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Department of Business Administration

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Featured Articles

Minority and Small Business Review

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The Minority and Small Business Review is published annually each Spring by the Center for the Study of Minority and Small Business (CSMSB) and the Department of Business Administration at University of the West. This publication includes original contributions based on both theory and practical insights on a variety of topics on entrepreneurship. While the topics may vary, each volume contains articles on subject matters that are critical to the growth and sustainability of minority and small businesses, such as: leadership & management strategies; finance/accounting; access to capital; marketing/branding; and legal/tax issues. The contributing authors include UWest Business Department Faculty as well as industry experts, business leaders/executives and entrepreneurs. Each year, the Review seeks to provide information that is content-rich and topically current.

We invite such articles to be submitted to the Editor via e-mail to meskeremt@uwest.edu (using a standard MS word-processing program such as Word). All submissions are subject to editorial review and modification--acceptance is not guaranteed unless such notification is provided in writing by the Editor.

The annual subscription rate is $10.00 for mailing within USA and $15.00 outside USA. (Please see Order Form). All correspondence regarding contributors' writings, excerpt permission and scholarly exchange; as well as subscriptions, changes of address and request for sample copies, should be addressed to: Editor of The Review, CSMSB, University of the West, 1409 N. Walnut Grove Avenue, Rosemead, CA 91770.

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Center for the Study of Minority and Small Business

The Center for the Study of Minority and Small Business (CSMSB) serves as a link between the University and the minority and small business community, offering regular seminars, lectures, conferences, business counseling and the publication of "The Review". The Center seeks to develop itself into an outreach link to connect area minority and small businesses with governmental and non-governmental organizations in order to broaden their exposure to current business realities and changing governmental regulations.

As the Center strives to strengthen its efforts to play a more meaningful role towards the long-term growth and sustainability of minority and small business, it is mindful of the fundamental need for a broad-based support and partnership of area stakeholders and the community at large.

Your subscription to The Review will not only provide us your contact info so we can advise you of upcoming programs and events, it will also signify your support to the Center's programs and activities.

We invite your ideas, feedback, support and involvement. Please address all correspondence to the Center's Director via email @ meskeremt@uwest.edu.

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Message from Chiung-Sally Chou, Ph.D., Interim President University of the West

June 10, 2020

In every organization there is often a ritual and a tradition that promote the organization especially a long-standing institution like the University of the West. At the University of the West, there are many rituals and traditions that set this University apart from others. The University prides itself with the virtues of Compassion, Character, and Community. The service to the community has always been the center of the University's mission. The Center of the Study of Minority and Small Business continues to fulfill its promise to serve the needs of the minority and small business communities of Southern California by providing research and studies, so that these businesses can flourish. The contributors to the Minority and Small Business Review are our own faculty members and other affiliated professionals.

Our goal is to strengthen minority and small businesses in our area by providing a variety of programs and support. The University has robust Business Administration degrees and programs that cater to the local students and business owners. Small businesses in our area provide a myriad of services to the community and the University is so pleased to be able to be a partner to them.

With the current challenges, the University strives to continue its tradition with the Center of the Study of Minority and Small Business and its publication of "the Review." The University is pleased that we have a part in the health of the community by training students to develop entrepreneurship. Thanks to the leadership of Professor Tadesse (Meski), the Review has completed its eighteenth year of publication. Congratulations!

Sincerely,

Chiung-Sally Chou, Ph.D.
Interim President

From The Editor

June 10, 2020

On behalf of the Business Administration Department of University of the West (UWest), I am happy to present this 18th Volume of the **UWest Minority and Small Business Review (The Review)**. This annual publication is hosted by the UWest Center for the Study of Minority and Small Business (CSMSB), and contains a collection of articles authored by our faculty, professionals, entrepreneurs, and business leaders.

Given the large number of businesses serving the broader San Gabriel Valley - the home of our institution - this publication serves as a vehicle to connect with our community as well as to inform and consult on topics that impact our collective societal and economic interests. This year's issue includes digestible articles on broadly diverse topics ranging from Artificial Intelligence to Cryptocurrency, mathematical literacy to Wall Street, and one on the various financial assistance programs available to small businesses in this covid-19 era.

As we continue to explore how to optimize our local businesses and organizations that support and sustain our community by providing services and employment, we welcome your ideas, article contributions, suggestions and collaboration in this worthwhile endeavor. Please address your communication directly to the Editor at meskeremt@uwest.edu.

I would like to take this opportunity to extend our sincere appreciation to our contributing authors who graciously shared their valuable expertise and insights.

Best Regards,

Professor Meskerem Tadesse, Director
Center for Minority and Small Business (CSMSB) &
Editor, Minority and Small Business Review

ARTIFICIAL INTELLIGENCE AND SMALL BUSINESS: ITS PAST, POWER, AND PROSPECTS

By Philip Borden, PhD

ABSTRACT

Artificial Intelligence (AI) poses both a blessing and a curse for small business. While it may add to the toolsets of entrepreneurs, it also may impose structural limits on small business growth. We untangle the complex impact of today's AI through a review of its evolution and meaning, plus ways in which it may help or hinder small business competitiveness.

THE EVOLUTION OF ARTIFICIAL INTELLIGENCE

Supplementing or replacing human intelligence and muscle power with machines has been a dream since well before Leonardo DaVinci designed the first intricate mechanical robots. However, the beginning of today's artificial intelligence dates to 1959. Following a conference on the subject at Dartmouth, John McCarthy gave this new way of computing the name. He and Marvin Minsky soon co-founded the Artificial Intelligence Lab at MIT. They explored both the idea of a thinking machine and practical ways of implementing it. To Minsky and the many who followed him, Artificial Intelligence (AI) meant modeling the human brain, which was merely a very complex computer made of meat. Hence, software ought to function like neurons to produce thought.[i]

In frustration, Minsky later criticized his own idea on practical and philosophical grounds. He came to argue that the brain worked not so much by piling up direct synapses as by the association of different streams of synapses. Neural networks were simply too complicated to be modeled given the state of computing at the time. Minsky, and the Lab turned to robotics and experienced modest success. Still, by the 1990s, without supervision no robot could unpack the box it came in.

LISP language, founded in the mid-1950s, was the second oldest computer language after FORTRAN. It became the first language of AI and basis of thinking machine software developed by McCarthy and others. LISP, (and to a lesser extent other early AI languages) worked by creating lists of possible outcomes and options, then eliminated the ones that did not work. It was a slow and clumsy process that required enormous machine resources. The time and power needed to get meaningful results rendered processing nearly useless for anything but straightforward non real-time projects.

McCarthy, who originally came from Stanford, moved back in 1962. There artificial intelligence was advancing on a second and quite different front. Edward Feigenbaum, realized that creating intelligence by modeling brain function was less practical than addressing limited problem domains. He and a colleague helped launch an AI movement called expert systems. Instead of addressing how brains worked, expert systems modeled how experts used their experience to solve specific problems. Expert systems made a very practical advance, but by the 1970s there still were no computer graphics, no natural language inputs or outputs, and reaction times were still slow.

When object-oriented programming, new languages, and new ideas came along shortly thereafter, expert systems used them to become the vanguard of artificial intelligence. Instead of lockstep algorithms that had to be complete and perfect, expert systems offered a new way of programming that got results into users' hands quickly, allowing users to constantly improve them and to home in on the goal. Businesses large and small could implement expert systems because they were so goal oriented, specific and bounded.

However, it was apparent expert systems could be applied to only a narrow band of tightly defined areas where expertise mattered. They acted more as expert helpers than intelligent actors. They exhibited very constrained learning capability, not too much "common sense," and no awareness of the consciousness that makes human thought human. By the late 1990s, the term artificial intelligence had become merely a programming style, and in some quarters, a term of derision. Artificial intelligence needed to return to its roots if it were to be considered intelligent at all.

Hardware technologies had been busy coming to the rescue of AI. Since 1987 CD ROMs and new disk technologies had multiplied computer storage options over 1,000-fold. Personal computers were doing things that used to require minicomputers, and doing them faster and better. Computing speeds had increased 10,000-fold, and communication speed and capacity nearly a million-fold.

AI began to move in two new directions that define today's artificial intelligence. It returned to ideas developed by the university types practitioners had disdained in the 1980s. Developers attempted anew to imitate how the brain processes information by building neurons rather than experts. They called their approach "neural networking" when describing how the software was structured, and "machine learning" when describing AI's method of acquiring knowledge.

The new AI focused on learning from information. Experts might guide the learning process or allow the machines simply to refine answers through trial and error. Working with mechanical engineers, software engineers applied machine learning to the underlying task needs and not just the controlling systems of robots. The new AI became the focus of most university research and promised to make software algorithms more autonomous and smarter.

Even when the neural training process is directed by humans, once set in motion today's AI programs no longer require experts to guide them. The nerves learn for themselves. They even create new networks on their own. For example, MIT has a program for dozens of tiny drones that learn to organize themselves in order to perform complex tasks without specific instructions. They can defend each other against hostile drones, fly through constantly shape-shifting holes, and join in order to accomplish things together that could not be realized otherwise.

Robots no longer are limited to running mechanical devices. An Internet "bot" is a software engine that searches through the Internet to find things it has learned--to look for. Bots can tell you what movie you most would like to see on Netflix, what blouses best go with a skirt newly purchased by you or a friend. A bot running a drone can decide when to destroy a target that features some but not necessarily all of the characteristics the drone is looking for, within some but not all of the space the target is supposed to occupy, if hidden within an ever-changing topography, at a time when the target is least able to defend itself.

New AI techniques have gone beyond imitating voices to understand speech, a significant step forward. They not only can direct large machine processes but can modify them in real time. And it a world in which touch labor represents less than 15% of an end manufactured product, AI can manage the surrounding paperwork. AI even can write, and is replacing such soft skills as newspaper reporting, which used to require high intellectual skill.

The 2020 Consumer Electronics Show boasted robots that learned to react—even emotionally—to a user. Some claimed they could "replace" parents in communicating with and managing kids. Cornell has developed a robot that is both autonomous and anticipates the needs of humans. Unbidden, it delivers coffee to "its boss." An all-too-human beautiful AI driven robot called Sophia gives speeches, banters with Wil Smith, and answers audience questions, all in order to raise money for its own manufacture.

These changes have profoundly amplified government and commercial power. Still, one more important barrier had to be jumped in order to boost AI onto its current higher plane: better data to learn from. We act on information. Sometimes we do so rationally, most often partly rationally at best. If we are smart (and lucky), we may combine information with experience and ethics to create wisdom. But it all begins with data.

We have always collected data on our behavior, through surveys we answer, taxes we pay, records we leave behind, actions that get recorded, etc. As AI was being born, so were computerized databases. The idea of a database was to arrange pieces of data so as to see connections between them. Then the data could be analyzed or perhaps turned into charts or other visual representations that made it easier to understand and act on those connections. By the 1990s, scientists and businesspeople were trying to solve larger and larger problems whose data no database could get its arms around. Users needed so much and such disparate data they began to organize databases of databases to analyze it. Today, data is often the most important thing determining a company's worth on a balance sheet. Managing it a company's largest challenge.

The digital revolution created the ability to collect kinds of data unimaginable just a couple of decades earlier. It has arrived in torrential streams and in large amounts of static and storable forms. It comes as sound and pictures and numbers and print and even gestures and direct brain wave measurements. It comes from social media, commercial websites, government collections, machines and industrial processes, television, DNA, and much much more. It comes in verified and unverified, simple and complex units. By 2005, the term Big Data (BD) had been coined to describe the amount of data available for computers to analyze.

How big is Big Data? We used to measure data in bytes, then megabytes, and so on. Today's data is measured in zettabytes. A zettabyte is one sextillion, or 10^{21} bytes. It is the amount of space need to store the music on 341 trillion MP3s, or about 200,000,000 years of listening time. Last year we created 2.3 zettabytes of data. Every two days we create as much data as we produced from the beginning of time until the year 2000. We now have access to 50 zettabytes annually and soon will be in the yottabyte (1,000 times larger than a zettabyte) era. BD is itself only a step along the digital path to Really Big Data (RBD). RBD is real. Scientific studies about the genome and the biosphere reference it. As our ability to process RBD grows, it will replace BD as a frame of reference in discussing privacy.[ii]

Data is not information. To become information data must be processed into useful form. The old tools for doing so also have been upgraded. Unable to process our spreadsheets because of the sheer weight of the data, we have devised two techniques: new sampling and statistically based analytic techniques, also called modeling, and automated model evaluations based on AI. Together they are the deep learning spoken about in the literature.

The supposition underlying all of BD and its AI support is the assumption that the more you know about something (or someone), the easier and better you can predict things about it. Statisticians call that proposition the law of large numbers. Any sample from a set of data contains errors. The larger the sample, the more the significance of any of its errors or aberrations abate. One mathematician has defined a law of "truly" large numbers. It eliminates the idea of coincidence. That a person is struck twice by lightning, for example, should be predictable because all possible lightning strikes near all possible populations over all of time makes such an outcome inevitable.

BD depends on big tools to keep from getting out of hand because of the sheer amount of the data being generated. It has found the answer in "Big Algorithms." Algorithms are nothing but rules or formulas for analyzing and making use of data. Big Algorithms (BA) repeat, learn from the data, tweak themselves on the fly to adjust to new insights, and repeat again. BA has the same learning characteristics as AI's neural networks or machine learning. BA is simply AI writ large.

Whereas expert systems were an aid to decision-making, today's BD/AI increasingly replaces it. Similarly, expert systems sharpened robotics, whereas today's AI runs them. Virtually every large governmental, industrial, business, marketing, and academic endeavor uses some form of BD/AI. In addition to numerically attuned fields like economics, public health and disease control, advertising, genomic and microbiome research, etc. Today it even extends to large law firms.

For example, Amazon uses BD/AI to suggest products, replace white collar staff by automating its fulfillment services, and to merge its retail and marketplace divisions. Managers who used to administer inventory and executives who used to negotiate Amazon's largest deals are being reassigned internally or fired or are fleeing the company. Even Amazon's well-heeled competitors are concerned about staggering efficiencies created. It is true that the potential impact of BD/AI on large business has been and will continue to be disruptive.[iii]

On the plus side, BD/AI makes it possible to identify relationships that were previously unknown or hidden. It is stunningly good at pattern recognition. On the minus side, BD/AI makes it possible to identify relationships that were previously unknown or hidden. It is still inadequate at understanding the meaning of the patterns it recognizes.

There is considerable debate about whether the technology is limited by the biases inherent in the data they process, is politically and socially biased and hence inherently unjust, and whether it better humankind or will leave humans with nothing to do. Elon Musk, Bill Gates, and Yuval Harari are among the many who have warned of AI's dangers. Stephen Hawking has suggested it could spell "the end of the human race." On the other side, Janelle Shane, one of the new AI's foremost practitioners, is spending

her career debunking what she sees as alarmism, limitations in understanding the meaning of what it models, and overconfidence in AI's promise.

