



I: Introduction

Good afternoon, Chair Sanders and distinguished members of the Committee. Thank you for inviting me to participate in this important discussion on cryptocurrency. It's truly a great privilege to be back in upstate New York, my second home, where I did my undergraduate studies at SUNY Cortland and received my Juris Doctorate and Master's in Public Administration at Syracuse University. As well, I'm excited to be back here today in Albany, where I last visited to be sworn in as a member of the New York State Bar.

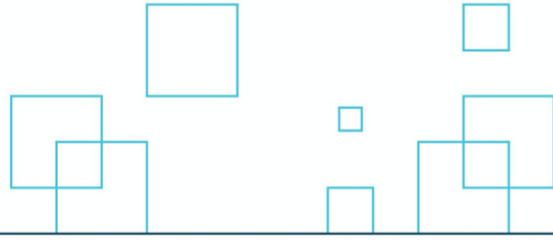
Today, I am honored to provide testimony on behalf of the Chamber of Digital Commerce, where I serve as the lead of our policy department. Established in 2014 as the world's first and largest blockchain trade association, the Chamber's mission is to promote the acceptance and use of digital assets, like cryptocurrencies, and blockchain technology. We are supported by a diverse membership that represents the blockchain industry globally, including nearly 200 of the world's leading startups, software companies, financial institutions, and investment firms, as well as other market participants, including digital asset mining firms. Membership is open to all companies committed to supporting and growing this thriving industry.

I appreciate the leadership of New York State, Chair Sanders, and the entire Committee for holding this hearing today. Education on cryptocurrencies and other innovative technologies is critical to fostering an environment that promotes consumer and investor protection without sacrificing economic and technological growth and competitiveness.

It's no secret to anyone in this room, or around the globe, that New York is the undisputed leader in finance. Today's conversation related to cryptocurrencies and financial technology illustrates the desire to preserve that leadership not only today, but for tomorrow as well. My testimony will be looking towards that future and highlighting the promises and opportunities, both known and unknown, of cryptocurrencies and blockchain technology that are ripe for exploration in New York State.

II. The U.S. Must Lead on Crypto

Cryptocurrencies are helping to usher in a truly global and inclusive economy. These technologies will never supplant the U.S. financial system, but they can support and improve it. This revolution is not only in financial services and banking, but also can be seen in innovations in the agriculture industry, education and healthcare, supply chain, government records, title and asset ownership, digitization and encryption of records, and digital identity. Much of the real-world impact of these technologies is still to be discovered. As the demand for paper money reached a 20-year low most recently, the desire for a digitally native alternative is here to stay.



Despite the many myths associated with these technologies, several key facts remain: the inherent nature of both blockchain and cryptocurrency enables transparency in the market, facilitates ease of transactions while removing the requirement to trust unknown third parties, and ultimately offers economic opportunity to underserved rural areas.

Recent market failures and front-page scams have altered the public perception of “crypto” and derailed the U.S. conversation of creating a sound policy framework for these technologies. The latest policy statements from U.S. regulators reflect a reluctance to accept that cryptocurrencies are here to stay and not a passing trend. Despite the aforementioned market failures, U.S. adoption of cryptocurrencies has steadily grown.¹ Today, nearly one in five American adults have owned cryptocurrencies.

My testimony endeavors to illustrate why it is critical that the United States lead on cryptocurrency innovation and adoption, and provide examples of how this technology, while nascent, is no longer abstract and is improving New Yorkers’ lives today.

With an appropriate policy and regulatory framework, cryptocurrencies and blockchain can positively affect the future of businesses, governments, and broader society, as innovations did in the 19th and 20th centuries. But just as the automobile, telephone, and Internet required regulations suited for an emerging technology versus the legacy infrastructure, policies for cryptocurrencies should be based on the use cases of the future versus the needs of early 20th century financial services. The innovation and opportunity created by these technologies are what I wish to discuss with you today.

There are three main reasons why it is essential that policymakers inform themselves about the opportunities and risks associated with cryptocurrencies and ensure that the U.S. continues to lead the adoption of these technologies.

