Reopening to a New Normal —A Brave New World

Our 2021 Intellectual Capital Conference

We are committed to providing counsel that helps families, individuals, and institutions achieve their wealth goals.

In a financial world increasingly populated by small boutiques or huge conglomerates, 1919 Investment Counsel is a rare, if not unique, entity.

Firm Facts:

- **Founded in 1919 as Scudder, Stevens & Clark**
- **37 portfolio managers and client advisors who average 34 years of experience**
- **Proprietary research**
- **Independent thinking**
- **More than 120 employees**
- **$18.9 billion in Assets Under Management with $2.1 billion in Responsible Investments (as of May 31, 2021)**
- **Ranked #19 in Barron's 2020 Top 100 RIA Firms and voted Top FA by Financial Times**

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As we did in 2020, we held 1919 Investment Counsel's Annual Intellectual Capital Conference virtually this year. While it is ideal to hold this event, which is about idea and insight exchange, in person, we have adapted to the technological alternative of ZOOM for the time being. Our current plan is to hold next year's event live so we reengage face to face with our colleagues from across the country. The lift that we get from that interaction is important on any number of levels.

As in the past, this year's speakers enabled us to continue the twin spirits of challenging accepted wisdom and encouraging intellectual curiosity that have defined our firm for over 100 years.

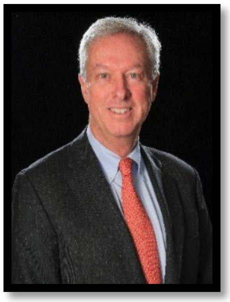
This year we tackled seven important topics: (1) the current state of play in the tax arena; (2) the concept of circular energy; (3) the Fed's current view and what might change that; (4) a nuanced look at China's willingness and ability to impact world events; (5) the immediacy of the climate crisis; (6) fixed income; and (7) why innovation is accelerating in the provocatively titled presentation "The Idea Multiplier."

As always, our goal was to expand our thinking by listening to thought-provoking views whether they agree with ours or not, and to see around the corner to what is coming next. Ultimately, of course, this is all about being better counselors to our clients and giving them the time and peace of mind that comes from having a well-informed, smart, and thoughtful team of 1919 Investment Counsel advisors.

In the pages that follow, we will share what we heard from our speakers. Feel free to call any of us if you want to discuss a topic in more detail.

Finally, while this has been a challenging time, it has been rewarding to hear from clients and friends that the quality and quantity of our communication have been outstanding. We continue to grow as a firm - most often via referrals from happy clients. I hope you enjoy the following summaries from this conference and that you find the variety of other publications available on our website helpful as well. Feel free to share our intellectual capital with folks you feel would benefit from it.

Thank you for your support of 1919 Investment Counsel.



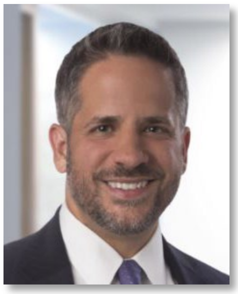
Harry O'Mealia
President and CEO

Please note that the opinions expressed by our speakers are their own and do not necessarily reflect the views of our firm.

Beth D. Tractenberg *and* George A. Callas

Steptoe & Johnson LLP

President Biden's Tax Proposal



Beth Tractenberg and George Callas are partners of the law firm Steptoe & Johnson, LLP. Ms. Tractenberg is head of the firm's Private Client Group. In her practice, she guides high-net-worth individuals, families, and fiduciaries in international and domestic estate planning, contested matters, estate administration, and related matters. Mr. Callas advises national and multinational corporations and partnerships on tax policy matters. Drawing on 15 years of experience on Capitol Hill, most recently as Senior Tax Counsel to Speaker Paul D. Ryan in the U.S. House of Representatives, Mr. Callas has a deep understanding of tax policy and the political environment. We were fortunate to have this combination of tax experts speak to us on President Biden's tax proposal and offer an insider's perspective.