ARTIFICIAL INTELLIGENCE AND SMALL BUSINESS

The military saw the potential benefit of AI from the outset and pumped out massive moneys to finance research. However, it did not know how to make AI appropriate to the real time battlefield, training, and analytic problems it faced. At the time the federal government was emphasizing the importance of "duel use technologies" that originated in military research and could be commercialized, and vice versa. So it offered opportunities to companies large and small to help. In 1982 it launched the Small Business Innovation Research (SBIR) program, requiring federal agencies already paying for large company outside research to make 1.5% of their budgets available for innovative small business research. The SBIR program sought new ideas by issuing very general solicitations and offering financial support for concept, prototype, and product phases, with the expectation that mature developments would secure private funding.

A significant portion of the technologies involved AI, especially those practical, effective, efficient, and comparatively inexpensive to develop and deploy expert systems. The military (and other government institutions) used expert systems to enhance training, pass routine decision-making down to lower ranked personnel, adjust battlefield strategies, and make quicker and cheaper equipment repairs. These uses were relatively easy to transition to commercial practice. Aided by the growth in hardware speed and capacity, the business community saw the economic benefits of expert system type AI. The term AI became part of the business vocabulary and important part of commercial public relations and branding.

SBIR funding has grown to 3.5% of outside government research based on its significant program success. In fact, thanks to the SBIR and related programs which developed in time, over the next fifteen years small technology startups contributed more to advance technology research than all large companies and university research programs combined, an astounding but verified statistic.[iv]

Despite considerable literature on the background and early history and analysis of the results of SBIR, there is little on the success of AI development. A consistent measure of the effectiveness of the program is that 70% of SBIR winners interviewed in 2018 indicated they would not have existed without the program and/or that the program significantly benefited their growth. In the period of 2014-2018 SBIR winners contributed over $92 billion in revenues and nearly $9 billion in federal taxes. They also created over 30,000 jobs annually.

The National Institutes of Health has produced the best studies of individual projects, though other agencies have done smaller ones. None single out software. However, a search of recent SBIR grant winners shows no "new AI" studies, though several indicate expert system type support systems for management and research, and an increasing number focus on Bayesian analysis (a sort of fluid probability technology open to learning and change in a near AI way).[v]

Although the SBIR program has garnered more respect, federal budgets and government dollars since its inception and changed in the size of its grant awards, SBIR's success has come at a price for small business.

SBIR has had to share the stage with the Small Business Technology Transfer (STTR) program. STTR offers universities similar benefits, despite the fact that for many years it was private small companies and not universities that were producing technological growth. Also, funding mechanisms have changed to allow large companies and financing concerns to participate earlier in the process, with a view to quick acquisition of small business technologies. This is especially true in the pharmaceutical space. Small companies no longer form the vanguard of AI in the SBIR program, certainly not the way they did in the expert system era.[vi]

While the SBIR program was transformative and helped create the fastest growing companies in the small business sector, it was only part of the small business story. Most small businesses in fact remain life-style businesses whose use of AI technologies continues to be marginal. Since the opening of the AI era, small businesses have been being formed and failing at about the same rate. 81% of them have no employees, a slight uptick over the past three decades. It suggests that the universe of those potentially poised for rapid growth are shrinking even as software technology gathers steam.

For the 20% or so of small companies with any capacity to utilize AI growth strategies no matter how limited, here are the ways that it can do so, at least in theory:

- New product development: aid in the technical research and research evaluation needed to create new products and services, and in the manufacturing processes to realize them through machine learned and expert analysis and control applications;
- Marketing and promotion: identify customer needs/wants/predilections/preferences, and tailor advertising to specific individuals in the process, using conversational AI and BD/AI analysis;
- Personnel: improve hiring practices by automatically evaluating large databases of resumes to match applicants with particular company priorities by reading and comparing applicant data and using BD/AI to evaluate their public histories;
- Operations: support to every back office and logistic function using the full range of BD/AI tools;
- Customer service: identify product and consumer service issues, even probe customer complaints and concerns to go beyond simple reporting, drawing on both pure BD plus language recognition, translation, and speech generation;
- Online presence: for retail and other purposes as appropriate, aiding in sales processes and image maintenance, using all the BD/AI tools.[vii]

Many of the functions that claim to be AI based do not use the "real thing" but only the name as a branding tool. For example, retail response to customers can be based on traditional decision tree programming even if it proclaims that its responses to clients are intelligent. Matching resumes to need does not have to be an AI function, and most practices are simple matching programs. In the end, the primary benefits of these traditional and sometimes actual uses of expert systems and BD/AI can create 24/7 service without the need for multiple full personal shifts. Hence, they may produce personnel, time, and cost savings.

The benefits of AI come with costs that can be measured in investment dollars and organizational dysfunction. One expert has written, "Despite the seeming proliferation of artificial intelligence technology today, it is still in the very early stages of development. Contrary to what might be hyped on

social media, in nearly all application areas AI is an expensive and complex solution without evidence of direct ROI. This is especially relevant for small businesses with limited data, limited resources, and limited data science talent."[viii]

- AI can be costly. In the era of BD, collecting the requisite data, evaluating its integrity, storing it, and maintaining it in a secure environment has both initial expense and ongoing maintenance costs that many small businesses cannot afford. And neural network learning AI systems to assess the data have a fundamental programming development cost as well as the ongoing expense attendant on a system that needs to keep learning to exist. In the post Covid-19 world, the loss of working capital reserves amplify the financial dimensions of the cost of AI for small business.
- Not all AI solutions pay off in the short run. Hence, it can have a negative impact on both profitability and valuation. Moreover, focus on the development of AI solutions in non-software companies exacts both a personnel and potential opportunity costs.
- Poorly executed to ill-defined AI solutions can create reputational costs that translate into dollar and cent liabilities that can be hard to overcome. They also can generate a backlash among consumers who need "real human" connections for flexibility and response.
- The return on investment (ROI) of AI solutions for small business has not yet been determined. Given the costs cited above it is not likely to be good, especially in the short run. And for an increasing number of small businesses, the short run may be its only run.
- There is a natural cultural mismatch between the personal service and hands-on orientation of small business and efficiency drive of large business. Hence, the change to implementing AI solutions may be seriously negative. Even where the economics of AI may pay off, how it affects the staff, internal arrangements, and external image of the small business can hobble or even negate any realized gains.

FUTURE OF AI IN SMALL BUSINESS

The future may be a different story. Capital is a term that relates not only to money, but to every type of fundamental resource from business and personal connections to CEO competence. Data is now the most important source of intellectual capital and increasingly a critical balance sheet item, especially for investors. Control of it is and will continue to be a function of size.

BD/AI today is a relatively newly developing field, just as computing was in the 1960s and 70s. Then there was no need, and in fact every objection, to using computing before it was mature enough to provide actual economic value to enterprises. Supervised or unsupervised, machine learning is fragile and its results are less certain than the hype. Big data is expensive to collect but and its validity has been justly questioned. Validity is not established by the size of BD data banks, because of uncontrolled biases built into the questions used to generate the data in the first place.

The ways BD/AI use data tend to work in the direction of confirmation bias. That is, they reinforce racial, ethnic, size, and other prejudices. We see that in such disparate fields as intelligence testing and bank lending. It also is the reason that police departments are increasingly rejecting facial recognition in the "post

Floyd" era. Because small business is small, even minor confirmation biases can engender life-altering impacts for them. While software upgrades and patches are being developed to make both AI and BD more reliable, they have not created the certitude small business need in order to invest with confidence.

Time is a more restricted capital asset than money, because unlike money once lost it cannot be recaptured. The time to implement AI solutions and the scarcity of qualified practitioners is also the liability in the competition between small businesses and larger concerns. The ***Wall Street Journal*** reports that 21% of small businesses use AI now or plan to do so within two years, compared to 65% reported by large companies. It does not support its 21% finding.

Karen Mills, a Harvard Business School professor describes what she calls a "Small Business Utopia" in which AI powers and enhances accounting and management functions and leads to a stronger competitive positioning against large companies. But utopias tend to exist on an ideal, not a real plane.[ix] However, AI is still a "black art" that can turn on its users.

In an era of rapid new software development businesses can either make or buy technology. Neither option is a good one for BD/AI. Building platforms is prohibitively expensive in time and money for most small businesses. While there are ready-made solutions on the market, small businesses on brittle budgets in highly competitive businesses need to consider carefully before adopting them. The efficacy and ROI of these technologies have not yet been firmly established in practice. AI for AI's sake, or for promotional or branding purposes is a poor idea.

The purchasing of AI generated data and analytics from Google, Amazon, and other large users of sophisticated AI programs to use in marketing and operations is another matter. Microsoft, Google, and Facebook (among others) state that the sale of their BD/AI driven data is a strategic goal. They already have a near monopoly over data collection analysis, plus its selling and reselling. However, each of these major purveyors of BD/AI data has both strategic plans and a historic penchant for squashing startups and small companies if they pose a threat, especially in the retail space.

Those most enthusiastic about the benefits of BD/AI typically use only large company, or even multiple large company collaboratives to make their case. Consider, for example, the much-ballyhooed self-driving car. It is grounded on BD/AI software that integrates and controls a vast collection of sensors and mechanical devices. In this BD/AI arena only the Googles, Amazons, Teslas, Ubers and Lyfts, major car manufacturers, and their ilk can play. While a small company can supply some components, the BD/AI function which commands the device will stay with the major companies. Consider also that all major self-driving vehicles are behind schedule in being deployed and making even a tiny profit. Even where small businesses can benefit from playing on this field, not many could stand the financial ravages brought on by delays in being paid.

Government regulation has the potential to level the playing field in data collection and analysis, and to protect the data of individuals and small companies. However, the prospect of them doing so is problematic. Large companies tend to influence such regulation as well as the interpretation of the rules after regulation in implemented. Large businesses always have done so. Personal data, the source of marketing BD, is under attack by Amazon, Google, and other social media companies. Despite some regulation in Europe, data rights have not been well defined and we have yet to see how the restrictions play out. It is simply not an arena that suits small players.

The Covid-19 epidemic, the ensuing economic crisis, and the crisis in racial relations actually bring us back to 1947. Atomic energy was a new and emerging technology. How it would be used was not clear. In that year, Vannevar Bush, a key player in the Manhattan Project that created the Atomic Bomb and then Head of the U.S. Office of Scientific and Technological Research, wrote that the new technology posed "a peril and a hope." The tag line for AI and small business might read the same way.

ENDNOTES

[i] Because materials on the history of AI are voluminous, I have restricted this note mostly to a few contemporary primary sources. See Martin Minsky (and Seymore Papert), ***Perceptron***s (1969) and ***The Society of Mind*** (1988); John McCarthy, "Programs with Common Sense," (1959); and Avron Barr and Edward Feigenbaum, ***The Handbook of Artificial Intelligence***, 3 vol (1981-82). The near "real time" review of the early evolution of AI is Pamela McCorduck, ***Machines Who Think*** (1979). A further gloss on AI as a philosophy may be found at https://plato.stanford.edu/entries/artificial-intelligence/. For a brief summary of AI's prehistory, see Evan Andrews, https://www.history.com/news/7-early-robots-and-automatons (2014, rev 2018).

[ii] Viktor Mayer-Schoenberger and Kenneth Cukier ***Big Data: A Revolution That Will Transform How We Live, Work, and Think*** (2013), is the classic analysis. See also David J. Hand, ***The Improbability Principle: Why Conicidences, Miracles, and Rare Events Happen Every Day*** (2014) and Annette Zimmerman and Elena di Rosa, "Technology Can't Fix Algorithmic Injustice,"(January 9, 2020), http://bostonreview.net/science-nature-politics/annette-zimmermann-elena-di-rosa-hochan-kim-technology-cant-fix-algorithmic.

[iii] The term BD/AI is mine. I use it to distinguish the new and newer AI from its predecessors. ***Business Insider*** is compiling a series of articles on the transformational value of BD/AI that focuses on larger businesses that have the dollars, staffing, and time to invest. It is edited by Julie Hood and Matt Turner and features about ten reporters. For two key articles in the series see https://www.businessinsider.com/how-ai-is-changing-everything-2019-7 and https://www.businessinsider.com/artificial-intelligence-how-the-tech-is-rippling-through-companies.

[iv] The most powerful advocate for SBIR were its first Executive Director, Jere Glover and its founder Roland Tibbets. In over 35 years of Congressional testimony and writings, both compiled or caused to be compiled SBIR's most compelling statistics. Two articles on the impact of SBIR in ***Minority and Small Business Review*** based partially on Glover's work are Borden with Terry Bibbens,"Very Small Business Creates Very Large Change (2009), and Borden with Jill Dominguez and Claudia Vieck "Small Business Innovation: The Lifeblood of American Enterprise, (2011). They provide analysis and policy suggestions for expanding the program.

[v] Robin Gaster, ***The Impact of SBIR/STTR Programs: Summary and Analysis*** (2108), focuses on economic analysis and has an excellent bibliography; See also, Charles W. Wessner, ed., ***Small Business Innovative Research: Challenges and Opportunities*** (1999) for detail on the development and early years, the results of a conference; with excellent notes but not a current bibliography.

[vi] The U.S. Small Business Administration Office of Advocacy sponsors numerous studies of small business development. It has performed all of the key early studies of SBIR and the recent trends in small business as a whole, mostly using published government data. Some of its key recent studies include https://cdn.advocacy.sba.gov/wp-content/uploads/2019/09/24153946/Frequently-Asked-Questions-Small-Business-2019-1.pdf. ; https://cdn.advocacy.sba.gov/wp-content/uploads/2018/09/25104218/Small-Business-Fact-Sheet-Business-Dynamics.pdf; and https://advocacy.sba.gov/2020/01/29/small-business-lending-in-the-united-states-2017/.

[vii] For optimistic evaluations of AI business use, see Karen Mills, "How Could AI Help Small Business," ***Harvard Business Review*** (2019), https://hbr.org/2019/06/how-ai-could-help-small-businesses; See also https://hbr.org/2019/06/how-ai-could-help-small-businesses https://www.inc.com/rebekah-iliff/5-ways-small-business-can-benefit-from-ai-revolution-

right-now.html; https://hackernoon.com/how-can-ai-help-small-businesses-e3f6938d384b; https://emerj.com/ai-executive-guides/is-artificial-intelligence-for-small-business/. For a less optimistic one, that includes layoffs at BuzsFeed, Yahoo, AOL, Huffington Post, and Vice, see Edmund Lee, "Maybe Information Actually Doesn't Want to Be Free," ***New York Times*** (February 8, 2020).

