

TESTIMONY OF

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and Commerce

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Chairman Burgess, Ranking Member Schakowsky, and Members of the Subcommittee: Thank you for the opportunity to testify this morning on the role that virtual currency may play in disrupting today's financial services landscape.

My name is Juan Suarez and I am Counsel for Coinbase, the world's leading retail bitcoin exchange platform. Coinbase was founded in early 2012 with the simple goal of becoming the easiest place to buy and sell bitcoin. At the time of Coinbase's founding, a bitcoin cost less than \$10, virtual currency had not entered the mainstream, and little to no venture capital had been invested in the industry. Today, bitcoin has become the world's most preeminent virtual currency: one bitcoin is valued at several hundred dollars, the total value of all bitcoin in circulation exceeds \$6 billion¹, and several leading online merchants accept bitcoin as a means of payment from customers all over the world.

We believe the rapid emergence of bitcoin, together with other decentralized virtual currencies, is attributable to several characteristics which, by design, naturally orient the technology towards innovation and free, open use. In particular, decentralized virtual currencies **(i)** are, by definition, decentralized, meaning that perfect strangers may transact reliably online without requiring the involvement of a trusted intermediary or its (proprietary) infrastructure and without necessarily disclosing personal information or payment credentials, **(ii)** typically operate via an-open sourced software protocol that anyone can study or to which anyone can submit proposed improvements, **(iii)** are accessible via internet-connected devices anywhere in the world, and **(iv)** allow any software developer to build (and independently own) applications that facilitate new and innovative interactions among users.

These characteristics are strongly reminiscent of the early Internet—itsself a distributed network that facilitated unbounded global communication, innovation, and

¹ <https://coinmarketcap.com>

development of technologies never before imagined. Virtual currency has the fundamental capacity to expose closed and entrenched financial services providers to unprecedented competition, to bring about new, efficient, and global consumer financial products, and, through very low marginal transaction costs, to unlock entire new industries not previously realized. This enormous potential is the reason bitcoin and other emerging virtual currencies are often referred to as the “Internet of Money,” and it is the reason why I am speaking to you today.

If it should please the subcommittee, I wish to share a few brief thoughts today about the promise of virtual currency, Coinbase’s role in that ecosystem, our efforts to protect our customers and to guard against illicit activity, and finally, to share some of our concerns with emerging trends among policymakers.

Virtual Currency as Disruptor

To date, more than \$1 billion has been invested by venture capital firms, large banks, and card networks, among others, into work on virtual currency or related “blockchain” technologies.² Since the invention of bitcoin in 2008, bitcoin has been debated, challenged, enhanced, and its initial distributed ledger innovation has led to the development of hundreds more virtual currencies. As of the time of this hearing, the combined market capitalization of the top 100 virtual currencies exceeds \$8 billion.³

The most widely adopted use of virtual currency to date has been as an asset class for investing savings or for trading. In fact, over 80% of U.S. Coinbase transaction volume and roughly half of our U.S. users are engaged in investment activity—*i.e.*, they buy and hold bitcoin over the long term, or they trade on the Coinbase Exchange, our

² <http://money.cnn.com/2015/11/02/technology/bitcoin-1-billion-invested/>

³ The top four virtual currencies—bitcoin, ethereum, ripple, and litecoin—account for over 95% of the total market capitalization of all virtual currencies combined. See <https://coinmarketcap.com>.

commercial bitcoin trading platform. Most virtual currency firms that generate revenue today operate similar trading platforms or retail conversion services.

There are, however, a great many additional uses of virtual currency beyond savings or investment activity. A worldwide race is underway to discover the “killer app”—a use of virtual currency so popular that it becomes an ordinary part of the everyday lives of tens of millions or even billions of people around the world. Although no single use case has achieved such popularity to date, several promising uses are emerging in parallel:

