BALTIMORE BUSINESS REVIEW

2022

A MARYLAND JOURNAL

CFA Society Baltimore

TOWSON UNIVERSITY

Baltimore Business Review
A Maryland Journal — 2022

Produced jointly by the CFA Society Baltimore and the Towson University College of Business and Economics

Edited by Rachel Gordon, Ph.D., Assistant Professor, Department of Finance, Towson University, Qing Yan, Assistant Professor, Department of Finance, Towson University, David Donahoo, CFA President of CFA Society Baltimore and Susan Weiner, CFA of Investment Writing

Designed by Towson University Creative Services, Rick S. Pallansch, Director, Chris Komisar, Senior Graphic Designer

For more information about the contents of this publication, contact the Towson University College of Business and Economics press contact, Rachel Gordon (410) 704-3019, or CFA Society Baltimore press contact, Robyn Osten (314) 650-8839.

This publication is available online at www.baltimorebusinessreview.org

1121.0872

SHOHREH A. KAYNAMA, PH.D., The George Washington University, 1991, is the Dean of the College of Business and Economics and Professor of Marketing at Towson University. Her research interests include services marketing, e-Commerce/e-Business solutions, marketing research, international marketing, and decision support systems in marketing. Her work has been published extensively in many credible journals (nationally and internationally). She was named one of the 2005 Top 100 Women in Maryland by *The Daily Record* and is an honored member of Empire "Who's Who of Women in Education." In addition, she is a member of Network 2000 and serves on the boards of SBRC, the Academy of Finance (NAF), Baltimore County Chamber of Commerce, Better Business Bureau of Greater Maryland, Maryland Council on Economic Education, and the Towson University Foundation.

Message from the Dean

Towson University, College of Business and Economics

Dear Colleagues and Friends,

I am proud to introduce the thirteenth issue of the *Baltimore Business Review: A Maryland Journal*. Every year the *Baltimore Business Review* presents a collaboration that showcases the strengths of the College of Business and Economics (CBE) at Towson University and the Baltimore CFA Society, creating a wonderful publication that highlights the Maryland business community and beyond.

Building on last year's issue and continuing to support our vision, this edition of the *Baltimore Business Review* discusses several different topics that encompass the perspectives of scholars, students, and practitioners. Each brings their own unique voice to discuss relevant issues.

In this issue, two articles illustrate the ways that Maryland businesses have coped with the COVID-19 pandemic, specifically exploring how entrepreneurs have been able to be fluid and adapt within the Greater Baltimore area and how PPP loans have been distributed from banks to different businesses in the counties across Maryland to help facilitate business development in these unchartered times. Further, this issue presents two collaborative works between faculty and students. First, we present a discussion about how the training of poll workers in the Maryland election system provided a model to help reduce cyber, physical, and insider threats to an organization's data and security. Second, an article examines how increased gender diversity on corporate boards has a positive financial impact for a firm's shareholders and presents implications for diversity and inclusion in the corporate board room. Finally, we present a survey from the student-run Towson University Investment Group that evaluates the knowledge of our students on investment decision making and risk management.

I would like to express my appreciation to everyone that contributed to this issue of the *Baltimore Business Review*. It is their time and effort that made this publication possible. We are delighted that you are joining us as readers, and as always, we look forward to hearing any feedback.

Best regards,

Shohreh A. Kaynama, Ph.D.
Dean, College of Business and Economics

Message from the President

CFA Society Baltimore

Dear Friends and Colleagues,

The past eighteen months have presented all of us with a variety of challenges and obstacles. Our thoughts are with those who have been, and those who continue to be, affected by the COVID-19 pandemic. My fellow board members and I wish you and your families well.

For many, including me personally, the pandemic has reminded us of what is truly important. Silver linings include less work-related travel and more time with my wife and two daughters, a more consistent schedule allowing for a regular exercise routine and, yes, the occasional Netflix binge. I hope you, too, have been able to find some positives in an otherwise challenging time.

Here at CFA Society Baltimore, we executed on virtual programming to continue to deliver member value. While we missed seeing everyone at The Center Club, virtual event turnout on average exceeded our historical in-person numbers. As we begin to return to in-person events with our membership and the broader Baltimore community, we will continue to offer options for those who prefer to join us virtually.

This year's Baltimore Business Review is the 13th edition and a continued hallmark of the society. We could not be prouder to partner with the Towson College of Business and Economics to deliver this publication again in 2022.

Many thanks are owed to Executive Director Robyn Osten for her tireless efforts and organization of all the society does, including this publication. Our editorial staff of Susan Weiner, alongside Qing Yan and Rachel Gordon from Towson University, collectively make this publication best-in-class. The design and detail orientation of Rick Pallansch and Chris Komisar from the Towson University Creative Services team is critical to bringing this project to life. Finally, thank you to all our authors and contributors. Your collective time and effort make this possible.

The CFA Society Baltimore originated in 1948 and serves over 750 members today. In a joint effort, the CFA Society Baltimore and its parent, the CFA Institute, work to promote and advocate the principles of the CFA program. The society proudly leads the investment community and other finance-related communities by promoting the highest standard of ethics, education, and professional excellence for the entire community's benefit. In this publication, you can see the list of the top 10 employers of our society's members.

I hope you enjoy this 13th edition of the *Baltimore Business Review*.

Dave Donahoo, CFA
President, CFA Society Baltimore

Top 10 Employers of CFA Society Baltimore Members

1. T. Rowe Price
2. Brown Advisory
3. Stifel Financial Corporation
4. PNC Financial
5. Morgan Stanley Smith Barney
6. Aegon
7. Wells Fargo
8. Adams Funds, Inc.
9. Franklin Templeton Investments
10. Legg Mason

Climate Change Will Radically Reshape the World You Live in

Matt Orsagh, CFA, CIPM
Senior Director, Capital Markets Policy, Americas, CFA Institute

Climate change is arguably the biggest problem ever faced by humanity. The good news is that we know what the solutions are. The bad news is that the solutions will require most people on earth to change how they live.

The physics behind climate change are simple. There has always been some carbon dioxide (CO_2) in our atmosphere. Throughout most of human history, that level has been in the range of 200 to 300 parts per million (ppm). That number sounds incredibly low, but because greenhouse gases trap heat and keep it from escaping back into space, relatively small increases can have a profound impact. Think of greenhouse gases in the atmosphere as a blanket warming the earth. The higher the concentration of greenhouse gases, the thicker that blanket becomes. In 2021, the atmosphere's average ppm is about 415, and it is rising at a rate of about 1 ppm to 2 ppm per year.

Physical Risks Are Largely Baked In, But Transition Risks Are Up to Us

Greenhouse gases (GHGs) trap heat in the atmosphere. The more GHGs we put into the atmosphere, the more heat they trap. This cycle raises the atmosphere's temperature, contributing to several follow-on problems.

A hotter planet means more drought, more famine, more extreme weather events, more property damage, and more dislocation of humanity than any of us have seen. We cannot know on what calendar date these disasters will arrive, but we can be confident that they will. The business community needs to incorporate these new realities into our analysis to help efficiently allocate capital in a world where the effects of climate change are increasing. Climate change will affect every company and every investor on earth.

Businesses need access to material data on climate change to make the most informed investment decisions possible. We need a robust market price on carbon emissions; we need timely, comparable, and audited data on material climate-related metrics; and we need to know how the companies we invest in are responding to climate change.

Estimates of the costs of climate change vary widely, but all contain bad news. If no action is taken to limit climate change, losses could be between $4 trillion and $20 trillion), according to a 2019 estimate by Sarah Breeden, then the Bank of England's executive director of international banks supervision.[1] The cost of adapting to climate change in developing countries could rise to between $280 billion to $500 billion per year by 2050, according to a recent United Nations Environment Programme report. Climate change could slash up to one-tenth of U.S. gross domestic product annually by 2100, according to the *Fourth National Climate Assessment*, published in 2018 by the U.S. Global Climate Change Research Program. That figure is more than double the losses of the Great Recession of 2008–2009.

Physical Risks/Transition Risks and Opportunities

A hotter world will increase heat stresses and coastal flooding due to more storm surges and rising sea levels from ice melting in the Arctic and Antarctic. This is already increasing the cost of insuring coastal areas as insurance companies change their rates every year, with dire implications for some coastal properties and homes with long-term financing.

Hotter oceans give hurricanes more power, and hotter air holds more moisture, creating stronger and more damaging hurricanes and thunderstorms.

The earth's oceans are actually larger carbon sinks—things that absorb more carbon than they release— than the trees and plant life that we usually think of as the main check against carbon dioxide in the atmosphere. This, however, leads to a warming ocean with higher acidity levels, which is a problem because about 40% of the world's population lives within 100 kilometers of the coast, and 4.3 billion people rely on fish for 15% of their animal protein.[2] Investors need to understand the impact of climate change on our oceans to grasp its impact on businesses that depend on the sea and what comes from it for their livelihoods.

Terrestrial food sources will also be challenged, as—if there is no change in current growing regions—weighted average yields are predicted to decrease by 30%–46% before the end of the century.[3]

These physical risks are well known because we see them in the headlines. But just as important are the transition risks that a reaction to climate change will bring. In the coming years and decades, whole industries will be transformed. Oil and gas, utilities, and transportation are the sectors that will be most affected, but no industry will be untouched by climate change.

As businesses, regulators, and policymakers react to climate change by moving to a low-carbon economy in the coming decades, that transition will have profound effects on businesses. It is important that businesses understand the changes coming, their relative timing, and the likely impact on their businesses, so they can plan for it. Businesses that fail to do so will be left at a severe disadvantage compared with companies that manage the transition well.

What Can Businesses Do?

Climate change isn't "coming." It is already here. "Hundred-year floods" are coming every 10 years, making flood maps based on historical weather patterns all but obsolete. Extreme heat is making droughts more extreme and longer-lasting, already stressing water resources in the western U.S. and increasing the number and severity of forest fires. But business and finance can only do so much. The real big lifting on climate change will take changes in behavior, which requires changes in incentives. Governments can set these incentives, so business and finance should work with policymakers to iron out what to do.

3 Recommendations for Action

1. Set a price on carbon—Adopting a price on carbon is essential for combating climate change, which must be supported by a transparent pricing mechanism that enables businesses to reliably incorporate carbon pricing into their analysis of investments' exposure to climate risk. CO_2 and other greenhouse gases in the atmosphere are negative externalities—effects that aren't priced into the cost of goods and services—that are not yet widely priced.

About 20% of global emissions are priced by some sort of carbon market. Europe, China, New Zealand, and others, including the east and west coasts of the U.S. operate under some kind of carbon pricing mechanism. But the reach of carbon markets needs to expand to eventually provide consumers and businesses with the incentive to move away from carbon. CO_2 and other greenhouse gases are a negative externality that needs to be priced to adequately address the negative effects of climate change.

It is important that policymakers ensure that regulatory frameworks for carbon markets are designed to deliver transparency, liquidity, ease of access for global market participants, and similar standards across jurisdictions, to underpin robust and reliable carbon pricing.

2. Include carbon price expectations in business strategy—A realistic market price on carbon will send a price signal that businesses and consumers need to properly value the externalities that come with greenhouse gas emissions. The externality of climate change has a cost, and that cost will be the future impact of climate change on our markets and society. Economists, investors, and policymakers who have studied the issue agree that a realistic price on carbon will allow markets to do the heaviest lifting in combating climate change.

3. Increase transparency and disclosure on climate metrics—Businesses should work with investors, policymakers, and stakeholders to settle on the metrics that matter when assessing a company's climate-change strategy. Investors, policymakers, and stakeholders often lack the data needed to make informed decisions on climate investment and policy. Businesses should work with these groups to determine what information (scope 1,2, and 3 emissions, for example) is needed to make the best policy and investment decisions around the issue of climate change.

Conclusion: Risks and Opportunities

The bad news is that climate change is one of the largest economic and societal challenges that mankind has ever faced. The good news is that we know the solutions to the problem. However, this will require changes to how we live, including the way we eat, farm, travel, do business, and invest. Addressing and adapting to climate change will be a cultural change for all of us, from the individual to the largest corporation. But those changes contain as much opportunity as they do risk. Those who can adapt best to the changing landscape and seize those opportunities will find the most benefit.

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[1] 2015 report from the Economist Intelligence Unit.
[2] Global Environment Facility, "Fisheries."
[3] Wolfram Schlenker and Michael J. Roberts, "Nonlinear Temperature Effects Indicate Severe Damages to U.S. Crop Yields under Climate Change," *Proceedings of the National Academy of Sciences* (15 September 2009).

Does it Pay to Have Women on Corporate Boards? Building a Business Case for Gender Diversity

Shaneeza Baksh
Major in Business Administration, Towson University

Nhung Hendy
Professor, Department of Management, Towson University

Introduction

Diversity, inclusion, and equity have received growing interest among executives and management researchers for at least two reasons. First, there is a business case for promoting diversity, inclusion, and equity in organizations including increased innovation, employee engagement, revenue, and profits (e.g., Bourke et al., 2017). Recently, a large-scale meta-analysis reported that gender diversity on corporate boards of directors was positively related to improved board decision-making, board attendance, and firm's financial performance (Halliday et al., 2021). Second, advancing diversity, inclusion, and equity is the right thing to do under the justice view of ethics as organizations move beyond legal compliance to avoid workplace discrimination (Noon, 2007).

Despite nearly six decades since the passage of the Civil Rights Act in 1964, the progress toward gender diversity, equity and inclusion in the U.S. corporate board rooms has been slow (Halliday et al., 2021). According to the latest data, in 2019, women held 22% of board seats in Russell 3000 companies (2020 Women on Boards, 2020) even when their participation in the workforce was more than 50% (Civilian Labor Force, 2021). One reason that might explain the lack of women on corporate boards is the structural deficit of female students majoring in finance or corporate finance as documented in at least one study using longitudinal data covering 2009 to 2018 undergraduate enrollment (Hawash, & Stephen, 2019). In addition, there was a decline in women serving as portfolio-managers, a typical role before being promoted to a corporate board member (Rogow, 2017).