[viii] Quote from Daniel Faggelli, "Is Artificial Intelligence for Small Business? Factors to Consider for Technology Adoption (April 9, 2019),https://emerj.com/ai-executive-guides/is-artificial-intelligence-for-small-business/, as is much of subsequent argument. See also Michael Kassner, "Small Businesses: Don't Rush Into Using AI," in ***Artificial Intelligence*** (April 23, 2020), https://www.techrepublic.com/article/small-business-owners-dont-rush-into-using-ai/.

[ix] Faggelli, op. cit.; Mills, op. cit; Shane, op. cit..; and Zimmerman, op. cit. The argument for the future of the technology responds to the arguments they utilize, plus Sara Castellanos and Agam Shah, "Small Businesses Aren't Rushing into AI," Wall Street Journal (June 9, 2019), https://www.wsj.com/articles/small-businesses-arent-rushing-into-ai-11560078000.

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Charitable Contributions of Cryptocurrency: Tax Implications Non-Profit Organizations May Need To Consider

By Fredrick Ho, CPA, MBA

Introduction

The days when not-for-profit charities received only cash or goods donations seem to be behind us. In our digital era, a new form of virtual asset is being donated. These assets are generally known as cryptocurrency. Not-for-profit organizations need to carefully assess whether they will accept such donations and if so, what may be the implications including relevant IRS regulations.

This article discusses the important considerations to address once the not-for-profit organization has concluded that it will accept this type of charitable contribution. The organization must begin by considering if it will accept the asset directly or indirectly through a third-party facilitator and, if accepting this asset class directly, how to do so safely and securely.

What is Cryptocurrency?

A cryptocurrency, or virtual currency, is a digital medium of exchange that can be used for purchasing, selling, and storing value, but it is not backed by any sovereign government.

Bitcoin, Ether, Syscoin, and Litecoin are among the best-known cryptocurrencies, but there are more than 2,000 cryptocurrencies available in the market, with varying degrees of popularity.

The U.S. Treasury Department categorizes cryptocurrencies under intangible property or a commodity. In spite of its name, cryptocurrency is not a currency and does not have legal tender status in any jurisdiction. The technology supporting cryptocurrencies is blockchain, which is essentially a "distributed ledger technology." This decentralized general ledger system in theory eliminates the need for banks and governments for security and regulation.

Preparing for Crypto Donations

The four steps not-for-profit organizations should take in preparation to accept cryptocurrency donations are:

- Review and update the organization's gift acceptance policy;
- Institute systems, accounts, policies, and procedures to accept and secure this new class of asset;
- Establish accounting policies and customize the chart of accounts as needed to properly account for this new class of asset if it cannot be readily converted to cash; and
- Understand and implement systems for gathering information required to comply with all reporting requirements resulting from accepting cryptocurrency.

The initial question is whether the not-for-profit organization agrees to accept this new class of asset as a charitable gift. Not-for-profit boards have fiduciary responsibilities for donated assets, and some may feel that cryptocurrencies pose uncertainties and unknowns to make exercising that fiduciary duty difficult. The decision to accept cryptocurrency is a board decision that should be documented in board minutes and then implemented by the organization's management.

If the board concludes that the organization does not wish to accept this class of asset directly, the organization can still encourage donors to use a donation-facilitating organization acting as an agent of either the donor or the organization. If the facilitator is acting on behalf of the donor, this could be a donor-advised fund (DAF) sponsor. Many DAF sponsors are able to accept most types of property, including cryptocurrency. There may be a delay between the time the donor makes the gift to the DAF sponsor and the time the gift is ultimately available to the not-for-profit organization because, it can take time to convert this type of property to cash depending upon the cryptocurrency donated and its liquidity. This could ultimately affect the gift's value.

Alternatively, the organization can contract with a facilitating organization to act as its agent to accept cryptocurrency on its behalf, convert this type of property to cash, and remit the cash net of fees. The donor receives a donor acknowledgment letter from the charity. However, the facilitating organization conducts the transaction on behalf of the charitable organization.

Accepting cryptocurrency gifts

Arguments favoring accepting cryptocurrency include:

- This is a form of asset (property) that is likely to be around for the long term. Therefore, organizations may find they need to accept the asset.
- Donors benefit by making gifts of appreciated assets without recognizing gain on the appreciation. Cryptocurrency fits this class of asset.
- A not-for-profit organization that has systems in place to accept this type of assets will be an attractive recipient of gifts from more sophisticated donors.

Arguments against accepting cryptocurrency are:

- More than 2,000 cryptocurrencies are in the market. Accommodating them all would be a logistical challenge, and their rapidly fluctuating values make them a risky asset class to hold even briefly.
- Some cryptocurrencies may not be readily convertible to cash. Therefore, the organization must determine if it will accept the asset if it cannot convert it to cash and put it to use for the organization's charitable purpose. The charity must be cautious and aware that it may need to utilize other assets of the charity pending liquidation of the cryptocurrency.
- The charity may want to limit the amount of this class of asset that it is willing to accept or hold at any time within its overall portfolio to help mitigate the risk of loss of value due to the current volatile nature of the asset class.
- This class of asset is an anonymous asset. The organization may have a policy of not accepting anonymous gifts. If both the donor and the asset are anonymous, the organization may want to have a policy strictly for public relations purposes. An anonymous gift could be a fine gift. However, it could be a gift from a donor with an "image problem" who may not stay anonymous. What are the organization's terms for accepting an anonymous gift? Must the donor commit to staying anonymous? What if the money came from ill-gotten gains? Experts say ransomware hackers, for example, often demand to be paid in cryptocurrency, which can be used as an exchange for many criminal endeavors. Many gift acceptance policies do not address this issue because it has never arisen.

Safeguarding Gifted Assets

Once the board decides to accept cryptocurrencies, the not-for-profit organization will need to establish procedures to safeguard and protect this asset. As a form of digital currency, Bitcoin and other cryptocurrencies

exist only electronically. The crypto donation will arrive in the form of an email or Quick Response (QR) code that the organization will need a "digital wallet" to decipher. A "wallet" is software or an application downloaded to either a phone (mobile device) or a desktop computer that stores the public and private keys used to send and receive digital currency. The wallet is like a bank account for cryptocurrency, and the organization must have one before accepting the asset. If a donor sends the organization cryptocurrency before the latter has a wallet, those tokens may not be recoverable.

Using a secure computer with two-factor authentication is an excellent practice. Cryptocurrency is not actually "stored" in a wallet. Instead, a private key (secure digital code known only to the organization and its wallet) is stored that shows ownership of a public key (a public digital code connected to a certain amount of currency). The public and private keys have a mathematical connection to each other, allowing the organization to share its wallet address without sharing all of its wallet information. The public/private key pair enables verification, as a transaction includes the public keys of the sender's and recipient's wallets, with the connection to the respective private keys being used to verify. The organization's wallet stores its private and public keys, allowing it to send and receive cryptocurrency (coins or tokens). The wallet acts as a personal ledger of all transactions to which it is a party. The organization should have systems in place for protecting these keys so they are not lost, stolen, or misappropriated.

When the organization sets up its wallet, it will need to share some sensitive information such as email addresses; cellphone numbers; identifying information for U.S. bank accounts, credit cards, or another similar payment service such as PayPal; tax identification number; and other forms of identification. A data classification policy, which provides the level of security and controls required to share these data outside of the organization, is a necessity. Risks to be taken into account include the vulnerability of wallets when keys aren't adequately protected or are stolen in a cyberattack.

Banks may at times freeze accounts with cryptocurrency activity. As a result, the organization might set up a separate bank account or related credit card account for the sole purpose of receiving and processing crypto donations into cash. It's important to apply security features such as dual approval and restricted access as a requirement for these accounts.

Cryptocurrencies are vulnerable like any other data asset on the organization's network, especially systems that have access to the internet. This includes online wallets, exchanges, wallets on employee computers, cloud storage of private keys, and mobile applications.

To prevent theft of cryptocurrencies, the use of cold storage (an offline archive of private keys) is recommended. This simply refers to taking them off the network. Preferred cold storage methods include an offline hardware wallet (a specialized device), a USB drive, or a paper wallet. Per the organization's gift acceptance policy, the organization may desire to liquidate crypto donations as soon as possible, reducing the need for storage and the risk of loss.

Alternatively, the organization may make the decision to hold on to the donation in cryptocurrency, then investment policy, storage, and security procedures around accessing this digital asset need to be well established. This would be addressed under investment and asset control policies.

Some wallet providers, such as Coinbase, act like a brokerage account, meaning you never have to worry about the private keys. However, when using such wallet providers, the organization will want to use cold storage if it plans on using a traditional wallet.

Because cryptocurrency operates on open blockchain networks and is facilitated over wallets and exchanges that require two-factor authentication, the individual responsible for managing these items will receive various notifications and verification requests. Appropriate security awareness training over these procedures and alertness for phishing emails or smishing text messages (which allow hackers to attack a cellphone) are crucial. Additionally, it will be critical to protect your organization by:

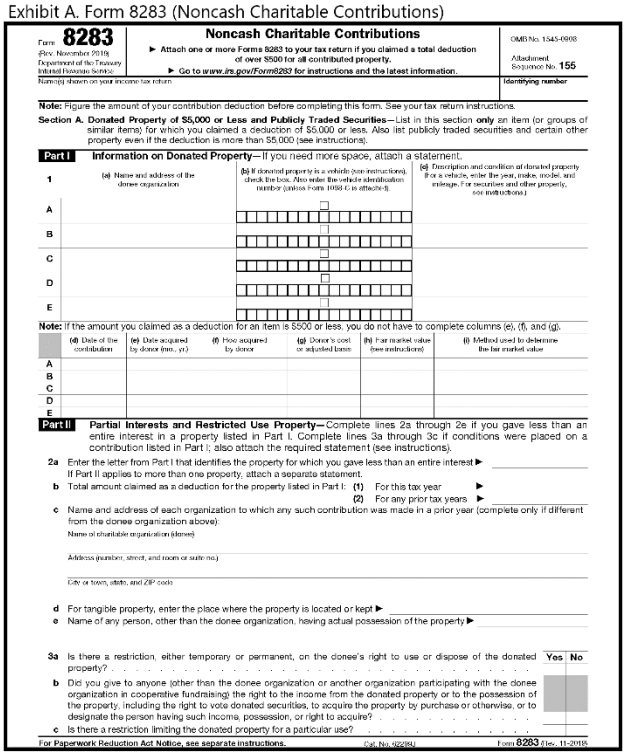
A. Using multiple wallets: There is no limitation on the number of wallet addresses an organization can use. Some holders of cryptocurrency generate a new address every time they send or receive cryptocurrency, to manage the risk of loss.
B. Keeping only small amounts in a web wallet: Web wallets are targets for hackers. Keep only a small amount of cryptocurrency protected by a password in each wallet. Wallets held on computers are also vulnerable. Use cold storage to hold large amounts of cryptocurrency.
C. Compliance with no-share policy: Never share the organization's private keys for its cryptocurrency with anyone. Doing so gives them full access to your organization's funds.

Tax Reporting Issues

A contribution of cryptocurrency must be treated as a noncash contribution, and the cryptocurrency must be valued at the time of the contribution. If the asset is immediately converted to cash upon receipt, the contribution and the conversion to cash are treated as two separate transactions for tax reporting purposes. The conversion transaction will be treated as a sale of property.

The not-for-profit organization will usually be requested to sign a Form 8283, *Noncash Charitable Contributions* (Exhibit A), to acknowledge receipt of the asset. The organization should also provide a signed donor acknowledgment letter providing the donor with the required items necessary to take a federal deduction for a charitable contribution.

Exhibit A. Form 8283 (Noncash Charitable Contributions)



Form **8283** (Rev. November 2018)
Department of the Treasury
Internal Revenue Service

Noncash Charitable Contributions

► Attach one or more Forms 8283 to your tax return if you claimed a total deduction of over $500 for all contributed property.
► Go to www.irs.gov/Form8283 for instructions and the latest information.

OMB No. 1545-0908
Attachment Sequence No. 155

Name(s) shown on your income tax return | Identifying number

Note: Figure the amount of your contribution deduction before completing this form. See your tax return instructions.

Section A. Donated Property of $5,000 or Less and Publicly Traded Securities—List in this section **only** an item (or groups of similar items) for which you claimed a deduction of $5,000 or less. Also list publicly traded securities and certain other property even if the deduction is more than $5,000 (see instructions).

Part I **Information on Donated Property**—If you need more space, attach a statement.

	(a) Name and address of the donee organization	(b) If donated property is a vehicle (see instructions), check the box. Also enter the vehicle identification number (unless Form 1098-C is attached).	(c) Description and condition of donated property (For a vehicle, enter the year, make, model, and mileage. For securities and other property, see instructions.)
1			
A		☐	
B		☐	
C		☐	
D		☐	
E		☐	

Note: If the amount you claimed as a deduction for an item is $500 or less, you do not have to complete columns (e), (f), and (g).

	(d) Date of the contribution	(e) Date acquired by donor (mo., yr.)	(f) How acquired by donor	(g) Donor's cost or adjusted basis	(h) Fair market value (see instructions)	(i) Method used to determine the fair market value
A						
B						
C						
D						
E						

Part II **Partial Interests and Restricted Use Property**—Complete lines 2a through 2e if you gave less than an entire interest in a property listed in Part I. Complete lines 3a through 3c if conditions were placed on a contribution listed in Part I; also attach the required statement (see instructions).

2a Enter the letter from Part I that identifies the property for which you gave less than an entire interest ►
If Part II applies to more than one property, attach a separate statement.

b Total amount claimed as a deduction for the property listed in Part I: (1) For this tax year ►
(2) For any prior tax years ►

c Name and address of each organization to which any such contribution was made in a prior year (complete only if different from the donee organization above):
Name of charitable organization (donee)
Address (number, street, and room or suite no.)
City or town, state, and ZIP code

d For tangible property, enter the place where the property is located or kept ►

e Name of any person, other than the donee organization, having actual possession of the property ►

		Yes	No
3a	Is there a restriction, either temporary or permanent, on the donee's right to use or dispose of the donated property?		
b	Did you give to anyone (other than the donee organization or another organization participating with the donee organization in cooperative fundraising) the right to the income from the donated property or to the possession of the property, including the right to vote donated securities, to acquire the property by purchase or otherwise, or to designate the person having such income, possession, or right to acquire?		
c	Is there a restriction limiting the donated property for a particular use?		

For Paperwork Reduction Act Notice, see separate instructions. Cat. No. 62299U Form **8283** (Rev. 11-2018)

Although the organization does not value the gift for donor acknowledgment purposes, it must value the gift for its own internal financial reporting and tax reporting purposes. This is not information the not-for-profit organization should provide to the donor, as it could affect the donor's preparation of his or her income tax return. If the donor places reliance on this information, it could cause the not-for-profit organization to incur penalties if the donor used the information and it resulted in the incorrect overstatement of an income tax deduction later disallowed by the IRS.

The Form 8283 is prepared by the donor and must be attached to a tax return for any noncash gift valued at more than $500 for which a donor plans to take a charitable deduction.

