

New normal, new opportunities

A special report by the Portfolio Advisory Group

Click [here](#) for authors' contact information. Priced (in USD) as of 9/11/20 market close, ET (unless otherwise stated).
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This report is a compilation of the previously published “New normal, new opportunities” articles, in which we examined secular trends in a post-COVID-19 world. The series covers a range of themes that are emerging as a result of social distancing, the work-from-home imperative, health care developments, corporate implications, and broader societal change. We believe identifying these trends and understanding their investment implications will be critical to navigating the road ahead.

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New normal, new opportunities



E-Commerce

Stuck at home? Some online retail therapy always helps!

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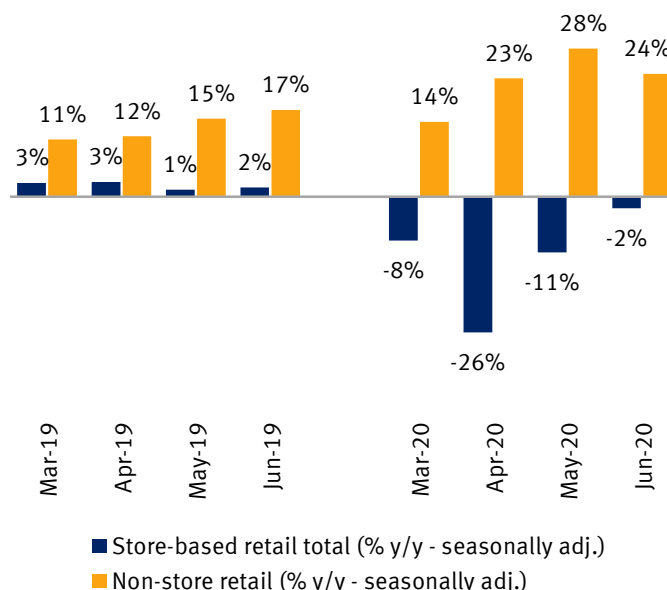
The COVID-19 pandemic has fast-tracked the transition of market share in retail from traditional bricks-and-mortar to e-Commerce. We believe, by and large, market share gains for those online players with the most sophisticated and wide-reaching networks will be structural in nature. Yet even with the surge in online retail in the span of a few short months, penetration rates for e-Commerce in the U.S. remain in the high-teens, suggesting to us there is considerable runway for future growth. Over the long term, we foresee the real possibility of online retail becoming the new norm thanks to the pandemic. Although many people thought online retail would eventually become the norm, COVID-19 has pulled the timeline forward as the value-proposition for e-Commerce with respect to efficiency, convenience, and reliability has been underscored.

COVID-19 has accelerated the transition to the digital retail market

E-Commerce and online shopping have experienced remarkable growth over the last several years, far outpacing that of the traditional bricks-and-mortar channel. And while COVID-19 has dealt a devastating blow to retail overall, this has not been uniformly felt across the sector. In fact, we believe COVID-19 has accelerated the transition to digital retail given region-wide lockdowns, a larger portion of the labor force is working from home, and a general fear of public spaces.

Store-based retail and non-store retail growth

March–June 2019, March–June 2020; year over year

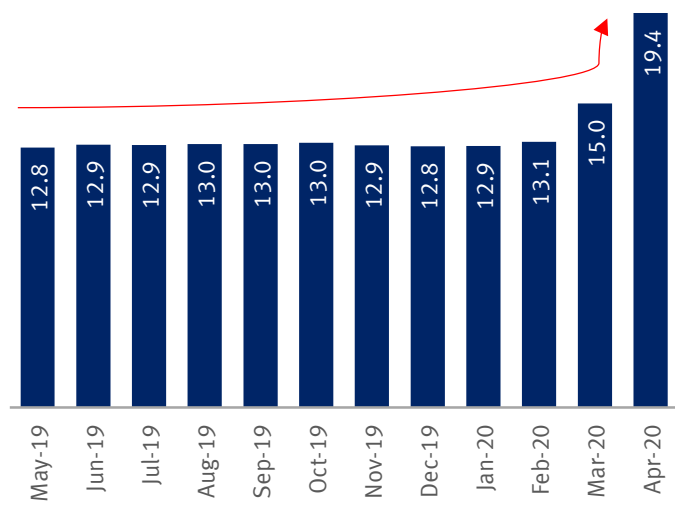


Source - U.S. Census Bureau

According to the U.S. Census Bureau, non-store sales accelerated year over year each month from March through June of this year. At the high, non-store sales growth surged 28% y/y in May, while store-based retail fell 11%.

Following from this, after holding steady for nearly a year, e-Commerce penetration rates in the U.S. jumped from 13% in February to 15% in March, and 19% in April of this year (top exhibit on the next page). We believe these changes represent material increases in penetration over a short duration. In a recent report, RBC Capital Markets opined that an increase of such magnitude would normally take several years, and that COVID-19-induced changes in consumer purchasing have essentially fast-tracked this transition within just a few months.

E-Commerce penetration in the U.S. (%)

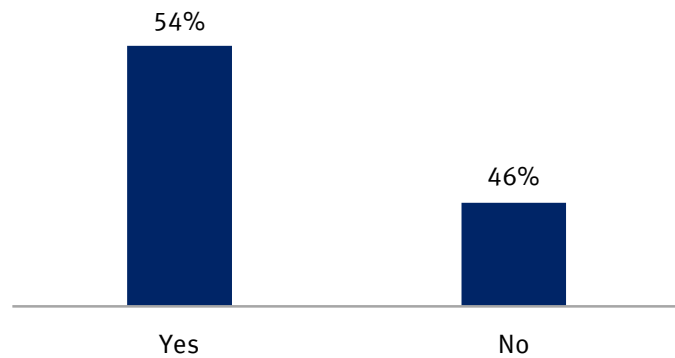


Source - U.S. Census Bureau (seasonally adjusted data), RBC Capital Markets

Pandemic likely to drive structural market share gain in e-Commerce

The “conversion rate” of households from physical to digital shopping channels should not be underplayed. We

Do you believe the COVID-19 crisis will lead you to permanently increase your willingness to purchase online versus in-store?



Source - RBC Capital Markets; Proprietary survey of 2,730 respondents

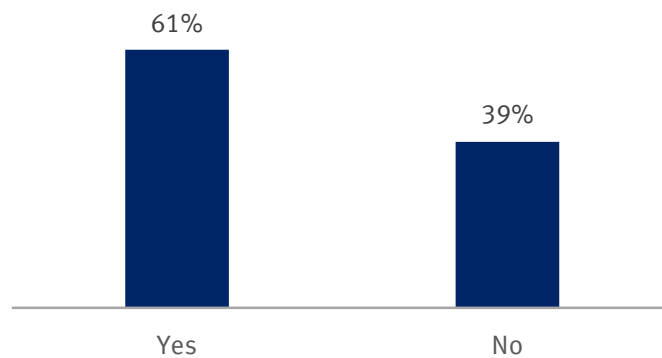
believe that the majority of online shopping novices that have migrated to digital channels amid the pandemic will continue to do a higher proportion of their shopping online in the years to come.

In RBC Capital Markets’ 8th annual U.S. Online Shopping Survey, when respondents were asked if the pandemic would lead to a permanent increase in willingness to purchase online versus in-store, more than 50% responded “Yes”. In addition, more than 60% of respondents indicated their online retail spend increased due to COVID-19.

Considerable long-term runway for online retail to become the “new norm”

Ultimately, in the “new normal” we believe this shift will manifest in permanent market share gains for online players with the most sophisticated and wide-reaching logistics networks. E-Commerce penetration rates in the U.S. retail market, while higher today than they were at the beginning of this year, sit in the high-teens, suggesting to us there is a considerable runway for growth and market share gains going forward. As has been the case in the past, we expect market share to be structurally ceded by the traditional bricks-and-mortar channel and sub-scale online players that possess inferior e-Commerce networks.

Has COVID-19 increased your online retail spend?



Source - RBC Capital Markets; Proprietary survey of 2,730 respondents

New normal, new opportunities



Placing more irons in the fintech fire

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The pandemic has provided a unique glimpse into a world where society has become hyper-reliant on digital infrastructure to communicate, transfer value, and conduct commerce. Though trends in both individual and corporate digital transformations were firmly in place prior to COVID-19, the pandemic has forced companies to cross the digital threshold with far more urgency. This report explores the specific impact of COVID-19 on digital payments as quarantine measures alongside hygiene concerns have accelerated the pre-existing secular shift.

Pandemic driving increased adoption

Though the transition away from cash towards digital payments was firmly in place entering 2020, the COVID-19 pandemic has accelerated this shift as quarantine

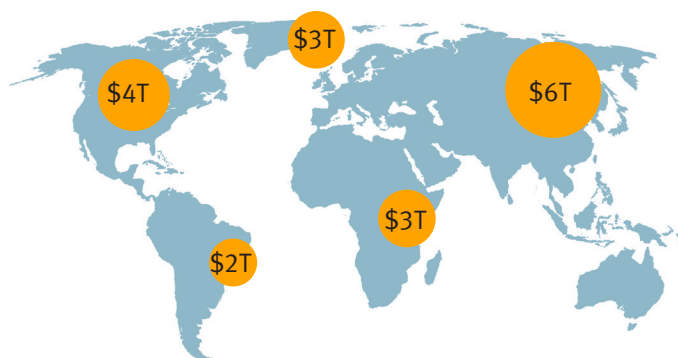
measures forced consumers to transact more online for everyday necessities while brick-and-mortar businesses encouraged the use of credit cards over cash given hygiene concerns. In our view, these COVID-19-related behaviours combined with the drivers that were formerly in place (e.g., adoption of digital wallets, higher smartphone penetration, and increased digital infrastructure investments by merchants) have made what was already an attractive secular growth theme far more robust.

We would highlight that the recent launch of 5G-capable smartphones will further accelerate digital payments adoption as this new communications standard will allow networks to handle digital transactions at scale given significantly reduced latency (the time it takes for a connected device to make a request from a server and get a response).

Large global market opportunity across multiple payment flows

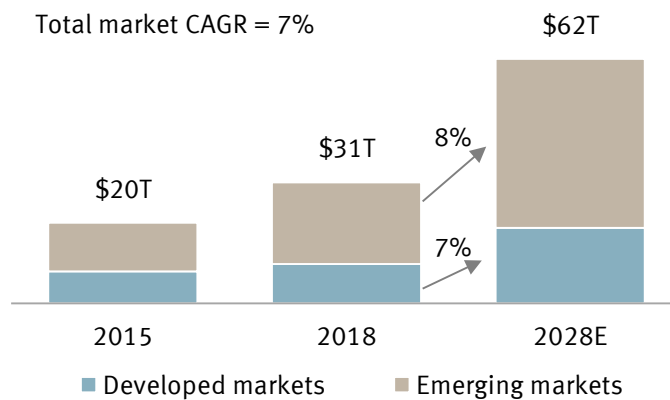
According to MasterCard Inc. (MA), the long-term global opportunity across multiple payment flows—including personal consumption expenditures (PCE), peer-to-peer (P2P), business-to-business (B2B), and business-to-

Global breakdown of cash and checks (\$ trillion)



Source - Visa Inc.