To remedy the situation, in 2018, Women on Boards was signed into law in California to advance equal representation along gender line on corporate boards of publicly traded firms in California (CA Secretary of State, 2018). Specifically, one or two female directors would be required contingent upon the size of the publicly traded firm by the end of 2021. However, as of this writing, California is the only state in the U.S. that has mandated a gender quota on corporate boards and its impact on firm performance has yet to be established. In this study, we argued that having women on corporate boards is aligned with the view of managing stakeholder groups based on Freeman's (1984) stakeholder theory of strategic management. In contrast to Friedman's (1970) shareholder theory in which the sole responsibility of the firm is to maximize shareholders' return on investment, stakeholder theory views that both shareholders' value and stakeholders' value (e.g., employee satisfaction and productivity) can be achieved. An anecdotal evidence is given to illustrate the dualities of having both shareholders' and stakeholders' interests served by filling the gender gap on corporate boards. In 2018, T. Rowe Price, a Fortune 500 company headquartered in Baltimore, Maryland, voted to add a female director

Table 1. Regression analysis results of board gender diversity on firm performance (N = 100)

Variables	Model 1 (Return on equity)				Model 2 (Revenue per FTE)			
	β	t	p	R^2	β	t	p	R^2
Technology sector	-0.10	-0.77	0.44		-0.04	-0.33	0.74	
Health care sector	-0.11	-0.79	0.43		-0.05	-0.47	0.64	
Financial service sector	-0.12	-0.80	0.42		0.05	0.44	0.66	
Energy sector	-0.21	-1.52	0.13		0.48	4.45	0.00	
Communication sector	-0.14	-1.04	0.30		0.02	0.20	0.84	
Consumer Retail sector	-0.34	-2.48	0.01		-0.10	-0.94	0.34	
Utilities sector	-0.11	-0.81	0.42		0.02	0.22	0.82	
Basic materials sector	-0.20	-1.43	0.15		-0.04	-0.40	0.69	
Real Estate sector	-0.19	-1.41	0.16		0.46	4.28	0.00	
Firm size	-0.13	-1.17	0.24		-0.05	-0.60	0.55	
				0.08				0.40
Board Gender diversity	0.22	1.97	0.05	0.12	0.18	2.18	0.03	0.42

Figure 1. Shareholders' Return on Equity by Sector controlling for Firm Size

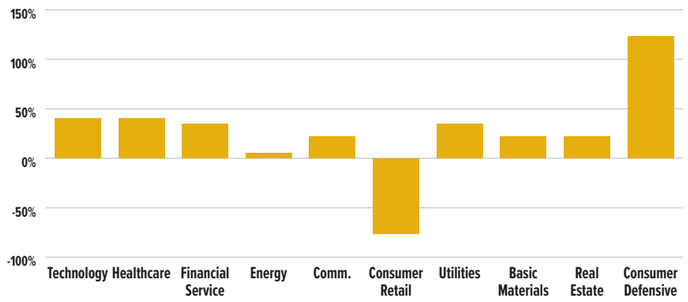
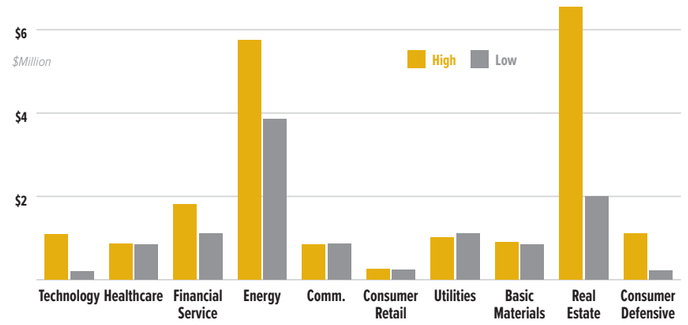


Figure 2. Revenue per FTE by Sector and Board Gender Diversity



to their Board of Directors, raising the number of female directors from three to four out of an eleven-member board size. Following this increase in board's gender diversity, they saw an increase in productivity, evidenced by a gain in revenue per FTE from $696,556 in 2017 (before) to $762,797 in 2019 (after) – a productivity gain of $66,241. In addition, shareholders also benefited from an increase in shareholder's return on equity from 27.15% to 31.67% - a gain of 4.52%.

Methodology

We conducted an empirical investigation to test Freeman's (1984) stakeholder theory. A stratified random sample of 100 companies with 10 each representing 10 sectors from the Standard & Poor 500 was included. The 10 sectors included were Basic Materials, Communication Services, Consumer Cyclical, Consumer Defensive, Energy, Financial Services, Healthcare, Real Estate, Technology, and Utilities. We used publicly available data including the firm's annual financial reports and proxy statements filed with the Securities and Exchange Commission to extract usable data for analysis. We restricted our analysis to 2019 data to control for the COVID-19 pandemic impact on the firm's performance. The number of women serving on corporate board by the end of 2019 was used as an indicator of gender diversity on corporate boards. Other variables including number of directors on the corporate board (board size), number of full-time equivalent employees of the firm (firm size) and the sector were used as control variables. In this study, corporate boards varied in size from 5 to 17 with a median of 11 directors. The number of women on corporate boards ranged from 1 to 7 with a median of 3 women directors. Outcome variables include shareholder's return on equity and revenue per full-time employees (FTEs). Nine dummy coded variables were created to represent the 10 sectors in all statistical analyses with consumer defensive as the reference sector. We used a median split of 27% of female representation (or 3 women) to create a dichotomous variable of gender diversity on corporate boards. Firms that have 27% or less of women serving as directors (47) were classified as low in gender diversity whereas firms that had more than 27% women (53) were classified as high in gender diversity on their corporate boards.

Results

We conducted two hierarchical regression analyses in which we regressed sector dummy variables and firm size onto shareholder's return on equity (ROE) in the first step, and gender diversity on boards in the second step, and found that firms that had 3 or more women on their corporate boards had an average gain of about $0.22 in ROE relative to firms having fewer than 3 women in their corporate boards after controlling for firm size and sector (See Table 1 and Figure 1). In addition, board's gender diversity explained 2% of incremental variance in shareholder's ROE.

Next, we performed the same hierarchical regression but this time, in the second step, we regressed gender diversity onto revenue per FTE. As shown in Table 1, board gender diversity had a positive and significant influence on firm's productivity after controlling for sector and firm size (= 0.18, $p < .05$). Converting this statistical finding into dollar terms, firms that had 3 or more women on their boards had more productive employees compared to firms with fewer women on their boards. On average, the firm's productivity gain was $414,469. Figure 2 shows a breakdown of gender diversity effect on firm's productivity by sector. Our findings provided support to Freeman's (1984) stakeholder theory such that having more women on corporate boards benefited both shareholders and employees, an important stakeholder group. In addition, the study findings provided support to viewing shareholders and stakeholders as interdependent and complementary, rather than opposing forces. Our findings can be explained by the differentiated perspectives between genders such as the feminine management style (Carter & Williams, 2003). Specifically, female directors were more likely to monitor executive decision making than male directors (Triana et al., 2013). In addition, female directors were more likely to encourage governance practices benefiting stakeholder groups (e.g., corporate social responsibility), rather than just shareholders (Halliday et al., 2021). Our study is not without limitations. First, the sample of firms included in the study was small, which may hinder the external validity of the study. Second, we only examined gender diversity and firm performance for one year period, rather than multi-year period. Therefore, a longitudinal study is needed in future research to further validate our findings. Third, future research should examine diversity on corporate boards in terms of the CEO's gender, age, and disabilities to be more inclusive.

Conclusions

This study provides data supporting that it pays to increase gender diversity on corporate boards in the U.S. Women directors can and will positively impact firm performance through increasing shareholder's value while at the same time benefiting employees, an important stakeholder group. As the sample of firms in this study includes several that are headquartered in Maryland, this study is relevant to our regional economic sustainable development because it raised awareness that there is a business case or a sustained competitive advantage for firms to advance equal gender representation in the corporate board room.

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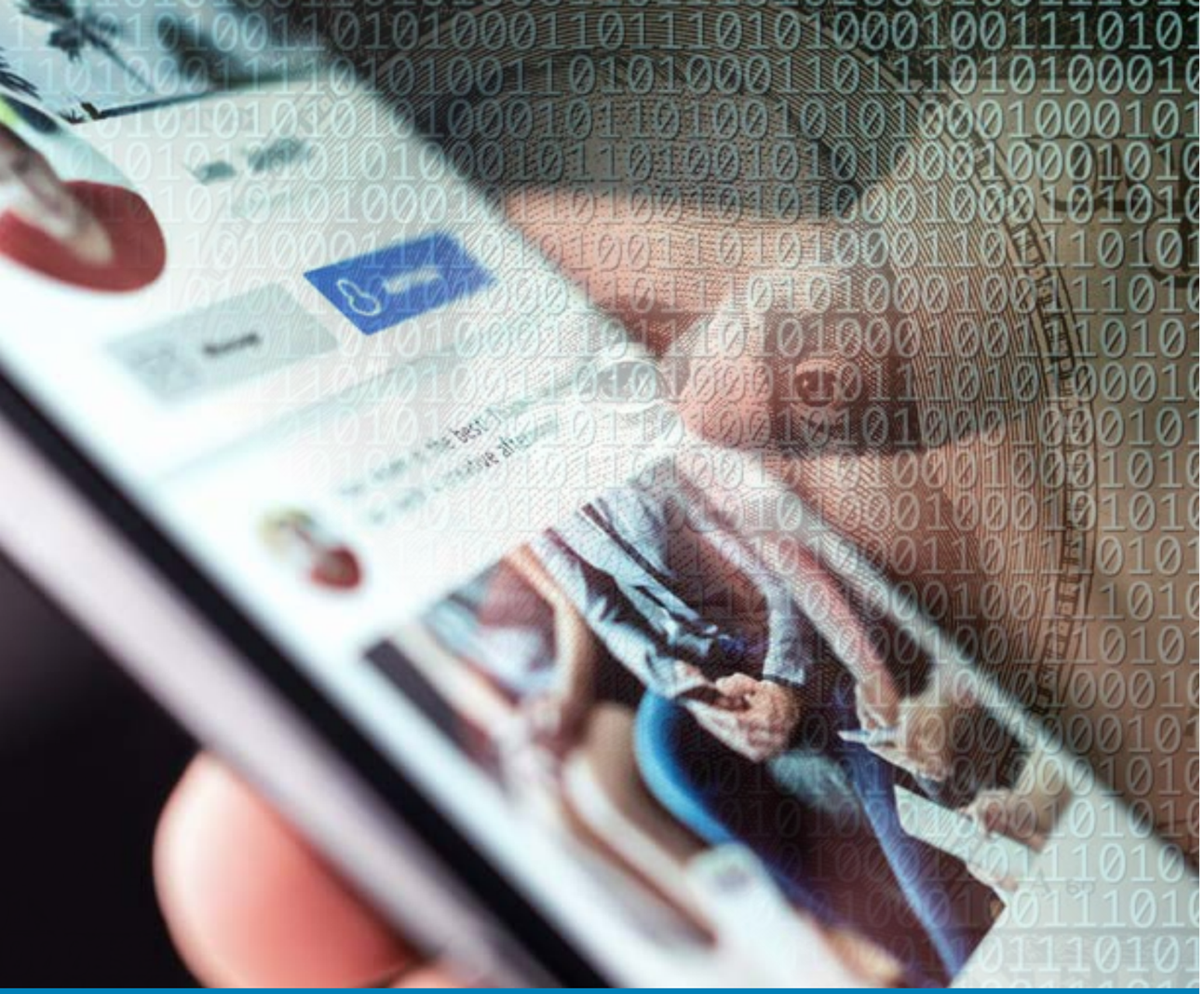


Taxing the Digital Economy
Maryland is the First U.S. State to Pass a Digital Advertising Tax

Nicola Daniel

Senior Advisor to the Center for Financial Policy at the University of Maryland's RH Smith School of Business

Reining in the darker side of big tech companies has been the battle cry of many economists, legislators, and data privacy experts for over a decade. Why? Because big tech's scale and global reach have evolved to the point where they undermine, if unintentionally, the foundation of free markets and democratic institutions with their market power and political advertising. Policymakers, including Nobel Prize-winning economist Paul Romer, think the U.S. needs to rewrite economic policy for the big tech era.

Romer's argument for taxing Facebook and similar companies rests on the fact that they drive their business through algorithms that increase user engagement and revenues by actively encouraging anger and disagreements, so they are manipulating users "in ways that they don't fully understand." This is not how markets usually work. As Romer explains, "When economists defend the market, we have this very simple idea in mind, where I as a buyer give something and get some good back." That doesn't happen in this new market for digital services, in which advertising becomes a "hidden method of capturing compensation for these firms."

Inspired by Paul Romer's op-ed on digital taxation in the *New York Times*, Maryland State Senate President Bill Ferguson pushed through the first digital advertising tax in the U.S. in February 2021. The tax runs up to 10% on revenues companies receive from selling digital ads that target Maryland IP addresses. It defines digital advertising as services delivered on any type of software, website, or application that a person can access on a device. These include banner advertising, search engine advertising, and other comparable advertising services. Such ads tailor content based on users' demographics and browsing history.

Firms with less than $100 million in annual global digital ad revenue are exempt from the Maryland tax. This high threshold is designed to target the largest internet companies, such as Google, Twitter, and Facebook, which account for roughly 59% of the $130 billion digital ad revenue market in the U.S., according to research firm eMarketer. The tax is projected to yield up to $250 million annually and was enacted just one week after legislators amended the state sales tax to include "digital products" and software as a service (SaaS).[1]

For Maryland small businesses, residents, and the state's budget, this tax makes sense, as it helps to level the playing field between digital behemoths and smaller companies. There are four core reasons legislators pushed the new digital advertising tax. First, a digital tax seeks to remedy the problem of jurisdictional tax arbitrage, which results from companies profiting from differences in systems of taxation. Second, it addresses the fact that generating profit from gargantuan data caches incentivizes companies to invade consumers' privacy in unprecedented ways. Third, it replaces tax revenues lost from other sources. Finally, it encourages healthy competition and punishes monopolies.

The Logic of Digital Advertising Taxes

1. Tax Arbitrage

A 2021 report from the U.S. Treasury notes that "although US companies are the most profitable in the world, the U.S. collects less in corporate tax revenues as a share of GDP than almost any advanced economy" at 1% of U.S. GDP versus 3.1% of Organization of Economic Cooperation and Development (OECD) country GDP. Regulators in Europe have been less forgiving of tax arbitrage than the U.S. In one case, Apple, the world's largest company by market capitalization, was presented with a $15.2 billion tax bill after the European Commission ruled that Apple's deal with Irish tax authorities constituted illegal state aid. The commission showed that the deal allowed Apple to pay a maximum tax rate of just 1%. In 2014, the tech firm paid tax at a rate of only 0.005%. The usual corporate tax rate in Ireland is 12.5%.

Google points out that its advertising sales do not take place in a specific country, but via an auction algorithm that is operated by algorithms whose physical location is undefined. Hence, online advertising should not be taxed by jurisdiction, according to Google's argument. The Maryland tax refutes this logic by linking advertising directly to the IP addresses of Maryland consumers. IP addresses are not a foolproof method of locational identification, as critics have argued. Nonetheless, digital ad taxes significantly curtail the ability for corporations to engage in jurisdictional tax arbitrage.