- ***As a payment rail.*** One of the most obvious applications of virtual currency is a means of payment for a good or service. Indeed, several large merchants have already enabled bitcoin payments on their platforms.⁴ The bitcoin payment rails offer several advantages relative to common online payment methods: bitcoin is truly global, so a merchant can immediately accept payment from customers worldwide; bitcoin is a push payment method—a merchant need not collect (and a customer need not provide) sensitive payment credentials to process a payment; a bitcoin payment, once made, cannot be unilaterally clawed back by the payer, so common forms of costly, post-transaction payment reversal—e.g., fraud chargebacks or insufficient funds—are not possible. Moreover, service providers can allow merchants to immediately convert bitcoin payments into local currency. Such providers, like Coinbase, can then batch local currency settlements to the merchant via low-priced, bank-to-bank transfers. The result is that the merchant receives payment in full, in dollars, at a much lower transaction cost, with little to no reversal risk, through a swift settlement window. These advantages translate directly into savings: payment processors that have

⁴ More than 40,000 Coinbase users have enabled merchant tools to accept bitcoin payments. A select list of companies that use Coinbase to process bitcoin payments is available at <https://www.coinbase.com/merchants>.

integrated bitcoin as a payment rail advertise drastically lower processing fees relative to fees charged by the same processors for similar credit card processing services.⁵

- **As a remittance service.** Bitcoin's global nature and low marginal transaction costs open possibilities as a cross-border remittance tool. Even in the nascent stages, while conversion into local currency is required on both ends of the remittance transfer, several firms are exploring product offerings and use of peer networks to offer remittance and conversion services at competitive prices. In a world where bitcoin is widely accepted as a means of payment, then the process for sending money home becomes a triviality, like sending an e-mail. Further, the ease and relative thrift of global value transfer via virtual currency has led to the emergence of firms which seek to unlock cheap, global peer-to-peer credit markets, or peer contractor services for the provision of simple, often isolated tasks that can be performed cheaply and remotely.
- **As a micropayments tool:** Bitcoin and derivative technologies uniquely enable online transactions that can be processed and settled for pennies, in some cases even less.⁶ These low transaction costs allow for economically viable micropayments that can unlock new incentive schemes (such as monetary incentives for small scale or one-off content creation, or peer tipping), new revenue models (such as *in-browser* micropayments that allows content hosts to seamlessly collect a small fee from visitors who wish to view a webpage rather

⁵ See Stripe pricing at <https://stripe.com/us/pricing> (0.8% flat fee to process bitcoin payments vs. 2.9% + 30 cents for card payments); Braintree (beta) pricing at <https://www.braintreepayments.com/features/coinbase> (fee waived on first \$1 million of transactions, then a 1% flat fee to process bitcoin payments vs. 2.9% + 30 cents for card payments).

⁶ At the time of this writing, the fastest and cheapest typical bitcoin transaction will cost the sender a fee of about 0.00009 bitcoin, or approximately \$0.03. See <https://bitcoinfees.21.co/#fees> (this fee ordinarily fluctuates with network conditions). Several companies are working on technologies that allow bitcoin transactions to occur more cheaply off-blockchain—*i.e.* which do not incur the typical bitcoin transaction fee and which can be processed for fractions of a penny.

than by monetizing via ad revenue), or even secure the way we communicate online (such as linking e-mails with tiny micropayments—an insignificant out-of-pocket cost to a typical user who sends several dozen (or hundreds) of e-mails daily, but which could render e-mail spamming operations economically unviable).

- **To settle property transfers:** More broadly, a hash value (a unique identifier) of any dataset can be uploaded to the bitcoin blockchain and can then be associated with bitcoin transfers through operation of the bitcoin network. The bitcoin blockchain can serve as an immutable, highly duplicated, and decentralized—*i.e.*, very secure—record of all transfers of such property. Several firms are investigating this use of bitcoin and related technologies to efficiently settle securities or other asset trades at low cost and high reliability. Others are investigating uses of smart contracts, or value transfer arrangements that can be programmed to self-execute via the blockchain based on certain preset criteria.