Global card payment volume



Source - The Nilson Report, RBC Capital Markets estimates

consumer (B2C) transactions—stands at \$235 trillion, and we believe it is ripe for further disruption. According to RBC Capital Markets, approximately \$18 trillion of global PCE was still accounted for by cash and checks. Based on data from the Nilson Report, RBC Capital Markets estimates that PCE growth combined with the secular shift away from these paper-based transactions will generate a seven percent compound annual growth rate in purchase volume on cards from 2018–2028.

The P2P market continues to be propelled by the increasing ubiquity of digital wallets that have allowed individuals to transfer value through digital applications. Meanwhile, the motivation driving the B2C potential has been the speed of transactions combined with the security benefits as

physical cash is no longer required to be held on premises. Finally, as it relates to the B2B possibility, the majority of accounts payable globally are still processed manually and paid by certified checks, which not only expose transactions to clerical errors but is also time consuming as these payments typically require several weeks to process.

In contrast to PCE, digital penetration rates in B2B and B2C remain significantly lower and represent a large proportion of the \$235 trillion global opportunity. Ultimately, the prospect for digitizing the global payments market remains substantial, and we continue to be constructive on the longer-term growth trajectory of the industry.

New normal, new opportunities



Cloud computing

Cloud genie is accelerating out of the bottle

This report is part of the “New normal, new opportunities” series, in which we examine secular trends in a post-COVID-19 world. The series will cover a range of themes that are emerging as a result of social distancing, the work-from-home imperative, health care developments, corporate implications, and broader societal change. We believe identifying these trends and understanding their investment implications will be critical to navigating the road ahead.

The pandemic has provided a unique glimpse into a world where society has become hyper-reliant on digital infrastructure to communicate, transfer value, and conduct commerce. Though trends in both individual and corporate digital transformations were firmly in place prior to COVID-19, the pandemic has forced companies to cross the digital threshold with far more urgency. This report explores how COVID-19 has elevated the importance of cloud computing, bringing it to the forefront of corporate agendas, as companies seek out its increased agility benefits and efficiency gains, both of which have become pre-requisites to compete effectively in an accelerated digital world.

What is cloud computing and its benefits?

Cloud computing is perhaps one of the more esoteric terms in technology, but at its core it is essentially a remote network of computers that allows a company to easily store, manage, access, and process data using an internet connection. Cost savings and scalability are the primary advantages of using cloud as companies can avoid the investments required to build and maintain an on-premise network as well as the considerable delays associated with increasing data capacity in response to higher computing demands. In addition, the emergence of the work-from-home movement will require cloud infrastructure to support a workforce that no longer shares the same physical location. What we think is often under-

appreciated is the strategic value cloud brings to the corporate table—the availability of big data and machine learning capabilities within a holistic cloud offering has given companies the power to organize and interpret its proprietary information more effectively, which in turn has translated into higher levels of consumer satisfaction and profitability, in our view. In short, embracing the cloud creates a more efficient and agile, higher-value enterprise while liberating important resources that can be redeployed towards other business investments.

Cloud deployments accelerating, but penetration remains low

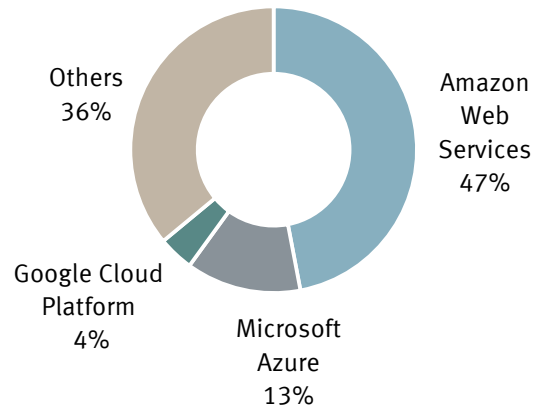
In the wake of COVID-19, management teams across the globe were thrust into a posture of extreme enterprise optimization that accelerated the imperative to digitize business infrastructure including essential cloud deployments. This phenomenon is perhaps best exemplified by way of a statement made by Satya Nadella, CEO of Microsoft Corporation, in April 2020: “We’ve seen two years’ worth of digital transformation in two months... from remote teamwork and learning, to sales and customer service, to critical cloud infrastructure and security”.

Despite the business community’s recent feverish pace of cloud expenditures, its representation in terms of overall global IT spending remains minimal. In 2019, according to International Data Corporation (IDC), worldwide public cloud services and infrastructure spending stood at \$229 billion, representing less than 5% of global information and communication technology (ICT) spend of approximately \$5 trillion. Moving forward, IDC expects worldwide public cloud services and infrastructure spending to more than double to \$500 billion by 2023, this against broader global ICT spend IDC expects to grow to \$5.8 trillion over the same time frame, a cloud penetration rate just shy of 9%. In our view, though the cloud penetration percentage has

likely inched higher recently, there remains considerable upside for cloud infrastructure players to capture a growing proportion of total global ICT spend over time.

It is important to understand that cloud is a scale game, so it should come as no surprise that the early players, who aggressively built out their platforms, have become so dominant. Ultimately, in our view, the cloud thematic remains a sizeable and durable secular opportunity that should support a healthy cadence of growth for the dominant cloud infrastructure players over the longer term.

IaaS* cloud market share (2019)



Note: *IaaS: Infrastructure-as-a-Service is a subset of the broader public cloud market.
Source - IDC; Bloomberg Intelligence

New normal, new opportunities



5G communications networks

Enabling next-generation technology

This report is part of the “New normal, new opportunities” series, in which we examine secular trends in a post-COVID-19 world. The series will cover a range of themes that are emerging as a result of social distancing, the work-from-home imperative, health care developments, corporate implications, and broader societal change. We believe identifying these trends and understanding their investment implications will be critical to navigating the road ahead.

Stated simply, 5G technology is the fifth generation of wireless mobile networks. Each successive generation of wireless networks has added speed, capacity, capabilities, and reliability to wireless services. The first two generations enabled, then accelerated voice communications. The third generation (3G) was notable, as it made the exchange of mobile data sufficiently practical for widespread use. The fourth generation (4G) brought broadband speeds to the mobile data network, speeding functionalities like wireless video delivery and closer connection to the wireline network.

5G technology can provide higher data speeds with less delay than 4G, sometimes referred to as 4G LTE. According to the Federal Communications Commission (FCC), some 5G services will provide coverage areas with data speeds up to 100 times faster than 4G and almost instantaneous response time. For example, it can take almost six minutes to download a feature-length movie with 4G. With 5G, the same movie can be downloaded in as little as 15 seconds. Technically speaking, current 4G speeds are approximately 12–36 megabytes per second (Mbps), while 5G services are expected to support speeds of up to 300 Mbps or greater.

The speed and connectivity enhancements provided by 5G networks, currently in the early stages of deployment, will bring a widespread presence of connected devices, objects, and machines, joining humans, smartphones, and computers, all of which will freely communicate with

one another. This is a watershed event by which many previously unavailable or infeasible technologies will be equipped to become reality.

The building blocks of 5G

Every system is built from a series of components, and for 5G networks, the root components are next-generation communications semiconductors. They are combined with additional communications components and manufactured into devices that receive, analyze, and transmit incoming and outgoing data. These devices are chained together to build 5G communications systems, and these systems are deployed into networks that include small cell antennas, wireless tower equipment, data processing equipment, and relay equipment that connects the wireless network to the wireline network.

Throughout the world there are multiple semiconductor companies, smartphone producers, network equipment developers, systems integrators, wireless tower providers, and communications network vendors that sell the products and services that make wireless communications a reality. For many, if not most, of these vendors, we expect spending on 5G systems, which began in earnest in 2020, will serve to increase their sales growth from pre-2020 levels.

5G is a key enabling technology

With 5G in its early stages of deployment, it is impossible to state with precision the added capabilities it will unlock, but some of them are becoming apparent. By providing previously unavailable data transfer volume and speed, the deployment of 5G wireless communications networks helps to enable so many of the productivity-enhancing, entertainment, and communications technologies covered in the “New normal, new opportunities” series. As a result, beneficiaries of 5G technology extend beyond the direct 5G

enablers discussed above. Here are some specific examples of technologies made possible or enhanced by 5G:

- **Artificial intelligence (AI):** To gain widespread acceptance and functionality, AI systems need three elements, according to RBC Capital Markets: computing power, distribution capacity, and storage. 5G networks are the enabling technology that provides the distribution capacity in that equation.
- **Virtual reality:** The convergence of advancements in processing power, display technology, movement detection, and 5G-enabled speed and bandwidth is in the early stages of providing virtual and enhanced reality applications that further blur the lines between information, entertainment, and communication, making all of them more personalized and interactive. Content providers become capable of delivering their services on-demand, available everywhere, and shareable with whomever users want.
- **Internet of Things (IoT):** The technology to put radio frequency identification (RFID) chips onto or into just about any object in order to track it has existed for over a couple of decades, but during that time, RFID technology has been slow to deploy, owing to the cost of bandwidth in today's wireless network, making it uneconomical for many applications. Once 5G networks are more widely deployed, we expect more widespread use of RFID tracking systems as more functions become economical.
- **"Big data":** Taking the lead of internet search engines, social networks, and advertising platforms, businesses of all stripes are waking up to the value of the data their customers and vendors provide on a constant basis. The IoT exponentially increases the amount of data produced, and AI-enabled systems can evaluate that data in ways previously unavailable. So, 5G is a vital piece of the big data puzzle, as it is an enabling technology to its key components.
- **Cybersecurity:** The advent of a greater volume of data collected from an increasing number of devices will necessitate an added level of data security vigilance on the part of businesses and consumers. Accordingly, cybersecurity technology will need to evolve along with the 5G network, providing opportunities for cybersecurity vendors that are adept at responding to the changing landscape.
- **Next-generation automation:** According to RBC Capital Markets, 37 percent of IoT spending is currently done by the Industrials sector. In a manufacturing setting, tracking-enabled equipment and inventories offer the opportunity to increase output and lower costs by automating tasks such as monitoring the manufacturing process, identifying maintenance issues before they become problems, and re-ordering raw materials and parts.