2. Data Privacy

A digital advertising tax recognizes that companies with massive data caches like Google, benefit financially from the volume of individual consumer data without economically compensating the data subject. The digital

[1] The new law defines a digital product as "a product that is obtained electronically by the buyer or delivered by means other than tangible storage media through the use of technology having electronic, digital, magnetic, wireless, optical, electromagnetic, or similar capabilities." The law also adds SaaS, subscriptions, streaming services and "digital codes" as taxable transactions.

Maryland's Digital Tax Structure

Firms are taxed based on their gross global revenues. The digital ad tax applies to the percentage of revenues directly derived from advertising to a Maryland IP if ad revenues exceed $1 million.

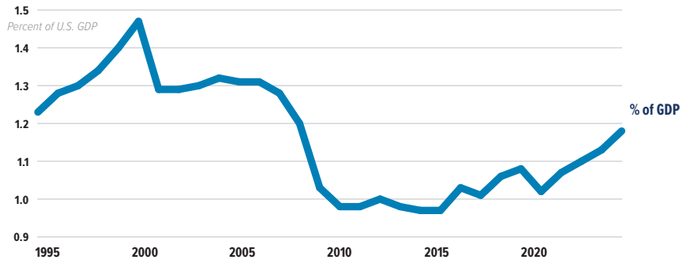
Tax rates:

- 0% for firms with annual gross revenues (AGR) less than $100 million
- 2.5% with > $100 million in global AGR
- 5% with > $1 billion in global AGR
- 7.5% with > $5 billion in global AGR
- 10% with > $15 billion in global AGR

A 2021 amendment prohibits companies from passing tax on to consumers and excludes certain media companies, like print newspapers.

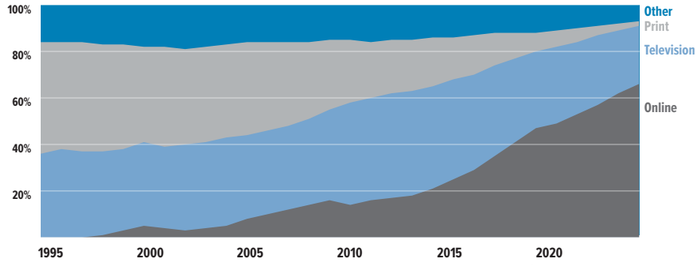
Source: KPMG.

Figure 1. United States Advertising Spending as a Percentage of GDP



Source: *Economist*

Figure 2. United States Advertising Spending by Medium (%)



Source: *Economist*

tax thus represents the interests of Maryland residents who provide that digital data.

Big tech's incursion into consumer privacy has been well-documented in books including *The Age of Surveillance Capitalism* and *An Ugly Truth*, a 2021 book describing Facebook's internal drift toward greater invasiveness based on the profit motive.

The digital tax also responds to the federal government's failure to regulate consumer data privacy. The European Union (EU) has strictly protected consumer data privacy since 2018 through the Global Data Privacy Regulation (GDPR).

In contrast, U.S. regulators ineffectively encouraged companies to self-regulate. When the Federal Trade Commission (FTC) fined Facebook $5 billion for the Cambridge Analytica data privacy breach in April 2019, Facebook's stock price soared because the fine was negligible compared to what regulators might have levied. Since then, Facebook broke its pledge to the FTC to keep barriers between its Instagram and WhatsApp applications, allowing it to glean more data on its users.

The GDPR grants consumers in Europe the right to obtain information about the data companies store on them, as well as the right to have their data deleted. More importantly, it grants individuals the right to sue firms. In 2020, Max Schrems, an Austrian lawyer, sued Facebook through the Irish Data Protection regulator and prevailed. This suit nullified the Privacy Shield agreement between the U.S. and the EU that allowed for data transfers between companies across the Atlantic, and it is forcing the U.S. to ensure better privacy measures for consumers. There are currently six data privacy laws proposed in Congress. Only two of them allow individuals the right to sue, whereas the other four require regulators to take offenders to court, suggesting less enforcement due to capacity constraints.

3. Replacing Lost Tax Revenue

Maryland needs to replace income lost by the shrinking of once-robust sources. For example, gas taxes, which were once a major source of state government revenue, have drastically fallen with increased electric vehicle use. COVID-19 worsened this trend as driving plummeted nationwide by 38% in the initial months of the pandemic. Maryland experienced a 6% decline in gas tax revenues in 2020. Overall, Maryland expects a $673 million tax revenue shortfall—3% of projected revenues—in 2021.

Meanwhile, online tech giants grabbed unprecedented market share as social distancing accelerated the shift toward digital platforms. Google's revenues grew by $20 billion to $181.9 billion in 2020. Its year-end net profits as of June 2021 stood at a staggering $122.73 billion. Similarly, Facebook's revenues grew by $15.4 billion to $86 billion in 2020, with net profits of $29.1 billion.

The annual $250 million projected tax revenue boost from the digital advertising tax goes a long way toward plugging Maryland's COVID-related shortfall while scarcely affecting the profit margins of digital giants.

4. Discouraging Monopoly

Finally, the digital tax provides incentives for healthy market competition from smaller companies because the more advertising revenue a firm collects, the higher its tax rate. If a firm splits itself, e.g., if Facebook were to spin off Instagram, the total tax bill for the two firms as separate entities would be smaller. These higher taxes for larger entities also discourage the kind of growth by acquisition that drives digital giants to acquire their potential competitors only to kill them.

Firms seeking to avoid the tax can opt for a subscription revenue model. Subscriptions conform to a more traditional economic framework in which consumers pay something to get access to something valuable and the balance of supply and demand determines the market price. *The New York Times*, for example, switched from an ad-only revenue stream to a subscription-driven revenue stream with resounding success. Today, *The New York Times* is financially healthy and dominates online news searches.

Global Digital Tax Trends

Will Maryland be joined by other states in imposing a digital tax? Or will it be isolated and face pressure that may force it to end this tax?

Maryland's digital ad tax is part of a much larger national and global trend. As of March 2021, 26 European countries imposed unilateral digital taxes on services like software subscriptions, video streaming, and audiobooks. They targeted firms that have many users in Europe and yet pay few taxes there. The U.S. protested, claiming that the policy would disproportionately affect U.S.-based tech companies.

The European taxes led to negotiations, spearheaded by the OECD and the EU, seeking to harmonize digital taxation. The OECD has led discussions among 137 jurisdictions to establish rules about where taxes should be paid and how profits should be allocated. Because U.S. firms are disproportionately affected by such taxes, U.S. regulators have increasingly participated in discussions. The negotiations have driven economic research that has led to a greater convergence of attitudes toward digital taxation between the U.S. and OECD countries.

Looking Ahead

Domestic legal challenges to Maryland's digital tax have surfaced. In February 2021, the U.S. Chamber of Commerce filed a suit against Maryland to challenge the digital advertising tax, arguing that it violates the federal Internet Tax Freedom Act. Other plaintiffs have followed. These challenges are likely to meet with some success and will require modifications to the existing law. As a result, the Maryland General Assembly passed an emergency bill to delay the digital tax's implementation to 2022. However, the U.S. Senate testimony of former Facebook employee Frances Haugen in October 2021 added fuel to the drive to take regulatory action against the larger digital platforms on multiple fronts and may well bolster the popularity of digital taxes. Many states—including Texas, West Virginia, Massachusetts, and New York—are following Maryland's lead in introducing digital tax legislation. The digital tax trend is not likely to abate soon.

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Securing Organizations from Within: Opportunities and Challenges with Insiders

Natalie M. Scala
Associate Professor & Graduate Program Director, Towson University

Josh Dehlinger
Professor, Towson University

Yeabsira Mezgebe
Research Assistant & Graduate Student, Towson University

Much attention has been paid to cyber, physical, and insider threats to an organization's data and security. Farahani, et al. (2016) in the *Baltimore Business Review* identify major cyber breaches of companies and organizations such as JP Morgan Chase, CareFirst Blue Cross Blue Shield, eBay, and Home Depot, and propose best practices to manage cyber risk. Since that article, insiders with malicious intent have received widespread attention, including major U.S. Government breaches driven by Chelsea Manning and Edward Snowden. Insider threats are related to human behavior and can range from simple mistakes made by system users to deliberate, malicious actions. A vast majority of insiders are altruistic and do not intend harm but may introduce risk through their mistakes or poor security behaviors.

Traditionally, the approach to managing organizational insiders—defined by the U.S. Cybersecurity and Infrastructure Security Agency as anyone who has access to an organization's network systems, data, or premises and also uses that access (CISA, 2021)—has been monitoring, surveillance, or other forms of supervision of the insiders' interactions and use of cyber systems. However, a new trend is emerging, where insider threats, which are considered a problem driven by users, shifts to a framing in terms of risk, which is instead driven by data (ARLIS, 2021). Considering insiders as threats is reactive, focusing on the protection and privacy of an organization's data, and is structured around activities such as securing email, web monitoring, and phishing attacks. However, considering an organization's insiders as potential *risks*, but not necessarily *threats*, acknowledges the fact that a vast majority of insiders are altruistic, shifting the organization's thinking to proactive by focusing on prevention by means of a centralized policy or process. In proactive insider risk management, the goal is to prevent data leaks and breaches before they occur, rather than reacting to what may have already happened.

The two approaches to insiders align with competing definitions of metrics. In cybersecurity, metrics are defined as best practices or predictive measures to manage or mitigate threat; however, in analytics, metrics are descriptive and focus only on the past and present (Scala and Goethals, 2020). These definitions generally align with the proactive/reactive approaches to managing insiders. The key is to consider the *level of risk* that an organization is willing to undertake as well as the amount they can bear. Levels of risk may not be consistent across organizations and may vary by the type/size of firm, operating environment, cyber maturity, nature or type of data to protect, etc. (Scala and Goethals, 2020; Black, et al., 2018). Corresponding metrics to define these polices are tough to develop but are of great interest in the cybersecurity community.

Behavior Intent as Metrics

Assessing insider behavior intent is one method of defining a metric for insider risk. The Security Behavior Intentions Scale (SeBIS), developed by Egelman and Peer (2015), is a validated inventory (Egelman, Harbach, and Peer, 2016) that is accepted by the usable security community to create characterizations based on the respondents' level of cyber and computer security knowledge and savvy. Questions in the SeBIS inventory focus on attitudes toward choosing passwords, securing devices, updating protocols, and proactive awareness (Egelman and Peer, 2015). Participants answer 16 questions on a five-point Likert scale. The SeBIS inventory measures participant intentions related to security and how those intentions may vary between individuals; it does not measure or predict actual behavior. However, organizations can interdict on employee intentions with the goal of poor approaches to security not becoming actions. The outcomes and actions taken after a SeBIS assessment of the workforce can empower insiders to become part of a security solution and not another source of risk.

Case Study: U.S. Elections Poll Workers

To illustrate the SeBIS inventory, consider poll workers in U.S. elections. Poll workers are part of the first line of defense in elections security; as such, they need to be aware of and vigilant to real-time issues that may occur and threats that may evolve on Election Day (Scala, et al., 2020). As elections are primarily one-day events in the U.S., they cannot be repeated or postponed. Consequently, the security and integrity of the votes must be maintained throughout the entire process. Poll workers need knowledge of voting threats to be empowered to mitigate and manage issues that may arise. However, across the U.S., poll workers do not necessarily receive threat training as part of election preparations.

Table 1: SeBIS Inventory Questions (Egelman and Peer, 2015), Means, and Standard Deviations for Poll Worker Population

	SeBIS Inventory Questions	Mean	Standard Deviation
Device Securement			
F1	I set my computer screen to automatically lock (i.e., sleep) if I don't use it for a prolonged period of time.	4.22	1.30
F2	I use a password/passcode to unlock my laptop or tablet.	4.49	1.17
F3	I manually lock my computer screen when I step away from it.	2.97	1.50
F4	I use a PIN or passcode to unlock my mobile phone.	4.21	1.50
Password Generation			
F5	I do not change my passwords, unless I have to.	2.69	1.10
F6	I use different passwords for different accounts that I have.	4.10	0.94
F7	When I create a new online account, I try to use a password that goes beyond the site's minimum requirements.	3.69	1.07
F8	I do not include special characters in my password if it's not required.	3.46	1.31
Proactive Awareness			
F9	When someone sends me a link, I open it without verifying where it goes.	4.30	0.93
F10	I know what website I'm visiting based on its look and feel, rather than by looking at the URL bar.	3.73	1.17
F11	I submit information to websites without first verifying that it will be sent securely (e.g., SSL, https, a lock icon).	4.20	1.06
F12	When browsing websites, I mouse over links to see where they go, before clicking them.	3.59	1.21
F13	If I discover a security problem, I continue what I was doing because I assume someone else will fix it.	4.59	0.76
Updating			
F14	When I'm prompted about a software update, I install it right away.	3.23	1.22
F15	I try to make sure that the programs I use are up-to-date.	4.07	0.89
F16	I verify that my anti-virus software has been regularly updating itself.	3.95	1.14

Questions F5, F8, F9, F10, F11, and F13 are negatively phrased in the SeBIS inventory, so the response scale was inverted for analysis.

Poll workers are trusted insiders to the voting process. They have access to voting systems, which the Department of Homeland Security classifies as critical infrastructure (DHS, 2020). This includes paper ballots, electronic voting cards, and all equipment used to administer an election. In Maryland, this includes optical scanning machines, electronic poll books, ballot marking devices, and provisional voting materials. Furthermore, poll workers are generally unsupervised while interacting with equipment and related ballots. Thousands of poll workers staff an election; Anne Arundel County alone had over 1,900 poll workers for the 2020 November General Election (Deville, 2020).

To deploy the SeBIS assessment, a data collection campaign from June through November 2020 targeted previous poll workers and/or those with intent to serve in the 2020 U.S. General Election and yielded 2,213 viable survey responses from 13 states. The target population was recruited via email campaigns, social media, and a postcard mailing; lists of poll workers for the email campaign and postcard mailing were obtained from county boards of elections and public records requests. To our knowledge, this is the largest set of collected SeBIS data responses of any population. Respondents were presented the SeBIS survey from Egelman and Peer (2015) in its entirety. Respondents were also screened to ensure they previously served as a poll worker or had intent to serve during the 2020 elections.