For contributions with a value of $501 to $5,000, donors need only complete Section A of Form 8283; a qualified appraisal is not required. The Form 8283 must be attached to the tax return for which a charitable contribution deduction is claimed.

For contribution over $5,000, except for a few limited exceptions including marketable securities but not cryptocurrencies, donors must obtain a qualified appraisal and complete Section B of Form 8283 and attach the qualified appraisal to the tax return on which the charitable deduction is claimed. The rules for what constitutes a qualified appraisal are detailed and complex. Donors should pay careful attention to the regulations if noncash contributions of substantial value are made.

In addition, the new regulations make clear that for any tax filings made after July 30, 2018, if the donor is not able to use the full charitable contribution deduction in the year the gift is made and is using the five-year carryover, the donor must attach the Form 8283 (whether Section A or Section B is used), and for gifts over $500,000, the qualified appraisal must also be attached to the tax return for any year in which the carryover deduction is claimed.

Exhibit B below outlines final IRS regulations issued July 30, 2018, and shows different requirements for documenting noncash contributions, depending on the value and type of noncash gift:

Exhibit B: General Rules for gifts of nonmarketable securities

Value of gift	Receipt required	Donor letter required	Form 8283 required	Qualified appraisal required	Appraisal attached to donor return	Form 8283 attached to carryforward years
Less than $250	Yes	No	N/A	N/A	N/A	N/A
≥ $250 and ≤ $500	No	Yes	N/A	N/A	N/A	N/A
> $500 and ≤ $5,000	No	Yes	Section A	N/A	N/A	Yes
> $5,000	No	Yes	Section B	Yes	N/A	Yes
> $500,000	No	Yes	Section B	Yes	Yes	Yes

(General rules for gifts of nonmarketable securities.)

A donor acknowledgment letter is required for any contributions of $250 or more and must include:

- Date of donation.
- Name of the donor (or the agent managing the gift on behalf of the anonymous donor).
- Description of the donated asset (but not the value).
- Name and tax status of the recipient organization.
- Any restrictions on the gift that might affect the gift's value.
- The value and a description of any goods or services provided in exchange for the gift or, alternatively, a statement that no goods or services were provided in exchange for the contribution of the gift.

Conclusion

Charities are increasingly accepting cryptocurrencies as donations. This potentially exposes them to the same level of risks and rewards as those investing in the asset. Many individuals that have been newly enriched by cryptocurrency are favoring making donations to charity in cryptocurrencies. By giving assets rather than hard cash, donors can get deductions on their tax returns along with the bonus of not having to pay the government for the capital gains made. The meteoric rise of Bitcoin and other cryptocurrencies over the last few years has meant that many individuals are sitting on massive capital gains. The above bonus is an incentive for them to donate the digital assets themselves to the charity, rather than converting them to cash and then writing a donation check.

A report in International Business Times warns that these not-for-profit organizations receiving and holding cryptocurrencies are just as at risk as investors in this emerging asset class. The publication goes on to state that since financial reports are only published once a year, the scale of the damage done by market crashes such as that of 2018 is largely unknown. There is concern that many charities will have received donations during the latter part of 2017 and, lacking the knowledge of how to turn these into a currency they are more familiar with, have since lost much of the value that their original donors wanted to give.

Despite potential losses, not-for-profit organization must consider that ultimately the incentive to give digital currencies as donations is a new and potential growing trend that is unlikely to subside anytime soon.

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Mathematical Literacy and Financial Literacy: Skills Set Necessary for Today's Business Owners and Mangers

By Bobby Ojose, Ed.D

Abstract

Financial literacy is necessary for all individuals. However, most people today have been found to lack the knowledge in financial literacy. A plausible explanation is the lack of sound mathematics background. The paper discussed the importance of possessing the skills of mathematical and financial literacies. It delved into the nature of mathematics as a foundation for financial literacy. It highlighted the deficiencies of financial literacy and made the case for financial literacy education.

Keywords: Mathematics literacy, Mathematics education, Financial literacy, Financial literacy education, Investment, Retirement, Economics

Introduction:

The development of critically thinking democratic citizens requires education of children and adults who interpret and articulate numeric representations of the social relationship that they experience (Paulo, 1988, cited by Tanase & Lucey, 2015). The reality of the matter is that both adults and young adults do not possess the necessary numeracy and quantitative skills to navigate a much more complex global economy that we have today in order to be informed consumers. One may attribute this situation, in part, to the educational disconnect of mathematical areas, such as geometry, calculus, algebra, and trigonometry, from the life experiences that student encounter outside the school setting. Another factor is the pure phobia for mathematics that most individual have for mathematics. This phobia is rooted in the notion that math is difficult.

As stated above, the possession of mathematical literacy skills is important in navigating today's complex world. If possessed, people use these skills in choosing a telephone plan, in negotiating the terms of a car note, in purchasing and procuring home appliances, in paying taxes and even mortgages, in investing money in stocks and bonds, in analyzing nutrition labels, in considering voting patterns in a city, county, or state; and many more. In short, mathematics represents an essential component for interpreting principles of economic reasoning that guide patterns of arguments which justify existing social structures and positions.

Mathematics Literacy and Financial Literacy Defined

It is necessary to explicitly define math literacy and financial literacy. On the one hand, "mathematics literacy is the knowledge to know and apply basic mathematics in our everyday lives" (Ojose, 2011). However, various authors and entities have put an academic spin on what mathematics literacy is. For example, the Organization for Economic Corporation and Development (OECD, 1999) defined mathematics literacy as "an individual capacity to identify and understand the role that mathematics plays in the world, to make well-founded judgements, and to engage in mathematics in ways that meets the needs of that individual's current and future life as a constructive, concerned, and reflective citizen." Another meaning developed by the National Adult Literacy Study, a project mandated by congress and carried out by the Educational Testing Service (ETS) in 1995 is that literacy involves "using printed and written information to function in society to achieve one's goals and to develop one's potential. The ETS study's concept of adult literacy was heavily based on the use of mathematics and also

emphasized the practical skills of everyday life. Some samples from the study tested mathematics knowledge that ranged from Level One questions like "Total a bank deposit entry" to Level Five questions like "Use information in a news article to articulate the difference in time for completing a race."

An alternate conception of literacy, one that for other purposes may be more useful, is to characterize literacy in terms of the minimum knowledge and skills an individual would need to be considered literate in any given domain. While the definition of adult literacy in the ETS report speaks of "knowledge that is needed," the knowledge that counts is clearly process knowledge rather than content knowledge. According to Ojose (2011), "an adult might know that calculating the interest of a sum of money deposited in a bank is: principal x time x rate. But to actually crunch numbers and arrive at an accurate answer requires another kind of knowledge and skill."

On the other hand, financial literacy has to do with an individual's ability to make financial decisions. The Organization for Economic Corporation and Development (OECD, 2017) defines financial literacy as not only the knowledge and understanding of financial concepts and risks but also the skills, motivation, and confidence to apply such knowledge and understanding in order to make effective decisions across a range of financial contexts, to improve the financial well-being of individuals and society, and to enable participation in economic life.

Mathematics as a Foundation for Financial Literacy

Much of the existing literature clearly supports the importance of mathematical skills as a support for financial understanding. Financial literacy is often defined in terms of mathematical ability (Worthington 2006). The question developed by Lusardi and Mitchell (2010) that currently serve as the gold standard for measuring financial literacy are mathematical in nature. De Bassa Scheresberg (2013) finds that those that rate themselves as good at math" are less likely the engage in high cost borrowing behavior but more likely to have an emergency fund and retirement savings. Cole et al. (2015) uses difference and difference estimation to show that increase in state math requirements results in greater financial literacy and action, specifically greater financial market participation, larger investment income stock, better credit management, and fewer home foreclosures.

Al-Bahrani, et al., (2017) researched student confidence of their math ability and their true math ability. Using a set of math questions, and self-reported confidence measure, they found that math ability and math confidence are determinants of students' financial literacy. Student with higher level of math confidence do better than students that report low levels of math confidence. Students that are above average in their math ability also scored higher on their financial literacy exams. This suggests that both confidence and true math ability impact students' knowledge of personal finance.

Most teachers would acknowledge that interrelationship between mathematics and personal finance, especially that "financial literacy lies in mathematics in the real world and in the contexts of their children" (Maxwell, 2008, quoted in Tanase & Lucey, 2015). These studies underscore the importance of mathematics as a foundation for a solid financial literacy for all citizenry.

The ability to view potential long-term effects of financial decisions represents a powerful skill. Mathematics and financial literacy are intimately connected, as mathematical formulas illustrate the social relationships that motivate and extend from financial decision-making: "the foundation of financial literacy lies in mathematics in the real world and in the contexts of students" (Maxwell, 2008, quoted in Tanase & Lucey, 2015). Knowledge of

the mathematics complexities that define social and financial structure empowers individuals with a deep understanding of mathematics.

The State of Financial Literacy

A recent US National Financial Capabilities Study finds that on average, Americans score 53% on the standardized set of financial literacy question. While this is surprisingly low, more alarming is that women did less favorably on the test relative to men and they were more likely to not respond to questions. (NFCS 2015). Other studies focused on the Big Three and designed by Lusardi & Mitchell (2008) have also showed limited financial literacy skills around the world.

When Lusardi & Mitchell used the Big Three to survey Americans over age 50 in 2011, the data revealed that only half of older American who presumably had made many financial decisions in their lives could answer the two basic questions measuring understanding of interest rates and inflation. And just one third demonstrated understanding of these two concepts and answered the third question, measuring understanding of risk diversification correctly. Over time the Big Three have been added to international comparison of financial literacy called the Flat World project. Findings from the project, which included data from 15 countries highlight the urgent need to improve financial literacy. Across countries, financial literacy is at a crisis level, with the average rate of financial literacy, as measured by those answering correctly all three questions, at around 30% (Lusardi & Mitchell, 2011c). According to the survey, only around 50% of respondents in most countries are able to correctly answer the two financial literacy questions on interest rates and inflation correctly, even though most countries included in the project have well-developed financial markets.

Students are not left out in the financial illiteracy epidemic. According to the Quantitative Literacy Design Team (2001), "most U.S. high school students leave high school with quantitative skills far below what they need to live well in today's society." As students enter the workforce, increasingly they will need to take responsibility for their retirement savings and health care benefits. In the USA, states supported and employer sponsored pensions are being replaced by plans that individuals are primarily responsible for selecting and funding (OECD, 2012, quoted in Sole, 2014). However, although individuals are often responsible for their own retirement, approximately 50% of older Americans in the work force know little about either their own pension plans or the policies governing how social security benefits will be administered (Lasurdi, 2008, quoted in Sole, 2014).

Many young adults do not understand personal finance. For example, although stocks fluctuate in values historically, but if held for long period of time, they yield greater returns than other more conservative investments such as bonds, savings accounts, and checking accounts. However, only 16.8% of high school seniors and 19.2% of college students thought stocks would outperform these more conservative investments over an 18-year period (Mandell, 2008, quoted in Sole, 2014). On a test designed to measure one's knowledge of personal finance, college students answered only 53% of the questions correctly (Chen & Volpe, 1998).

Despite gaps in their financial knowledge, many young adults have checking accounts and credit cards. However, most do not understand how to reconcile an account or compute interest. A survey of 18-year-olds found that only 43% understand how to balance a checkbook and how to review a bank statement for errors and only 32% know how credit cards calculate fees and interest (Charles Schwab, 2011 quoted in Sole 2014). A survey of students who were enrolled at either a four-year public or private university found that 29.2% had at least one credit card and 23.7% carried a balance of $1,000 or more (Everfi, 2014). Poor financial decisions made by college students may be the result of not having sufficient knowledge with respect to financial literacy.

The Need for Financial Literacy Education

The need to be financially literate cannot be overemphasized. Everyone, from private individuals, to small business owners, and executives of big corporations rely on sound mathematical and financial acumen to live above the fray. The most basic decisions that we all make hinge on math and finance: payroll, paystub, interest on loans, mortgages, car payment, etc. As point out by Lusardi (2019), "a growing number of financial instruments have gained importance, including alternative services such as payday loans, pawnshops, and rent to own store that charge very high interest rates…" In order to navigate these kinds of opportunities, a small business owner or a private individual ought to be financially literate.

There is ample evidence of the impact of financial literacy on people's decisions and financial behavior. For example, financial literacy has been proven to affect both saving and investment behavior. Empirically, financially savvy people are more like to accumulate wealth (Lusardi, 2019). There are several explanations for why higher financial literacy translates into greater wealth. Several studies have documented that those who have higher financial literacy are more likely to plan for retirement, probably because they are more likely to appreciate the power of interest compounding and are better able to do calculations (Lusardi, 2019).

Financial literacy is also associated with higher returns on investments and investment in more complex assets, such as stocks, which normally offer higher rates of return (Lusardi, 2019). This finding has important consequences for wealth according to the simulation by Lusardi, Michaud, and Michell (2017) which concludes, "…in the context of a life-cycle model of saving with many sources of uncertainty, from 30 to 40% of US retirement wealth inequality, can be accounted for by differences in financial knowledge." These results show that financial literacy is important.

Financial literacy is also strongly correlated with a greater ability to cope with emergency expenses and weather income shocks. Those who are financially literate are more likely to report that they can come up with $2000 in 30days or that they are able to cover an emergency expense of $400 with cash or savings (Hasler, et al 2018 quoted in Lusardi 2019).

Financial education and strengthening students' cognitive skills increases financial literacy, which, in turn can impact financial market participation. One study found that high school students from states that had a mandatory requirement that students complete some financial education coursework scored significantly higher on a test designed to measure financial literacy compared with students from states that did not have such a mandate (Tennyson & Nguyen, 2001, quoted in Sole, 2014). Another study found that although financial education did not impact one's decision to participate in the financial market, those with higher cognitive abilities were more likely to participate in financial market (Cole & Shastry, 2008).

Economic Importance of Financial Literacy for the Business Owner

As noted above, there is the need to be financially literate. Everyone, including small business owners need this acumen of financial literacy in order to be successful. These skills are better acquired and used to service one's business instead of totally delegating that function to a worker or a subordinate. With a sound financial and mathematical background, a small business owner is able to dissect information on forms like tax forms, information sheet like pricelists and catalogues; and even better manage contract terms.

Outside of work, there are a growing number of investment options that small business investors can take advantage of. One option offered to small investors is mutual funds, which pool investors' money. By 1890,

closed-end funds, which are funds that do not issue new shares and do not redeem investors' old shares, had come to the United States (Rouwenhorst, 2004 quoted in Sole 2014). By 2012, the number of mutual funds had risen to 7,238 (Silverblatt, 2013). Although the number of options has increased, it is difficult for an individual who is not financially literate to read a financial prospectus and take into account a fund's fees, goals, rate of return, level of diversification, trading practices, and tax implications to select the best option given the individual's needs and tolerance for risk. This could be one reason for the low rate of market participation. Presently, only 54% of adult have money in the stock market either in an individual stock, stock mutual fund, self-directed 401K or IRA (Jones & Saad, 2014 quoted in Sole 2014).