These and many other applications of virtual currencies are being actively pursued by *thousands* of developers around the world.⁷ Put simply: we believe the invention of decentralized virtual currency is among the most historical breakthroughs in computer science, and its derivative technologies, commercial industries, and emergent mainstream products are likely to have as profound an impact on humanity as the Internet.⁸

We acknowledge a healthy debate has ensued over the design and operation of virtual currency protocols and related distributed ledger technology; some argue that certain characteristics of today's bitcoin protocol, such as low transaction fees and

⁷ Descriptions of a few other promising bitcoin applications are available at: <http://financialsingularity.com/top-apps/>

⁸ A useful introduction to the technology and its significance, authored by Marc Andreessen, was published in the New York Times dealbook on January 21, 2014, available at: <http://dealbook.nytimes.com/2014/01/21/why-bitcoin-matters/>.

transaction processing speed, may need to change in order to sustain continued transaction growth and/or continued decentralization of the network. In our view, healthy competition will emerge (and must emerge) among developer teams seeking to propose improvements to the bitcoin core protocol. Changes within bitcoin will be debated and voted upon by the processors (miners) comprising the bitcoin network, and through this process we believe an adaptive, competitive, and reliable decentralized virtual currency norm will emerge. We think bitcoin is likely to remain the world's leading virtual currency for some time—and to date, it is the only virtual currency we have supported on our platform—but Coinbase's ultimate goal is to afford our users convenient access to the most popular virtual currency(s), and we may well support additional virtual currencies in response to consumer demand.

Finally, several companies have invested resources into distributed ledger technology which does not necessarily involve decentralized virtual currency. Many proposals seem to involve centralized control and coordination by one party, proprietary interests over the network, and limited points of access for third-party development. Although these technologies would appear to forfeit some of the core, innovation-friendly characteristics of decentralized virtual currency—indeed, some leading investors have expressed reasoned skepticism that “permissioned ledgers” will have a transformative impact⁹—Coinbase looks forward to learning whether other competent firms' work on permissioned ledgers will lead to improved distributed database technology or settlement tools that can reduce the cost of incumbent financial services.

⁹ Marc Andreessen, co-founder, Andreessen Horowitz, December 17, 2015, twitter (“Big companies desperately hoping for blockchain without Bitcoin is exactly like 1994: Can't we please have online without Internet??”); Glenn Hutchins, co-founder, Silver Lake Partners, January 16, 2015 (“The private ledger is equivalent to the *intranet*. Remember when we first had intranet? It was kind of good because you could collaborate with people you work with but it didn't transform things until everybody was connected in the seamless world wide web.”); reported at: <http://www.newsbtc.com/2016/01/17/glenn-hutchins-you-cant-have-the-blockchain-without-bitcoin/>.

Coinbase's Role in the Virtual Currency Ecosystem

Today, Coinbase operates the world's largest retail conversion service with over three million users around the world. Our retail bitcoin conversion services are available to customers in thirty-two countries where, with the assistance of banking or other payment processor partners, Coinbase can accept local currency payments via local bank transfers or debit cards. To date, our customers have bought or sold more than \$3.5 billion-worth of bitcoin through our platform and we safe keep more customer bitcoin than likely any other commercial enterprise in the world. Our company is headquartered in San Francisco, we have over 100 employees, and we have raised over \$100 million from leading venture capital firms, major banks, and the New York Stock Exchange.¹⁰

We generate revenue solely through transaction fees we charge customers to purchase or sell bitcoin on the Coinbase platform—for retail users, typically a flat, 1% fee. We do not attempt to profit by adding margins to market exchange rates, nor do we charge users to store bitcoin on Coinbase or transact in bitcoin.

Coinbase's long-term success depends upon, first, the increasing adoption of virtual currency and, second, maintaining the continued trust of our customers, bank partners, and regulators. For Coinbase, these twin criteria are linked: our contribution towards establishing a scalable ecosystem is to provide a reliable, trustworthy, safe, and transparent platform which enables customers around the world to efficiently acquire or liquidate virtual currency. We invest considerable resources towards this goal: we invest in customer support and consumer best-practices comparable to norms in the regulated consumer financial services space; we constantly enhance and scrutinize the security of customer and corporate assets and data; we work extremely closely with our banks and

¹⁰ <https://blog.coinbase.com/2015/01/20/coinbase-raises-75m-from-dfj-growth-usaa-nyse/>.

other payment processors in order to enable convenient local payments (to acquire bitcoin) in a user's local currency; we employ professional investigations staff and robust compliance tools to monitor our platform for suspicious activity and to coordinate with law enforcement; we have met with many agencies of state and federal government to train agents and policymakers in the operation of Coinbase's platform and virtual currency generally; and in many U.S. jurisdictions, certain of Coinbase products constitute regulated financial services (more below). I highlight two areas of particular operational importance to Coinbase which are most relevant to many other virtual currency trading platforms and policymakers: consumer protection and anti-money laundering.