Table 1 presents the mean and standard deviation for each SeBIS question response amongst all respondents; the questions are numbered as they appear in the full original inventory. Note that SeBIS is scored on a 1-5 Likert Scale, with responses ranging from never (1) to always (5). Table 1 reflects that many poll workers reported positive security intentions with their own personal computing devices. Questions F5, F8, F9, F10, F11, and F13 are negatively phrased in the SeBIS inventory, so the response scale was inverted for analysis; these questions are denoted in bold in Table 1. A higher mean in Table 1 (closer to 5.00) implies stronger security behavior intentions amongst the respondents. It is also important to note that the standard deviations in Table 1 imply the existence of variability in security intentions amongst the respondents.

To further investigate the data, a Spearman rank-order correlation analysis was performed on the entire data set. Spearman's rank-order correlation was used to measure the strength and direction of the association between respondents' security intentions. Spearman rank-order correlation analysis assumes that participants were randomly selected; the selection of rank is independent; and the relationship of one rank with another is monotonic, which is appropriate for this dataset (Kraska-Miller, 2013).

Table 2: Spearman Correlation Matrix with *p*-values (Bold *p*-values Denote Significance at 0.05)

		F1	F2	F3	F4	F5	F6	F7	F8	F9	F10	F11	F12	F13	F14	F15	F16
F1	Correlation Coefficient	1.000															
	Two-tailed *p*-value	n/a															
F2	Correlation Coefficient	0.387	1.000														
	Two-tailed *p*-value	**0.000**	n/a														
F3	Correlation Coefficient	0.272	0.337	1.000													
	Two-tailed *p*-value	**0.000**	**0.000**	n/a													
F4	Correlation Coefficient	0.299	0.399	0.255	1.000												
	Two-tailed *p*-value	**0.000**	**0.000**	**0.000**	n/a												
F5	Correlation Coefficient	-0.032	-0.044	0.056	-0.024	1.000											
	Two-tailed *p*-value	0.136	**0.040**	**0.008**	0.255	n/a											
F6	Correlation Coefficient	0.159	0.14	0.172	0.083	0.109	1.000										
	Two-tailed *p*-value	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	n/a										
F7	Correlation Coefficient	0.22	0.177	0.266	0.129	0.11	0.411	1.000									
	Two-tailed *p*-value	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	n/a									
F8	Correlation Coefficient	0.095	0.125	0.119	0.078	0.2	0.132	0.264	1.000								
	Two-tailed *p*-value	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	n/a								
F9	Correlation Coefficient	0.107	0.087	0.181	0.058	0.114	0.196	0.204	0.174	1.000							
	Two-tailed *p*-value	**0.000**	**0.000**	**0.000**	**0.006**	**0.000**	**0.000**	**0.000**	**0.000**	n/a							
F10	Correlation Coefficient	0.09	0.056	0.161	0.056	0.109	0.158	0.188	0.171	0.356	1.000						
	Two-tailed *p*-value	**0.000**	**0.009**	**0.000**	**0.009**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	n/a						
F11	Correlation Coefficient	0.083	0.039	0.139	0.006	0.121	0.201	0.198	0.144	0.401	0.335	1.000					
	Two-tailed *p*-value	**0.000**	0.066	**0.000**	0.764	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	n/a					
F12	Correlation Coefficient	0.149	0.119	0.256	0.065	0.083	0.186	0.261	0.106	0.328	0.297	0.317	1.000				
	Two-tailed *p*-value	**0.000**	**0.000**	**0.000**	**0.002**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	n/a				
F13	Correlation Coefficient	0.054	0.057	0.101	-0.012	0.07	0.213	0.188	0.098	0.258	0.216	0.316	0.165	1.000			
	Two-tailed *p*-value	**0.010**	**0.007**	**0.000**	0.576	**0.001**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	n/a			
F14	Correlation Coefficient	0.119	0.124	0.057	0.144	0.024	0.116	0.101	0.032	-0.009	-0.005	-0.016	0.094	0.014	1.000		
	Two-tailed *p*-value	**0.000**	**0.000**	**0.007**	**0.000**	0.255	**0.000**	**0.000**	0.128	0.671	0.827	0.451	**0.000**	0.506	n/a		
F15	Correlation Coefficient	0.208	0.208	0.255	0.173	0.055	0.279	0.334	0.155	0.211	0.182	0.212	0.303	0.219	0.38	1.000	
	Two-tailed *p*-value	**0.000**	**0.000**	**0.000**	**0.000**	**0.010**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	n/a	
F16	Correlation Coefficient	0.137	0.107	0.2	0.051	0.095	0.3	0.302	0.105	0.219	0.186	0.286	0.313	0.279	0.18	0.539	1.000
	Two-tailed *p*-value	**0.000**	**0.000**	**0.000**	**0.016**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	n/a

Table 2 presents the Spearman rank-order correlation and corresponding *p*-values for the SeBIS inventory questions. A significant positive correlation implies that security intent either tends to increase or decrease in parallel between the pairwise survey questions or intentions being compared. A significant negative correlation implies that security intentions tend to move in opposite directions (i.e., one increases and one decreases) between the pairwise survey questions.

Implementing Behavior Intent Metrics

A correlation analysis alone does not identify actions to take or behavior intentions to consider for improving polling place security and reducing poll worker insider risk. However, to implement the insights from the correlation analysis, organizations should partner with their insiders and have them buy into becoming part of proactive mitigation solutions. Poll workers are generally altruistic insiders who are committed to their service; therefore, empowering them with the means to identify and mitigate risks and threats that may arise is critical. This includes building positive feedback loops into organizational culture that reward, instead of intimidate, for participation in the organization's security posture. Training is also a key component; Scala, et al. (2020) propose online learning modules for poll workers to

identify and mitigate potential threats that may arise at a polling place. That training, which was utilized in Anne Arundel County during the 2020 General Election (Deville, 2020), and statistically significantly increased poll worker threat awareness (Scala, et al., 2020), can be extended to include targeted correlated behavior intentions from the SeBIS inventory. Such improvements will create more robust insider risk training, directly addressing potential shortcomings in particular security intentions. Finally, security workarounds that employees may be using should be identified and mitigated by designing policies that support work efficiencies but also strong security-minded behaviors.

Even though this case study examined poll worker behavior intentions, the same approach can be applied when considering the cyber, physical, and insider security of supply chains. For example, if the organization is worried about data breaches, it can deploy the inventory and use highly-correlated SeBIS intentions to understand current employees' behavior intentions, followed by developing and/or adjusting policies, practices, and training accordingly to help prevent a breach.

An organization can also use SeBIS to gain insight on its data locality, data visibility, fraud prevention, and third-party risk. A related example is the March 2021 SolarWinds data breach. In early 2020, hackers secretly broke into SolarWinds and added malicious code to the software system (Jibilian, 2021). SolarWinds unwittingly sent out software updates to its customers that had the malicious codes, which created a backdoor to customers' IT systems. Then the hackers installed even more malicious codes that helped them spy on companies and organizations.

The need for organizations to develop a proactive security posture to protect the integrity of sensitive data and processes is essential to maintain public trust and organizational viability. Yet, many organizations focus solely on developing risk assessments and mitigations to protect from external actors; an organization intent on developing a strong security posture needs to additionally understand, assess, and train for risks that may arise from insiders.

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A Review of Agriculture and Conservation in Maryland

Vincent Anderson, CFA
Director, Equity Research, Stifel Financial Corp.

Laura Wood
Agriculture & Outreach Coordinator, ShoreRivers

Despite Maryland's population growing nearly 30% since 1990, with accompanying rapid development of residential areas, agriculture remains an important part of much of the state's local economy and culture. Within Maryland, the economic, cultural, and environmental impact of farming is perhaps no greater than on the Eastern Shore. Much of the state and its visitors may only give a passing glance to the swathes of corn and soybeans on their way to the iconic Chesapeake Bay or Atlantic shores. But despite the predominance of farmland, the Eastern Shore struggles to support its agricultural heritage amid volatile crop markets and pressure to protect the health of the Chesapeake Bay and its watersheds. Luckily, there are organizations that have risen to the challenge of preserving both the environment and Maryland's agriculture.

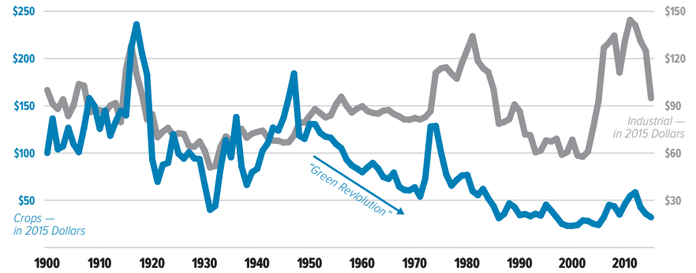
Global Row Crop Markets: A Historical Perspective

Historically, row crop prices have suffered from the deflationary impact of technological advancement in the form of steadily improving yields. Beginning with the postwar proliferation of chemical fertilizers and mechanized equipment, yields (crop output per unit of land area) in the U.S.—and elsewhere in the world—have largely outpaced demand growth. The result has been a decoupling of inflation-adjusted crop prices from traditional "industrial" commodities such as energy products, non-precious metals, etc. For perspective, the significant appreciation in energy and metals prices in response to the China-led commodity super-cycle of the 2000s contrasts with row crops' much more muted response (Figure 1).

Crop prices tend to be less sensitive than industrial commodities to economic cycles because demand is more stable, tracking population growth and household incomes. Given this, higher crop prices typically require a supply-side push, either from a decline in acreage (capacity) or yields (utilization). As with any large fixed cost base, profitability is heavily tied to the utilization of the fixed asset (land, equipment). So it is unsurprising that global crop yields have marched steadily higher for decades as farmers look to maximize the value of their operations (Figure 2). Knowledge of best practices; advances in farm machinery, soil testing, and crop monitoring; and new technologies in crop protection chemicals and seed genetics have all contributed to increasing output per acre. The result has been long inventory cycles, which slowly influence the growth in new acreage.

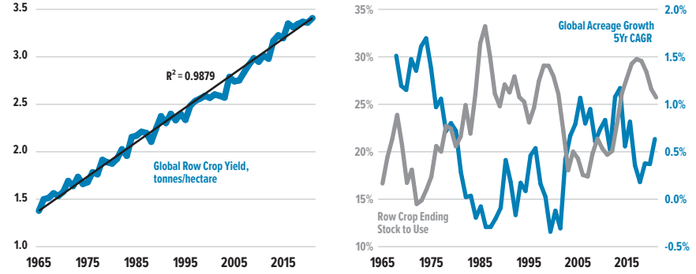
Figure 1. Prices of Industrial Commodities Versus Corn, Wheat, & Soybeans

Prices in real 2015 dollars



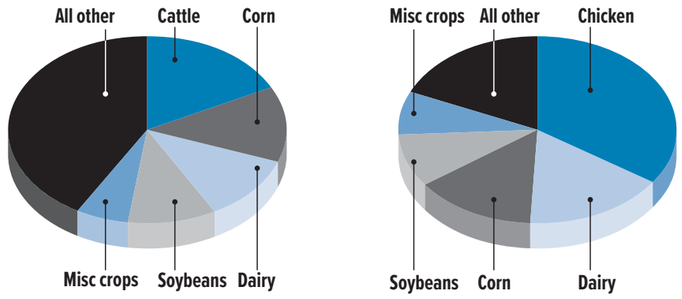
Source: Author's compilation of USGS, USDA, and US Census Bureau data; all prices are adjusted to real 2015 dollars and equally weighted in each index; "Industrial commodities" includes crude oil, iron ore, zinc, copper, coal, and cement.

Figure 2. Global Crop Yields and Row Crop Ending Stock/Global Acreage Growth



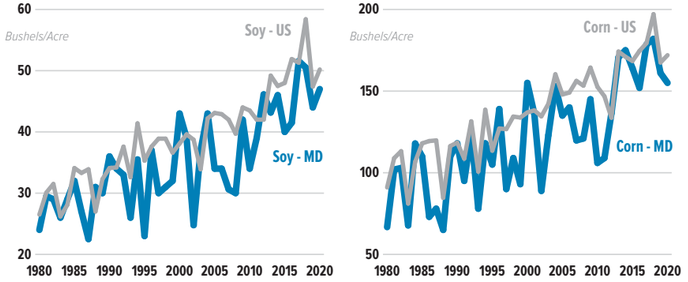
Source: USDA, Author's calculations

Figure 3. Agricultural Revenues by Source: Maryland vs. U.S.



Source: USDA

Figure 4. Soybean and Corn Yields for the U.S. Versus Maryland



Source: USDA

Maryland's Agricultural Economy at a Glance

Maryland's agricultural sector amounted to $2.2 billion—only 1.3% of the state's 2018 gross domestic product. However, the agricultural economy's health remains essential to the state's rural population because 82.6% of Maryland's more than 12,000 farm organizations are individual/family sole proprietorships. Of those, less than 25% generate more than $50,000 per year in revenue despite nearly 50% of the state's farm operators listing agriculture as their principal occupation.

A higher percentage of Maryland's rural population fails to complete at least high school (11.7% vs. 9.5% in urban areas). The rural population also experiences higher poverty rates (12.3% vs. 9.0% in urban areas) and a median income 13.4% lower than urban households and 33.5% lower income per job worked. Compared to national averages, Maryland's rural population comes out slightly ahead in areas such as income and education disparity. Some of the gap is potentially explained by the relatively higher population density of the state versus other rural communities, providing more opportunities for nonfarm income sources. Additionally, many farms in Maryland generate nonagricultural income via services such as hunting rights, horse boarding, etc. However, the data still underscores the challenges facing one of the state's higher-risk demographics.

The composition of Maryland's agricultural economy is unique. While row crops are generally its most visible representation, poultry (particularly chickens) is the state's largest source of agricultural revenues (Figure 3). With Perdue Farms' strong presence in the area incentivizing local production, poultry markets have offered a solid revenue source, diversified from row crops, and with good local demand. This supplement is important, given the comparatively low share of Maryland farmland dedicated to pastureland and high-value livestock/dairy operations.

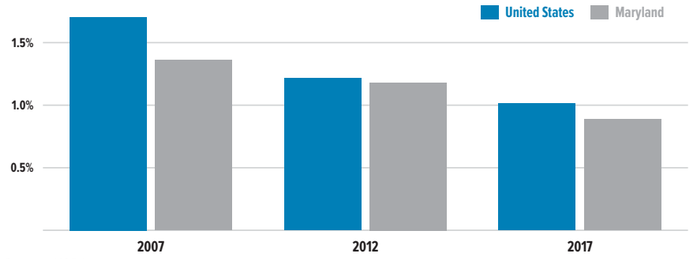
If farmers across the U.S. have faced economic challenges from a decade of low crop prices, how have Maryland farmers fared? Maryland farmers have shown remarkable resiliency when their average yields for the state's primary row crops, corn and soybeans, are compared to national averages (Figure 4). While naturally a smaller subset of geography will display greater volatility than the national average, particularly from weather disruption, on a whole Maryland has performed well over the past few decades, averaging just 10% lower yields on soybeans and 12% lower yields on corn since 1980.