Preserving U.S. Competitiveness

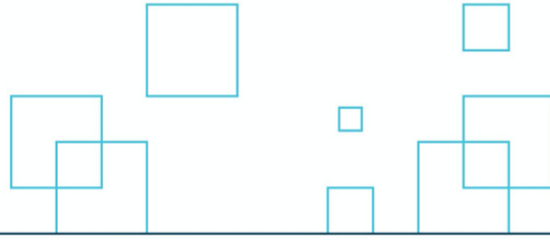
The U.S. share of blockchain development jobs has consistently dropped year after year in a rapidly expanding industry as developers and start-up businesses seek jurisdictions with clearer regulatory and legal requirements. In 2017 the U.S. led all other nations with 40% of blockchain developer roles within its borders. That share has decreased to 29% today and is expected to continue to decrease by an average of 2% annually absent a legal framework.² In contrast to the U.S. which has consistently lost share, Europe (excluding the U.K.) has maintained a consistent share of 29% of crypto developers.³ This is a burgeoning industry; if current growth rates

¹ Chainalysis (2022). 2022 Global Crypto Adoption Index. Chainalysis Blog.

<https://blog.chainalysis.com/reports/2022-global-crypto-adoption-index/>

² “U.S. Share of Blockchain Developers Is Shrinking.” *Developer Report*, <https://www.developerreport.com>.

³ *Ibid.*



continue, an anticipated one million new open-source software engineering and associated blockchain-industry jobs will be created by 2030, but most likely will not reside in the U.S.

As the U.S. dallies, other jurisdictions have seized the opportunity. Allies and adversaries are opening their doors for blockchain-based companies and will reap the economic benefits resulting from technological advances and clear rules.

Protecting U.S. National Security

If the U.S. continues to delay creating rules and regulations, the rules will be made for us. Technology that can impact the way we transact should not be shunned but embraced and innovated incessantly. Cryptocurrency innovation should help protect and stabilize the US dollar's reserve currency status.

Recently, Brazilian President Luiz Inacio Lula da Silva called for an end to the dollar's dominance in international trade during a visit to China by developing a BRICS (Brazil, Russia, India China, South Africa) currency⁴; China is beginning to settle oil trade with Saudi Arabia in yuan; and a myriad of other nations are announcing bilateral trade agreements in their national currencies, bypassing the dollar. Most alarmingly, China accounts for 84% of the world's blockchain patent applications and has deployed the Blockchain-based Service Network (BSN), which encourages development and use of blockchains internationally.⁵

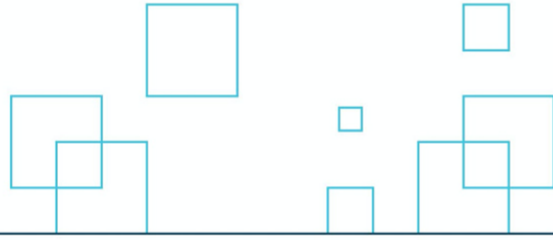
Demand for USD globally underpins U.S. international power and competitiveness and even a relatively small diminution of its use may have detrimental effects. In a world where demand for dollars in trade and reserves is waning, we should be embracing new sources that extend its reach, not discouraging and disparaging them. Stablecoins and other cryptocurrencies pegged to the USD can help preserve the USD's reserved status by providing a digital, borderless alternative for payments while still being backed by the traditional financial system. We should be aiming for as much global trade and finance to be denominated in dollars where the U.S. has the most influence and purview to identify and apprehend bad actors, protect investors, and support capital formation.

Moreover, the highest adopters of cryptocurrencies by population are emerging and developing markets. The World Bank categorizes countries into one of four categories based on income levels and overall economic development: high income, upper middle income, lower middle income, and low income.⁶ Using that framework, ten out of the top 20 countries for

⁴ Bryant, L. (2023, April 24). The BRICS' New Currency Move Won't End Dollar Dominance—Yet. Foreign Policy. <https://foreignpolicy.com/2023/04/24/brics-currency-end-dollar-dominance-united-states-russia-china/>

⁵ Chen, J. (2019, January 11). China accounts for 84% of all blockchain patent applications, but there's a catch. Cointelegraph. <https://cointelegraph.com/news/china-accounts-for-84-of-all-blockchain-patent-applications-but-there-s-a-catch>

⁶ World Bank (2021, July 1). New World Bank country classifications by income level: 2021-2022. World Bank Blogs. <https://blogs.worldbank.org/opendata/new-world-bank-country-classifications-income-level-2021-2022>



cryptocurrency usage and adoption are lower middle income.⁷ As other countries experiment with cryptocurrencies to help counter unstable economic conditions, cryptocurrencies can reduce reliance on other countries' currencies, like China's Yuan.