President Biden has put forth two ambitious plans to advance his domestic agenda:

1. The American Jobs Plan (a/k/a the "infrastructure plan") and
2. The American Families Plan

Both of these plans call for trillions of dollars in new federal spending over the next ten years. In order to finance these new programs, the federal government will have to raise taxes in a significant way.

The speakers explained that despite the ambitious goals of these spending programs, there is a certain political reality that will prevent too much change from occurring. Democrats in Congress have a very thin margin; they have a slight majority in the House and are split evenly with Republicans in the Senate. As a result, the slightest defection could spell disaster for a major tax increase. In order to pass the legislation, they will avoid picking too many fights by concentrating on large impactful revenue-raising measures rather than dozens of small changes for fear of offending one constituency or another.

One of President Biden's tax proposals is to impose a tax on capital gains at death. Never before has the United States taxed unrealized gains. Federal tax rules also have historically allowed appreciated assets to get a "stepped-up" basis when the owner dies. Thus, the asset's basis for purposes of computing gain is reset at fair market value as of the owner's date of death. Because of this rule, significant amounts of capital appreciation are never taxed. Although the estate tax will affect some of that wealth when it is transferred at death, there are generous exemptions (currently $11.7 million per person) and other allowances that effectively eliminate all but a small minority of people from actually owing any estate tax.

"The situation today is very fluid and changing rapidly."

As of the date of our Intellectual Capital Conference, the Biden Administration has released a "Fact Sheet" of its American Families Plan, which included the following tax increase proposals:

- Increasing the top individual tax rate from 37% to 39.6%
- Increasing the top capital gains tax rate from 20% to 39.6%
- Requiring realization of capital gains at death
- Taxing income from "carried interests" at ordinary rates
- Limiting the exclusion for like-kind exchanges of real estate to $500,000
- Making permanent the excess pass-through business loss limitation
- Expanding the 3.8% percent tax on Net Investment Income to all income not otherwise subject to the Medicare tax

"Retroactive tax legislation is unlikely, but we can't rule out a last minute change to make the numbers work."

Ms. Tractenberg noted that earlier this year, she received many inquiries from clients concerned about the prospect of a retroactive change in the gift tax exemption. Ms. Tractenberg observed that, under gift tax rules, the amount of the effective exemption is not determined as of the date of the gift but as of December 31 of the year of the gift. Thus, a mid-year change or retroactive reduction of the gift tax exemption would affect all gifts made in 2021. While both speakers agreed that Congress could pass tax legislation retroactively, the potential is low. Nevertheless, Mr. Callas said that there is a certain fiscal reality that may require a last minute change to the effective date of a new tax law, to make the budget numbers work.

"Because of the thin majority in Congress and realities of the legislative process, big changes to the tax system like the wealth tax or even taxing capital gains at death seem unlikely."

Mr. Callas observed that each of these tax measures has its supporters and detractors. Our speakers noted that small tax changes targeting obscure tax breaks are unlikely but lawmakers may seek to fix things that the American public see as unfair, such as the preferential rules for "carried interests," which many see as a tax loophole for the wealthy.

Ms. Tractenberg said the Treasury Department is expected to issue more detailed revenue proposals in its "Green Book," which is expected by the end of the May. The Green Book will indicate whether the Biden administration intends to include any estate, gift or generation-skipping transfer tax changes in its tax plans. As a candidate, Joe Biden said he wanted to restore estate and gift taxes to 2009 levels. The Green Book will also reveal if any of the other tax proposals that President Biden advanced on the campaign trail are on still the table.

Editor's Note: The Treasury Department issued the Green Book on May 28, 2021. No estate, gift or GST tax proposals were included.