This relatively strong performance has been achieved despite Maryland farmers operating an average farm size of just 160 acres versus the national average of 441 acres, greater distance from key supply chains (mainly the Mississippi and other tributary systems that connect much of our grain and fertilizer shipping to the "breadbasket" states). In Maryland, the average farm size has remained the same since 2007, while average farm size nationally has increased 5.5% from 2007–2017 (most recent available data). Consolidation has been a key theme and is important to owner-operated efforts to increase fixed-cost leverage, particularly on equipment, as farm rent values (a cost for non-owner operated farms) have remained stubbornly high despite lower crop prices. Maryland's geography—unlike the large open expanses of the Midwest—has likely contributed to its more fragmented operations. Moreover, its proximity to attractive Mid-Atlantic real estate markets has created competing nonagricultural bids for farmland.

Agriculture and Conservation: A Delicate Balance

Farming is a critical industry, given its role in feeding the masses. Accordingly, governments worldwide have worked throughout history to protect their domestic agriculture through subsidies and direct intervention in agriculture markets. In fact, so-called "bread riots" have long been a topic of discussion in political science and geopolitics, to the extent that rapid food price inflation has contributed to political upheaval. For example, some historians estimate that bread as a share of the average working-class citizen's daily wages rose over 30% in the run-up to the French Revolution. More recently, the Arab Spring uprising coincided with significant increases in food inflation that the government of Egypt, at the time, was unwilling to offset with increased subsidies. During China's African swine fever outbreak, which led to the deaths of over 50% of its swine herds, the government released strategic reserves of pork. This was partly due to pork's cultural significance, despite the shortage not carrying any material nutrition risks to the population. During the COVID-19 outbreak, global grain traders saw increased demand for basic agriculture commodities into areas that rely on imports to meet domestic caloric needs.

Figure 5. Percentage of Farmland in Conservation Programs—U.S. Versus Maryland



Source: USDA

Given both lagging farmer incomes and the political importance of food supplies, efforts to address real concerns over issues, such as water pollution, can struggle to gain traction. In some cases, these efforts compete indirectly with programs that seek to preserve land for agriculture by buying real estate development rights, keeping land that may otherwise be uncompetitive in agricultural production and providing little incentive for farmers to contribute capital to improve nutrient management and run-off controls. Partly as a result, official estimates of farmland in conservation programs, both in absolute terms and as a share of total farm acres, has declined, both nationally and in Maryland. However, nonprofits and corporations within the agriculture value chain continue to work toward alternative programs to reduce the environmental impact of farming.

Lessons in Farmer/Conservation Cooperation in Chesapeake Bay: ShoreRivers Example

The Chesapeake Bay is central to Maryland's identity and, for much of the state, its culture. This extends far inland, owing to the watershed's 150 major rivers and streams, totaling over 100,000 tributaries. Surrounding these tributaries on the Eastern Shore, farmers who have spent generations working the land and enjoying recreation on the bay are asked to make difficult decisions.

Runoff is a well-known issue in environmental conservation; rainfall carries waste and materials intended for land use into waterways where they become pollutants. Many are likely familiar with the Gulf of Mexico "dead zone," the disruption to Gulf Coast fishing and water quality from run-off flowing down the Mississippi River. Much of the Chesapeake's struggles with water quality in the main stem of the bay are attributed to run-off from the Susquehanna River. However, the Eastern Shore community is also facing the need—and an opportunity—to improve its waterways and their impact on the health of the Chesapeake. Organizations like ShoreRivers are working to educate and assist farmers in balancing the needs of the land with the needs of the local water system to address these challenges.

Farming and Conservation: Challenges

Plants are no different from other biological life in needing specific nutrients to grow and survive. However, growing crops requires a different timeline for nutrition than do human beings with their decadeslong lives. With row crops being planted, grown, and harvested in less than a calendar year, it is paramount that enough of the right nutrition is available to the plant at the right time to maximize yields. After over a decade of lagging crop prices, making changes to agricultural practices that serve any purpose other than to get maximum production out of the land can be difficult for farmers to accept.

On the Eastern Shore, the low-lying land, permeated throughout with tidal rivers, has often struggled with run-off of all kinds. The prevalence of agricultural land use there has placed much of the burden on farmers to address conservation needs. Convincing farmers of the crucial role they play in bay restoration can be difficult. Pollution comes from all sectors, and farmers can sometimes feel overly burdened with the task of improving local waterways. However, on the Eastern Shore, agriculture is the largest land-use sector for all of the rivers' watersheds. Therefore, agriculture has an undeniable impact on local waterways and an undeniable opportunity to improve water quality. Luckily, given the close cultural ties the local farming community has to the bay, and with the consistent efforts and science-driven approach of ShoreRivers, the nonprofit has been successful in working with agricultural stakeholders on these issues.

Farming and Conservation: Successes

ShoreRivers works to improve the health of Eastern Shore waterways through science-based advocacy, restoration, and education. The organization formed in 2017 via the merger of the Chester River Association, Midshore Riverkeeper Conservancy, and Sassafras River Association.

As of May 2021, the organization of roughly two dozen full-time employees had 186 projects (of which 130 are agricultural) that have diverted over 144,000 pounds of nitrogen; 17,500 pounds of phosphorus; and 5,000 tons of suspended solids (sediment) from the waterways. The group adapted quickly during the pandemic, growing its project base by over 40% from May 2019 to May 2021.

The organization relies on extensive testing and standardized water quality grading methods to foster confidence in its reporting. The transparency of regularly reporting successful practices and areas needing improvement lend credibility to its advocacy. In fact, many of the organization's projects are inbound requests. Its extensive testing and reporting of water quality along the region's river system have been pivotal in convincing locals that most of the local water quality issues originate from their own land use, rather than as an extension of the broader water quality conditions of the Chesapeake Bay.

ShoreRivers works to position itself as a partner to the agricultural community by providing technical support, such as offering engineering assistance when designing replacements for old, failing drainage systems to incorporate better run-off controls, and coordinating financial assistance, such as state and federal cost-share programs with grants and foundation funds to complete comprehensive projects that provide for buffer zones between crop land and waterways. ShoreRivers and farm partners are also investigating innovative financing mechanisms to help fund conservation through outcome-based approaches to leverage private investment. Employing this collaborative approach paired with innovative financing, along with its members' deep personal connections to the area, have helped drive its successes.

Looking Ahead

Farmer fortunes have taken a perhaps unexpected turn since the outbreak of the COVID-19 pandemic; while economics globally reeled from the impact of shutdowns, crop prices have risen markedly. Currently, corn and soybean prices are up over 40% compared with 2019 levels. Weather issues in Brazil, Eastern Europe, and China, recent changes to biofuel economics, and the pandemic's impact on the purchasing patterns of nations that rely heavily on imported crops have combined to push prices to levels not seen in years. For farmer incomes, this has clearly benefited bottom lines. For conservation efforts, it may require more adaptation. Higher farm incomes could increase the opportunity cost to farmers of placing marginal quality land into conservation programs, but may also spur farmers to invest in better run-off control infrastructure. Regardless of the direction of crop markets, organizations like ShoreRivers will continue to work to improve the quality of local water systems while preserving Maryland's agricultural industry and heritage.

Developing an Entrepreneurial Mindset: A Look into Female Entrepreneurs in the Greater Baltimore Region During COVID-19

R. Gabrielle Swab
Assistant Professor, Towson University, Department of Management

Jan Baum
Director and Professor of Entrepreneurship, Towson University, Department of Management

Lisa V. Byrd
Director of Events and Business Development, Lead Staff, Baltimore Women's Advisory Board, Greater Baltimore Committee

Jennifer Stano
Sr. HR Partner, Towson University, Office of Human Resources

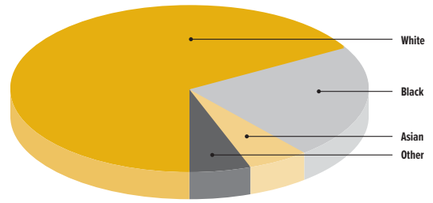
In 2020, the COVID-19 pandemic disrupted labor markets on a global scale, with employers and employees dealing with the short-term and long-term sudden and often severe consequences. Many shuffled to adjust to at-home work environments, while millions of others were less fortunate, being furloughed or faced with job loss. Subsequent pandemic-related research and studies focused on the macro level of national and global economies, while small business owners, entrepreneurs, and female entrepreneurs were largely neglected.

While the economic losses from the pandemic were huge, the pandemic specifically took a toll on the female workforce, with female job loss totaling 5.4 million compared to male job loss at 4.4 million (Ewing-Nelson, 2021; Ellingrud & Segel, 2021). While the years of 2020 and 2021 may be over, the pandemic and the significant financial insecurity many women and their families are facing are not (Boesch & Phadke, 2021). However, women and entrepreneurs create an interesting and unique context of individuals to consider during a time where both personal and professional changes are happening rapidly, and without much foresight into the future. Female small business owner Carla Nelson Chambers, founder of The Nelson Ideation Group, says, "as women, we can turn on a dime", and as "entrepreneurs, we have to do that anyway." She further clarified that "Women are able to make <those> changes very quickly because we are so used to, as women, figuring out what is the need for my family, for my friends, for me." Entrepreneurs and women alike have a unique mindset in creating ways to stay viable, whether it be for their business, or those around them (e.g., Ambepitiya, 2016; Patil & Deshpande, 2018).

In this regard, a discussion highlighting female entrepreneurs as a growing and erudite success story deserving attention in the pandemic conversation. They represent a group of emerging business leaders that can teach us as individuals, managers, or leaders survival skills in these unprecedented times.

To learn the valuable lessons female entrepreneurs have to offer, our research team partnered with the Greater Baltimore Committee (GBC) and its Baltimore Women's Advisory Board (BWAB). In doing so, we conducted a survey to investigate the impact of the pandemic on women in the workplace within the Greater Baltimore region. We had a final 433 male and female respondents

Figure 1. Ethnicity Identified by the Entrepreneurs

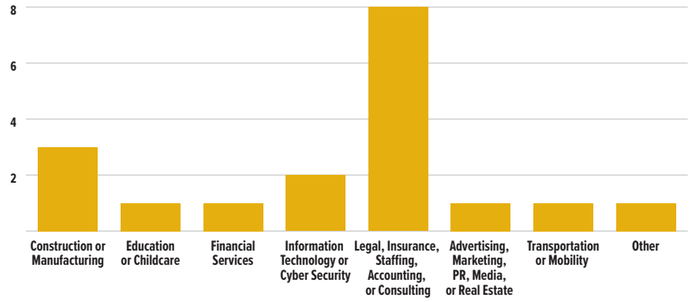


across a variety of industries and roles that completed a survey of questions ranging from organizational support, job satisfaction, stress, to discrimination. If individuals identified themselves as an entrepreneur, they were asked additional quantitative questions related to entrepreneurial identity and persistence, as well as qualitative questions regarding their business pre, during, and post pandemic. From the original 433 participants, we had 18 female entrepreneur respondents within the region that provided our team with both quantitative and qualitative data. Based on discussions and feedback from our sample, we have compiled a look into how this group is pivoting during the pandemic.

The Sample

Within our sample, we found a mix of entrepreneurs who had been in business over 20 years, down to those who had started their business within the year prior to the pandemic. Among the 18 female entrepreneurs, there was one in the 26-35 age group, four in the 36-45 age group, five between 46-55, five between 56-65, two 65 or older, and one did not disclose their age. The ethnic diversity of the entrepreneurs is reported in Figure 1, while the industry in which the sample identified with is in Figure 2.

Figure 2. Industry Identified by the Entrepreneurs



Lessons Learned from an Entrepreneurial Mindset

Entrepreneurs tend to have a more proactive personality, higher resilience, greater self-efficacy, and a more positive stress mindset, meaning they respond to challenges with motivation versus defeat (Li et al., 2020; Neneh, 2019). However, one does not have to be an entrepreneur, nor possess all of the aforementioned qualities, to develop an entrepreneurial mindset. Observations based on their responses provide insight into the mindset and unique ways entrepreneurs adapt to change and stay viable during adversity.

(1) Recognize when to Pivot

"We took immediate action in 2020 to be proactive around safe work practices, such as PPE and a combination of telework."

"The business did lose out on revenue due to the stay home order but I am now currently writing a book."

Entrepreneurs have an innate ability to recognize an opportunity (Kirzner 1973) and thus, a question surrounding entrepreneurship research is why entrepreneurs recognize opportunities that non-entrepreneurs fail to see (Dyer, Gregerson, & Christensen, 2008). Popular explanations for their unique opportunity recognition may include personality, cognitive, or social network differences. In turn, these thought processes are linked to one's perceptions of risk-taking, tolerance for ambiguity, or one's locus of control (meaning one's view on whether or not they have the ability to influence a situation) for example.

With feedback from our sample and with the support of other entrepreneurial research (Dyer et al., 2008), both entrepreneurs and organizational leaders recognize opportunities for innovation by frequently asking questions that may challenge the status quo. This includes questions regarding what the future may hold. Second, entrepreneurs can explore these questions and/or their environment by creating hypotheses and testing them along the way. Third, through the engagement of idea networking, they can test their hypotheses on a network of individuals with differing perspectives, thus learning from others as well. Finally, engaging in these processes leads to pattern recognition and thus, the discovery of new ideas.

(2) Increase Resilience

"I opted to use <a> business coaching program to stay connected to more people during the pandemic and it has been a wonderful thing both for learning online marketing gaps I knew I needed to fill and in helping to keep a vibrant tribe."

"I embarked upon my venture a few weeks prior to COVID. COVID made things a lot more difficult - specifically, acquiring financing, and solidifying client retention. COVID also put an additional strain on family income because it shut my spouse's business down for several months. However, it also gave my business somewhat of a competitive advantage because our skillset could manage virtual interpersonal relations better than many of our competitors."

Resilience is described as "The capacity of a system to survive, adapt and grow in the face of change and uncertainty" (Fiksel, 2006, p. 21). The COVID-19 pandemic not only disrupted the entire economy, but had a significant impact on peoples' personal and professional lives. It is within this context that the heightened levels of resilience often found in entrepreneurs (Bullough et al., 2014) allowed them to shift and reinvent (their businesses) during this time. For example, regardless of a positive, negative, or generally significant event - the interpretation, coping mechanisms, and other individual differences (e.g., resilience, stress mindset) of an entrepreneur influences the viability of their venture, and further, the long-term effects of their business. Events – such as the pandemic - also determines their view on needed resources, which largely influences their well-being and start-up persistence (Marshall, Meek, Swab, & Markin, 2020).