Consumer Protection

We are keenly aware that virtual currency, like any early-stage technology, is prone towards abusive practices. Some consumer abuse results from unscrupulous merchants who accept bitcoin as a means of a payment from customers who cannot reverse a fraudulent transaction; other abuse stems from virtual currency service providers themselves who fail to properly secure customer assets from theft or fraud.¹¹

Avoiding both types of abuse on our platform is paramount to customer trust. In brief: Coinbase vets merchants whose transactions we process. We reject merchants who appear at risk of deceptive or abusive practices or who may be in violation of Coinbase's prohibited businesses policies, we monitor merchants' continued use of the platform, and in certain circumstances, we may become involved in remediation of merchant disputes if appropriate. In addition, Coinbase does not expose its customers' payment credentials to Coinbase merchants (unless expressly requested by the

¹¹ The FTC, for example, has warned of the unregulated nature of most bitcoin operations and has stated that it has received reports of unfair practices among certain abusive merchants who accept bitcoin as payment. See blog posts dated June 22, 2015, available at <https://www.consumer.ftc.gov/blog/paying-bitcoins>, and September 23, 2014, available at <https://www.consumer.ftc.gov/blog/staying-current-bitcoin-and-other-cryptocurrencies>.

customer), so even if a merchant is independently subject to a data breach, customer payment data is unaffected.

Separately, Coinbase implements and audits security procedures pertaining to bitcoin storage, application security, infrastructure and network security, user account security (we require strong, two-factor authentication on all new logins and new device verification, among other safeguards), employee access and physical security, and customer data. These protocols are time consuming and expensive, and in fact, there is no formally established best practice for virtual currency security. We believe that best practices will emerge—and emerge quickly—as leaders in the industry begin to adopt uniform and consistently audited security practices. I will highlight one aspect of our security program which is common among many leading virtual currency platforms: bitcoin cold storage. Approximately 99% of customer bitcoin is stored offline and cannot be transferred without restoring it, in complete and readable form, to an Internet-accessed device. A quorum of multiple individuals' active authorization is required to restore and decrypt the bitcoin private keys held in cold storage and thus to unlock the associated bitcoin for transfer off platform. This procedure is a critical line of defense against Mt. Gox-style hacks and can avoid significant consumer loss. In addition, Coinbase is one of the few companies in the world to have private insurance against loss or theft of the small percentage of customer bitcoin is connected to the Internet.

Preventing Money Laundering

Coinbase and all other decentralized virtual currency exchangers are required to register as a Money Services Business (“MSBs”). As such, Coinbase maintains a Bank Secrecy Act (“BSA”) Anti-Money Laundering (“AML”) / Know-Your-Customer (“KYC”) program. We report primarily to the Financial Crimes Enforcement Network (“FinCEN”) within the U.S. Department of the Treasury, and like other MSBs, we are subject to federal auditing of our BSA program.

It is critical to Coinbase that we protect our platform from illicit actors who may attempt to cash out proceeds of dark web, black market commerce. To that end, Coinbase's Chief Compliance Officer maintains a customer information and onboarding program that enables Coinbase to identify its customers and monitor for suspicious activity. We train all staff in AML procedures, we subject our compliance program to regular internal testing and independent, annual review by third-party auditors, and we work closely with law enforcement agents. Coinbase is particularly proud to have built and designed unique in-house tools that enable our investigations team to more effectively and programmatically monitor customer behavior, including our customers' interaction with the bitcoin blockchain.