Also, financial literacy is important for an individual's role as an active citizen. First, those who have financial acumen are able to avoid predatory loans like the payday loans that are very popular nowadays. Researchers have found that victims of predatory lending practices had lower scores on tests measuring their financial acumen compared to the general population (Moore, 2003). Second, being financially literate helps one to assess which critical services should be funded; to better a business' internal financial dealings and policies, risks taking and investment; and to calculate a business' probability for profit or loss.

Managing money well is probably the most common context in which ordinary people are faced with sophisticated quantitative issues. It is also an area greatly neglected in the traditional academic track of the mathematics curriculum. The following are examples of scenarios in which one's financial and mathematical literacy would be very helpful: Understanding depreciation and its effect on the purchase of cars or computer equipment; Comparing credit card offers with different interest rates for different periods of time; Understanding the relation of risk to return in retirement investments; Understanding the investment benefits of diversification and income averaging; Calculating income tax and understanding the tax implications of financial decisions; Estimating the long-term costs of making lower monthly credit card payments; Understanding interactions among different factors affecting a mortgage (e.g., principal, points, fixed or variable interest, monthly payment, and duration); Using the Internet to make decisions about travel plans (routes, reservations); Understanding that there are no schemes for winning lotteries; Choosing insurance plans, retirement plans, or finance plans for buying a house (Quantitative Literacy Design Team, 2001).

Conclusion

In this thematic paper, I made the case for math literacy and financial literacy for all: individual citizens as well as small business entities. The definitions and meanings of mathematics literacy and financial literacy, as well as the dependency of financial literacy on mathematics was discussed. The state of our financial literacy and the deficiencies that exists in it was also brought to the fore. The bottom line is that math literacy and financial literacy are necessary in today's complex world. In order to read financial documents, one must have a decent degree of familiarity with economic terms and a strong vocabulary, a high level of reading comprehension, and strong mathematical and analytical skills. Hence, it is not surprising that the OECD has found that there is a strong positive correlation between both financial literacy and mathematics and between financial literacy and reading with correlations of 0.83 and 0.79 respectively (OECD 2014). Therefore, to ensure that students will be financially literate, teachers needs to also develop students' reading comprehension and as well as mathematics computation skills (Sole, 2014). The world needs to be sensitized as to the importance of being literate in mathematics because this eventually transforms into financial literacy. The present school curricula should be reorganized to address the deficiencies that currently exist.

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The Challenges of Raising Capital for Crypto Projects: Recent SEC Actions May Provide Regulatory Clarity

By Andrew Petillon, Esq. and Mark Hiraide, Esq.

Introduction

Cryptocurrency and blockchain technology in 2019 continued its evolution as a volatile asset class with an uncertain endgame but also as the most exciting and potentially disruptive innovation in the financial markets. Just a decade after still-anonymous Satoshi Nakamoto launched Bitcoin as a decentralized digital currency and six years after the FBI shut down the Silk Road online market which tarnished cryptocurrency as a facilitation tool for illegal activity, 2019 saw cryptocurrency and blockchain technology increasingly part of mainstream conversations. Facebook proposed Libra, J.P. Morgan and Fidelity established crypto divisions, Walmart and Starbucks adopted blockchain applications for supply chain management, Wyoming-based Avanti prepared to become the first crypto-focused U.S. bank, U.S. politicians discussed crypto in televised congressional hearings and the Chinese government officially recognized blockchain as the next technological revolution and declared that it will exceed the importance and value of the Internet. . New crypto projects have burgeoned in response to the increasing acceptance of this new technology. Crypto projects like any startup require growth capital. But fundraising for a nascent technology requires skillful navigation through a global minefield of often gray area regulations. Some crypto entrepreneurs and their counsel in the last few years have attempted to exploit the perceived gray areas in good faith and otherwise by raising capital from U.S. investors based on the position that digital asset offerings do not require compliance with the federal securities laws. The Securities and Exchange Commission's Division of Corporation Finance was particularly active in 2019 in addressing these offerings through registered offering approvals, no-action letters, new rule proposals and related public statements. The Commission's Division of Enforcement similarly made initial coin offerings (ICOs) a high priority filing several enforcement cases, which initially went unchallenged but recently are being actively litigated. These SEC actions, and emerging judicial decisions, collectively provide a window of regulatory clarity to the crypto space.

Quick Review of Blockchain Basics

Blockchain is the core technology underlying Bitcoin, Etherium, XRP, Litecoin, and other cryptocurrencies.

Blockchain applications are also being developed to provide various solutions to business enterprises such as enhancing efficiency, privacy, security, record-keeping, and inventory management.

A blockchain is a decentralized distributed ledger or database that stores data digitally over a network of independent computers, often referred to as "nodes" in a peer-to-peer (P2P) network. Each computer runs open-sourced software that validates and records transactions on the blockchain through consensus algorithms, which are rules that govern what "blocks" of information are valid and added to the blockchain. Once the data is recorded on each of the computers or nodes in this decentralized system, cryptography makes it very difficult to alter. It is this inability of a single actor or company to control or change the data on the blockchain that makes blockchain technology so valuable.

But decentralization comes at a price. There is no company to finance the network development, promote its use, and process and record transactions on it. Instead, the network is programmed to provide users of the network financial incentives to perform the work of the network normally paid for by the owners of the network. In the case of Bitcoin, for example, anyone may compete to perform the calculations necessary to validate and store transactions on the Bitcoin blockchain. These actors are called "miners" and the software rewards them with Bitcoin for their labor.

The traditional fundraising mechanism for blockchain startups has been initial coin offerings ("ICOs"). An ICO issuer offers a unique "coin" or "token" or "digital asset" in exchange for consideration. The digital asset is typically issued and distributed on a blockchain and provides rights and benefits to buyers which vary from ownership and profit participation in the project to serving as a form of currency. More than $14 billion was raised in ICOs in 2017 and 2018. Most of these ICOs made no attempt to comply with securities laws and some call this unregulated period the Digital Wild West. The SEC began focusing on ICOs in mid-2017. As the SEC brought an increasing number of ICO-related enforcement cases in 2017 and 2018, approximately 20 cases, many issuers stopped U.S. fundraising or pivoted to variations on ICOs to try and mitigate regulatory risk. One ICO variant is a security token offering ("STO"). Tokens may be classified as "utility" or "security." A utility token is intended as a means of payment for or access to certain goods or services of the business like a token for a subway. A security token represents rights to share in profits of a venture like a traditional security. Since pure utility tokens look less like a security some issuers began attempting to structure token offerings to emphasize the utility function and avoid being regulated as a security. But labeling a digital asset offering as an ICO, STO or utility token offering is essentially a distinction without a difference from a regulatory standpoint. The SEC traditionally ignores the name of an investment assigned by the issuer and instead analyzes the economic reality to the purchaser within the framework of governing statues, rules, caselaw and related guidance.

Crusading Crypto Enthusiasts vs. Mission-Driven Bureaucrats

Current public discourse regarding the appropriate degree of SEC regulation to apply to crypto projects is largely an ideological debate with competing passions and perspectives on both sides of the regulatory fence. Understanding these perspectives can be helpful in representing a crypto entrepreneur or engaging with the SEC to seek a workable compromise to a regulatory issue.

Crypto enthusiasts who are often in their 20s and early 30s typically see blockchain technology as a revolutionary force for change and a more utopian future. One industry insider observed that the crypto community can resemble a religion and is a social movement as much as a monetary and technology movement. Many enthusiasts hold libertarian views and believe that crypto has the power to "bank the unbanked" and produce decentralized organizations that will protect privacy rights and provide more freedom and autonomy to individuals. This subversive idealism prompts some crypto entrepreneurs to view SEC regulations as old-world barriers to innovation and SEC staff as rigid bureaucrats who "just don't get crypto." The crusading zeal of these enthusiasts often leads to uncompromising militant-toned criticism of the SEC and its regulatory approach to crypto. The SEC has its own motivating perspective as well. Protecting investors has been a sacrosanct SEC mission since the agency's creation in 1934. SEC staff routinely see heartbreaking situations in which "main street" investors lose their life savings due to investment promoters who improperly circumvent the federal securities laws. This perspective conditions many SEC staff to view with eye-rolling skepticism self-serving statements by investment promoters that their particular project has special innovative features that warrant a pass from the laws and standards that govern most investment offerings. (Similar arguments were made to the SEC by Internet promoters seeking a pass from securities laws during the 1990s dot.com boom prior to the Tech crash of 2000.) Many at the SEC believe that

speculative high-risk investment promotions particularly to unsophisticated investors should have the full protections of the federal securities laws and that those who seek to circumvent such protections often do so to conceal important risk disclosures from those who need it most.

But the SEC is not anti-crypto like famed investor Warren Buffet (who calls Bitcoin "rat poison squared"). Crypto entrepreneurs are often surprised to learn that facilitating capital formation is also a core SEC mission. SEC Chairman Jay Clayton is a particularly strong advocate of capital formation and business innovation since he has made job creation a top SEC priority and jobs are created when companies have access to capital. Two recent SEC rule proposals illustrate the current SEC's support for capital formation. First, in December 2019, the SEC proposed new rules that would expand the definition of "accredited investor" and allow more investors to participate in private offerings. The current definition that has been in place for over three decades is based primarily on wealth metrics. The new definition would additionally take into consideration an investor's experience or financial sophistication. If adopted as proposed following a public comment period, the new rules could make private offerings such as those under Regulation D easier for businesses, including crypto projects, by expanding the pool of eligible investors in such offerings.

A second rule proposed in March 2020 would simplify and enhance current offering exemptions. The most notable change would be to increase limits on what can be raised under the core exemptions such as Regulation A+ (from $50 million to $75 million for a Tier 2 offering), Regulation Crowdfunding (from $1.07 million to $5 million) and Rule 504 of Regulation D (from $5 million to $10 million). If adopted these rule changes would provide additional fundraising options for promoters of crypto projects.

Another high-ranking advocate for crypto innovation is SEC Commissioner Hester Pierce who has been called "Crypto Mom" for her support of crypto projects. She has been a vocal critic of what she views as the SEC's failure to provide adequate guidance to the crypto community. Commissioner Pierce has stated that the SEC's failure to provide a workable regulatory framework for crypto projects has hindered innovation. She has invited crypto businesses to reach out to the SEC whenever gray areas arise. In February 2020, Commissioner Pierce took crypto advocacy a step further by proposing a securities law safe harbor for crypto projects. The proposal would essentially give crypto promoters a three-year pass from the registration provisions of the federal securities laws to allow the project to develop into a decentralized network that will no longer be considered a security. The proposal was not joined by the other Commissioners so adoption by the SEC (which requires majority approval by Commissioners) does not appear likely at least as proposed. But the fact that a Commissioner would make such a proposal is significant.

It could be strategically advantageous for crypto entrepreneurs and their advisers to leverage Commissioner Pierce's statements and the support for innovation within the SEC when attempting to negotiate favorable regulatory treatment for a crypto issue with the SEC. Advocates for a given crypto project who are able to propose to the SEC a course of action that appeals to its innovation faction as well as addresses investor protection concerns will have a better chance of promoting a workable compromise that will allow the project to advance with SEC support.

The Analysis: Howey, Dao, Hinman and The Framework

Whether a digital asset should be deemed a security is a threshold question that has significant implications for the crypto startup. If deemed a security the SEC has jurisdiction over fundraising and the issuer must expend significant time and money to comply with disclosure and other requirements of the offering. Additional compliance costs and requirements may follow an offering such as broker-dealer registration or registering a class of securities under the Securities Exchange Act of 1934, which subjects token issuers to the periodic reporting, proxy and other regulations

applicable to U.S. public companies. The consequences of non-compliance from the SEC and investor private actions may be even more costly. Individuals who control an issuer that conducts an offering in violation of the federal securities laws can be jointly and severally liable with the issuer for rescission liability to all investors. Avoiding SEC jurisdiction and securities-related compliance requirements is a sufficient incentive for crypto entrepreneurs to seek a supportable legal basis to conclude that a project's digital asset is not a security.

The SEC's typical starting point for analyzing whether an investment program should be considered a security is the seminal Supreme Court case *SEC v. W.J. Howey Co*., 328 U.S. 293 (1946). The Court in Howey decided that a transaction would be deemed an "investment contract" and therefore a security if it involved (1) an investment of money, (2) in a common enterprise, (3) with an expectation of profit, (4) to be derived from the efforts of others. The broad parameters of this test coupled with 70+ years of caselaw provide fertile opportunity for the SEC and defense counsel to comprehensively argue each prong. The SEC traditionally takes an aggressive approach in finding evidence for all prongs when an investment program involves a speculative investment and highly promotional marketing efforts. The SEC views these investment situations as exactly the type the federal securities laws were enacted to regulate. ICOs typically fit this description.

The SEC's first salvo in the area of crypto regulation occurred in July 2017, when the SEC issued a Report of Investigation regarding an unregistered offering of digital tokens by an entity called the DAO The DAO was among the first Decentralized Autonomous Organizations or "virtual" unincorporated organizations embodied in computer code and executed on a blockchain. The code autonomously sold tokens in an ICO to investors, accumulated the digital funds and allocated the collected digital capital to fund "projects." Investors would receive a return on their investment by redeeming their DAO tokens or selling them on secondary markets. The DAO was similar to a venture capital fund, except that it was "decentralized" -- the code enabled investors who held DAO tokens to vote on proposals to fund projects. In theory, there was no fund manager or central authority controlling the fund's investment activity. However, before any proposal was put to a vote by DAO token holders, one or more of the DAO's "Curators" were required to review the proposal. According to the White Paper, the Curators performed crucial security functions and maintained ultimate control over which proposals could be submitted to, voted on, and funded by the DAO. A critical issue in determining the applicability of Howey to autonomous networks on a blockchain is "whether the efforts made by those other than the investor are the undeniably significant ones, those essential managerial efforts which affect the failure of success of the enterprise." The SEC concluded that the expertise of the DAO's creators and Curators was critical in monitoring the operation of the DAO, safeguarding investor funds, and determining whether proposed contracts should be put up for a vote.