These heightened levels of resilience "maintain relatively stable, healthy levels of psychological and emotional functioning over time" (Corner, Singh, & Pavlovich, 2017, p. 688), though active steps can be taken to increase resilience. According to psychologist Susan Kobasa, resilience stems from first, viewing difficulty as a challenge rather than a paralyzing event, second, staying committed to your life and goals (this includes work as well as relationships, spiritual beliefs, etc.), and third, focusing on those events or situations that you have control over, which in turn leads to greater empowerment and confidence.

(3) Learn from the Past to Shine Light on Future Directions

"I have learned that remote work can be positive."

"I convinced my mom it would be a good idea to close down our showroom and strictly do online sales from our warehouse. This was one of the best decisions we've made and have seen a large increase in revenue since going to strictly online sales."

Both opportunity recognition and heightened resilience further allows for a greater ability to learn. Combining these mindsets and learning from the past increases the ability to cope with failure (Singh, Corner, & Pavlovich, 2007), along with the emotions and cognitive processing in which to do so (Byrne & Shepherd, 2015). Entrepreneurs perceive heightened learning, such as the ability to transfer knowledge from one venture to the next, when they first, choose to attribute the failure to internal causes and second, start a second venture quickly after failure (Yamakawa & Cardon, 2015). Therefore, reflecting on past controllable steps, combined with a rapid view on how to move forward, increases both learning and a look into ways to move forward.

Final Thoughts

Discussions on the mindset of entrepreneurs may not initially appear relevant to those in a large organization or in a corporate role. However, according to a study led by the Boston Consulting Group, one in three companies requires a turnaround, at any point in time. In this regard, organizations, and those entrepreneurs or leaders, must be frequently prepared for changes to their operations or strategies. We encourage these considerations in not only the pandemic, but also during general organizational change.

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Forecasting the 2022 Midterm Elections and Market Returns Under Different Political Regimes

Nicholas Sheppard, CFA
National Account Manager, T. Rowe Price

The 2020 election results are still fresh in the minds of many Americans, and they continue to be discussed or even contested (as in the Arizona "audit"). Election bills in Texas, Georgia, and other states are debated across the country, with a focus on voter access versus confidence in election results and their integrity. The simple civic duty of voting is now one of the most contentious topics in the country. Despite this, we are edging closer to the 2022 midterm elections, the results of which will likely determine the fate of President Biden.

In the meantime, some states are featuring hotly contested races, such as the Virginia and New Jersey gubernatorial races, in late 2021, as this article went to press. Is there anything we can glean from these very early off-cycle races to potentially predict control of the House of Representatives and Senate in 2022? This article examines three predictors of midterm election results and market returns under various political regimes: 1) off-year election results, 2) generic ballots, and 3) the presidential approval rating. The results of this midterm cycle will determine control of Congress and potentially Joe Biden's legacy as our 46th president.

Off-Year Elections in Virginia and New Jersey

Virginia and New Jersey feature off-year elections in 2021 that may have much broader implications for the 2022 midterm elections. In New Jersey, Democratic Governor Phil Murphy remains popular, with percentage approval ratings hovering in the mid-to-high 50s and an average nine-point lead in polls conducted since August 2021. Murphy is attempting to be the first incumbent Democrat in 44 years to be reelected governor of New Jersey.

Virginia faces a slightly more competitive race with Terry McAuliffe, former governor and chairman of the Democratic National Committee, taking on businessman Glenn Youngkin. Youngkin has committed a significant amount of his personal wealth to assist in his fundraising. The FiveThirtyEight.com polling average showed a lead of 3.3% for McAuliffe as of Sept. 30, 2021, but the race had narrowed over the several months since McAuliffe enjoyed a high single-digit lead. Could this race have even more predictive power than others?

Here's what Jim Newell said on Slate.com on September 28:

The Virginia governor's race has, historically, been one of the easiest races to forecast: The candidate from the party not controlling the White House would win. For 36 years beginning in 1977, the party that had lost the presidential race in the previous year won the governor's mansion. That streak broke in 2013, when McAuliffe defeated Ken Cuccinelli during Obama's second term in office, cementing the change in the commonwealth's perceived political character.[1]

Election Day 2021 could provide insights into more than just local politics in New Jersey and Virginia. Democratic wins in those states with margins similar to Joe Biden in 2020 would be positive for Democrats. If they win, but by smaller margins, this could signal a rightward shift in the electorate. If they lose either or both races, it will almost certainly be spun as a disaster heading into 2022.

Table 1: Political Party Change in Mid-term Election

Change between the president's party's average margin in generic-ballot polling on Sept. 16 of the year before the midterm election* and it's national House popular vote margin, in every midterm election from 1982-2018

Cycle	President	Early Generic-Ballot Margin	House Popular Vote Margin	Change For Pres. Party
1982	Republican	R+0.3	D+11.8	-12.1
1986	Republican	D+8.3	D+10.0	-1.6
1990	Republican	D+10.0	D+8.0	+2.0
1994	Democratic	D+2.0	R+6.8	-8.8
1998	Democratic	D+7.7	R+0.9	-8.5
2002	Republican	D+6.7	R+4.6	+11.3
2006	Republican	D+8.0	D+7.9	+0.1
2010	Democratic	D+2.9	R+6.6	-9.5
2014	Democratic	D+1.9	R+5.8	-7.6
2018	Republican	D+8.3	D+8.6	-0.3

*Using FiveThirtyEight's current generic-ballot polling average methodology applied retroactively.

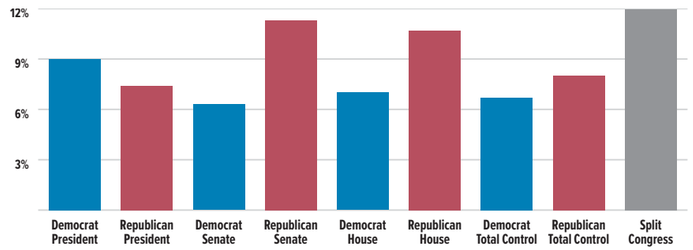
Sources: Polls, U.S. House of Representatives

Generic Ballot

The "generic ballot"—a poll question asking whether the respondent would vote for a Democrat or Republican for Congress—has historically been a reliable indicator of midterm election results.

Where do the results stand today? Let's take a look and dissect what they can mean for the future. As of the first release of FiveThirtyEight.com's generic ballot polling average in September 2021, the Democrats held a small lead, with Americans preferring Democrats over Republicans, 43.8% to 41.1%.

Figure 1. Average Annual Return Based on Political Party in Office (1946-2020)



However, early winning margins for the presidential party have often reversed, as the chart below shows. This leading indicator is not screaming a "red wave" for Republicans. However, if the trend continues, Democrats risk losing the House and potentially the Senate. Tack on the redistricting effort that is likely to benefit Republicans to the tune of as many as 10 seats from gerrymandering alone, and it's easy to see why some Democrats are beginning to ring the alarm bell.

Presidential Approval Rating

President Biden began January 2021 with strong approval ratings, but has suffered setbacks due to frustration with the ongoing COVID-19 pandemic, inflation (transient or not), the withdrawal from Afghanistan, and immigration issues at the southern border. According to FiveThirtyEight.com's presidential approval average, President Biden peaked at 55.1% approval in March 2021. As of late September, more Americans disapproved than approved of the job he's doing as president: 48.8% to 45.3%. In comparison, at this time of the year, President Trump's approval rating was 38.8% versus more than 52% for President Obama. Both of them experienced historic losses in Congress during their presidency's first midterm election, which does not bode well for the Democrats.

Market Returns Under Different Political Regimes

The good news for investors? Regardless of the party in charge or the split, the market has performed well under the scenarios shown in the chart below.[2] Split control—what some may call "partisan gridlock"—has resulted in the best returns for investors.

What mix of political control was best for stocks? Regardless of who held the White House, stocks performed best when political control of Congress was split, as in Scenario E above. Stocks returned a healthy average of 12.9% per year when the leadership of Congress was split between Democrats and Republicans, which has only happened 16% of the time.

Which Party Will Come Out Ahead?

Since the 1930s, the sitting president's party has picked up seats in the mid-term elections only three times—including 2002, 1998, and 1934. I do not expect 2022 to buck this trend. The country is deeply polarized, so I do not anticipate a monumental red wave similar to 2010 or 1994. However, early signs point to the Republican party being positioned to capitalize at least marginally on the "midterm curse" and take back control of the House. The Senate is more complicated because Republicans face several retirements and find themselves defending more seats in this cycle.

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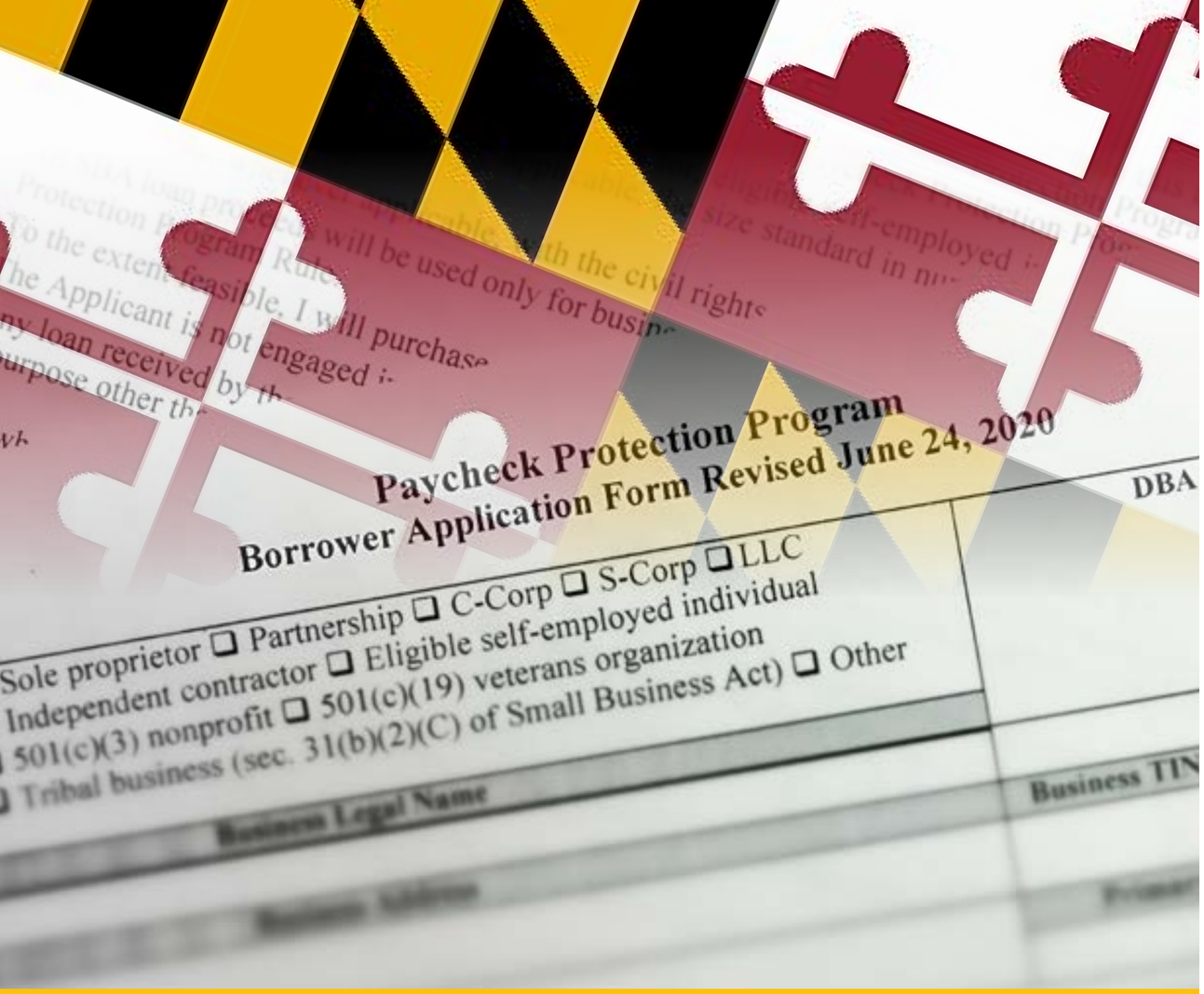


PPP Loans in Maryland

Michaël Dewally, Ph.D.
Professor in the Department of Finance at Towson University

Yingying Shao, Ph.D., CFA
Professor in the Department of Finance at Towson University

The Program

The COVID-19 pandemic disrupted our daily lives and interrupted business to such a large scale that many enterprises faced imminent failure. To protect the fabric of the American business landscape, the U.S. Congress swiftly passed the Coronavirus Aid, Relief, and Economic Security Act (CARES Act) on March 27, 2020. Among its provisions, the CARES Act allocated $953 billion to the Paycheck Protection Program (PPP). The PPP's purpose was to fund payroll costs for small businesses as well as interest on mortgages, rent, and utilities. Eligible businesses applied for the loans to private lenders. PPP loans have a provision of forgiveness for the amount of the loan spent on payroll to the extent that employees were kept or rehired. For issuing banks, the financial risks are minimal. The loans are forgivable and the sponsor is the Small Business Administration (SBA), an entity with which banks routinely work in assisting local enterprises. Additionally, the Office of the Comptroller of the Currency (OCC), the Board of Governors of the Federal Reserve System and the Federal Deposit Insurance Corporation (FDIC) recognized that PPP loans have no impact on regulatory capital because they bear no credit or market risks due to the government guarantees. PPP loans therefore only carry operational costs since they require additional loan officers to process applications, speed up lending and deal with exposure to new clients. This was an unprecedented effort.

The program proved swiftly successful. Businesses of all sizes applied for funding and some applied for a second draw for additional funding. The loans carry a one percent interest rate. As of the PPP Report through 9/12/2021, the program approved 11,496,362 loans nationwide for a total dollar amount of $792,753,837,209 funneled through 5,467 lenders. As the economy has recovered albeit at a slow pace, many businesses have initiated their application for forgiveness. The 6,739,872 applications for forgiveness represent 69.3% of the dollar borrowed and the SBA has approved 96.5% of these applications.

The Program in Maryland

COVID-19 Impact

To measure where PPP loans were disbursed in Maryland, we retrieve information on several aspects of the COVID-19 crisis. We collect data from Google, the Maryland Department of Labor and the SBA. From Google we collect information on Mobility[1] during the crisis, starting from the second quarter of 2020. Google's Community Mobility Report tracks how communities are moving around differently due to COVID-19. Due to different local responses to the crisis, the local interruption of business and economic activity varied across the nation and within states. Google's Mobility measures tracked "movement trends over time by geography across different categories of places such as retail and recreation, groceries and pharmacies, parks, transit stations, workplaces, and residential."

