable and can be used to calculate organizational benchmarks or highlight investment red flags. However, many governments today have limited financial and human capital resources to deliver essential services. In fact, many governments have not replaced employees that left their ranks in 2020 according to the Bureau of Labor Statistics.

Therefore, in an environment of limited financial and human capital resources, one cannot help but wonder, who will cover the cost of implementation?

Therefore, in an environment of limited financial and human capital resources, one cannot help but wonder, who will cover the cost of implementation? Will the beneficiaries, including technology providers, cover the cost? Will FDTA result in an exodus of issuers from the public markets to the private placement market to avoid the time and financial burden of implementation? Will the final product be worth the cost?

Federal, State, and Local Government Employees in the U.S. (#s in millions)



Source: Bureau of Labor Statistics and HilltopSecurities.

The Electronification of Municipal Bond Trading

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Despite a slower rate of adoption of electronic trading for municipal bonds, compared to Treasury and corporate bonds, there are key advantages that build the case for increased electronification of the municipal bond market.

Despite a slower rate of adoption of electronic trading for municipal bonds, compared to Treasury and corporate bonds, there are key advantages that build the case for increased electronification of the municipal bond market. Electronic bond trading is the use of electronic bond trading platforms (i.e. MarketAxess, Tradeweb, Bloomberg and ICE Bonds) designed to promote efficiency, transparency, and liquidity in the fixed income market. More broadly, electronification would also include technologies related to artificial intelligence/machine learning, and alternative trading models such as algorithmic strategies. Electronic trading has been slowly gaining traction over the past decade with both buy- and sell-side firms seeking to benefit from: (1) workflow efficiency in executing larger volumes of smaller-sized, odd-lot bond trades compared to a manual process; (2) price transparency by aggregating real-time data on anonymous bid/offer levels across multiple platforms, improving price discovery (3) greater liquidity with access to a broader range of liquidity providers including algorithmic traders, banks and non-traditional liquidity providers.

Early in the pandemic, March – April 2020, was a pivotal moment. During that period of heightened volatility, some of the more prominent traditional liquidity providers stepped back, allowing electronic trading platforms to provide much needed liquidity to asset managers connected to those platforms. From that point, the level of interest in electronic municipal trading platforms accelerated. Dealers, banks and asset managers have begun to hire and build capabilities around these dynamic technologies. Notwithstanding the complexities that make the municipal bond market quite different than the government and corporate bond markets, the benefits and opportunities of electronic municipal bond trading are compelling. We expect an increased utilization of electronic trading in municipal bonds especially as new technology is integrated into new or existing strategies.

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Municipal Bond Trading Activity by Month

Source: TradeWeb and HilltopSecurities.

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