The SEC Report reviewed the DAO's ICO and concluded that it triggered all four Howey factors and thus was an offering of securities that should have been registered under Section 5 of the Securities Act of 1933. The SEC did not actually charge the DAO with a violation. The Report was essentially guidance to the crypto community and a shot across the bow to would-be ICO issuers that the SEC may bring enforcement actions against unregistered ICOs going forward. Following the DAO Report the SEC filed and settled a number of cases against ICO issuers for failing to register the ICO with the SEC. The next significant event in SEC crypto regulation was a speech by the Director of the SEC's Division of Corporation Finance, William Hinman, in which he discussed crypto assets and Howey. The most interesting part of the speech for the crypto industry and securities lawyers was Hinman's opinion that a digital asset could begin its life as a security but at some later point transform into a non-security. Hinman's analysis focused on Howey's "efforts of others" factor in the context of matured digital assets like Bitcoin and Ether that started out as an undeveloped project dependent on the efforts of the initial promoters for success but at some later point began operating in a sufficiently decentralized manner. Hinman said that holders or new purchasers of tokens or coins of a sufficiently developed and decentralized project would no longer reasonably rely on the

managerial or entrepreneurial efforts of the small group of original promoters and instead look to the project's broader decentralized group of participants (the project's "ecosystem"). Therefore digital assets initially considered securities may at some point fail one prong of the Howey test and therefore no longer be considered securities.

Many in the industry viewed Hinman's speech as a welcome step forward since he articulated the unique nature of crypto and opined that certain cryptocurrencies like Bitcoin and Ether may not be securities. But Hinman's speech also affirmed the DAO Report's warning that ICOs are likely securities offerings under Howey. Hinman summarized his core reasoning as follows: "The digital asset itself is simply code. But the way it is sold – as part of an investment; to non-users; by promoters to develop the enterprise – can be, and, in that context, most often is, a security – because it evidences an investment contract. And regulating these transactions as securities transactions makes sense. The impetus of the Securities Act is to remove the information asymmetry between promoters and investors."

After the DAO Report and Hinman speech, most crypto entrepreneurs and their advisers attempted to structure their ICOs to comply with securities laws, often by first pre-selling tokens only to accredited investors pursuant to SEC Regulation D, and then once the network is developed and functional, issuing utility tokens to the public in the ICO or token distribution event. At this point in time, they argue, their platform is sufficiently decentralized to render the token a non-security. However, determining at what point a blockchain network is sufficiently decentralized is not an easy task.

In April 2019, SEC staff issued additional guidance on applying Howey to digital asset offerings through its Strategic Hub for Innovation and Financial Technology (FinHub). The SEC created FinHub in fall 2018 to serve as a resource for SEC FinTech issues including crypto. FinHub published "Framework for Investment Contract Analysis of Digital Assets" (Framework) to provide guidance to those contemplating an ICO. The Framework essentially expanded on the DAO Report and Hinman's talk in analyzing when a digital asset would be considered a security. The Framework concludes that most ICOs will be considered securities offerings with narrow exceptions. The Framework encourages market participants to consult securities counsel and engage with the staff on gray area issues. Thus, while the Framework is a clear warning to issuers that ICOs likely require securities law compliance, the SEC staff also appears to be signaling that it is innovation-friendly and open to discussion with crypto issuers who engage with the staff prior to commencing an offering.

Regulation A+: Blockstack and YouNow

Regulation A+ is a relatively new type of offering option created by the Jumpstart Our Business Startups (JOBS) Act of 2012. Regulation A+ became effective in June 2015 and allows a company to essentially raise up to $50 million (a pending SEC rule proposal would raise the offering limit to $75 million) by conducting a mini-IPO without incurring the full expense of a traditional IPO. Reg. A+ has additional advantages in that it allows issuers to raise capital from accredited and non-accredited investors, to "test the waters" and gauge investor interest for the offering, and to issue freely-trading securities. The SEC's Division of Corporation Finance will review the draft and issue comments to the company as it deems appropriate. Once the SEC has no further comments it will upon request declare the offering statement to be qualified and the issuer may commence the offering and sell the securities.

In July 2019, the SEC qualified a $28 million offering under Regulation A+ for blockchain startup Blockstack to sell its tokens. The final offering circular was over 180 pages and included audited financial statements and 44 pages of risk factor disclosures. According to statements by the company's co-founders quoted in a Wall Street

Journal article, Blockstack spent 10 months and about $2 million dollars to get this offering qualified with the SEC. While these figures might sound discouraging to other would-be Regulation A+ crypto issuers, it should be noted that this was the first Regulation A+ filed by a blockchain company and there is typically a steep first-time learning curve for both the SEC and the issuer. A day after the SEC approved Blockstack's offering, the SEC qualified a second offering circular for YouNow, Inc., a social media video platform, to sell its cryptocurrency in a $25 million Regulation A+ offering.

SEC approvals for these two offerings establish Regulation A+ as a viable blueprint for crypto issuers to register and sell digital assets in a way that is acceptable to the SEC. While the time and expense required to obtain Regulation A+ qualification and the cap on the amount that can be raised in a 12-month period make this crowdfunding device less than ideal for many crypto start-ups, it is nonetheless one legitimate way forward. Since the offering circulars for Blockstack and YouNow are publicly available and the detailed risk factors and other disclosures in the documents were presumably carefully reviewed by the SEC to its satisfaction, future issuers can leverage the hard work already completed by these issuers and the SEC and presumably obtain qualification more quickly and at less expense than Blockstack or YouNow.

Options for Issuers Needing to Raise More Than $50 Million

While Regulation A+ can be an attractive fundraising option for issuers to tap public markets and raise up to $50 million in a 12-month period, if a company needs additional capital there are a few options to consider. First, the issuer can conduct a private offering under Rule 506 of Regulation D and raise an unlimited amount of capital if the offer and sales are to accredited investors. Second, the issuer can raise an unlimited amount of capital in an offshore offering under Regulation S if the offer and sales are to offshore non-U.S. investors. Third, the issuer can conduct a full IPO and raise an unlimited amount by filing a registration statement with the SEC of Form S-1. While there has not been an IPO for a pure crypto company that has gone effective (though a commercial bank with a focus on cryptocurrency business, Southern California's Silvergate Bank, went public in November 2019), the Praetorian Group filed a draft Form S-1 registration statement for proposed sales of its PAX token and the draft disclosures in that draft could be used as a starting point template along with the disclosures in Blockstack's offering circular. While each of these offering options involve complex requirements and have their own set of pros and cons, each represents an established way for an issuer to raise significant capital with SEC support if approved.

Token Issuances Outside of Howey: TurnKey Jet and Pocket of Quarters

While recent SEC enforcement activity and related public statements suggest that the SEC will view most offerings of digital assets as securities offerings subject to registration, the SEC staff in 2019 agreed through its no-action letter process that certain types of digital asset offerings would not be considered securities offerings. SEC no-action letters are a method for SEC staff to give assurance to a specific company or individual that the staff will not recommend enforcement action under a specific set of facts. No-action letters are not official actions of the SEC since Commissioners do not vote to approve them. But they are a well-established and relied-upon method for SEC staff to provide informal guidance in a relatively efficient manner.

In April 2019, the SEC's Division of Corporation Finance staff issued a no-action letter to TurnKey Jet ("TKJ"), a licensed US air carrier and air taxi operator that provides interstate air charter services. TKJ proposed to offer and sell blockchain-based digital assets in the form of "tokenized" jet cards. Consumers of TKJ's air charter services would be able to use the tokens to purchase such services from TKJ and third-party carriers. TKJ's counsel represented in the no-action request that TKJ would not use any funds from the token sales to develop the TKJ services platform since it would already be fully developed and operational at the time any tokens were sold.

Counsel also represented that the tokens would be marketed in a manner that emphasized their functionality and not on potential for any increase in market value. The staff issued no-action relief indicating that the staff would not recommend enforcement action if TKJ issued its tokens without registration.

The SEC appeared to grant the no-action relief based on representations that the tokens were marketed and sold for utility and functionality rather than investment purposes. In terms of Howey factors, since the purpose of buying the tokens was to consume air charter services, there did not appear to be an expectation of profits from the efforts of others. While this seems like a straight-forward fact scenario for concluding that no security was involved, the SEC staff's grant of no-action relief clearly establishes for the avoidance of doubt that the SEC has a baseline for determining when a digital asset offering will not be considered a security. In July 2019, the staff issued a similar no-action letter to Pocket of Quarters (PoQ), indicating that the staff would not recommend enforcement action if PoQ offered and sold its blockchain-based cryptographically protected tokens without registering such tokens as securities. These two no-action letters provide another option for a crypto issuer and its counsel to consider if they believe that a proposed offering would be more like a pure utility token offering than an investment contract.

Conclusion: A Tale of Two Digital Asset Issuers

Recent SEC actions involving digital asset issuers can generally be categorized into two groups. The first – our-digital-assets-are-not-securities group -- made the determination that their offerings would not violate the securities laws and even if the SEC attempted to assert jurisdiction it could be convinced to stand down or would lose in litigation. These issuers in good faith or otherwise essentially calculated that it was better to seek forgiveness than permission and that pursuing their offering without regard to SEC compliance was in the best interest of the project. SEC actions and ongoing litigation against such issuers in 2019 and 2020 to date suggest that this determination was a major miscalculation since these issuers found themselves entangled in expensive and distracting SEC enforcement proceedings. It is difficult for any business to defend an SEC enforcement action let alone a thinly capitalized startup, even when the battle is framed as a noble cause and supported through a crowdfunded war chest.

The second – the-SEC-will-likely-view-our-digital-assets-as-securities-so-let's-engage-to-get-them-on-board group -- includes issuers like Blockstack, YouWork and TurnJet Key who engaged with the SEC and ultimately issued their digital assets with SEC support. In contrast to the first group, these issuers invested time and money up front to reduce the regulatory risk of their offering and now appear well-situated to use their resources to develop their projects rather than spending them to defend the SEC. Even one company, which initially committed a regulatory foot-fault eventually engaged with the SEC, made its peace with the agency, took corrective action, and received an SEC-approved path to compliance.

The contrasting fortunes of these two issuer groups suggest that unless the SEC codifies a new regulatory framework for crypto as proposed by Commissioner Pierce or loses in litigation and a new crypto-friendly Howey standard is broadly adopted by courts, crypto issuers who wish to access U.S. public markets for capital at this time appear to be far better off if they engage with the SEC from the start within the established framework of the federal securities laws. A summary of fundraising options within the established regulatory framework includes:

- **Regulation S**. Issue digital assets outside the U.S. in reliance on Regulation S.
- **Regulation A+ (Tier 2)**. Issue securities to raise up to $50 million in a 12-month period ($75 million under proposed rules). Leverage the format and disclosures of crypto offerings already approved by the SEC (e.g., Blockstack).

- **Rule 506(b) or (c) of Regulation D**. Issue securities to raise an unlimited amount to accredited investors (expanded pool of accredited investors under proposed rules).
- **Regulation Crowdfunding.** Issue securities to raise up to $1.07 million ($5 million under proposed rules).
- **Rule 504 of Regulation D** Issue securities to raise up to $5 million ($10 million under proposed rules).
- **Full Registration on Form S-1**. Issue securities in a registered public offering to raise an unlimited amount.
- **Not securities.** Issue digital assets for a crypto project that has been sufficiently developed and decentralized such that they are deemed not securities (e.g., Bitcoin and Ether). But proceed with caution on determining the point of "sufficient decentralization." Best to run the analysis by the SEC first or seek no-action relief for full comfort.

As crypto projects continue to evolve and seek capital from U.S. investors the SEC regulatory framework for such projects will also evolve. While the current framework may be less efficient and permissive than desired by many in the crypto community, there is now at least some clarity on where the SEC draws the regulatory line and what options are available to issuers to stay compliant while pursuing their projects.. Recent SEC actions suggest that crypto advocates best serve their projects by avoiding the temptation to devise clever ways to end-run the SEC and the securities laws, like two high-profile companies, Kik and Telegram, tried to do, and instead by engaging with the SEC within the established framework. If a project runs into problems within the established framework, project advocates would be wise to play the long game and take advantage of the SEC's repeated invitations to reach out to the agency before raising capital and work collaboratively to forge a compromise that will allow the project to advance with SEC support.

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The Dichotomy between Wall Street and Main Street – Why the Disconnect?

By Chi Sheh, PhD

ABSTRACT

There has been a deep disconnect between Wall Street and Main Street that has become painfully apparent in the months after the COVID-19 pandemic started to sweep through the world in the first half of 2020. As the economy goes through a deep painful recession and losing jobs at a scale not seen since the Great Depression, the stock market has completely recovered from the historic selloff in March 2020. This article aims to address the main reasons why this dichotomy occurred and the hidden risks that lurk behind it.

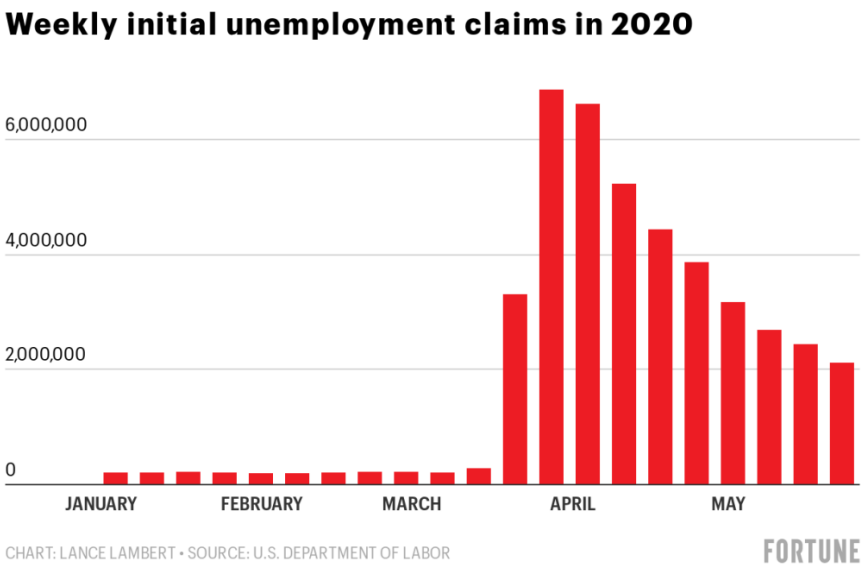
The Disconnect

On Monday March 9th, 2020, the Dow Jones Industrial Average[1] lost more than 2000 points, which was at that point the biggest intraday drop in the history of the Dow Jones Industrial Average. It marked the start of the end of the longest running bull market of US history, which started back in March 9th, 2009 and lasted 11 years. Barely three months later, on June 9th, 2020, all major stock indices had already recovered their losses from their March lows, with the tech-heavy NASDAQ actually recording a new record high above the previous high set in February 2020.

This unprecedented reversal in the stock market happened on exactly the day in which the National Bureau of Economic Research Business Cycle Dating Committee declared that the U.S. had entered its first recession in nearly 11 years due to "the unprecedented magnitude of the decline in employment and production, and its broad reach across the entire economy". Just in the month of April 2020, 20.5 million Americans lost their job, raising the unemployment rate to 14.7%. (See graph below for US Department of Labor weekly unemployment claims) GDP in the first quarter of 2020 had already contracted by 4.8%, while the second quarter GDP is estimated to contract around 40-50%, according to the Atlanta Fed's GDPNow tracker. At the same time, as of June 8th, 2020, the human toll of the COVID-19 novel coronavirus pandemic has claimed more than 114,000 lives in the US and more than 404,000 lives across the world.