Emerging Regulation

At the federal level, Coinbase registers with and reports to FinCEN. At the state level, Coinbase has sought licensure of certain of its products under existing state money transmission regimes¹². We think a measured approach to virtual currency regulation should begin with an appreciation for the small size of the virtual currency economy relative to existing financial services. To take one perspective, the Visa network alone processed 71 billion transactions in 2015 for a total payment and cash volume of \$7.4 trillion¹³—this averages to 194 million daily transactions whose combined value exceeds \$20 billion. And that's just one card network. PayPal, as another example, reported approximately 4.9 billion transactions worth \$282 billion in 2015, for a

¹² Coinbase is currently licensed to engage in money transmission in 32 U.S. jurisdictions. A majority of these jurisdictions license Coinbase to operate a PayPal-style U.S. Dollar, stored value facility. Coinbase customers use this U.S. Dollar facility to settle trades on the Coinbase Exchange. A minority of these jurisdictions—fewer than ten—have indicated that operation of certain other products, including hosted bitcoin wallets and Coinbase's bitcoin conversion service, *also* fall within the scope of licensed activity. For those states, a much larger scope of services ostensibly fall within the scope of prudential oversight. New York is the unequivocal leader in this category. Coinbase's application to engage in virtual currency business activity in the state of New York (the "BitLicense") is currently pending.

¹³ See Visa's 2015 annual report, available at: http://s1.q4cdn.com/050606653/files/doc_financials/annual/VISA-2015-Annual-Report.pdf

daily average transaction count exceeding 13 million and volume exceeding \$770 million.¹⁴ By contrast, the entire bitcoin network processes on the order of 200,000 to 275,000 transactions per day, with an estimated value in the range of \$200 million¹⁵. In other words, all daily transactions processed via the bitcoin network—far and away the largest virtual currency network in the world—amount to roughly 1% of Visa’s daily transaction count and volume, and less than one third the amount of PayPal.

In short: the virtual currency economy is clearly in its infancy.

Although we acknowledge that a money laundering risk exists at the points of virtual currency and fiat currency exchange, the magnitude of worldwide consumer risk exposure to virtual currency, relative to existing financial services, is low. To the extent any prudential oversight is deemed appropriate at this early stage, Coinbase feels that operators in this space who are entrusted to sell, store, and transfer virtual currency on behalf of customers can be regulated adequately under existing money transmission regimes—*i.e.*, regimes that have been adopted to regulate companies with innovative stored value and other money transfer products, like PayPal. Although wholesale adoption of money transmission laws or other existing regulatory structures is not possible in every case—some states’ laws are vary narrowly drafted—we believe that methodical adjustments to state money transmission rules or laws can effectively and efficiently leverage existing protections to promote fair, sound, and safe business practices among standard hosted wallet and retail conversion services.¹⁶ Of course, the offering of more complex products may be appropriate for consideration for licensure under different state or federal charters.

¹⁴ See PayPal’s Form 10-K for fiscal year ending December 31, 2015, available at <https://investor.paypal-corp.com/>.

¹⁵ <https://blockchain.info/charts/n-transactions> and <https://blockchain.info/charts/estimated-transaction-volume-usd>.

¹⁶ For a further explanation, see Coinbase’s February 26, 2015 letter to the Conference of State Bank Supervisors, available at <https://www.csbs.org/regulatory/ep/pages/framework.aspx>.

We have identified two particular areas where regulatory overreach, both at the state level, may seriously jeopardize the success of virtual currency businesses in the United States. First, any regulatory construct that contemplates a dual licensing process is potentially wasteful, unnecessary, and overly burdensome. For example, a virtual currency business who also holds customers' dollars may be required to obtain, in some states, both a "traditional" license to engage in money transmission activity *and* a "virtual currency" license, even notwithstanding the fact that the respective purpose of each regime is to achieve essentially the same outcome, via similar diligence processes, administered by the same regulator. Second, inefficiency and avoidable cost stems from the unnecessary duplication of reporting and KYC obligations arising under federal law. In particular, we believe AML regulation and reporting is best coordinated by FinCEN. Although it is certainly the prerogative of state regulators to require licensees to comply with applicable federal law and to conduct audits accordingly, we believe the imposition of state-specific, bespoke anti-money laundering obligations constitutes a bold and costly departure from the prevailing norm, and does not necessarily offer enhanced law enforcement tools relative to a centralized reporting structure managed by the Treasury.

Conclusion

Thank you for the opportunity to testify today. Coinbase looks forward to continued work with policymakers as the virtual currency industry becomes a larger and exciting part of our United States and world economy. I look forward to answering any questions you may have.