As illustrated in the examples above, the capabilities unlocked by 5G technology make enhancements to goods and services accessible to businesses of any size, in most cases at a reasonable price. We believe that the competitive advantages unlocked by spending on such technology will prove vital to most efforts to improve a company's offerings and cost structure. In some instances, adoption of these enhancements may prove necessary for companies to remain competitive.

As a result, we expect that much of the upcoming spending on 5G-enabled technologies such as those above will be viewed as mandatory by companies in a wide range of industries. For consumers, 5G will make entertainment and communication services that were in the realm of science fiction 20 years ago widely available and sufficiently inexpensive. Accordingly, we believe spending on 5G technology and the enhancements it unlocks will propel business and consumer spending for many years to come.

New normal, new opportunities



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Video streaming

Cord-cutting in the time of COVID-19

This report is part of the “New normal, new opportunities” series, in which we examine secular trends in a post-COVID-19 world. The series will cover a range of themes that are emerging as a result of social distancing, the work-from-home imperative, health care developments, corporate implications, and broader societal change. We believe identifying these trends and understanding their investment implications will be critical to navigating the road ahead.

Over the last several years, continued price hikes in pay TV, a proliferation of video streaming services offering high-quality content, and households’ desire for more customized viewing options have underscored the cord-cutting¹ phenomenon. We believe that the pandemic has magnified the value proposition of video streaming given better economics, access to high-quality content, and greater control of the viewing experience, and could potentially accelerate the cord-cutting and cord-shaving² trends.

Video streaming goes viral

With the vast majority of the workforce at home, a fear of public spaces, an inability to enjoy live events, and the pause of live sports (until recently), it’s not surprising that households are relying on home entertainment as a means of passing time and leisure in the midst of this pandemic. An April report published by Nielson cited that time spent streaming videos from services including Netflix, YouTube, Hulu, and Amazon Prime Video more than doubled from a year ago as a result of COVID-19.

In fact, based on a cord-cutting study published by Roku in July of this year, cord-cutting hit a milestone in the midst of the pandemic with nearly one in three U.S. TV households without traditional pay TV subscriptions (cable, satellite, telco), while another 25 percent of households identified as cord-shavers and cut back their service.

COVID-19 has given households the opportunity to reassess their home entertainment experience and what they are willing to pay for it. Ultimately, the Roku study suggests that COVID-19 is in fact favorably influencing the shift to streaming. When asked about the intent to cut the cord fully in the next six months, 45 percent of cord-shavers indicated they were likely to do so. The focus on value is key, with 40 percent of recent cord-cutters deciding to cut traditional pay TV services as a result of access to free trials and premium subscription services.

While the absence of live sports events on traditional pay TV services earlier on during the pandemic no doubt facilitated the acceleration in cord-cutting and greater adoption of streaming services, at the time the survey was taken it was questionable as to whether cord-cutters would resubscribe to traditional pay TV in order to regain access to live sports. Interestingly, according to the survey, only 17 percent of recent cord-cutting households indicated that this would be the case. One-third of households said they would likely subscribe to a live sports streaming service, and over half of traditional and cord-shaver households said that they would likely reduce their package if televised sports on traditional pay TV did not return.

Cord-cutting and cord-shaving on the rise as households prioritize value

In 2019, major cable and satellite TV operators collectively lost around 5.8 million subscribers in the U.S., more than double that lost in 2018, according to protocol.com. We believe these changes are driven primarily by households’

¹ **Cord-cutting:** The process of cancelling a cable or satellite subscription and getting TV shows and movies by other means. Most often, this involves switching to video streaming services that can be accessed via the internet.

² **Cord-shaving:** Keeping one’s cable TV subscription, but cancelling all the costly channels, packages, and add-ons. As a result, household cable bills drop significantly, while retaining some of the essential basic channels, along with an internet connection.

desire to lower expenses by switching to cheaper video streaming alternatives.

Consider the fact that the vast majority of households with a cable bundle end up with a host of channels they don't watch, while also paying a disproportionate amount of their monthly income towards their cable package. A recent report published by DecisionData.org in March of this year found that the average U.S. consumer pays more for their cable package—an average monthly cost of \$217.42, of which TV services constitute 50 percent—than they do for most other household utilities combined. Further, the average cable bill stays relatively similar across household sizes, whether one or more people live there—though this is not true of other utilities such as electricity or water. Notably, cable bills have steadily been on the rise and despite the pandemic, there are few signs that annual price hikes will abate anytime soon.

We believe households that cut the cord can economically redirect those savings towards multiple streaming subscriptions. Consider the fact that the average U.S. household pays around \$100 per month for pay TV services. Even if a household were to sign up for subscriptions to, for example, Netflix, Amazon Prime Video (for non-Prime members), Disney+, and AppleTV+, they would still be retaining close to 60 percent of those savings (see table).

Ample runway for cord-cutting over the next several years

Despite a strong shift towards cord-cutting globally, particularly in the U.S., over the last several years, we believe there is an ample runway for this megatrend to continue on a multiyear basis. Statista projects revenue in the global video streaming segment to reach \$51.6 billion in 2020—a 16 percent increase year over year. Over the next five years, revenue is expected to grow at an annual compounded rate of 10.7 percent, or to \$85.7 billion by 2025. Note that the penetration rate, despite robust growth over the last several years, was just under 11 percent in 2019. This is expected to expand to approximately 17 percent by 2025.

Potential savings from cord-cutting & switching to multiple streaming subscriptions

Streaming provider	Cost per month
Netflix*	\$15.99
Amazon Prime Video**	\$12.99
Disney+	\$6.99
AppleTV+	\$4.99
Streaming total	\$40.96
Average cost of pay TV	\$100.00
Cord-cutting savings	59%

*Premium subscription cost. Basic subscription is \$8.99/month. **Cost is for non-Prime members. Amazon Prime members get access to Prime Video for free.

Source - Company websites, RBC Wealth Management

While the focus on value as a driving force of cord-cutting cannot be understated, we believe there are other factors that will potentially magnify this megatrend over the long term.

First, the desire for personalized content coupled with greater control of the viewing experience will augment the secular growth trend of video streaming.

Second, as the subscriber base for a subscription video-on-demand (SVOD) provider grows, this creates a giant data set that can be mined to better understand customers' viewing behaviors and preferences, and ultimately used to purchase or create better content. The data should empower the provider to not only strengthen its relationship with its customer base but also attract new customers to the platform.

Third, technological advances related to improved network speeds should enable SVOD service providers to deliver high-definition videos at a faster streaming rate. These faster speeds, coupled with the proliferation of connected devices such as smart TVs, smartphones, and tablets, will enhance the growth of the broader streaming "ecosystem."

New normal, new opportunities



Nesting: Homebodies for now

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The weight of COVID-19

It seems likely that people all over the world have cabin fever and are eager to get out and about. But for the most part, individuals remain homebound with prior shelter-in-place restrictions and social-distancing rules and guidelines to combat and contain COVID-19.

As winter passed by, puzzles, toilet paper, and sanitizer were flying off physical and virtual shelves, and cooking, baking, and food products were likely stockpiled at an unprecedented rate as well, as comfort food was likely craved in newfound relative isolation. This pantry stocking seems to have produced at least one broad consequence—extra food at home resulted in extra consumption. In a poll of 2,000 adults, Nutrisystem found that 76 percent of adults admit they have gained up to 16 pounds since the COVID-19 precautionary measures began. There seemed to be a double-whammy—it was winter and harder to get outside, and gyms were closed, many mandated by COVID-19 restrictions. Many have reopened, but the fear of germs has kept many consumers from renewing their memberships. On July 23, TD Ameritrade released the results of a survey of 2,009 adults ages 24 and older that found 59 percent don’t plan on renewing their gym membership once the pandemic is over. Of those surveyed, 56 percent said that the pandemic helped them discover cheaper ways to exercise and live healthier.

Although there are many exercise apps available on smartphones and streaming workouts on other screen devices, equipment usage at home has also grown in popularity. New companies are cropping up, and even

athleisure company lululemon athletica inc. has become more serious about the trend, as the company completed the acquisition of the subscription-based in-home, interactive fitness company MIRROR on July 7. According to lululemon, 64 percent of its customers participated in digital workouts at home prior to the pandemic, while 75 percent did so during the pandemic, and 86 percent used at-home equipment, saying they intend to use it the same or more than they did prior to the COVID-19 outbreak. With a similar business model, Peloton Interactive, Inc. has amassed 886,100 connected fitness subscribers.

Nesting and COVID-19 gardens

Outside of working and working out, individuals appear to be focusing on both old and new hobbies, with many of these centered in and on the home.

The current interest in gardening is likely unprecedented, or at the very least, at a recent historical peak. Scotts Miracle-Gro Company recently reported results that showed the U.S. Consumer segment with a sales increase of 21 percent year over year in its fiscal Q3 (ended June 27) and 50 percent year-to-date. Management noted that “30 percent of edible gardening activity came from consumers who are either new to the category or returned after being away.” The CEO reminded investors that “what our category does for people’s emotional and physical well-being has never been more evident than it has been in 2020.” Reuters quoted the chairman of seed company W. Atlee Burpee & Co. as saying the company sold more seed this past March than at any time in its 144-year history. U.S. Census Bureau data shows building materials, gardening equipment, and supplies dealers enjoyed sales growth of 7.1 percent year over year from January through May 2020, while total retail and food services suffered a decline of 4.6 percent.

Other companies catering to do-it-yourself home projects, decorating, and repair and remodeling continue to deliver solid results, as many people are at home staring at their surroundings with an eye for improvement. The Home Depot, Inc. posted seven percent year over year

sales growth in the most recent quarter, while Lowe's Companies, Inc. delivered growth of approximately 11 percent.

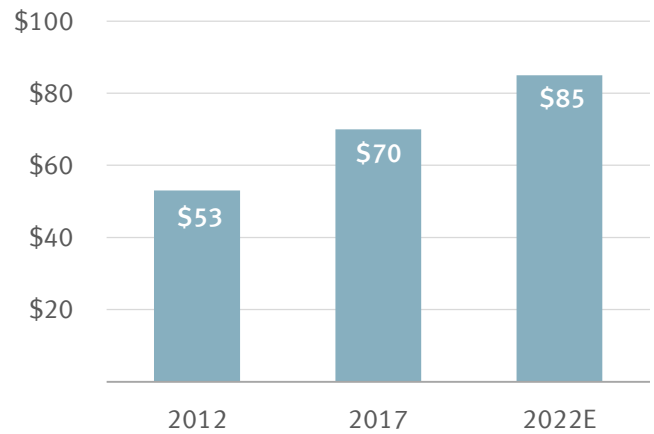
Man's (woman's) best friends in high demand

With more time at home, many individuals have embraced pet ownership. The Wall Street Journal published an article on April 10 entitled "Coronavirus Panic Buying: Puppies" stating pet fostering demand is "through the roof." The American Veterinary Medical Association estimates that over 48 million households own at least one dog, and 32 million own a cat, according to a 2017–2018 U.S. Pet Ownership & Demographics Sourcebook. Although that's a warm and fuzzy topic, pet ownership and spending has been a growing category for years, and is fairly recession-resistant.