ADAM SIEMINSKI

President, King Abdullah Petroleum Studies and Research Center

The Circular Carbon Economy (CCE)

Adam Sieminski has a pragmatic perspective on how to mitigate rising greenhouse gas emissions due to his unique combination of financial services, research, and policy experience. He was chief energy economist at Deutsche Bank and later served as a top energy advisor to the Obama administration in his role as Administrator of the US Energy Information Administration (EIA) from 2012 to 2017. Mr. Sieminski is currently involved in shaping energy policy in the Middle East and globally through his role as President of the King Abdullah Petroleum Studies and Research Center (KAPSARC) based in Saudi Arabia. KAPSARC is a non-profit think tank that provides research, data, and advice on energy economics and environmental policy.

Greenhouse gas emissions including methane and carbon dioxide (CO2) are widely acknowledged as contributing significantly to climate change. However, that said, an important and less examined question is whether or the degree to which we can effectively reduce the carbon footprint of fossil fuels without banning them altogether? Billions of dollars are being invested in research and development to accelerate the shift from a linear carbon economy focused on extraction and burning of fossil fuels/carbon to a circular carbon economy (CCE) that can reduce, reuse, recycle, and remove greenhouse gases associated with fossil fuels. In a somewhat rare instance of global consensus, the Group of Twenty (G20) countries endorsed this concept of a circular carbon economy in 2020. Perhaps somewhat surprisingly, Saudi Arabia and other nations that rely on oil exports are actually playing an integral role in the development of these projects and technologies.

"Oil and petrochemicals will be a necessary part of the global economy for a long time."

A reasonable case can be made that banning fossil fuels is not feasible over the near term. Numerous critical industries including shipping, aviation, and cement production rely on fossil fuels and currently have no viable or cost-effective alternatives. Even electricity generation may be difficult to provide from renewable sources alone due to intermittent generation and limitations on battery storage. This may explain why demand for oil continues to grow with worldwide consumption expected to surpass 2019 levels by 2022.

"This is not just smoke and mirrors."

The transition to a circular carbon economy will rely on new technologies and processes to reduce, reuse, recycle, and remove the greenhouse gases associated with fossil fuels to slow or even reverse climate change. Reducing fossil fuel use can be achieved through energy and fuel efficiency improvements as well as increasing the use of renewable energy (including nuclear energy) and clean fuels such as hydrogen. New methods to capture carbon dioxide create opportunities for it to be re-used, recycled, or removed. Advancements in enhanced oil recovery (EOR) allow waste CO2 to be permanently injected into the ground to pull additional oil from existing wells. New technologies are allowing captured carbon to be recycled into high-value additives in materials, fertilizer, industrial chemicals, and fuels. Ultimately, the removal of CO2 from the atmosphere may be the only way to actually reverse climate change. Direct mechanical capture of CO2, mineralization, and natural environmental carbon sinks including mangrove trees and seaweed all hold promise to promote "negative" emissions by absorbing and storing CO2. If the cost to capture CO2 directly from the air continues to decline in a manner similar to other new technologies like solar panels, then it could eventually provide a truly scalable solution to climate change.

"Oil producers want to be part of the solution, not part of the problem."

Canada, Norway, Qatar, Saudi Arabia, and the United States, which represent 40% of global oil and gas production, have formed the Net Zero Producers Forum to help design a roadmap to zero emissions while acknowledging the need for some fossil fuel use for the near future. In fact, Saudi Arabia has a number of carbon-reducing projects underway including one of the largest renewable energy-based hydrogen (i.e. "green hydrogen") projects in the world.

If oil will not be going away anytime soon, then developing a more circular carbon economy may be the only way to effectively curtail climate change. Economic incentives and multiple technologies will likely be required to achieve this goal. Fortunately, some of the largest oil producers in the world are the ones most actively engaged in finding pragmatic and innovative solutions.

Julia Coronado, Ph.D.