Creating Wealth Opportunity and Improving Access

We do not purport that crypto assets and blockchain technology alone will solve the broad issue of financial inclusion. However, these technologies have provided another option to increase access and opportunities for wealth creation for those who have faced difficulties accessing traditional financial services. This progress should be embraced and improved upon so that every U.S. citizen has equal financial opportunity.

These opportunities for wealth creation are being accessed by those communities that have historically been denied access to traditional financial institutions and their services. According to a survey by the National Opinion Research Center (NORC) at the University of Chicago, nearly 44% of Americans who own and are trading crypto are people of color.⁸ A 2021 Federal Reserve report also noted that a small but growing number of underbanked individuals were using crypto.⁹ Additionally, the 2022 Ariel-Schwab Black Investor Survey found that 25% of Black Americans surveyed owned cryptocurrencies: that number jumps to 38% for Black investors under 40.¹⁰

Moreover, there are roughly 4 million people living in banking deserts in the United States, which is defined as living in an area where there are no bank branches within a 10-mile radius of the home. That number has steadily increased as community and regional banks close and banking concentrates in large players. The number of FDIC-insured banks has dropped by 50% in the last 20 years.¹¹ Lower-income households are more impacted by banking deserts with median incomes in these deserts ranging from \$41,259 (rural deserts) to \$46,717 (urban deserts). To put that in perspective, the national median household income is \$71,186.

These people are out of options for access to traditional financial services and are being left out of the market. Cryptocurrency is one potential solution in providing financial services to the un-or-underbanked population. This also includes individuals with low incomes or poor credit

⁷ Chainalysis (2022). 2022 Global Crypto Adoption Index. Chainalysis Blog.

<https://blog.chainalysis.com/reports/2022-global-crypto-adoption-index/>

⁸ NORC at the University of Chicago, "More Than One in Ten Americans Surveyed Invest in Cryptocurrencies," Press Release, July 22, 2021.

<https://www.norc.org/NewsEventsPublications/PressReleases/Pages/more-than-one-in-ten-americans-surveyed-invest-in-cryptocurrencies.aspx>

⁹ Federal Reserve Board of Governors, "Economic Well-Being Of U.S. Households in 2021," (May 2022).

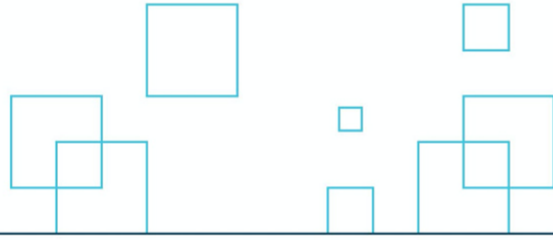
<https://www.federalreserve.gov/publications/files/2021-report-economic-well-being-us-households-202205.pdf>

¹⁰ Ariel Investments and Charles Schwab, "2022 Black Investor Survey: Report of Findings," (April 2022).

https://www.arielinvestments.com/images/stories/PDF/2022-ariel-schwab-black-investor-survey-findings_4.5.22.pdf

¹¹ Board of Governors of the Federal Reserve System. (2023, April 14). Community Banking in the Time of COVID. Speech by Governor Michelle W. Bowman at the National Agricultural Bankers Conference, Indianapolis, Indiana.

<https://www.federalreserve.gov/newsevents/speech/bowman20230414a.htm>



history who may not qualify for traditional loans or credit cards. The additional choice and trustless foundation of cryptocurrency can help reduce poverty and increase economic opportunity.

III. The Case for Crypto

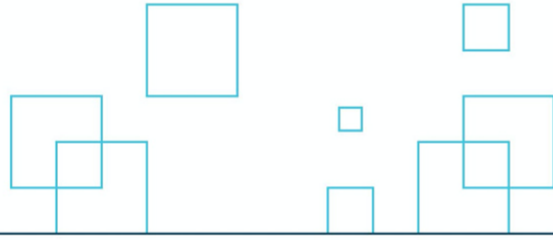
At its simplest form, cryptocurrency is a digital currency that you can use to buy things or send to other people, just like you would with a US dollar or Euro. However, instead of issuance and value being controlled by a bank or government, it's managed by a network of computers.

Now, imagine a digital ledger (like a notebook) that records all the transactions of these cryptocurrencies. This ledger is called a "blockchain." Each time people send or receive digital tokens, the information is added to the ledger as a new "block." All the computers on the network work together to confirm that the transactions are valid and add the block to the chain. The blockchain is like a digital history book that everyone can see but nobody can change. This makes it very secure and completely transparent, which is useful because it ensures that everyone is playing by the rules and that transactions are fair and honest.