As millions of everyday people look at the unprecedented job losses and economic contraction in the US, the obvious question to ask is why is the stock market hitting new highs and borderline euphoric while the economy suffers the worst recession since the Great Depression? Isn't the stock market supposed to mirror what is happening in the economy? What can possibly explain this dichotomy of fortunes between the US stock market and the US economy?

[1] The Dow Jones Industrial Average (DJIA) is the second-oldest and best-known stock market index. Owned by Dow Jones & Company, it measures the daily price movements of 30 large American companies on the Nasdaq and the New York Stock Exchange.



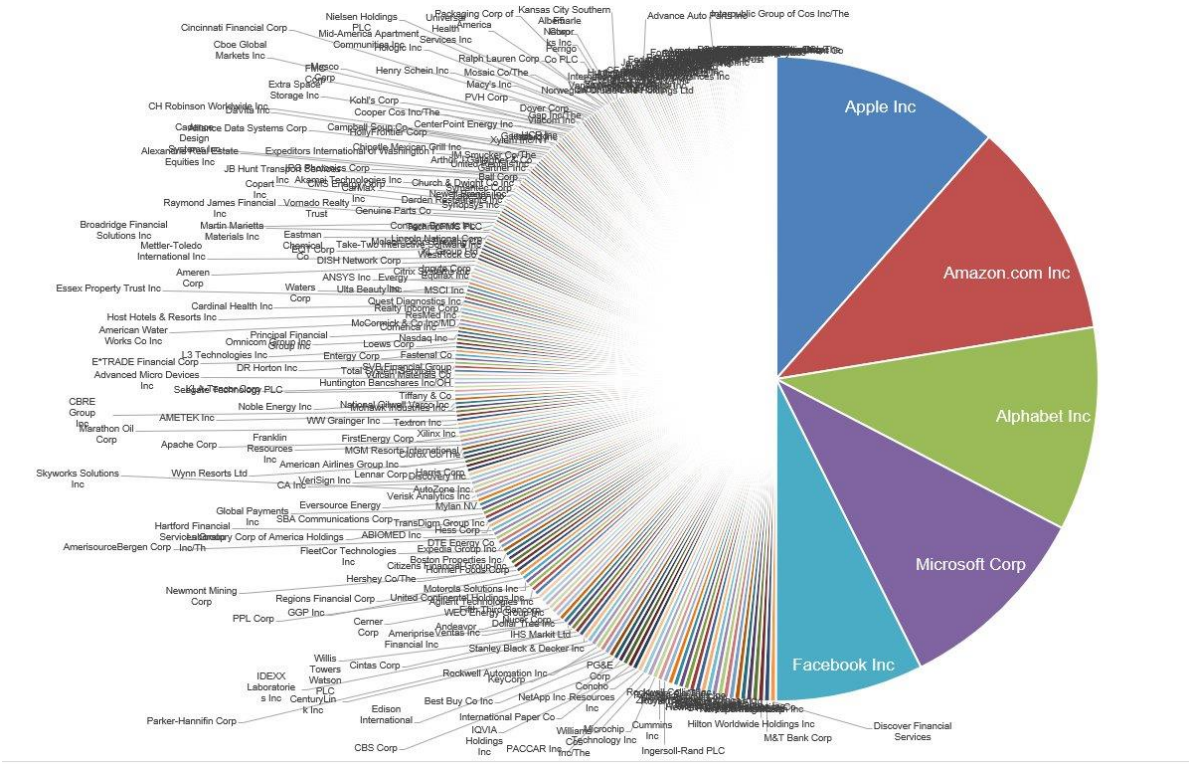
The Haves versus the Have Nots

There are several reasons that have been forwarded by market strategists, economists, and various financial experts. Some point out that most of the job losses occurred in the leisure and hospitality sector, along with retail sector, as these sectors have suffered the most dramatic impact from social distancing rules and restrictions. At the same time, the companies in these sectors are much smaller in terms of market capitalization compared with the technology giants who have actually benefitted from social distancing.

This is significant because these tech titans, Amazon, Apple, Facebook, Alphabet/Google, and Microsoft, together weigh as much as 20.4 percent in the S&P 500 index. The index is weighted by market capitalization, meaning that if a company with a market value of $500 billion moves by 2 percent, its impact on the index is five times as large as that of a $100 billion company moving 2 percent. In fact, because other large companies have not performed as well in this rally, the aggregate weighting of the five technology giants is now even greater than it was before the pandemic.

For more context to this issue of market size, consider that the smallest 340 companies in the S&P500 index together also add up to a weighting of 20 percent in the index. This means that these 5 tech giants weigh as much as 340 companies. (See graph[2] below for a visual representation of their relative size) And the 165 smallest companies together weigh as much as the largest of them all, Microsoft. Before you think that these are minnows that you have never heard of, they include names such as Hewlett-Packard, Viacom, Expedia, and Tiffany.

[2] https://ei.marketwatch.com/Multimedia/2018/07/18/Photos/NS/MW-GM758_market_20180718204202_NS.jpg?uuid=8d36657a-8aec-11e8-81b7-ac162d7bc1f7



What the Stock Market really Measures

A key issue that a lot of times is forgotten by the public is that very few companies are actually *publicly* listed companies that list their stock on the listed stock exchanges. The Dow Jones Industrial Average, which is the leading stock market indicator, has only 30 stocks in the index. There are only 2,400 companies listed on the New York Stock Exchange in total. There are only 3,500 companies listed on the NASDAQ Stock Market. Even the companies that are not listed in the exchanges like the NYSE and the NASDAQ that trade over the counter (OTC) number about 15,000 companies total.

In comparison, there are 5.7 million firms in the US that have employees, which means less than 0.4% of the firms are actually publicly listed in the stock market. Also, there is a growing trend in the last couple of decades of companies staying private and never get publicly listed in any exchange or OTC.

Why are these facts important? Because what this means is that the stock market most definitely is NOT measuring the entire economy. The stock market only measures the value of the large companies that were successful enough to get listed in the stock market in the first place. They represent the cream of the crop, so to speak, of corporate America. A large majority of businesses, more than 99% of them in the US, are much smaller and have suffered the brunt of the pain associated with the deep contraction of the economy caused by the COVID-19 pandemic.

Figure 1

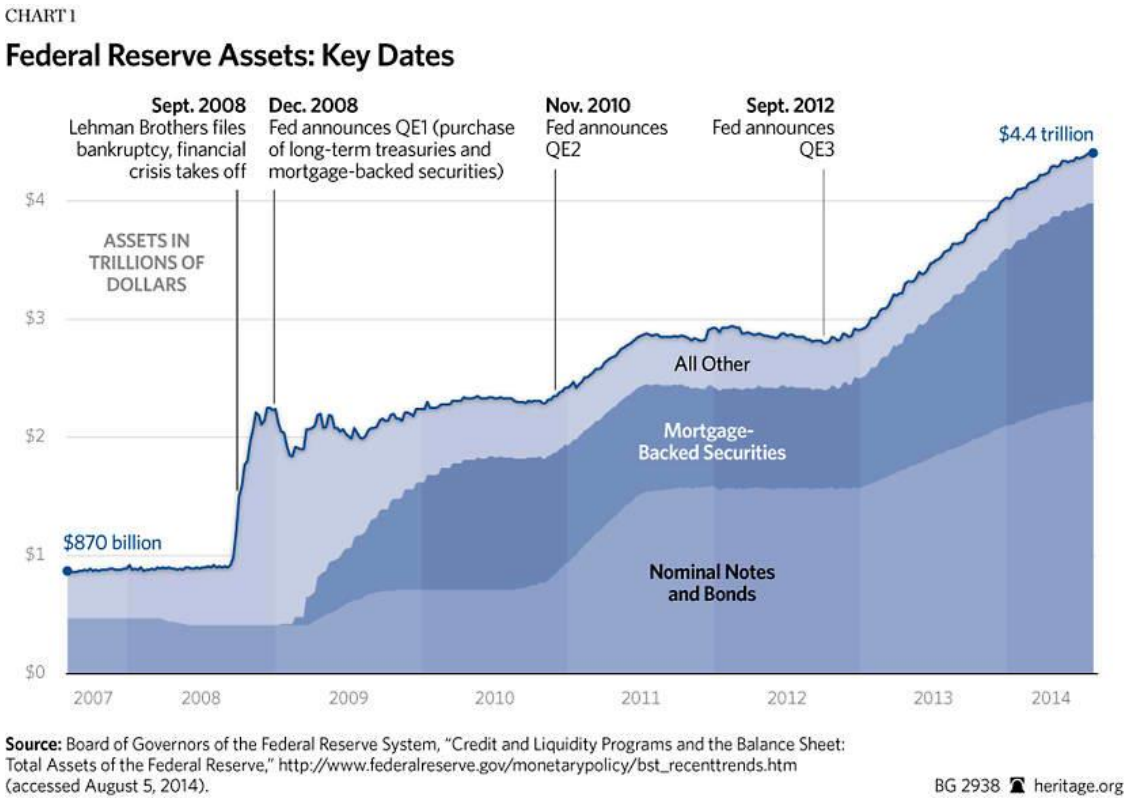
Number of Listed Firms by Year on the NYSE, Nasdaq, and Amex, and Market Capitalization from 1975 to 2015

Source: The source for number of listings and market capitalization is Center for Research in Security Prices (CRSP) data.
Note: The market capitalization is shown in 2015 dollars.

A Tsunami of Liquidity

Both monetary and fiscal stimulus is being undertaken by all major countries around the world at a level unimaginable a few years ago. The Federal Reserve (Fed), the Bank of Japan (BOJ), and the European Central Bank (ECB) initiated new programs to purchase securities and open lending facilities to support businesses in the hopes of preventing a global COVID-19 deflation. This massive monetary stimulus, which consisted of pushing policy rates at or below zero, undertaking massive quantitative easing operations, buying up government guaranteed securities, in some cases equities, which increased the size of central bank balance sheets and pushed bank reserves to unprecedented levels.

Just in the US, the Fed on March 3rd lowered the target federal funds rate by 50 basis points and on March 15th, it lowered it again by 100 basis points, and slashed the reserve requirements to 0. It also announced a new quantitative easing operation to purchase at least $500 billion in Treasury securities and $200 billion in agency mortgage-backed securities (MBS). On March 17 and 18th, the Fed announced three special funding facilities: the Commercial Paper Funding Facility, the Primary Dealer Credit Facility, and the Money Market Mutual Fund Funding Facility. On March 23rd, it extended its Treasury and MBS purchase program to "amounts needed" and added purchases of agency commercial MBS. Before the 2008 financial crisis, the Fed held $890 billion in assets. Now, with its COVID-19 stimulus programs, the Fed's assets have grown to $10 trillion, approaching 50% of the US GDP. (See graph below for an illustration of the Fed's asset expansion scale) All of these amounts to a gigantic infusion of money supply into the global financial markets.



Why is this infusion of money into the financial markets important? Because all this money has to go somewhere, and having a massive infusion of money chasing a limited number of assets creates the fire to ignite a stock market bubble. Basically, as interest rates have dropped, the only ways for an investor to actually generate a real significant financial return is by investing in the limited number of publicly traded stocks, especially the tech giants.

Conclusion

In conclusion, the combination of a mountain of money flowing into the financial system, along with the dearth of attractive liquid assets available to investors, makes it so that the relatively scarce number of publicly traded companies in the stock market benefit. Investors simply do not have many places to go with their money because interest rates are already at historically low levels and there are extremely few places where they can invest that can provide both the liquidity and investment return with upside that they seek. This is not just happening in the United States, but around the world, as this monetary and fiscal stimulus is happening around the world in all major economies.

Once we add to this the fact that the bulk of the value created in the stock market is increasingly concentrated in the 5 tech giant Microsoft, Apple, Amazon, Facebook, and Google, which all have benefitted from social distancing, it becomes even more apparent why the stock market has brushed off the present pain and suffering caused by the COVID-19 pandemic.

Even though millions of people have lost their jobs, they still have income in the sense that they still have purchasing power based on the stimulus checks and unemployment benefits they collect, the demand of products and services will still be expanding as time goes on. Many thousands of businesses are going bankrupt, but the remaining ones are investing heavily into the IT technology and software needed for remote work and AI automation, trends that had already started before the pandemic. All this results in a dramatic concentration of market power that is fully reflected in the sky high stock prices of these tech giants that make currently the bulk of the stock market.

There are risks that are lurking, of course. There is a strong possibility of a second and third wave of infections which may shut down the economy in the US and around the world again in the winter months. A vaccine may not be available for mass distribution until 2021 or later, and government support of worker's income through various stimulus plans and unemployment insurance will run out eventually. The economy is suffering, especially the small and medium size businesses that employ millions of lower wage workers, and many of them will go out of business for good. Paradoxically, this destruction creates opportunities of market and profit consolidation that will benefit the largest companies that are left standing at the end, which will be reflected in their ever higher stock prices. The stock market of the present is the stock market of the top 1% companies, and not reflective of the other 99% masses. Wealth is being transferred on a historic scale, with unforeseen potential for public and civic unrest created by these disparities. Time will tell how sustainable these underlying risks are before they boil over.

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Dr. Sheh is also the Director of the University of the West Socially Responsible Investment Fund, where he directs MBA students in the selection of socially responsible companies, mutual funds, and exchange traded funds. Dr. Sheh is also the founding advisor to the Sustainable Investing Club at University of the West, which seeks to promote a sense of responsibility to the society, the environment, and future generations by searching for ways to make investing more sustainable, and in the process serve as a platform to foster innovative ideas in the various areas of sustainable investment.

His professional experience also includes working as a financial analyst for Enron Corporation in Houston, Texas, in the areas of Power Trading, International Energy and Water Project Development, and Commercial Energy Risk Management and Services.

Understanding Options For Financial Assistance For Small Business In The Covid-19 Era

By B.J. Hawkins, PhD

Introduction

As COVID-19 began to force businesses to close their doors and people to "stay at home", the inevitable damage to our communities and businesses became real and alarming, with Wall Street reacting with the highest loss in history in early March. Business failures and grim unemployment numbers became a real threat, and even more so to small business and their employees. Conventional financial decision strategies tied to standard business practices were no longer applicable during this world-wide pandemic. For the average small business where even in the best of economic times, cash flow is a critical issue, COVID-19 posed business life-threatening challenges.

Considering the global reach of the pandemic with no predictable end in sight, the US government stepped in to provide financial support offered through the *Coronavirus Aid, Relief, and Economic Security Act* (*CARES Act*), a stimulus package designed to mitigate the effects of the novel coronavirus ("COVID-19"). Though the legislation is broad based covering non-profits, educational institutions, home mortgages, prescription drugs, assistance to states, and key protections for workers' this article will concentrate on the provisions that provide loan opportunity relief to small businesses, the self-employed and sole proprietors.