President and Founder of MacroPolicy Perspectives, Clinical Professor of Finance, UT Austin

Implications of the New Regime of MacroPolicy

Dr. Coronado is the President and Founder of Macro Policy Perspectives with more than a decade of experience as a financial market economist. She served as Chief Economist for Graham Capital Management and BNP Paribas and is a member of the Economic Advisory Panel of the Federal Reserve Bank of New York and the Economic Studies Council at the Brookings Institution.

Dr. Coronado gave us her insights on the New U.S. Framework for the Federal Reserve's (Fed) Fiscal and Monetary Policy. While it had been in the works for quite some time, the COVID pandemic delayed its unveiling until last September. In her view, this time around, the Fed seeks to push the economy into a faster recovery with demand leading supply. It wants to see a greater share of labor compensation as a percentage of GDP. It further expects inflation to pick up momentum so that over time, it averages about 2%. Global headwinds of demographics, globalization, and technology will temper any sort of 1970's levels of inflation. This time around, it seeks to calibrate monetary policy on actual data, rather than forecasts. Ultimately, it seeks higher nominal interest rates and a steeper yield curve.

This new framework of fiscal and monetary policy is dependent on a number of factors:

- First, the Fed observed that across the globe the equilibrium interest rate (r*), that is the interest rate at which the demand for money exactly matches the supply of money, has been low from a global standpoint. Dr. Coronado pointed to decreasing populations, trade globalization, and technology as reasons for the decline.

  According to recent United Nations data projections, the growth rate of the working-age population (age 15 to 64), has been shrinking across the globe. We can expect this will be the reality of our macro-economic environment for the foreseeable future.

  Trade globalization has allowed for lower production costs and consequently inflation, for decades. Technology empowered consumers to make more informed and better-buying choices with less time and effort. Technology causes changes in business models and questions the need to increase workers. Companies seek to be leaner and more productive. As a result, the period of time it takes to recover the jobs lost from a recession has become increasingly longer. This jobless recovery has become the norm.

  "The Fed's new policy regime aims for a new recovery dynamic--hotter and faster with demand leading supply."

- As a second factor, the Fed has observed how worker compensation has lagged compared to worker productivity and as a result, as a share of U.S. GDP since the 1990s. The labor sector, in general, has lost bargaining power giving workers a lesser sense of job security. This translates to a consumer on a budget, sensitive to price changes, and not willing to absorb price hikes. Dr. Coronado noted this time around, workers would need to experience higher wages, for them as consumers to feel comfortable in paying higher prices on goods and services.

  Dr. Coronado questioned whether U.S. demand, fueled by recent fiscal support, will ignite the Fed's desired change in the inflationary regime. The large fiscal stimulus is certainly taking effect as we are in the midst of a strong economic surge. The projection of an 8% GDP for 2Q after 1Q of 6% is likely despite the supply-chain bottlenecks we are currently experiencing.

On another positive note, she pointed out that Americans are coming out of this recession with much cleaner and healthier balance sheets. This could make them feel more comfortable to seek credit, increase their purchases, and speed up demand. In prior recessions, rising loan delinquencies have spurred credit deterioration as banks are forced to make further reserves against bad loans. This in turn prolongs the malaise of the recessionary period. During the recent COVID-inspired short-lived recession, for the first time, the percentage of seriously delinquent loans actually decreased. Banks granted moratoria on mortgages, student loans, and other household loans. Households used the fiscal and monetary stimulus to either stay current or pay down consumer debt, rather than for spending.

"When you are in a recession, it is hard to calibrate how much support is needed. Given the low inflationary environment of the past decades, the Fed believes this time it is better to err on the side of doing too much than too little."

In terms of achieving the right level of inflation, the Fed is looking to accomplish the inflation expectations of the early and mid-2000s before the Great Recession. During that period, the 'sweet spot' of core inflation in the economic cycle was at times just right below 2% and at others just above 2%. The Fed sees the current uptick in inflation as transitory and believes that they will be able to manage a return to that 'sweet spot' as the economic activity normalizes.