The category grew during the last recession, when many spending categories declined. An annual filing from online pet retailer Chewy supports this resiliency, stating, "In 2010 alone, spending in the United States on entertainment fell 7.0 percent, food fell 3.8 percent, housing fell 2.0 percent and apparel and services fell 1.4 percent, according to the U.S. Bureau of Labor Statistics, while spending on pets rose 6.2 percent, according to the American Pet Products Association." According to the S-1 Chewy filed with the SEC prior to going public, in 2017, the pet industry in the U.S. saw \$70 billion in total dollars spent, and is projected to grow at a compound annual growth rate of 4.2 percent from 2017 to 2022. About 42 percent of spending is on pet food

Total U.S. annual spending on pets

Billions of dollars



Source - RBC Capital Markets, Chewy S-1, Packaged Facts

and treats, about 25 percent for veterinary costs, and the remainder on other categories such as grooming, boarding, and insurance (only two to three percent of U.S. pets are insured, according to animal health company Zoetis).

New normal

Sudden disruptions in our lives can lead to enduring changes. Although some parts of our lives that we have all been missing will inevitably return over time, we expect the changes discussed above could have an enduring time horizon going forward, even in a hopeful world with COVID-19 vaccines and treatments.

New normal, new opportunities



Cybersecurity and digital content

A digital defense is the best corporate offense

This report is part of the “New normal, new opportunities” series, in which we examine secular trends in a post-COVID-19 world. The series will cover a range of themes that are emerging as a result of social distancing, the work-from-home imperative, health care developments, corporate implications, and broader societal change. We believe identifying these trends and understanding their investment implications will be critical to navigating the road ahead.

Cybersecurity spending has been a growing area of information technology spend for years, with breaches increasing in frequency, data size, and financial and reputational consequences. No industry is spared and no company isolated from cyberattack attempts, which can often result in successful attacks. The ramifications are wide and often all-encompassing, with loss of information, business disruption as well as likely customer distrust. These attacks and incidents can come from both outside hackers and corporate insiders.

Cybersecurity exists to combat cyberattacks, with the most common being: illegally obtaining corporate information via compromising business emails; identity theft; ransomware (malicious software that prevents access to files, systems, or networks, and typically demands a ransom for release); and phishing or spoofing, which tries to trick individuals into providing sensitive information.

Gartner currently sizes the information security and risk management market at \$124 billion in 2020, which RBC Capital Markets believes could reach \$176 billion in 2025, representing a compound annual growth rate of 7.3%. The majority of cybersecurity spending is for legacy security needs, but this approach could drastically change due to the work-from-home environment caused by COVID-19—a transformation that is likely here to stay.

The negative statistics were already accelerating at a frightening pace prior to COVID-19, with Accenture stating that security breaches have increased by 11 percent since 2018 and 67 percent since 2014. According to the University of Maryland, hackers attack computers with internet access every 39 seconds, on average 2,244 times a day. Even with an increasing amount of dollars being devoted to identifying these breaches and correcting them, an IBM study found the average time it took companies to recognize a breach in 2019 was 206 days, and the average cost to a company was \$3.9 million.

Worms, viruses, and cyberthreats, oh my!

Cybersecurity has evolved over the years from fighting the first computer worm in 1988 to countering credit card breaches to protecting networks to safeguarding the cloud. An increase in devices per user and the billions of connected devices within the Internet of Things have made points of access explode. A suddenly remote and distributed workforce has amplified the need for different cybersecurity solutions.

It's highly likely that the changes thrust upon corporations in light of COVID-19 will only escalate the need for continued spending on cybersecurity, and RBC Capital Markets believes COVID-19 has accelerated changes to security spend by five years. Key areas likely to be focused on are: cloud security; application access and security; identity; protecting workloads (an expansion of the idea of endpoint security or anti-virus); and monitoring and observability. New emerging trends include: Secure Access Service Edge (SASE), which supports the digital transformation of enterprises and the dissolution of the traditional network perimeter to enable security at the point of access, and Zero-Trust Network Access (ZTNA), which provides identity-aware access to eliminate the excessive “implicit trust” inherent in wide network access that malicious actors can exploit.

Branch offices as far as the eye can see

RBC Capital Markets refers to the paradigm shift toward location-agnostic work that has been triggered by COVID-19 as “Work 2.0.” Although time will tell how many workers shift from the office to working from home, an RBC Capital Markets’ survey suggested nearly 60 percent of employees had never worked from home prior to COVID-19, with an additional 15 percent working from home just a few days per month. Although it’s hard to know how many employees will eventually return to the office full-time, it’s highly likely that the majority of employees will want some increased flexibility going forward.

This could be a win-win situation, as corporations are interested in both the real estate savings and a reduced carbon footprint with fewer employees commuting. But increased corporate network access at home impacts the structure of cybersecurity spend. According to RBC Capital Markets, traditional infrastructure was designed to accommodate 15 percent to 20 percent of employees working remotely, which will likely be much higher going forward.

Digital documents the way of the future

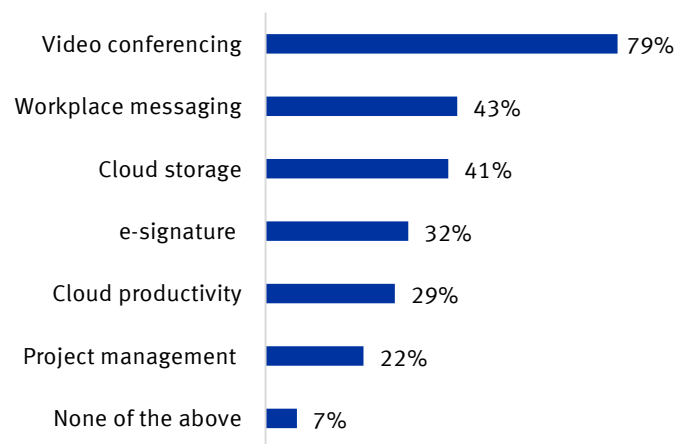
With enhanced security software in place, old processes can safely evolve. Just as the world has embraced the transition from coins, cash, and checks to credit cards, mobile payments, and contactless payments, the corporate world is in the early stages of moving from legacy paper to digital contracts. Real estate has been an early adopter of the technology, but large swaths of the economy still haven’t had the same uptake, including most areas of the government.

RBC Capital Markets surveyed 1,000 “knowledge workers” (i.e., those who “think” for a living such as engineers, scientists, accountants, lawyers, and academics) regarding their usage and thoughts toward information technologies. The survey showed the growing importance of many new communications tools spurred by COVID-19, with e-signature solutions cited as the No. 4 rising new technology. An electronic signature, or e-signature, is a legal way to consent to electronic documents or forms

and replaces a handwritten signature. Thirty-two percent of respondents said they are using e-signature tools more now that they are working from home due to COVID-19 than before. RBC Capital Markets believes the opportunity for this emerging trend was \$51 billion pre-COVID-19, but expanded to \$86 billion as workers and individuals are likely to find ways to engage in business, yet do it with less face-to-face interaction than six months ago.

Increasing usage of key technologies while working from home

% of survey respondents using various solutions more than before COVID-19



Source - RBC Capital Markets (Welcome to Work 2.0 - Imagine 2025, 6/11/20)

Perspective evolves from a crisis

A crisis can quickly evolve an individual’s and corporation’s perspective, and we are likely in the midst of such a paradigm shift. More employees are working from home, and the benefits that come with that—for both the employee and corporation—are being realized, with spending being reallocated to effect this transformation. Many old processes are being tossed out, in favor of new technology, both out of necessity as well as an understanding that the old way may not have been the best way.

New normal, new opportunities



Automation

Technology advancements lead to new products and higher productivity

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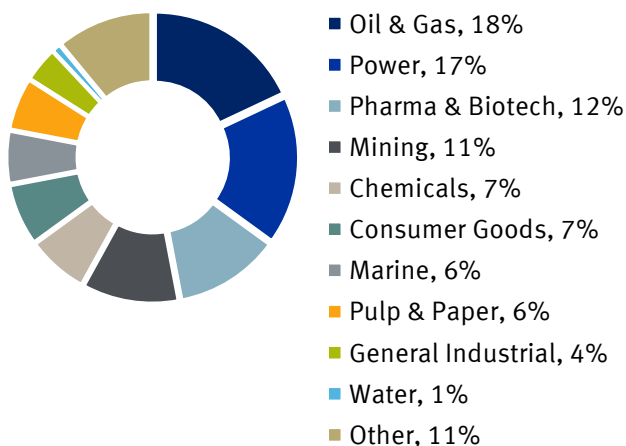
The primary objective of industrial automation is to make manufacturing operations more profitable. This is achieved in several ways, such as developing higher-quality products, lowering labor and materials costs, and reducing the need for input inventories on hand.

Today, the world is experiencing a confluence of advancements in computing power, data network speed, and mechanical technology. As a result, manufacturers appear to have an opportunity to increase the functionality

and personalization of manufactured goods by spending on automation. Examples of such goods include electrical and self-navigating automobiles, smart appliances, and cleaner water systems.

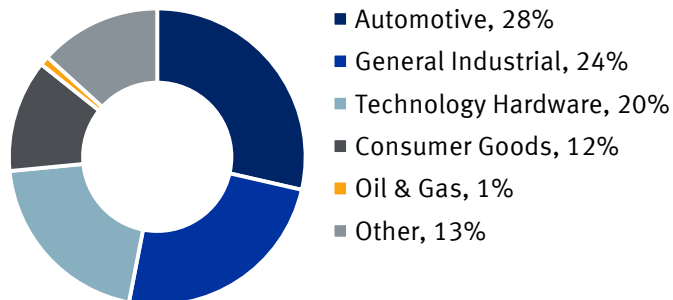
The COVID-19 pandemic revealed supply chain security weaknesses in many developed markets, coming from offshoring production for entire product categories. For example, outsourcing the production of antiviral protective masks helped lead to a U.S. shortage in the early stages of the outbreak. This has led to a reassessment of essential goods production capabilities, with nascent initiatives to bring some manufacturing operations back onshore. In a recent survey of U.S. manufacturers by the Institute for Supply Management (ISM), 64 percent of respondents indicated an intent to reshore at least a portion of current manufacturing operations, for reasons related both to supply chain security and higher overseas labor costs.