We select the Workplace mobility measure to represent how strict or loose the lockdown restrictions were at the local level and how these rules were followed. In Maryland, workplace mobility dropped an average of 29%, in line with the nationwide average. However, some areas saw drops in excess of 40% in Howard and Montgomery counties, and both Baltimore City and Baltimore County experienced drops of about 33%. In contrast, workplace mobility dropped the least in Worcester County with a decline of only 13%. We present these measures in Table 1. We see that the most affected areas are located in the Baltimore – Washington DC corridor while the counties most East and West were the least affected. These same counties experienced the lowest reported cases of COVID-19.

Declines in workplace mobility, however, combine the influences of both decreased employment and the ability to work remotely, the latter of which provides job security and protects employment during the pandemic. To know where unemployment spiked during the crisis, we collect unemployment rates across the state from the Maryland Department of Labor. We find that the unemployment rate was the highest in Worcester County (11.1%) followed by Baltimore City (8.9%) and Prince George's (8.5%) while St. Mary's County experienced the lowest unemployment rate (4.9%).

Table 1: COVID-19 Impact in Maryland

County	Workplace Mobility	Unemployment	PPP Amount ($ million)	PPP Percent
Allegany County	-23.0%	7.8%	$78.29	0.7%
Anne Arundel County	-34.3%	5.9%	$1,263.00	9.1%
Baltimore City	-33.7%	9.0%	$705.44	6.8%
Baltimore County	-32.5%	6.9%	$2,089.84	20.4%
Calvert County	-32.6%	5.3%	$69.45	0.6%
Caroline County	-20.3%	5.6%	$56.53	0.9%
Carroll County	-30.7%	5.1%	$107.10	0.8%
Cecil County	-26.8%	6.0%	$84.00	0.7%
Charles County	-35.9%	6.8%	$135.61	1.3%
Dorchester County	-17.8%	6.8%	$28.08	0.4%
Frederick County	-34.2%	6.0%	$448.66	3.3%
Garrett County	-20.6%	6.7%	$64.90	0.3%
Harford County	-30.1%	5.8%	$327.34	2.8%
Howard County	-40.9%	5.3%	$834.32	6.0%
Kent County	-20.9%	6.6%	$7.71	0.1%
Montgomery County	-40.4%	6.5%	$2,558.40	24.5%
Prince George's County	-35.1%	8.5%	$1,237.93	15.9%
Queen Anne's County	-24.6%	5.5%	$106.35	0.7%
Somerset County	-20.8%	8.4%	$14.11	0.2%
St. Mary's County	-32.1%	4.9%	$100.03	0.8%
Talbot County	-21.1%	6.2%	$100.18	0.5%
Washington County	-23.5%	6.8%	$205.32	1.2%
Wicomico County	-22.7%	7.5%	$175.42	1.2%
Worcester County	-12.5%	11.1%	$112.91	0.9%

PPP Location

Using the data from the SBA from August 2020, we track the first round of the PPP for funds that hit the coffers of Maryland businesses at the height of the crisis.

At the top of the list comes Montgomery county with $2.5 billion, followed by Baltimore City with $2.0 billion, Anne Arundel with $1.3 billion and Prince George's with $1.20 billion. In contrast, Kent County businesses only received $8 million from the program. We transform the information to show the percentage of PPP loans received in each county. Businesses in Montgomery County received 24.5% of all PPP dollars in Maryland, while businesses in Kent County received the least at 0.1%.

The evidence presented suggests that the distribution of PPP funds reconciled with the intention of the government initiatives. It was in those areas the most impacted by COVID-19 and the ensuing restrictions that PPP lending was the most in demand. The injection of rescuing funds no doubt have helped local businesses sustain their employment and provided financial securities to the workforce.

PPP Recipients

The SBA data is released in two sets: one for small loans under $150,000 and one for large loans in excess of $150,000 up to the limit of $10 million set by the program. The total amount a business can request cannot exceed 2.5 times the average monthly payroll costs for 2019.

In Maryland, under the $150,000 loan threshold, there were 168,981 loans approved for businesses that reported an average of 4 employees. This amounted to $4.8 billion in total loans and 664,764 jobs sustained by the program. There were also 18,918 large loans each exceeding $150,000, representing additional total loans of $10 billion. These larger businesses employed an average of 50 employees, for 944,595 additional employees supported by the program.

PPP Forgiveness

Of this total $14.8 billion, a full $7 billion, or 47%, had already been forgiven by September 2021. The forgiveness rate is larger for larger businesses (51%) than it is for smaller businesses (40%). This difference reflects the burden the early forgiveness application process placed on smaller businesses. The SBA adjusted its forgiveness application to facilitate the sharing of information between the borrower, the lender and the SBA itself.

PPP Lenders

There have been multiple runs of PPP loan issuance since its first launch. As much as the nation saw the entire financial sector participate in the program to help funnel funds where needs were, so did Maryland. The SBA records 768 different nation-wide lenders issuing loans to Maryland businesses, from 1st Choice Credit Union in Atlanta, Georgia to Zions Bank in Salt Lake City, Utah.

Table 2 records the list of the top ten lending banks to smaller businesses in Maryland, providing loans under $150,000, throughout the entire PPP including 2021. The list shows banks ranging far and wide from some of the largest banks in the country (M&T Bank, Bank of America, PNC, and Wells Fargo) to smaller banks active during the PPP rollout. For example, Prestamos, a Community Development Financial Institution (CDFI) out of Arizona and the lending division of Chicanos Por La Causa, a Community Development Corporation (CDC), approved, just in 2021, 494,415 PPP loans for a total $7.7 billion nationwide. In Maryland, Prestamos approved $134 million to small businesses. The only bank locally headquartered in Maryland in the top ten list is Sandy Spring Bank.

Table 2: Major issuers of PPP loans under the $150,000 threshold

Lender	State	PPP Amount ($ million)
M&T Bank	NY	$507.11
Bank of America	NC	$458.28
PNC Bank	DE	$298.32
Truist Bank	NC	$276.28
Cross River Bank	NJ	$246.16
Sandy Spring Bank	MD	$217.38
Harvest Small Business Finance	CA	$142.34
Prestamos CDFI	AZ	$134.56
Wells Fargo	SD	$115.58
Customers Bank	PA	$110.61

Table 3: Major issuers of PPP loans exceeding the $150,000 threshold

Lender	State	PPP Amount ($ million)
M&T Bank	NY	$1,605.21
Truist Bank	NC	$1,160.42
Sandy Spring Bank	MD	$953.00
PNC Bank	DE	$743.38
Bank of America	NC	$566.61
FNB of Pennsylvania	PA	$320.92
Fulton Bank	PA	$280.83
Howard Bank	MD	$237.87
WesBanco Bank	WV	$226.41
EagleBank	MD	$172.39

The top ten lenders to larger businesses in Maryland are listed in Table 3. Some institutions appear to carry the same role in actively underwriting the PPP loans. M&T Bank leads their peers again and we see that for all Maryland businesses, M&T Bank issued in total over $2 billion in PPP funding while Sandy Spring Bank provided over $1.1 billion in PPP loans. Research by Li and Strahan (2021)[2] shows that, despite their lack of credit risk, banks were more likely to issue PPP loans to businesses with whom they had prior experience, meaning PPP loans were issued to businesses with an established relationship with the issuing bank. Their findings suggest "a new benefit of bank relationships: [..] access [to] government-subsidized lending." In Table 3, we find more regional lenders and larger loan issuance, compared to the list in Table 2. This is in line with Li and Strahan's findings on the importance of relationship lending.

Focusing on the largest lenders obfuscates other strong supporters like Harbor Bank, as reported in The Baltimore Sun in August 2021[3]. Harbor Bank opened for business in 1982 and has since raised its assets from $2 million to $321 million in 2020. During the crisis, in Maryland alone, Harbor Bank provided over $46 million in PPP loans, or over 14% of its assets. Harbor issued 426 loans under $150,000 for $13.4 million, and an additional 70 loans over $150,000 for $32.7 million. The Sun article reports that Harbor Bank tasked its "employees [to go] out of their way to help qualified business owners, regardless of whether they were Harbor Bank customers." Li and Strahan (2021) report that "bank PPP supply [..] alleviates increases in unemployment." The combined efforts of Harbor Bank, other Maryland lenders and out of state lenders allowed Marylanders to retain their employment during the crisis and prepared Maryland for a speedier recovery.

References

[1] https://www.google.com/covid19/mobility/

[2] Li, L. and P.E. Strahan (2021). Who supplies PPP Loans (and does it matter)? Banks, relationships and the COVID Crisis. *Journal of Financial and Quantitative Analysis* Accepted manuscript.

[3] A go-to resource during the pandemic - Maryland's only Black-owned and -managed commercial bank stepped up – Newsmaker, August 3, 2021, Sun, The (Baltimore, MD), Billy Jean Louis, p. 3.

Towson University Students post-pandemic outlook on Investing

Milan Pandey
President of TUIG, Majoring in Finance

Aleksandr Olshansky
Portfolio Manager of TUIG, Majoring in Finance

Jordan Le
Director of Communications of TUIG, Majoring in Accounting and Finance

Daniel Morales
Assistant Portfolio Manager of TUIG, Majoring in Finance

Nicholas Norman
Majoring in Finance

Introduction

The Towson University Investment Group (TUIG) surveyed the extent to which Towson University students know about investing and decision making. We started our survey with gathering data from our target demographic audience about general investing knowledge, followed by investment decisions and risk tolerance. In total, we had 38 respondents. We sought to evaluate students' knowledge of investment decisions, risk management, time-horizon, and used major and college-specific segmentation of respondents to segment our data. With the existing macroeconomic backdrop currently stands - new investing precedents, an influx in new investors, and new economic boundaries, the survey gave us good insight into how college students are proceeding with their decision-making. Key questions in the survey included: What are your financial priorities after graduation? With $100,000 to invest, how would you allocate your money? What percentage of your portfolio would you allocate to cash? If you were to invest in equities, what sectors would you focus on?

Towson University is composed of the following colleges: College of Business & Economics (CBE), College of Health Professions (CHP), Jess & Mildred Fisher College of Science & Mathematics (FCSM), College of Liberal Arts (CLA), College of Fine Arts & Communication (COFAC), and College of Education (COE).We questioned the students throughout the entire University to involve a variety of answers and conducted the survey in October 2021. The results helped us conclude how Towson University students approach investing with respect to their asset allocation, sector and stock diversification along with their specific risk tolerance and time horizon.

Participant Background

The demographics data from our respondents indicate that 67.6% are male. In terms of ethnic distribution, 56.8% of the respondents were White, 16.2% were Hispanic or Latino, 10.8% for Black or African American, 10.8% for Asian/Pacific Islander, and the remainder being distributed between Middle Eastern and Asian and Black. Again, we saw a more significant skew towards Juniors and Seniors, with 43.2% Juniors and 27% Seniors. As for respondents' employment, 48.6% are employed for wages either salaried or paid by the hour, 21.6% do not actively work, 10.8% are interning, and 10.8% are out of work but looking for a job. A majority of the survey participants were from the College of Business & Economics, consisting of 22 students from the CBE college, with a majority pursuing a Finance Major. The average GPA for respondents was 3.32, with a range between 2.1 and 3.9.

$100,000 Student Portfolio

TUIG conducted a research survey that asked participating students how they would allocate their money if they had $100,000 and what percentage of their portfolio would you allocate to cash, the time horizon, investment objective, and your risk tolerance. The survey also asked what specific stocks, crypto, and sectors students would invest in. Roughly 75% of student respondents said they would diversify their portfolio into various sectors. This approach aligns with the TUIG portfolio as we aim to allocate in all 11 sectors like the S&P 500 index. The remainder of the students would allocate their money into Growth and Real Estate.

Regarding the cash position within their portfolio, 50% of students would allocate 10-25% to cash, 25% said they would allocate 0-10% cash, and 22.2% of students said they would allocate 25-50% of the cash. Overall, students are more likely to keep a more significant cash position (10-25%) than the TUIG portfolio of 8% due to the high fluctuations in the market and the increase in volatility of asset prices. Students' responses have shown they are more concerned with long-term investing than short-term; 45.7% of respondents said their time horizon is more than ten years, and 28.6% with a 2-5 year time horizon. This aligns with their overall investment objective of growth (75% of respondents), and 19.4% wanted a source of income. Low-risk and medium-risk responses both pulled in 46.2%, with 7.7% voting for high-risk. Students aim for growth in their portfolio, have a long-term horizon, and lower their risk by diversifying in different sectors within the market.

Figure 1: Stock Response

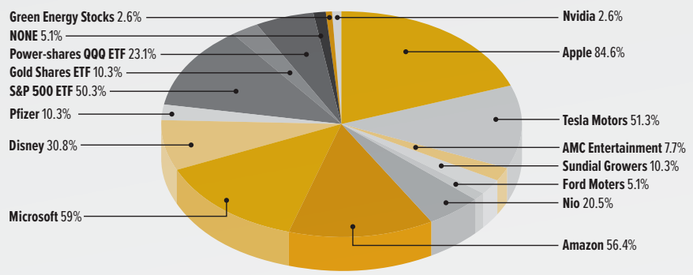


Figure 2: Crypto Response

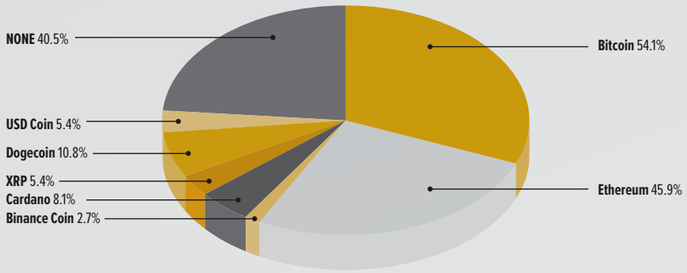
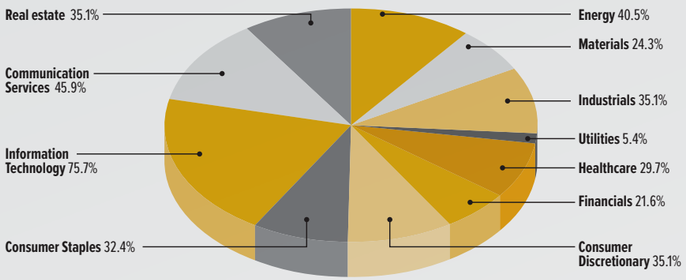


Figure 3: Sector Interest



Major Holdings

The top 5 holdings from the 2021 survey are Tesla and the S&P 500 ETF ($SPY), coming in with 50% of the participants selecting these stocks, Amazon (55.3%), Microsoft (57.9%), and Apple (84.2%). The most significant differences within the top 5 holdings from this year and last year 2020 would be the absence of Google and Disney and the addition of Tesla and the S&P 500 ETF. This could be because 46.2% of the respondents indicated that they have a lower risk tolerance, and one of the best ways to mitigate risk is by diversifying their money in the S&P 500 ETF. Tesla has also become a new favorite among investors, especially with its recent performance in the stock market and future outlook. Over the past year (October 25, 2020 - October 25, 2021), Tesla has gone up 143.85% from $420.28 to $1024.86 compared to Apple, which has gone up only 29.23% from $115.05 to $148.67, and Disney, which has seen a 38.30% from $124.06 to $171.57.