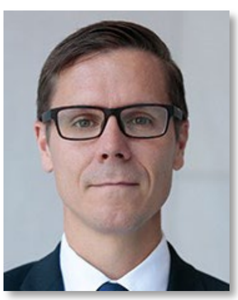
- Last, Dr. Coronado pointed to the rise in global liquidity with U.S. dollars as the source, its impact on asset markets, and why this dynamic is likely to continue. Trade globalization in the past decades has caused global reserves to rise. These reserves have been, and continue to be U.S. dollars, recycled into U.S. dollar-based assets. Consequently, as consumer inflation lowered, household net worth (value of all asset prices and house prices minus debt) has increased. As the U.S. leads the charge in the post-pandemic world economic recovery, we can expect the demand for U.S. dollar-based assets to continue.

In sum, we are in the midst of a new fiscal and monetary dynamic to propel the U.S. economy into faster recovery and a new economic cycle. The eyes of the world are on the Fed as it in turn closely monitors this new approach unfold.

Jude Blanchette

Freeman Chair in China Studies, Center for Strategic and International Studies

China: Managing Geopolitical Risk during Periods of Slower Growth



In recent years, China repeatedly has exerted its influence on the global stage, often in ways that have clashed with the capitalist and democratic ideals of the West. This friction has boiled over during the last three years, notably through the ongoing tariff war between the U.S. and China, coupled with tensions created from the handling of the COVID-19 outbreak which led to the global pandemic. Now that developed markets are beginning to recover, domestic economic advisors are seriously considering ways in which to counterbalance possible actions by Xi Jinping's administration to further expand China's influence.

To help us decode the psyche of leaders within Beijing, we sought Jude Blanchette, author and frequent columnist on the topic of China. He has lived in China for several years and also is Freeman Chair in China Studies at the Center for Strategic and International Studies. Jude provided an in-depth analysis on how concerned investors should be given the political climate in China and China's relevance in the global economy.

China's Near-Term Outlook

There are two popular viewpoints when it comes to China's path forward: either that China's policies will cause its economy to collapse, thus losing sway within the global marketplace, or that China is poised to become the dominant economy for the foreseeable future. However, the more probable outcome is that China's course, at least over the next several years, will not exhibit a linear trajectory at all, given the current challenges Xi's administration faces, especially over the next 18 months. This period has significance to Xi and his administration for two reasons: July 1st will mark China's 100th anniversary as a communist nation, a symbolic and prideful moment for China. This occurrence will undoubtedly spark the start of the next election cycle as Xi Jinping seeks to secure a 3rd term in power during Fall '22. Secondly, Beijing will host the Olympics in February and wants to project a sense of stability and order by curtailing any perceived oppositions that could disrupt the normal order. Although China's elections are not democratic in nature, they do happen, and Xi knows that he must show members of the ruling class that he has a plan to lead the country on a path to prosperity to retain their approval and maintain power.

As with any authoritarian government, there is an obsession with power, which Xi has displayed over the years through consolidating his status, notably with the successful abolishing of term limits in 2018. Although China feels emboldened by its governing approach in the wake of the effectiveness of its lockdown protocols, during the height of the pandemic and relative to the U.S. struggles dealing with the Capitol insurrection, Xi's administration acknowledges that it will have its own issues as it looks to manage productivity in the face of mounting headwinds surrounding an aging population and slowing growth. On top of those challenges, one of the more glaring risks created by Xi's consolidation of power has been the lack of a leadership succession plan in China. It is unclear who would replace him if he has a catastrophic health event, which is plausible given his current health, which is perceived as below average for a person of his age. Such an outcome would likely destabilize the region for some time.

Bilateral Relations

What is the trajectory of the bilateral relationship between the U.S. and China and what should we expect during the current administration?