Process automation end markets



Source - Credit Suisse

Discrete automation end markets



Source - Credit Suisse

Automation explained

Industrial automation can be split into two separate platforms: process automation and discrete automation.

- **Process automation** has to do with manufacturing raw materials into products that are then either sold to the public or used as inputs into finished goods.
- **Discrete automation** has to do with assembling finished products from the component parts. A relatable example is an automotive assembly line.

Process and discrete automation systems are not mutually exclusive, as some industries use hybrid systems that perform both processes. Key examples are pharmaceuticals, water, and food & beverage.

The primary components that make up automation systems are:

- **Automation equipment & systems.** The largest manufacturing and automation companies build the equipment that performs the actual manufacturing processes. Additionally, each of these equipment makers also provide integrated platforms which contain subcomponents such as the three listed below, creating a coordinated manufacturing system.
- **Automation software** helps manufacturers oversee their operations. This is done in several ways, such as automating product design, monitoring the manufacturing process, identifying and sometimes addressing maintenance issues, managing labor productivity, and coordinating input supply. Automation software systems provide a feedback loop of information that can then be used to enhance the manufacturing process and ultimately improve product quality, efficiency, and profitability. Our research source estimates that the automation software market is growing at a seven percent annualized rate, versus that of around four percent for the whole automation market.
- **Instrumentation** is a smaller but important component of the manufacturing process, providing feedback on manufacturing to the labor, management, financial, and purchasing departments, as well as to the automation software. This information can then be used to make improvements to the manufacturing process.
- **Manufacturing robotics** allows a manufacturer to save on labor costs and increase quality consistency. The robotics systems must be sufficiently fast, reliable, and energy efficient to justify their upfront costs.

Growth opportunities

In addition to automation software, there are a few niches within the automation market that may grow at a faster rate than the automation market as a whole, due to their relatively early stage of development, and in some cases, pandemic-mandated changes.

A relatively new and niche component of the automation puzzle is the Industrial Internet of Things (IIoT), which involves a network of transmitters, sensors, and processors designed to remotely monitor and analyze data through an automated process. It can unlock manufacturing profitability in several ways, such as reducing waste, improving employee safety, monitoring equipment performance, and automatically procuring resources. We expect IIoT deployment to become more widespread as the enabling 5G wireless networks are deployed over the next few years. According to our research source, 37 percent of current spending on Internet of Things initiatives emanates from the Industrials sector.

The global COVID-19 pandemic could accelerate the automation of office buildings and factories. A recent study by the University of Chicago estimated that 37 percent of jobs could be done entirely at home, while 63 percent still require a physical location. The study further stated that within several years, 30 percent of employees could be home several days per week. The corollary to this is that 70 percent would still be working in the office, store, or factory. Should COVID-19 prove to be a persistent reality like the flu, it is likely that the additional precautions temporarily in place regarding spacing, security, and access may need to become permanent. While the shorter-term impact could lead to a down-cycle in office building construction, those that already exist may need to spend more money on security, lighting, and access automation solutions. Factories may seek to reduce employee density by increasing remote monitoring capabilities.

RBC Capital Markets expects the pandemic to accelerate adoption of “smart water” solutions deployments by water utilities. Several of these utilities had already been implementing automation solutions prior to the outbreak, deploying remote asset and workforce management solutions, automated operations, and remote monitoring. Companies deploying solutions to projects such as the United Nations’ Sustainable Development Goals, which aim to conserve water through the use of advanced technologies and provide access to clean water and sanitation to underdeveloped populations, should appeal to investors who take a company’s environmental, social, and governance (ESG) factors into consideration.

Could COVID-19 serve as a reshoring catalyst to offset automation-induced job losses?

Increasing adoption of automation has a tendency to reduce the need for labor, and as a result produces a negative externality for society in the form of fewer available high-paying jobs. The U.S. has been experiencing manufacturing labor displacement for a few decades, due to factory production being shipped overseas to take advantage of lower labor costs in emerging markets. However, with labor costs in those developing nations trending higher, and also with the COVID-19 pandemic exposing some national security concerns associated with having important operations concentrated in foreign markets, the trend toward automation-enabled reshoring appears to be growing.

While ISM's manufacturer survey revealed that 64 percent of respondents indicated they're likely to bring production and sourcing back to North America, RBC Capital Markets believes this survey may overstate the eventual reshoring move, because in most cases manufacturing outside of the U.S. is for local domestic use, termed "in-country, for-country." Our research source believes that most of the reshoring inspired by supply chain security will be limited to just a few industries, particularly medical device and pharmaceutical production operations.

While automation may not be a permanent boon for U.S. job creation, reshoring initiatives may result in new domestic factories, stimulating commercial construction activities, and leading to a particularly strong purchasing cycle for automation equipment, provided that the health of the global economy provides a sufficient backdrop to justify such spending.

New normal, new opportunities



The importance of resilient companies in portfolio construction

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The global pandemic has challenged management teams in unprecedented ways. The sudden, forced retrenchment of economic activity has impacted companies differently—the ones that were resilient to these unexpected changes have seen their stocks outperform those of companies that were less able to successfully react to these changes. This discussion will study the characteristics of resilient companies and examine the importance of selecting these types of companies for investment portfolios.

Corporate resilience is a characteristic that enables a business to tolerate, overcome, and be strengthened by adverse events and experiences. This aspect of a company can be expressed across multiple facets: operational resilience, financial resilience, and even resilience of employees can play a part in ensuring corporations thrive during periods of adversity.

The global management consultancy firm McKinsey & Co. analyzed the top ten percent of companies to emerge from the global financial crisis in 2009 to find common threads that contributed to their resilience during the last recession.

The clearest marker of resilience was profitability. McKinsey found that as the economy started to contract, almost all companies suffered declining revenues to similar

degrees. But as the economy bottomed out, the cash earnings of “resilient” companies were already up by ten percent from their low point, while the earnings of their industry peers continued to shrink.

What were the factors behind this divergence? In general terms, resilient companies made efforts to clean up their balance sheets and ensure cash flow flexibility *before* the recession arrived. This doesn’t mean these companies’ management teams were particularly good at anticipating recessions. Rather, it means they were cautious as the economy slowed. They divested noncore assets early, while they could still get a good price for them.

They also implemented far-sighted operational changes, such as variable pricing contracts, diverse and flexible supply chains, and dynamic resource reallocation. This focus on flexibility and balance sheet strength paid dividends after the recession too, as it gave them more firepower to acquire growth assets as the economy took off again.

Many of the more resilient companies were also proactively investing in digital platforms at a time when this was a relatively radical approach to operations management and customer engagement.

Supply chains

The supply chain flexibility factor of resilient companies was particularly important in the run-up to the COVID-19 pandemic. The proactive management teams of resilient companies had already moved to diversify supply chains as trade war rhetoric heated up in the years before the recession. The pandemic underlined the vulnerability other companies faced as several links in the global supply chains broke at the same time.

Identifying resilient companies in investment portfolios

The easiest way to ensure we invest in resilient companies may be to avoid the companies that clearly aren't resilient. Using the metric of balance sheet strength is likely a good place to start, specifically by studying dividend payments.

According to the fund firm Janus Henderson, global dividend payments fell by 22 percent to \$382 billion in Q2 2020 as the recession forced companies to address their dividends to preserve their balance sheets. Most sectors were impacted, although Energy and Consumer Discretionary companies were the hardest hit.

We believe the stocks of those companies that were forced to cut dividends to preserve cash may be laggards until the economy regains its original growth trend. And we note that the stocks that offer relatively high dividend yields may need some time to regain investors' trust.

If we look at the year-to-date stock performance of companies grouped by their dividend yields, we note that those with the lowest yields have performed the best this year. This is partly due to the success of technology companies as work-from-home practices took hold, because these growth companies typically pay low or no dividends. But we also believe that significantly higher dividend yields tend to indicate higher-than-average risks to cash flows.

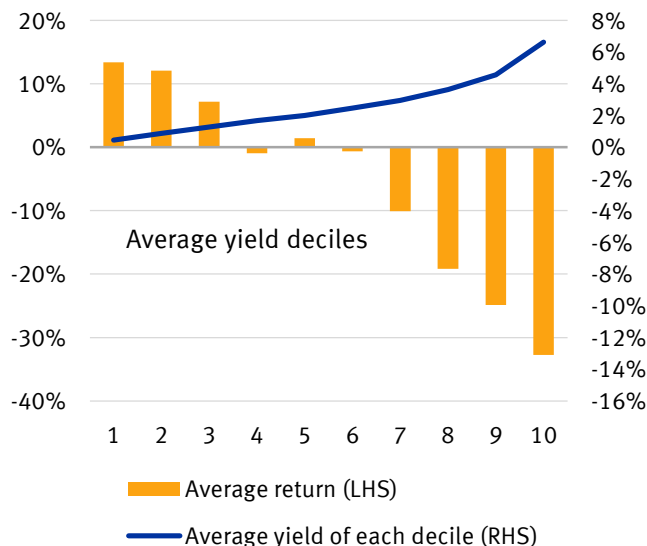
We grouped all the S&P 500 stocks that pay dividends into ten deciles based on their current yield (see top chart). The lowest-yielding decile performed the best, on average, so far this year. And the performance of the remaining deciles declined as average yields increased, with the highest-yielding decile (average yield of nearly seven percent) posting significant underperformance. While dividend-paying companies are an important source of income, we should be wary of the signaling provided by excessively high yields.

Last word

For long-term investors, resilient companies should constitute a significant share of portfolios. Less resilient companies can work well too when the economy is firing on all cylinders, but in periods of economic stress or slow growth, the resilient companies tend to shine.