Cryptocurrency and blockchain technology can make transactions faster, cheaper, and more secure. They also give people more control over their money and can help provide financial services to those who don't have access to traditional banking systems. It is easy to talk about cryptocurrency as a nascent technology in the abstract and question its fundamental value but several use cases that have already benefited consumers and investors illustrate its capability:

Humanitarian Aid: Cryptocurrencies have been used for various humanitarian purposes around the world. One example is the use of cryptocurrencies to provide aid to people affected by conflict or economic instability. In Ukraine, for instance, the United Nations' Refugee Agency (UNHCR) and International Computing Centre partnered with the Stellar Development Foundation to launch a blockchain payment solution for digital cash distribution to internally displaced persons and other war-affected people there.¹² The money is providing humanitarian assistance to some of the most vulnerable people impacted by the war to provide for basic needs like shelter costs, food, medical care and heating during the winter. By using cryptocurrencies, Ukrainians can bypass traditional financial systems and access money safely and instantly as they move around the country or cross borders. The UN hopes to expand the program to other countries where assistance is rapidly needed as people are forcibly displaced.

¹² United Nations in Ukraine (2022, December 15). UNHCR launches pilot cash-based intervention using blockchain technology for humanitarian assistance.
<https://ukraine.un.org/en/211593-unhcr-launches-pilot-cash-based-intervention-using-blockchain-technology-humanitarian>



Another example is the use of cryptocurrencies to support women's economic empowerment in Afghanistan. The nonprofit organization Code to Inspire¹³ launched a program that teaches Afghan women how to code and develop blockchain-based applications. The program pays the women in cryptocurrencies like bitcoin, which allows them to earn money and participate in the global economy without the need for a bank account, which is typically not available to women. Additionally, the use of cryptocurrencies provides greater security and anonymity for the women, who may face discrimination or even violence for their participation in the program or use of financial services generally.

Cryptocurrencies have also been used for disaster relief efforts, such as in the aftermath of the earthquake that struck Turkey and Syria earlier this year. The cryptocurrency community launched a campaign that raised over \$12.5M in relief funds for various organizations working on the ground. By using cryptocurrencies, donors were able to bypass traditional financial systems and ensure that their donations went directly to the people who needed them and even more efficiently.

Overall, cryptocurrencies have the potential to play an important role in humanitarian efforts by providing secure and transparent transactions, increasing financial inclusion, administering aid more quickly and effectively, and supporting women's economic empowerment.

Remittances: Cryptocurrencies enable low-cost and efficient cross-border transactions, making it easier for individuals to send money to their families in other countries. This is particularly important for immigrant populations, which make up nearly 22% of New York's population,¹⁴ who may have family overseas and would like to send them money quickly and securely.

Today, a typical remittance fee can be as high as 10.9% per transaction,¹⁵ and the World Bank estimates that “[g]lobally sending remittances costs an average of 6.38% of the amount sent.¹⁶ In addition, international money transfers can take anywhere from one to five business days depending on the banks involved, the destination country, bank hours of operation, and currency conversions needed.¹⁷ On top of this, both senders and receivers of funds must spend a significant amount of time and money just to travel to the service provider and often wait in long lines—sometimes over an hour and a half on both ends, representing an additional cost variable to the process. In contrast, payments providers operating in South America and Africa using bitcoin

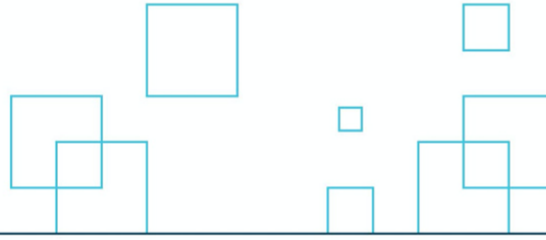
¹³Code to Inspire: <https://www.codetoinspire.org/>

¹⁴FWD.us. The contributions of immigrants in New York. Retrieved April 22, 2023.

¹⁵“Bitcoin gains traction as a vehicle for sending remittances home to Mexico,” Mexico News Daily, May, 2021. <https://mexiconewsdaily.com/news/bitcoin-gains-traction-as-vehicle-for-sending-remittances-home-to-mexico>.

¹⁶“Remittance Prices Worldwide,” The World Bank, March 2021.