It is important to note that these stimulus loans are substantially different from traditional business loans. The legislation clearly differentiated stimulus loan requirements from standard loan underwriting criteria. The differences allow small business to avoid the traditional barriers to accessing operating capital. A low or substandard credit score, for example, does not present an insurmountable barrier nor is it a reason for automatic denial. A low credit score may, however, impact the eligibility for a higher dollar amount loans. Interest rates for all types of stimulus loans are low, under 4%, the terms are generous, a portion of the loan amount is able to be forgiven, and re-payment is delayed for up to one year.

Current Availability of Stimulus Funds

Currently available small business financial support includes:

- The Payroll Protection Plan (**PPP**)
- Economic Injury Emergency Grant Program and Economic Injury Disaster Loan (**EIDL**)
- Small Business Reorganization Act of 2019,(**SBRA**) also known as "Subchapter 5"
- Bridge Loan Program
- Pandemic Unemployment Assistance (**PUA**)

The Facts on PPP

PPP known as The Paycheck Protection Program under the CARES Act is a loan program designed to prevent layoffs and loss of jobs as a result of COVID, with the provision that the loans may be forgiven provided that a business maintains all of its employees for a certain period of time and that the loan proceeds are used for payroll, and other specified business expenses.

The core inhibiting factor for small business access to PPP funds available through the CARES Act was the distribution methodology. Given the uncharted and high anxiety environment, the historically fiscally conservative banks, favored extending the loans to those who had an existing *business loan* relationship. Businesses with an existing bank loan would most likely fall into the category of relationship banking and have a relationship manager/banker assigned to them. A relationship banker has the information that the banks were requiring to process the applications for stimulus funds. Information such as corporate legal entity identification, industry code, income statement and related financial information would already be in the bank's system. The larger banks through their electronic data bases could quickly and did move massive amounts of information into the SBA portals. The allocated CARES funds were dimensioned by the surges from the large banks and these funds tended to go to established larger businesses with pre-existing access to credit. And as the press has elucidated, to even big multi-state businesses, some of whom actually returned or reversed their funding awards. Even for those small businesses that were able to submit an application, it was still the larger small businesses that were likely to have an application processed and receive funding.

The initial distribution of stimulus funds was not juxtaposed between those businesses with business accounts and those without. In fact, banks such as Wells Fargo and One West had their branches communicate their refusal to accept applications from their customers with business accounts who did not also have business loan account. Generally, in the first phase of funding banks would not accept applications from non-customers. If you were unfortunate enough to have a business account and/or loan with a bank that chose not to participate in the stimulus program, the opportunities for getting another bank to accept your application were minimal; and unfortunately, this was not limited to a regional or local trend. Informal sampling undertaken by this author and interested colleagues supported what we believed to be the trend of major barriers to the application process for small business without pre-existing lines of credit or bank loans. As a result, the first phase funds of the stimulus program or the initial CARES Act were generally unavailable to the smallest of small business or micro businesses.

The Administration mandated that important data would not be collected for stimulus funds. Business size and demographics, therefore, were not collected. Racial identity, gender, geographical location of the recipients of stimulus funds could not be tracked.[i] Anecdotal data appears to show the bank processing barriers had the most negative impact on Black owned businesses, businesses owned by persons of color, and micro businesses. In general, businesses located in communities of color were the least likely to have been successful in receiving Phase 1 PPP funding. As a result, the lack of data limited targeted help to those businesses who had the greatest need and who required the most assistance.

PPP funding was increased and the depleted funds were replenished in Phase 2. The replenishment was accompanied by good news for small business owners. The firing of the Inspection General with oversight and the ability to take action on fraud and misuse of the funds was mediated by Congressional, state and locally elected representatives along with the concerted actions of small business advocacy, and racial and social justice organizations, The learning curve and political response to all aspects of the first phase of stimulus funding has resulted in massive changes that benefit small and micro businesses. The most significant of the changes has been the increase in the types of financial institutions that have been designated as application processing and submission agents for PPP.

For a small business, sole proprietor, or self- employed persons, PPP applications are now submitted through:

- credit unions
- community banks
- small banks
- Pay Pal
- Intuit (QuickBooks)
- non-bank loan institutions

Applications most often are submitted on-line to the financial institutions and instructions have become more straight forward and user-friendly. Guidelines can be found at the SBA site, https://sba.gov. Barriers have been removed and screening processes that resembled traditional underwriting criteria, as the legislation intended, have not been an obstacle. Bankruptcy or criminal activities will, nevertheless, eliminate the applicant business.

The official end date for PPP application submissions remains June 30, 2020. However, the pending HEROES Act, passed by the House and awaiting Senate approval and advocacy organizations' pressure to release data that they believe demonstrates disparity in the award of stimulus funds, may extend the application submission date. Since there are no penalties for submitting an application, it is worthwhile to make inquires to the expanded list of financial institutions to determine if they will accept an application post June 30th. For example, when funds were depleted in Phase 1, some banks and financial institutions held completed applications until the funds were replenished and then submitted them. It is possible that as the election nears and COVID19 continues to impact the economy, there will be a perceived need for further stimulus and the PPP may be extended.

Economic Injury Emergency Grant Program and Economic Injury Disaster Loan (EIDL)

The other significant COVID-19 loan program under the CARES Act is the Economic Injury Disaster Loan (EIDL) [*pronounced idle*] program. EIDL funds were quickly depleted in Phase 1. When the application process reopened, it was restricted to agriculture and agriculturally related businesses. Since June 15, 2020, however, the EIDL application and award process have been completely functional. The processing of the monetary advance portion, which is also known as the grant portion of the loan, takes as few as three days and can be as much as $10,000. The application process is scheduled to remain open until September 30, 2020 and is a real opportunity for small and micro businesses, sole proprietors and the self-employed. https://covid19relief.sba.gov

Unlike the PPP, the EIDL application is available only on-line and is directly submitted on-line to the SBA. The areas to which the EIDL loan may be applied are less restrictive than PPP funds. This flexibility provides wide discretion for the business owner in deciding how the funds are utilized. The funds may be applied to almost all operating expenses, including paying business debt, business rent and leases, and in some cases business mortgage payments. However, funds obtained under EIDL cannot be used for new real property purchase or speculative ventures. Further, traditional underwriting criteria ae not applicable. Since there are no guarantees as to how long the funds may be available, any interested business owners should act immediately.

Small Business Reorganization Act of 2019,(SBRA) also known as "Subchapter 5"

A lesser known relief option for small businesses impacted by COVID-19 went into effect on Feb. 19, 2020. The new law, the Small Business Reorganization Act of 2019 (SBRA), also referred to as "Subchapter 5", instituted a new Bankruptcy Code that provides an easier, less costly, and a shorter version of the Chapter 11 Reorganization for small business corporate and individual debtors. For a severely distressed business, Subchapter 5 may mean the difference in having the resources to weather the pandemic and allow a business to maintain operations. This period of continued operations allows the businessperson to make an informed decision and not have to act in a state of crisis where the only option is to abruptly close down and liquidate or dispose of the business's assets.

Historically small businesses entering into a Chapter 11 bankruptcy have had a low percentage of success. Often the Chapter 11 became a Chapter 7 or liquidation plan, or the Chapter 11 was terminated with catastrophic losses. The SBRA statute can be a life saver for the businessperson who knows that the PPP or the EIDL will not provide the means to stay afloat and wants a reasoned method to be able to make a fresh start. The small business debtor or sole proprietor must be a person or entity engaged in commercial or business activity with aggregate non-contingent liquidated secured and unsecured debts of $2,725,625.00 or less, excluding personal debt to the

company or debt from officers or other insider sources. A business that is a single asset real estate entity is not eligible to use SBRA.

Subchapter 5 requires no creditor committee. As a result, there is no debtor priority rule. Furthermore, other than the initial filing fee, fees are minimal or eliminated. Thus, subchapter 5 is not prohibitively expense for the bankruptcy petitioner. While there has not been much publicity on Subchapter 5, it is an important tool and a feasible option for restructuring for the small business community.

Bridge Loan Program

SBA 7(a), 504, and other non-disaster loans obtained prior to the CARES Act are eligible for payment consideration. Approximately $17 billion was set aside to cover loan payments on these SBA loans (principal and interest) for six months. These loans are currently available to new borrowers under the same terms of six months of payments covered through September 27, 2020. There are also immediate Bridge Loans available to customers of financial institutions that are designated Express SBA Loan lenders. For extremely distressed business, it may be worth the time and effort to apply for a Bridge loan. These Bridge Loans are issued in amounts up to $25,000 and are paid off once an EIDL grant or loan is received. Bridge loans, however, do not have the forgiveness components that are part of PPP and EIDL loans.

While there are other micro loans that are being issued, the numbers are not significant and they are not necessarily the best option available for small business.

Pandemic Unemployment Assistance (PUA)

The final type of significant assistance for small business owners is the Pandemic Unemployment Assistance (PUA) program available in California through the state Economic Development Department (EDD) unemployment insurance (UI). The CARES ACT and the state of California widened the eligibility pool for COVID-19 assistance through the UI program. For the first time, business owners, the self-employed, independent contractors, and gig-workers are eligible to receive unemployment insurance. Working for a company other than your own is not necessary. All self-employed and sole proprietors are considered to have at least one employee eligible for UI, themselves.

To be eligible for PUA you must not have received a W2 wage statement in 2019 or 2020. The state portion of the funds for which the aforementioned types of businesspersons are eligible is a minimum of $167 per week for 39 weeks up to December 26, 2020. Recipients of PUA funds are also eligible for an additional $600 per week in Federal assistance until July 25, 2020. The application forms are filled out and submitted through EDD on-line at https://www.edd.ca.gov.

PUA is the only one of the stimulus program that is not through the SBA. The funds are advanced through a Bank of America debit card that may be utilized for food, clothing, to pay bills, for gasoline or any other necessity. Cash may be withdrawn from the card but it is not advisable as PUA funds are taxable and it is prudent to track the manner in which the funds are utilized.

Looking Back – Providing a Way Forward

The intent of the stimulus package, both the original bipartisan package and the subsequent additions must be looked at from the perspective of a political prism to understand why there has been seemingly contradictory information about availability of funds and the differentiation of stimulus fund availability to the smaller of small

businesses or micro businesses[ii]. The distribution methodology utilized was a decisive factor in the size and business ownership likely to receive funds for the most well-known of the stimulus loan programs, the PPP.

The distribution methodology intentionally or unintentionally favored larger Banking institutions. Direct submission to the Small Business Administration (SBA) of the PPP was not possible. Applications could only be submitted through a financial institution and in most cases that was through a bank. The bank, after the application was considered completed, would submit to the SBA. Though the legislation did not require traditional underwriting criteria such as personal guarantees, 2019 filed tax returns, and credit scores, the banks could utilize screening processes. In the absence of national guidelines, each banking organization established its own method of accepting and processing of applications. For example, to complete the application some banks required in-person interviews and some banks only accepted applications from existing customers.

These are lessons learned and subsequent additions to economic stimulus have reflected these lessons. What is unfortunate is the cost of the lessons on American small businesses.

Is Help Available?

No matter how much valuable news is received, for some small business owners it remains difficult to discern the difference between speculative and inaccurate and accurate and useful information about assistance available to mitigate the economic injury caused by COVID-19. For those whose budget permits, help is available from a cadre of ' COVID Assistance Experts' who can guide the business owner on how best to access available programs. The Experts can also help prepare applications to better the chances of a complete and correct submission. Some more sophisticated Experts are knowledgeable about Federal SBA requirements and standards and how best to utilize that information to complete a successful application process and receive the maximum funding available.

Technical and Expert assistance is also available from the local Small Business Development Corporations (SBDCs). This assistance is provided cost free (your tax dollars at work) usually in a webinar. The webinars are scheduled in the afternoon at least three days a week. The business owner can obtain more detailed instructions by booking a no cost consultation with their local SBDC. One of the best sources for COVID information in Southern California is the Orange County SBDC located in Fullerton https://orangecountysbdc.org.

Conclusions

In a virtual Town Hall presented on Wednesday June 24, 2020, Congressional Representative Judy Chu, part of the Asian Pacific American Caucus and a member of the House Small Business Committee, acknowledged the racial disparities in COVID-19 assistance. Joined by Representatives Karen Bass of the Black Caucus and Lucille Roybal Allard of the Hispanic Caucus, the three members of Congress recognized the changes and improvements in the stimulus funds distribution system. These changes make the programs even more beneficial to small business owners. For self-employed, sole proprietors, micro businesses, and small and mid-size small businesses and business owners who have not previously received or applied for stimulus funds, the chances of receiving funding have increased.

Prior to the pandemic, sage financial advice would have been to avoid debt. The burden of debt servicing has traditionally thwarted long term prospects for growth and profitability. These, however, are not normal times. While it is wise to include in any decision to obtain a loan considerations of how the debt load will be met if market conditions do not improve, the short term ability to even partially meet obligations enhances the chances of business survival. Short term availability of funds also provides the means for an organized and strategic restructuring. In conclusion, for most small businesses obtaining stimulus funds makes good financial sense.

Further, as the pandemic continues its unpredictability and the threat of a possible second wave looms, assistance programs may continue to be extended. As stimulus programs to help businesses and minimize COVID-19's negative impact on our economy change, it is important to stay up to date on developments and pursue all options with due diligence.

ABOUT THE AUTHOR

BJ Hawkins PhD, Managing Principal of One Source Fiduciary Solutions, is a California Licensed Professional Fiduciary with Court appointments as a Conservator, Trustee, and Administrator. Dr. Hawkins has testified before legislative and regulatory bodies as a designated Expert in access to capital for small and minority businesses and on inter-generation transfer of wealth as well as complex business issues impacting profitability. As a Court approved Testifying Expert Witness, Dr. Hawkins' areas of Expertise include Breach of Fiduciary Duty, Partnership Disputes, Corporate Governance, Business Judgment, and Trustee Malfeasance, Misconduct, and Mismanagement.

References

[i] for example, by lacking the ability to gather data , there is not an existing method to assure equitable distribution. Potentially 70% of the funding could be made to businesses that were white male owned franchise businesses over $ 3 million in annual revenues in cities with populations of less than 900,000.

[iii] A micro business is generally defined as any business that operates on a small scale with a limited number of employees. The US Small Business Administration defines micro business as those with fewer than 10 employees and revenues under $. Intuit defines a micro business as a sole proprietor, a self-employed person with no or few employees (less than six). The annual revenue amount differs but there is almost universal agreement that it is less than $250,000.
https://sba.gov.
https://covid19relief.sba.gov
https://www.edd.ca.gov.
https://orangecountysbdc.org.

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