Higher-yielding dividend stocks have performed poorly in 2020

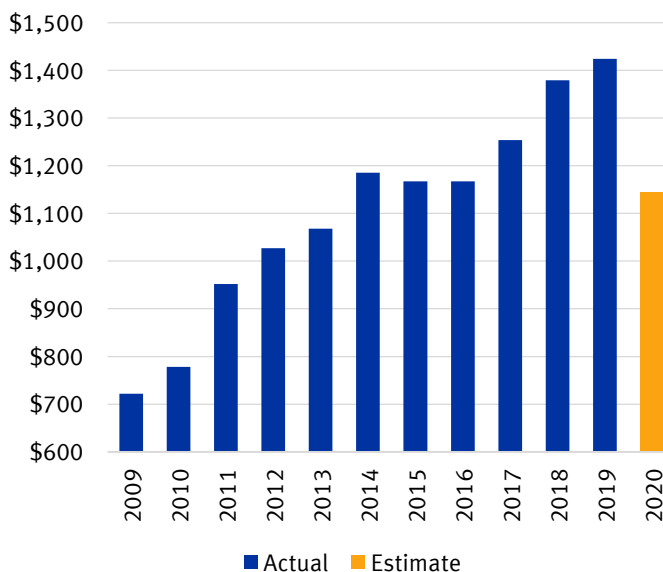
YTD returns of each yield decile of the S&P 500



Source - Refinitiv, RBC Wealth Management; bars indicate price returns from 12/31/19 to 8/26/20

Annual global dividends

Total global dividends (U.S. \$ billions)



Source - Janus Henderson, RBC Wealth Management estimate

New normal, new opportunities



Drug discovery & diagnostics

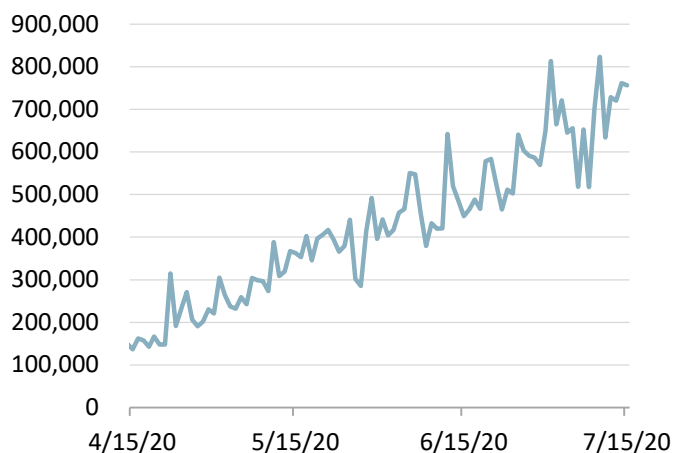
They might be just what the doctor ordered

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COVID-19 testing: Rising steadily

The COVID-19 pandemic has elevated public awareness that infectious diseases have not been eradicated, and that companies doing novel research will be able to drive new medical discoveries and be rewarded for their success. In addition to R&D-driven drug discovery firms, other beneficiaries of the pandemic response include companies developing test kits and diagnostic machines to reliably identify those infected. Earlier identification makes it possible for sick individuals to receive medical care sooner, reducing both recovery time and the risk of infecting others.

Number of COVID-19 tests processed daily in the U.S.



Source - The COVID Tracking Project (covidtracking.com); data range 4/15/20–7/15/20

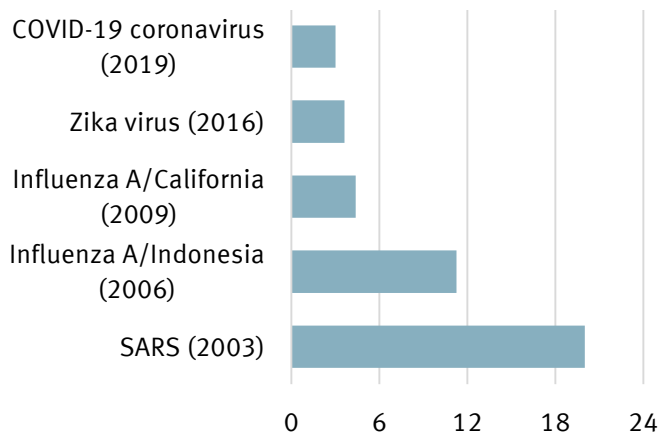
Over the past three months, the number of daily COVID-19 tests administered in the U.S. has steadily risen as more test kits have been made available and high-volume analyzers have entered service. While we expect the number of COVID-19 tests administered will drop once a vaccine becomes available, we also believe it is likely that demand from governments, employers, households, and individuals for tests targeting both novel and familiar diseases will be elevated relative to pre-COVID-19 levels.

A health problem that requires a health solution

Pharmaceutical and biotechnology companies are also focused on the fight against COVID-19, with a surge of innovation in the infectious-diseases landscape setting up a race for a cure. The industry has responded rapidly to the pandemic, developing candidates for clinical testing within weeks of determining the genetic make-up of the virus.

Drug prescription volumes have slowed down and stabilized since March, coinciding with declines in physician visits and job losses. With 15 million workers

Number of months from genetic sequencing of virus to first human trial of vaccine



Source - U.S. National Institute of Allergy and Infectious Diseases

in the U.S. losing their health benefits along with their jobs since March due to COVID-19-related disruptions, a significant number of newly unemployed workers have transitioned from traditional commercial insurance plans to health care coverage options with lower reimbursement levels. As the economy recovers and furloughed workers are rehired, we expect enrollment in employer-sponsored commercial health insurance plans to pick up, providing a tailwind for growth in the drug industry.

Looking ahead: Diagnostics and the development of a COVID-19 vaccine

In a post-COVID-19 landscape, we expect individuals will want to be more informed and take greater control of their health decisions by getting tested sooner for infectious diseases. Earlier identification of an infection can enable more timely treatment to help arrest the progression of the disease and promote a swifter recovery as well as stop its spread and protect others.

Drug discovery companies will not only fine-tune their internal processes to maximize R&D productivity, but are likely to increase their involvement with regulators when developing clinical trials in order to maximize their

chances of success in the approval process. While a vaccine for COVID-19 will likely be available sometime next year, it is possible that the immunity conferred may not be long-lasting, and thus the threat posed by the coronavirus may be endemic for years to come. Individuals may end up taking a seasonal COVID-19 vaccine much like their flu vaccine, thereby boosting the fortunes of diagnostic testing and drug companies well into the future.

While the share prices of drug discovery and diagnostic companies can be volatile, we believe the demographic trend of an aging population is supportive of long-term growth prospects in both industries. According to the U.S. Census Bureau, 2030 will mark a turning point: all baby boomers in the U.S. will be 65 years of age or older, expanding this demographic segment to 21% of the population from 17% currently. Furthermore, by 2034 senior citizens will outnumber children in the U.S. for the first time. Given higher per-capita health spending for people age 65 and older, we expect the aging of the population to drive the use of prescription drugs, vaccines, and diagnostic tests.

New normal, new opportunities



Telemedicine

Stepping out of the shadows to take centre stage

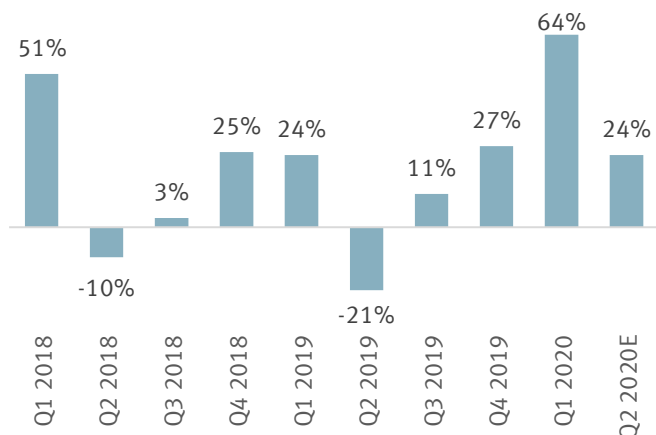
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Prior to COVID-19, telemedicine was gradually coming into its own as patients, health insurance payors, and health care providers gained comfort with the technology to realize the convenience and cost savings of using virtual channels for receiving and providing care. The pandemic has accelerated the shift towards telemedicine as social distancing and work-from-home mandates have created greater awareness and utilization of the technology. This shift has been further boosted by the convergence of advancements in cloud security and high-quality video conferencing.

Utilization is growing as acceptance rates increase

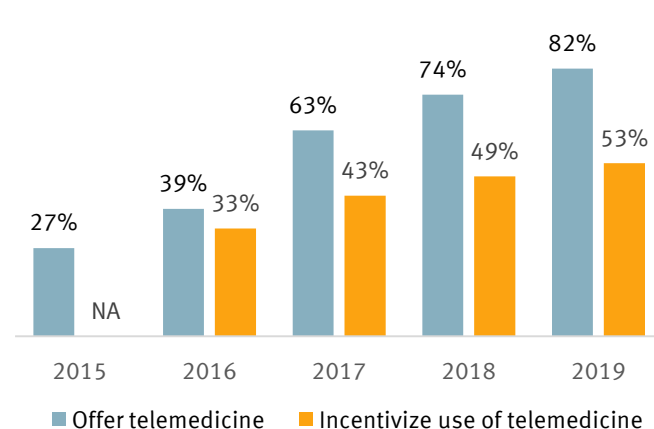
The COVID-19 pandemic and resulting containment measures have, in our opinion, created an awareness and need for telemedicine that has led to increased utilization of a technology that is in the early stages of adoption. The convergence of enhanced cloud security and high-quality video conferencing has also been integral to ensuring privacy regulations are upheld and a positive user experience is delivered. An analysis of one of the industry players, Teladoc Health, Inc. (TDOC), by RBC Capital Markets revealed that data traffic originating from Teladoc’s digital channels spiked in Q1 2020 as patients discovered the dual advantages of faster diagnosis and convenience of virtual visits with a physician (see the left chart on the prior page). Utilization trends have moderated after a large number of early adopters, but are still up from the prior year.

Quarter-over-quarter change in Teladoc Web traffic



Note: Q2 2020E data is based on company-provided guidance of expected website visits
 Source - Company reports, SimilarWeb, and RBC Capital Markets

Proportion of large employers offering and incentivizing telemedicine utilization



Source - Kaiser Family Foundation and RBC Capital Markets

A survey by the Kaiser Family Foundation revealed that roughly 82% of large employers offered telemedicine to their employees in 2019, a dramatic jump from 27% in 2015 (see the right chart on the prior page). Health insurers (payers) are realizing the cost benefits of using virtual channels and are increasingly designing benefit plans to motivate members to utilize telemedicine as a first step to getting assessed and treated instead of visiting traditional brick-and-mortar providers. Payers typically offer financial inducements to encourage members to adopt telemedicine. These practices include lowering the deductibles and co-pays of health plans and reducing the out-of-pocket costs for prescription drugs or to see a specialist.

Patient confidentiality must be ensured

Any medical professional or health care organization providing remote service is required to be compliant with the Health Insurance Portability and Accountability Act (HIPAA). Under HIPAA, a patient's paper and digital information has to be protected at all times. Physicians and health care providers have to ensure their cloud providers use special safeguards such as biometric scans, electronic IDs, and encryption to protect a patient's medical data from being hacked, copied, and transmitted. By using multiple safeguards, providers can protect electronic health information at all times and ensure that if the data

is intercepted, it cannot be read. Failure to comply with HIPAA will result in severe penalties.