¹⁷Cecilia Hendrix, “How long do international money transfers take?,” Western Union, April 5, 2021.



and other open cryptocurrencies charge transaction commissions as low as 1% and transfers execute and settle nearly instantly.¹⁸

Since analysts expect that the remittance market will grow by \$200 billion to over \$900 billion by 2026, lower fees will ensure that more funds go directly to individuals and their families.¹⁹ Domestically, the lack of a real-time, 24 hours a day payment system in the United States forms the basis for why Americans pay approximately \$26 billion in overdraft and high-cost check cashing fees each year.²⁰

Micropayments: Due to low transaction fees, cryptocurrencies facilitate micropayments, which can be used for online content, tipping, and app-based services. In traditional financial systems small transactions can be costly due to high transaction fees and minimum balance requirements. However, cryptocurrencies like bitcoin and ether allow for micropayments to be made without these constraints. For example, the Lightning Network, a scaling solution for Bitcoin, allows for instant and low-cost micropayments, which can be used for various purposes such as tipping, pay-per-view content, or small purchases.

The ability to make micropayments using cryptocurrencies can be beneficial to the U.S. economy by promoting innovation and entrepreneurship that enables the creation of new business models that otherwise would not be viable. For example, social media platforms like Twitter and Reddit have integrated micropayment systems using cryptocurrencies, which allows users to tip content creators or support their favorite causes.

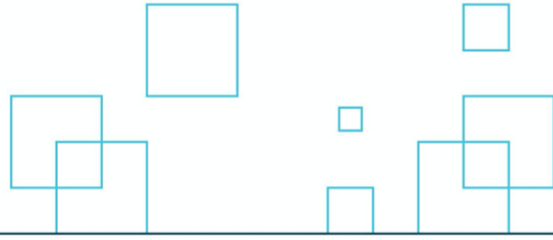
Additionally, micropayments can be used to support charitable causes and nonprofit organizations. By using cryptocurrencies to make small donations, individuals can support a wide range of causes without incurring high transaction fees or minimum balance requirements. The ability to make micropayments using cryptocurrencies can provide a low-cost and efficient means of making small transactions leading to new economic opportunities and greater financial accessibility.

Supply Chain Management: Cryptocurrencies, along with blockchain technology, can improve transparency and efficiency in supply chains by tracking and verifying the movement of goods. Firstly, they can be used to facilitate secure and transparent transactions between parties in the supply chain. By using cryptocurrencies like bitcoin or ether payments can be made instantly and without the need for intermediaries like banks or payment processors. This reduces transaction

¹⁸ Andalusia Knoll Soloff, “The new wave of crypto users: migrant workers,” Rest of World, April 26, 2021, <https://restofworld.org/2021/crypto-remittances>.

¹⁹ Polly Jean Harrison, “Global Remittance Market is Expected to Grow by \$200 Billion by 2026,” The FinTech Times, June 29, 2021, <https://thefintechtimes.com/global-remittance-market-is-expected-to-grow-by-200-billion-by-2026>.

²⁰ Aaron Klein, “The fastest way to address income inequality? Implement a real-time payment system,” Brookings Institution, January 2, 2019, <https://www.brookings.edu/research/the-fastest-way-to-address-income-inequality-implement-a-real-time-payment-system>.



fees and increases the speed and efficiency of transactions, which can help streamline supply chain operations.

Secondly, cryptocurrencies can provide greater transparency and accountability in the supply chain. Blockchain technology, which is the underlying technology of many cryptocurrencies, allows for a distributed ledger of transactions that can be accessed by all parties in the supply chain. This can help to reduce fraud and increase trust between parties, as each transaction is recorded and cannot be altered without the consensus of the network.

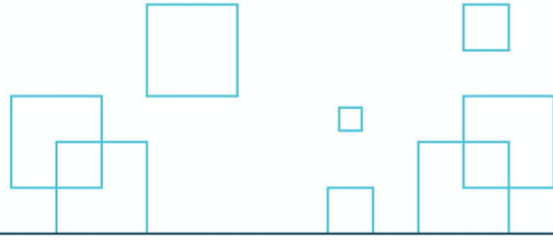
Thirdly, cryptocurrencies can be used to incentivize good behavior in the supply chain. For example, companies can use blockchain-based tokens to reward suppliers for meeting certain environmental or ethical standards. These tokens can then be redeemed for goods or services, creating a system of incentives that promotes responsible behavior in the supply chain.