Xi's advisors are the architects behind China's domestic policies and they are solidly behind the idea that the western world is an adversary of China and does not want China to prosper. Recent coordinated sanctions against China are often referenced to support their claim that the western world does not have China's best interest at heart. Political pundits agree that the U.S. has adopted a containment strategy with China. However, many of the U.S. efforts to get China to change course have not worked. China has doubled down on its retaliatory responses, escalating the conflict by applying its own sanctions and expulsions hoping to deter future sanctions from the West.

"Investors should expect that this hardening stance will be the norm as it has been since 2016."

Xi's administration feels that the U.S. damaged the bilateral relationship during the previous administration and are not in a rush to help repair relations. Although Beijing realizes that it has to fix China's slowing economic growth, it has shifted its main focus to national security. China's latest propaganda touts that China is witnessing positive changes unseen in a lifetime, all while the West is declining. As a counterpoint, our weekly market reviews and quarterly Investment Review and Outlook, have noted that U.S. GDP is expected to outpace other developed nations for at least the next few quarters.

Despite China's rhetoric, it is unlikely that their inward focus will cause them to withdraw from the rest of the world. Financial markets within China have been one of its bright spots and all indications suggest that China wants to continue to welcome foreign investors, and for them to see it as an attractive location for doing business, especially in the semiconductor, robotics, and financial services sectors. However, it is noticeable that they are skeptical about continued global integration, especially if they do not have the leverage to enforce their will. It is believed that Xi views the ability to control access to the Chinese market, given its size, to be his biggest asset. We expect him to look for ways to leverage this strength when negotiating with other nations in the coming years.

China's Big Bet

China wants to retool its economic growth engine from one reliant on exports to one weighted more towards internal growth and consumption, as there is a sense of uncertainty surrounding the strength of their external relationships.

The latest intelligence suggests that China will not deliberately invade Taiwan, either to secure the intellectual property or to settle a century-long territorial dispute, as doing so would be too costly on several fronts. Mainly, they are certain that an invasion would warrant direct military conflict and intervention from the West. The Chinese economy surely would suffer in such a conflict. Instead, China's growth strategy likely will involve securing its own capacity by heavily investing within certain strategic sectors such as semiconductors. As China's growth rate has slowed, so has its foreign investments in countries such as Pakistan and in African nations. ROI is more of a concern now. We expect foreign investment in China to remain at lower levels as investors in Canada, the U.K. and the U.S. assess how a slow-growth China will perform. It remains to be seen whether China's pivot will pay-off, but one thing is certain: China is betting that it will continue to remain relevant.

Christian Stracke

Managing Director, Global Head of Credit Research, PIMCO

Hot Topics in Fixed Income

Christian Stracke is global head of the credit research group and a senior portfolio manager at PIMCO. His discussion focused on the future of fixed income investing, the path of inflation, and whether traditional portfolio allocations to fixed income still make sense.

"Strongly in the 'Transitory' Inflation Camp."

PIMCO is strongly in the camp that the recent trend in higher inflation will be "transitory" and cited four major factors as to why:

- One-off adjustments: The U.S. economy is facing a series of one-off factors that will bump up reported inflation metrics in the short term, but do not represent a regime change in inflation. Supply bottlenecks are partially a result of a logistical nightmare of re-opening and restarting the economy, but this will be worked through over the course of the next several months.

- Fiscal retrenchment: Government spending represented close to 30% of GDP in 2020, and this figure will decline meaningfully in 2021, and further in the years ahead. The stimulus spending was meant to bridge the economy through the pandemic and will not be repeated.

- Private sector deleveraging: Corporates are gradually deleveraging after a borrowing binge in 2020. Consumers are also in good shape, with stimulus payments being used to manage down debt balances. Mortgage markets are also healthy, with solid underwriting and equity cushions supporting higher balances.

- Secular trends: Long term secular forces, including technology adoption and demographics continue to exert disinflationary pull.