Looking ahead

Telemedicine is a practical option for people on the go and those who are either house-bound or live in underserved areas lacking access to quality care. Moreover, telemedicine allows hospitals and doctors to easily follow up with patients to monitor their progress, change their course of treatment as required, and determine if in-person attention is needed for more urgent care. Given the frequent monitoring, health issues can be detected earlier in the process thereby keeping treatment costs down.

In a post-COVID-19 environment, we envision stable long-term growth for vendors as more people choose to work from home, existing patients grow more comfortable with the technology, and an expansion of services is offered to cultivate greater member loyalty. We also expect the landscape to become more competitive as we think the pandemic will likely attract an influx of new telemedicine competitors looking to capitalize on what we view as a secular growth opportunity. We anticipate health insurers and non-health-care technology vendors becoming more prominent players in this space over time.

New normal, new opportunities



How will COVID-19 impact the fading globalization theme?

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The pandemic likely accelerated an existing trend in the world economy—that of a slowdown in globalization. This was arguably the key driver of global growth for a generation, but it now appears to be a victim of its own success.

Between the end of World War II and the onset of the global financial crisis in 2007, total annual global exports as a share of the aggregate global economy increased from roughly five percent to 30 percent. This was driven by countries increasingly taking advantage of their comparative strengths in trade, either low cost, low regulation regimes or high value-added products and

services. This served as an efficient mechanism to improve living standards in emerging and developed nations—wages increased in the former and affordability of products and experiences improved in the latter.

There were a few speed bumps along the way caused by an over-reliance on certain regions for key inputs (witness the energy crisis in the 1970s), but overall, globalization was more of a blessing than a curse over that period.

But as efficiencies in global trade were continually exploited, by the start of the 21st century job losses and income inequality accelerated in developed nations. These tensions fanned the flames of populism and prompted economists to surmise that globalization had reached its limit.

The pandemic underlined another vulnerability in the system. Without open borders, international trade languishes. And the interconnectedness of global supply chains becomes a vulnerability if several links in that chain break at the same time.

More than a speed bump in world trade growth?

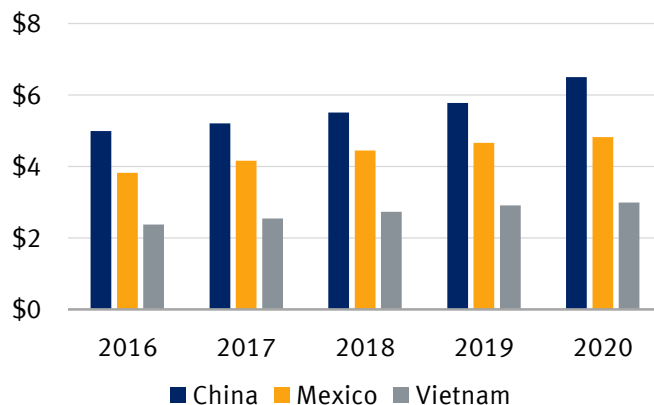
Total exports as % of global economy



Source - Penn World, IMF, World Bank, RBC Wealth Management estimates

Rising input costs require flexible sourcing

Average hourly manufacturing labor costs



Note: Average annual cost growth: China 6.8%, Mexico 6.0%, Vietnam 5.9%
Source - Statista, RBC Wealth Management

One area where the retreat of globalization clashes with the global response to COVID-19 is in the development of a vaccine. During previous pandemics, academic cooperation across countries combined with multinational organizations to speed the path of vaccine development. However, in the current environment, the instinct of typically populist politicians globally has been to prioritize rapid national development of home-grown vaccines. While this may only serve as a speed bump to the eventual roll-out of a vaccine, at the margin it may prolong the economic recovery.

In contrast, we note that the eurozone is one area where the pandemic appears to have strengthened cross-border cooperation. Recent measures to support the more impacted southern countries of the bloc have pushed the eurozone closer to the federalization of fiscal policy, as Germany appears to have performed a U-turn in its attitude toward bailing out less economically efficient members of the group. At the margin, this may act as a tailwind to European risk assets.

And although economic globalization may diminish further due to the pandemic, we don't believe the status of the U.S. dollar as the world's reserve currency is at risk, at least over our medium-term time horizon. While the greenback's importance may fade slightly at the margin,

its global dominance is unlikely to be challenged given the depth and liquidity of its bond market, and the dearth of competitor currencies that could assume its mantle. This should not be confused with a bullish view on the dollar, as we believe valuation considerations and increasing political risk in the U.S. may pressure the currency over the near term.

How to play the fading globalization theme?

We believe companies that already have well-established international franchises and end users in faster-growing markets should benefit, as we expect less pressure from future competitors attempting to copy their scale and reach. These include global pharmaceutical companies and multinationals with an established presence in regions with a growing middle class. Additionally, we believe countries that offer an option for companies to diversify their established supply chains may benefit from increasing country-specific trade tensions. And finally, those regions where the pandemic may have strengthened cross-country cooperation may emerge more quickly from the current global recession.

New normal, new opportunities



Surging government debt and deficits

This report is part of the “New normal, new opportunities” series, in which we examine secular trends in a post-COVID-19 world. The series will cover a range of themes that are emerging as a result of social distancing, the work-from-home imperative, health care developments, corporate implications, and broader societal change. We believe identifying these trends and understanding their investment implications will be critical to navigating the road ahead.

The novel coronavirus has also given rise to novel and unprecedented global economic conditions. This is the first time in modern history that the world economy has effectively been placed in an induced coma. With no real playbook on how to deal with this, governments and their central banks have fallen back on the simplest solution—to shower their economies in money.

The fiscal response has been fast, large, and widespread. The U.S. was arguably the first developed nation to open the spigot, but its peers followed suit in short order. In 2017, the Congressional Budget Office (CBO) projected an ongoing annual U.S. fiscal deficit of about five percent of GDP. The CBO was correct for the first two years, but the 2020 deficit is now likely to come in closer to 14 percent of GDP.

The U.S. government has had little difficulty financing or rolling over this debt so far, since it’s far from the only country doing this, and foreigners have an appetite for U.S. bonds. But that may usher in a problem further out if overseas investors sour on Uncle Sam. This is because U.S. net external debt is now 55 percent of GDP compared with only nine percent in 2007.

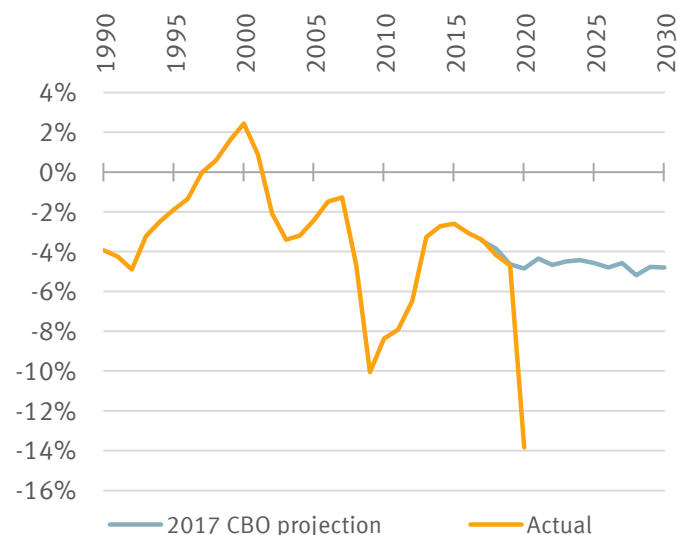
To be sure, fiscal largesse is the right strategy to support an economy in recession. But questions remain. How will this overspending impact the economy as we pull out of recession? Can we get back to balancing the books? What are the long-term implications?

The fiscal packages implemented to deal with COVID-19 will significantly increase the debt levels of most countries. For the developed OECD (Organization for Economic Cooperation and Development) economies, the World Bank projects aggregate public debt to rise from 109 percent of GDP in 2019 to 137 percent in 2020. Typically, academic consensus views debt levels above 90 percent of GDP to be harmful to long-term growth. We believe it’s highly unlikely that governments will implement austerity programs or spending cuts after the pandemic is over, so the default response is more likely to be higher taxes, financial repression, or creative accounting.

The easiest targets for higher taxes are likely to be foreign or multinational companies with overseas income streams. But this runs the risk of tit-for-tat tax hikes on domestic companies, which will probably face political pushback.

The CBO forecasts now look a little optimistic

Deficits as percentage of U.S. GDP



Source - Congressional Budget Office, RBC Wealth Management

So we believe a combination of higher taxes and continued low interest rates may be the most likely prescription.

Governments can get away with lower interest rates over the medium term, as aging populations suggest there is continued demand for income-based investment vehicles, which means that bond issuance tends to get snapped up even at historically low coupon rates.

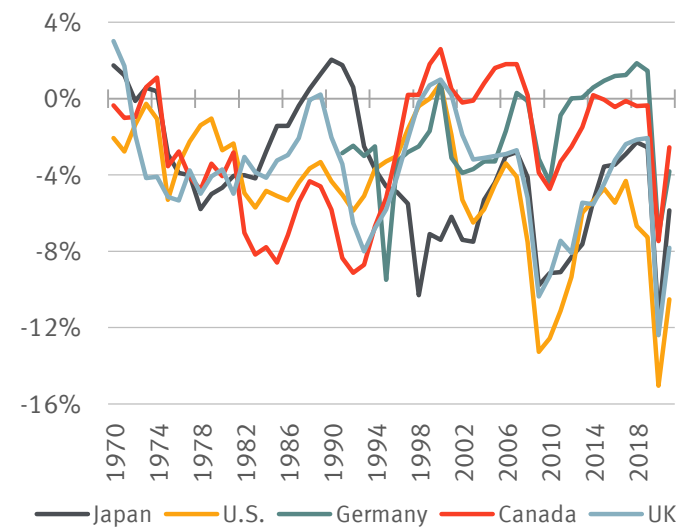
Over the near term, COVID-19 is a disinflationary shock given high spare industrial capacity and high unemployment. But over the longer term, it may act as an inflationary shock due to a combination of higher government spending and trends toward deglobalization. Additionally, higher money supply tends to lead inflation by 2–3 years under normal conditions. Although we see no current inflation pressures, if this were to change, excessive debt loads could effectively be inflated away, although rolling over the debt would become more expensive.