Transition to Renewable Energies: Like the traditional financial industry, ensuring the functionality and integrity of the Bitcoin network and other proof-of-work blockchains require energy use. However, digital asset mining brings with it an opportunity that the United States should not overlook. Namely, digital asset mining is helping spur sustainable energy practices, accelerating and funding the transition to renewable energy, and offering economic revitalization to underserved rural areas. The bitcoin mining industry leads the world with 59% of its consumed energy derived from renewable sources.

Bitcoin mining can help to create new financial incentives for renewable energy sources, like solar, wind, and hydroelectric power. Many mining operations are in areas with excess energy capacity, where renewable energy sources like wind or solar are often underutilized. Utilities have a greater incentive to invest in solar and wind energy when they know that they will have a consistent customer in a bitcoin miner. By using this excess energy for bitcoin mining, miners can provide an additional revenue stream for renewable energy producers, which can help to make renewable energy more economically viable and accelerate the transition to a low-carbon economy.

As well, unlike other energy consumers, bitcoin miners can power down when the grid is experiencing strain, and power up when the grid has excess load from renewables. This ability leads to less wasted energy, better grid management on extreme load cases, enough bitcoin mining revenue for utilities to continue developing and adopting renewables, and reduced costs from efficiencies derived from higher base loads.

With appropriate policies, the United States should be the world leader in supporting an industry that will underpin the evolution of financial services infrastructure, while helping propel advances in sustainable energy.



IV. Regulatory Challenges

As the digital asset industry has evolved, various regulators have produced guidance, rules, and enforcement actions that are sometimes divergent from or conflict with prior actions and/or those of other regulators. Today, the digital asset industry is regulated at both the Federal and State levels under existing laws, but the U.S. regulatory approach is disjointed, and a lack of clarity has led to consumer harm. As we move forward, New York must continue to lead on this front.

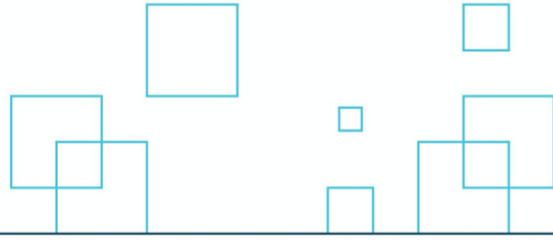
The State has been a pioneer in regulating digital assets in the U.S., primarily through the introduction of the BitLicense framework in 2015. The BitLicense framework was the first of its kind in the U.S., setting a precedent for other states to follow. However, being a pioneer has not been easy. New York has only issued 34 BitLicenses in eight years. As a result, digital asset companies have moved elsewhere. As New York City Mayor Eric Adams aptly observed, the BitLicense regime “stifles innovation and economic growth” and hinders the state’s ability to compete in the digital asset sector.

Nevertheless, New York has been willing to adapt in recognition that the technology has demand, and it is here to stay. In 2020 the state established a conditional licensing framework to facilitate application drafting and submission and relieve hurdles by allowing applicants to work with licensed entities, trusts or state educational institutions to obtain capital, personnel, and structure. Hopefully this conditional license will allow for innovation to flourish without bankrupting or regulating it out of existence. The Chamber encourages New York to continue to collaborate with industry and revise its licensing requirements on an ongoing basis that allows for innovation to succeed within the State’s borders.

V. Conclusion

For nearly a decade, the Chamber of Digital Commerce has been advising policymakers to further bring crypto assets into the U.S. regulatory perimeter. As adoption and opportunity grows, legal guardrails must be in place to protect consumers and investors. The U.S. should lead the creation of those guardrails to preserve its leadership and protect its national security.

I would like to express my deepest gratitude for the opportunity to testify before this distinguished committee on the topic of cryptocurrency. It is truly commendable that the committee is prioritizing education efforts in this rapidly evolving area of finance and technology. By fostering a deeper understanding of cryptocurrency and its implications, the committee is laying the groundwork for informed decision-making and the development of common-sense policies that will serve the best interests of all stakeholders.



As we continue to explore the intricacies of this emerging technology, it is vital that we remain open to discussion and collaboration. In this spirit, the Chamber of Digital Commerce and its membership stand ready to serve as a resource for the committee, offering our expertise and insights to help guide the development of responsible and forward-thinking policies. Together, we can ensure that the potential of cryptocurrency is harnessed effectively and responsibly for the benefit of the people of New York and beyond.

Once again, I thank the committee for prioritizing this crucial educational initiative and for the honor of being invited to testify today. I look forward to contributing to the important work that lies ahead and continuing our collective efforts to ensure New York remains the leader of financial innovation in the United States and the globe.