Cryptocurrency

In recent years, cryptocurrency has gained popularity within the investment community as a potential area for profit. Bitcoin, the top cryptocurrency, hit a record high of $66,974 on October 20, 2021, thus moving the rest of the crypto market higher because most cryptocurrencies follow the same patterns as Bitcoin. In this year's survey, we asked the respondents, "if they were to choose to invest in crypto currency, please specify which crypto currency you would invest in?" and the top 5 responses were Bitcoin (52.8%), Ethereum (44.4%), None (41.7%), Cardano (8.3%), and Dogecoin (8.3%). Many investors do not understand cryptocurrency and do not see it as a possible investment. 41.7% of respondents claim they would stick to equities and other investments that they understand better. This could be one of the reasons for such a high response rate to not investing in crypto at all. Those who understand crypto tend to lean on the more prominent cryptocurrencies like Bitcoin and Ethereum, as they are usually the movers of the crypto market.

Many students are risk-averse and chose no investment in crypto in order to preserve capital and have an adequate annual return for their investments given their longer term horizon. The top picks for specific stock holdings are blue-chips and in the S&P 500, which have a historic performance of 10% annually.

Sectors

During 2020 with COVID-19 and the supply chain crisis, many sectors suffered. The Consumer Cyclical sector (Auto Manufacturer, restaurants) was suffering amid the global quarantine. Many people saved money throughout the 2020 recession, and many companies in this industry lost revenue. Another industry that took heavy battering was the Industrial sector (Airline industry). Following the quarantine and foreign and domestic travel restrictions, the Airline Industry stocks saw severe decreases. In February 2020, shares of Delta Air Lines were worth $58.90; In March, shares dropped to $21.35. Investors suffered significant losses, and many investors transitioned to long-term investing.

Following the 2020 market crash, the method of investing changed for many. When Towson University students were asked, "When investing in the stock market, which sectors interest you the most?" We surveyed that most hypothetical investments were dominated by the information technology (75%) and communication services (44.4%) sectors. With information technology being one of the fastest-growing industries and most essential assets in most businesses, many investors are attracted to the potential growth/innovation and low volatility the future holds. During COVID-19, technology saw a benefit from the pandemic. According to Morningstar, "the US Technology index was up 47.5% in 2020." Many technology investors gained profits through hardship. This sparked interest for many investors. Communication also received significant increases due to the quarantine and heavy reliance on advertising demand on these platforms. Companies such as Facebook and Google did not suffer during COVID-19 compared to others. In conclusion, it can be observed that Towson University students prefer investing in IT and Communication because of the long-term potential in both sectors.

Student Investing Experience and Knowledge

Of our samples, a simple question was asked: do you invest your money? A surprising 60.52% of respondents say they do, while the remaining 34.21% do not, and the last 5.26% possibly support. It indicates that more than half of the respondents are on the right track to retire in the future; starting at an early age puts them ahead of the curve. When asked about their investment experience from no investment experience to expert knowledge, 44.73% are intermediate, 34.21% are beginners, and 21.05% have no experience. Indicating that most participants have an idea of what they are doing and that they are responsible with their money, one can invest money anywhere, but if no knowledge is known about a particular field, losses can occur; this is why many people seek professional guidance, to achieve their financial and personal goals. When asked if they would seek a financial advisor, 42.10% were not sure, 36.84% would not, and the rest of the participants, 21.05%, would. That is a small percentage that would seek professional advice, which means most of the respondents are pretty confident in reaching their financial goals in life. While confidence is essential in life, there is also a tendency for people to overestimate their abilities, which is very common. To avoid such biases, investors must do their due diligence, in which case research and proper preparations must be done.

Sources

https://www.morningstar.com/articles/1026616/these-sectors-performed-best-and-worst-in-the-pandemic

TOWSON UNIVERSITY

Towson University Investment Group Disclosure:

TUIG is a student run organization that was created as a forum for highly driven, like minded students to gain real-world experience through quantitative and qualitative research. We offer students a professional environment to discuss, learn, and connect with real-world financial experiences. TUIG maintains professional relationships with a widespread network of integrated local Maryland businesses in order to provide members with the opportunity to create interpersonal relationships with mentors and potential future employers.

CFA Society Baltimore

TOWSON UNIVERSITY

Contributors

VINCENT ANDERSON, CFA joined Stifel Equity Research in 2013. Based out of the Baltimore office, Mr. Anderson is a Director covering the Materials sector, with a focus in Chemicals and Agriculture. Before joining Stifel, Mr. Anderson was a senior capital markets analyst for NewDay USA, a mortgage originator. Mr. Anderson is a graduate of the Rensselaer Polytechnic Institute Lally School of Management, with concentrations in Financial Engineering and Economics, and holds a Chartered Financial Analyst designation.

SHANEEZA BAKSH received her B.S. in Business Administration with a concentration in Human Resource Management from Towson University in Towson, MD in May 2021. She is currently a gaming video creator and specializes in the competitive gaming scene for Call of Duty. She currently lives in Woodlawn, MD.

JAN BAUM is Professor and Faculty Director for Entrepreneurship@TU. Baum founded and directed the Center for Innovation + Entrepreneurship at Towson University from 2015-2021, the hub of entrepreneurial activity at TU, to nurture and develop entrepreneurial talent and create an entrepreneurial ethos across the university, and establishing TU as a heartbeat for innovation and entrepreneurship. Baum is a passionate expert on innovation, change, and leadership and a serial entrepreneur. Baum founded and directed 3D Maryland a state-wide leadership initiative for 3D printing and additive manufacturing after establishing the first comprehensive digital fabrication lab in the University System of Maryland in 2011. Baum's awards include: The Baltimore Sun's 25 Women to Watch in 2016, The Daily Record's Influential Marylanders 2014, The Daily Record's Innovator of the Year 2013, 2014.

LISA V. BYRD is the Director of Special Events and Business Development for the Greater Baltimore Committee (GBC). She received her undergraduate degree in Political Science from Frostburg State University and Masters of Management from the College of Notre Dame (now Notre Dame of Maryland University). She then earned a certificate in Event Management from The George Washington University School of Business. She currently manages all events for the GBC and serves as the staff liaison to the Baltimore Women's Advisory Board who commissioned the Impact of Covid-19 on women in the workplace in the Greater Baltimore region research project.

NICOLA DANIEL is Senior Advisor to the Center for Financial Policy at the University of Maryland's RH Smith School of Business. She joined the Smith School in 2013 and has been instrumental in designing and executing student experiential learning projects with employers. She has co-taught graduate finance students a popular experiential learning module on short-selling with portfolio managers from Invesco Investment Management. Ms. Daniel is also currently a doctoral candidate at Johns Hopkins SAIS. Her research work focuses on the proliferation of the EU's data privacy regulation in China, Latin America, and the US and its relationship to market competition in the digital age. She is the former Executive Director of the CFA Society of Baltimore.

JOSH DEHLINGER, PH.D., is a Professor in the Department of Computer and Information Sciences and the Director of the undergraduate Computer Science program in the Fisher College of Science and Mathematics at Towson University. He earned his Ph.D. in Computer Science from Iowa State University in 2007 and served as a Research Scientist in the Charles L. Brown Department of Electrical and Computer Engineering at the University of Virginia in 2008. His research expertise lies, broadly, in software safety and reliability, election security, machine learning, and software engineering. His recent research efforts have examined the cyber, physical and insider threats to voting processes and developed training modules for election judges to empower them to identify and mitigate threats during an election. Some of this work, in partnership with the Anne Arundel County (Maryland) Board of Elections was recognized in 2020 with the U.S. Elections Assistance Commission Clearinghouse Award for Outstanding Innovation in Election Cybersecurity and Technology.

MICHAËL DEWALLY, PH.D., Professor in Department of Finance at Towson University. MS in Chemical Engineering in France, and MBA and Ph.D. in Finance from the University of Oklahoma. After teaching at Marquette University in Milwaukee, he joined Towson University in 2010. Michaël's research interests are in the fields of Investments, Corporate Governance and Banking. His research has appeared in the Review of Financial Studies, Journal of Business, the Journal of Banking and Finance, the Journal of Corporate Finance, the Financial Analysts Journal among others.

NHUNG HENDY received her Ph.D. in Business Administration with a concentration in Human Resource Management from Virginia Commonwealth University in Richmond, VA in 2002. She joined Towson university in 2005 and is currently a Professor in the Department of Management. She is a senior certified HR professional by the Society for Human Resource Management (SHRM) and Human Resource Certification Institute (HRCI). Her research and teaching interests span areas of Human Resource Management, Business Ethics, and Research methodology. She has published more than 30 journal articles in scholarly and professional journals. She has also consulted with numerous organizations such as Capital One, Maryland State Department of Education, and Maryland Aviation Administration. As a mental health advocate, she has been leading Thao Nguyen Foundation, Inc. whose mission is to raise mental health awareness and suicide prevention.

JORDAN LE an undergraduate sophomore and is a dual major student in Accounting and Finance at Towson University. He is currently the Director of Communications for the Towson University Investing Group (TUIG). An incoming Assurance and Advisory intern for Clearview Group.

YEABSIRA MEZGEBE, M.S., is a 2021 Master of Science graduate of the accelerated program in Supply Chain Management at Towson University. In May 2020, he earned a B.S. in Business Administration with a concentration in Project Management and Business Analysis, also from Towson University. During his studies, he served as a Research Assistant, specializing in data mining and focusing on educating poll workers about the potential for cyber, physical, and insider threats at election polling places. He presented his research to an international audience at the 2020 INFORMS Annual Meeting, and his additional career experience includes internships with Danfoss and Aerotek.

Contributors

NICHOLAS NORMAN an undergraduate junior majoring in Business Administration with a concentration in Finance at Towson University. His career goal is to provide financial services to the underbanked and to help spread financial knowledge among people who were not taught financial literacy. He is currently looking for an internship to display his great teamwork, communication, and analytical skills.

ALEKSANDER OLSHANSKIY currently Portfolio Manager at TUIG, Senior pursuing a Major in Finance. Currently an equity research intern at Blue Point Investment Management. Also interned for Prudential Financial.

MATT ORSAGH, CFA, CIPM, is a senior director of capital markets policy at CFA Institute, where he focuses on corporate governance, ESG, and climate change analysis. He writes and speaks frequently on these topics on behalf of CFA Institute. His paper, Climate Change Analysis in the Investment Process was named "Best ESG Paper" by Savvy Investor in 2021.

MILAN PANDEY an undergraduate senior majoring in Business Administration with a Concentration in Finance at Towson University. Contributes to fundamental and technical analysis research for Towson University Investment Group (TUIG). Currently serving as the President for TUIG.

NATALIE M. SCALA, PH.D., is an Associate Professor and Director of the graduate programs in Supply Chain Management in the College of Business and Economics at Towson University. She earned Ph.D. and M.S. degrees in Industrial Engineering from the University of Pittsburgh. Her primary research is in decision analysis, with specialization in military and security issues, including risk in voting systems, attack trees and strength of threat in mail voting, integrity of votes throughout the supply chain, poll worker education, and cybersecurity metrics and best practices. Her work in elections security earned a University System of Maryland Board of Regents Award for Excellence in Public Service, the system's highest faculty honor. In conjunction with Anne Arundel County, Maryland, her work in cybersecurity and threat training for poll workers received a U.S. Elections Assistance Commission Clearinghouse Award for Outstanding Innovation in Election Cybersecurity and Technology. Dr. Scala frequently consults to government clients and has extensive professional experience, to include positions with Innovative Decisions, Inc., the United States Department of Defense, and the RAND Corporation.

YINGYING SHAO, PH.D., CFA Professor in the Department of Finance at Towson University. Prior to receiving her Ph.D. from the University of Arkansas and joining Towson faculty in 2010, she completed a Master of Science in Finance from the University of Tulsa in 2006, and earned her MBA from the University of Arkansas in 2003. Her research interests include banking, risk management, corporate finance and emerging markets. Her research has appeared in the leading journals in finance such as Journal of Banking & Finance, Journal of Financial Services Research, Family Business Review, and Journal of Business Research, among others.

NICK SHEPPARD, CFA is a vice president of T. Rowe Price Group, Inc. and a National Account Manager in the U.S. Intermediary segment of T. Rowe Price, where he focuses on broker-dealer and global bank relationships. Nick earned a B.S. in finance from the University of Baltimore, Merrick School of Business. Nick is a Series 3, 7, and 63 registered representative and has also earned the Chartered Financial Analyst designation.

JENNIFER STANO is the Sr. Human Resources Partner at Towson University. She received her Doctor of Management from University of Maryland Global Campus with a focus on strategies to support the recruitment and retention of a diverse workforce. In her role at TU, Jennifer focuses on community partnerships to develop pipelines for employment, leveraging academic research to support HR decisions, and supporting the TU faculty and staff.

R. GABRIELLE "GABBY" SWAB is an Assistant Professor of Management at Towson University. She received her Ph.D. from the University of Mississippi. Her research interests include competitive behavior and work-life balance, with a focus on these influences in teams, entrepreneurs, and family firms. She currently teaches Management, Leadership, and Entrepreneurship courses. Gabby's industry experience includes sales and project management in the technology sector.

LAURA WOOD joined ShoreRivers in 2018 as part of the merger with the Chester River Association, Midshore Riverkeeper Conservancy, and the Sassafras River Association, where Ms. Wood previously worked since 2016. Ms. Wood is an Agriculture & Outreach Coordinator, focusing on agricultural restoration and research projects that reduce sediment and nutrient runoff to local waterways on the Eastern Shore of Maryland. Ms. Wood is a graduate of Rhodes College with a degree in Environmental Studies. Ms. Wood also participates in the management of Indiantown Farm and Poplar Grove Farm in Centreville, MD.

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College of Business and Economics
Towson University
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