While increasing the debt loads of individual countries in isolation would typically weaken their currencies, the picture is less clear when everyone is doing it. Instead, we would look to relative trends in fiscal deficits to drive currency moves. But if a country starts to meaningfully address its deficit, it would likely be rewarded with an appreciating currency, which would harm its competitiveness. For this reason, we expect a global standoff in deficit reduction until the first country blinks.

And if any country can get away with deficits for longer, it's likely to be the U.S., due to the reserve currency nature of the dollar. Currently, 62 percent of global foreign exchange reserves are in dollars, while the next largest competitor

Welcome to the party: Developed nations spending heavily

National fiscal deficits as a % of GDP



Source - Bloomberg, RBC Wealth Management

currency, the euro, only accounts for 20 percent of global reserves. Given the liquidity of the U.S. bond market, we don't expect the greenback to surrender its reserve currency status anytime soon.

Ultimately, high fiscal deficits and debt loads are a political issue, rather than an economic one. As such, it will likely be addressed in a political fashion—by dealing with it when politicians get voter pushback. Given the widespread increase in government deficits globally, and the disincentive to be the first to cry “uncle,” we don't think that's likely to happen soon.

New normal, new opportunities



Wealth
Management

Speed bump in the secular growth of the sharing economy

This report is part of the “New normal, new opportunities” series, in which we examine secular trends in a post-COVID-19 world. The series will cover a range of themes that are emerging as a result of social distancing, the work-from-home imperative, health care developments, corporate implications, and broader societal change. We believe identifying these trends and understanding their investment implications will be critical to navigating the road ahead.

The sharing economy is an economic model defined as a peer-to-peer-based activity of acquiring, providing, or sharing access to goods and services that is often facilitated by a community-based online platform.

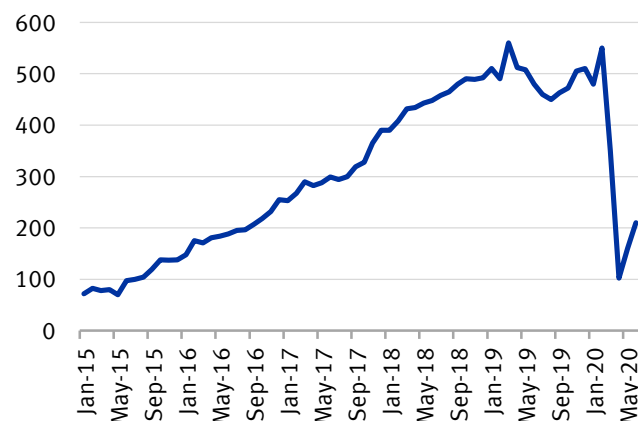
While the online facilitation aspect of this new business model works well in the COVID-19 world, the personal peer-to-peer interaction element is clearly a problem. But even as the broader economy continues to struggle, there are signs the sharing economy may bounce back to previous growth trends in relatively short order. People are social animals, so we would expect social-distancing habits to fade in the absence of widespread health fears.

The leader in the sharing economy is arguably the ridesharing business model, which has largely supplanted conventional taxi services in metropolitan areas. But a combination of stay-at-home mandates and an aversion to sharing confined spaces served to crater demand since March 2020.

One of the rideshare pioneers, Uber Technologies Inc., reported an eye-watering decline in usage for the quarter ending June 2020, with ride bookings declining 75 percent compared to the year-ago period. This marked a much slower recovery relative to consensus estimates. In countries outside of North America, rides recovered as mobility restrictions were lifted, but not to the extent suggested by cellphone mobility data. People just didn't want to jump into a shared vehicle.

COVID-19 set the rideshare industry back a few years

New York City Uber trips per day, '000s



Source - New York City Taxi and Limousine Commission, RBC Capital Markets, RBC Wealth Management; monthly through 6/30/20

This mirrors demand trends for public transportation, which in most instances showed even weaker demand trends. So who benefits from the aversion to shared transport? The automotive sector, at least in the short term. After the approximately 50 percent decline in light vehicle sales in the U.S. from March to April 2020, sales rebounded 40 percent month over month in May, and this trend appeared to continue over the summer months, prompting manufacturers to step up production plans.

But we wouldn't necessarily look to the major auto companies as a hedge against rideshare stagnation, as they face structural challenges of their own. Instead, we'd suggest the auto parts companies may be a better place to look.

RBC Capital Markets, LLC Hardlines Retail Analyst Scot Ciccarella notes that the “greater usage of personal vehicles rather than public transportation, combined with people opting to fix/maintain existing vehicles vs. purchase new

ones” helped drive revenue growth of 16 percent year over year in the June 2020 quarter for a major parts distributor.

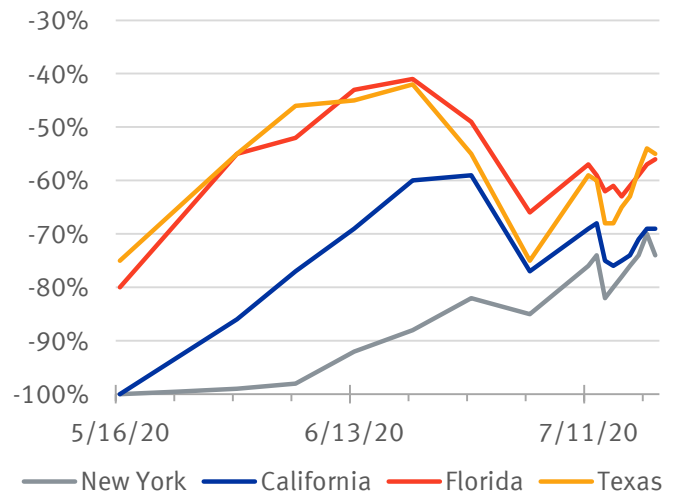
We expect other sharing economy business models will eventually recover lost ground, but only when social-distancing habits recede. Online vacation rental marketplace companies, such as Airbnb and Vrbo, suffered an initial drop in demand, but recovered faster than hotels in many locations, as vacationers sought to drive to accommodations where social distancing would be easier to maintain.

However, we believe other businesses, such as those that offer shared business work spaces, may have a harder time of things as work-from-home practices become more ingrained.

Overall, we expect sharing economy companies to thrive again as we emerge from the pandemic. They play to the trend toward renting over owning, and consumers’ increasing preference to spend money on experiences rather than “stuff.” In most instances, we believe the COVID-19 recession will mark a speed bump in their secular growth trends and not a road block.

Consumers still wary of enclosed spaces and other people

Change in number of seated diners from the same date in 2019



Source - Open Table, RBC Capital Markets, RBC Wealth Management; data includes reservations and walk-ins, from 5/16/20 through 7/19/20

New normal, new opportunities



Ground zero in the COVID-19 upheaval: The future of travel and leisure

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If we had to select a business model that exemplifies the devastating impact of the pandemic on revenue trends, the travel industry is likely at the top of the list. For the quarter ending June 2020, the two largest online travel agencies both posted year-over-year revenue declines of approximately 90 percent. RBC Capital Markets, LLC Internet Analyst Mark Mahaney believes this marks the low in revenue trends, but he only expects a modest improvement through year-end, with bookings down 70 percent and 50 percent year over year in Q3 and Q4, respectively.

The forced closure of economies and restrictions on travel have decimated global tourism. According to the UN World Tourism Organization, the pandemic cost \$320 billion in lost tourism revenue between January and May 2020, a loss three times greater than that of the global financial crisis of 2009. Tourist numbers fell 56 percent year over year over that five-month period. While we expect global tourism to rebound over time, some areas may fare better than others, and we expect the hardest-hit areas will take longer to recover.

Ultimately, we believe the travel industry will survive, but some of the demand trends evident before the pandemic may take a while to reappear. At the end of the last economic expansion, consumers were increasingly favoring spending on experiences rather than tangible goods. This trend may resurface, but only if the experience can be enjoyed in relative isolation from throngs of tourists. This may favor “bespoke” travel agencies.

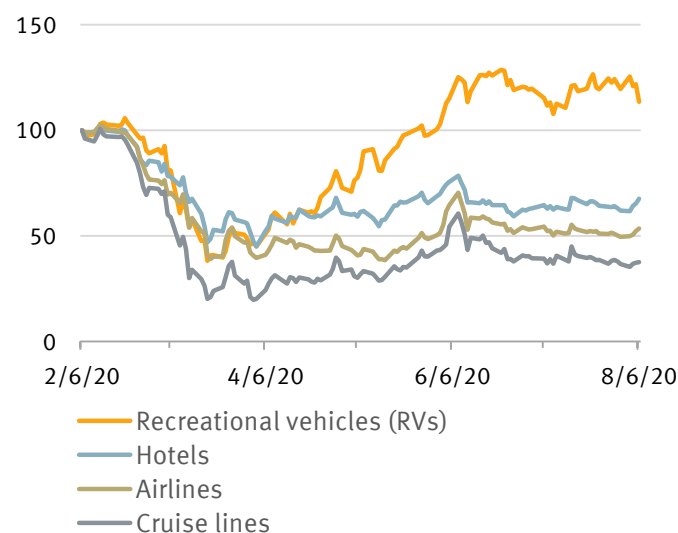
There are parallels between the current slowdown in demand for travel and that caused by the terrorist attacks in 2001. The 9/11 tragedies also created an existential crisis for the travel industry, but eventually it bounced back, albeit with more restrictions and higher costs.

If we examine the rebound in travel demand since the spring lows, we notice that lower-end hotel chains have fared better than their glitzier peers. This was also a trend seen after 2001, when local and car travel recovered ahead of air trips and corporate travel. According to our national research partners, revenue per available room during the pandemic fell by 24 percent through July 31 for economy hotel chains versus 51 percent for the broad U.S. hotel industry.

We expect these budget chains to recover to 2019 demand levels by 2021. Beyond that, higher-end business-focused

Get me off this boat ... I'll take the RV instead

Relative stock price performance



Daily closing prices, last six months, with 2/6/20 = 100. Performance reflects the average of the two largest public companies in each category.

Source - RBC Wealth Management, Refinitiv I/B/E/S

hotel chains and online travel agencies should recover by 2022, with industries that might struggle in a social-distancing world, such as casinos and cruise lines, set to recover their pre-COVID-19 revenue levels by 2023, in our view.

From a geographical perspective, developing nations that derive significant revenue from tourist dollars, together with companies that operate in growth tourist destinations, may struggle for longer.

But while we're waiting for normal service to resume, there are areas of leisure-related businesses that may pick up the slack. For those unwilling to venture too far afield, the [home fitness trend](#) may fill the leisure gap. And for those that crave a more controlled travel experience, the recreational vehicle (RV) lifestyle appears to be making a comeback, with RV manufacturers and companies that offer RV resort facilities reporting a surge in demand.

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