Given PIMCO's view that inflation is likely transitory, they have a view that core CPI in 2021 will be only somewhat above 2%. The Fed's preferred inflation metric, core PCE, is typically 20-30 bps lower than core CPI, leading to PIMCO's view that there is "not much risk" of a big inflation overshoot and instead, inflation will "fade back down" over time.

"High Debt World Acts a "Natural Cap" on Rates."

Against this backdrop, PIMCO believes the Fed's "dot plot" timeline for raising rates is accurate, and ultimately the Fed will struggle to get rates back to their longer-run forecast for Fed funds at 2.5%. PIMCO's view is that in a high-debt world, there is essentially a "natural cap" on interest rates over the long term not far above the current 10Y rates; over the short term, however, yields could easily overshoot. Do bonds still make sense in such a low interest rate world? PIMCO says Yes, for two major reasons:

- A fixed income investor that is willing to take on moderate credit risk can generate more attractive returns than a Treasury-focused investor, with intermediate term investment grade corporates currently yielding around 2%, or above 3% on higher quality high yield bonds. For Munis, valuations are stretched, but PIMCO still likes the sector, as credit fundamentals remain healthy.

- Bonds should still protect investors from "tail risk" scenarios which lead to major equity market drawdowns. Although bond yields are low on a historical basis, they can go lower. Yields move inversely to prices and bonds should hold up better than equities in a sustained risk off environment.

Looking ahead, there are some concerns building in the lower echelons of high yield markets, single B ratings and lower, where they are seeing more aggressive yield-chasing behavior. Market participants are relaxing underwriting standards in this corner of the markets, and PIMCO remains cautious for this space. PIMCO also noted that bond market liquidity remains a concern, as the March 2020 pandemic crisis severely tested liquidity last year. While the Fed was quick to act last year, it will not want to create moral hazard for the credit markets going forward. Since the financial crisis, banks have been less able to cushion volatility in credit markets, leading to less market liquidity. This lack of market depth is worrisome given the deteriorating credit standards in pockets of high yield. Despite these longer-term concerns, PIMCO has a constructive view on fixed income investing in the current market environment.

Dr. Stuart Mackintosh

Executive Director, Group of Thirty

Climate Crisis Economics

Dr. Mackintosh is a certified Business Economist and the Executive Director of the Group of Thirty, an international financial think tank comprised of senior figures from central banking, the financial sector, and academia. His latest book, *Climate Crisis Economics*, which will be published this summer, served as the basis for his presentation at our conference. Dr. Mackintosh spoke about the urgency of the climate change crisis, the path forward, and how investors are driving change and will continue to drive change alongside policymakers, individuals, and businesses. His comments raised alarm, but also offered optimism for the future.

Regarding climate change and "the glidepath to net zero," Dr. Mackintosh stated, "we need to recognize the crisis for what it is if we are going to grapple with it with sufficient urgency; now is not the time for incrementalism, now is the time for dramatic change." Carbon dioxide levels in the atmosphere are the highest they have ever been. Temperature levels have been rising, too, and are currently 1.2 degrees Celsius above pre-industrial levels. As part of the Paris Agreement, world and business leaders have agreed to limit the rise in temperatures to 1.5 degrees Celsius, up to a maximum of 2 degrees Celsius. However, Dr. Mackintosh noted that current commitments globally are not enough and will only get us to 2.4 degrees Celsius above pre-industrial levels. He emphasized, "That is dangerous because we're banging up against tipping points within the climate." Once we hit the "tipping points," we cannot go back. If we fail to take adequate action, we will see increases of 3 to 6 degrees Celsius, and the impacts of this will be like nothing we have ever seen in human history.

While we are already seeing aspects of global warming, Dr. Mackintosh expressed good news, "Crises are moments of opportunity, crucibles for change. Crises, once they're recognized, result in significant, rapid, dynamic change." He cited the world's collective response to the COVID-19 pandemic as an example of this.

"The glidepath [to net zero] is not going to be easy, but it is possible."

China, the U.S., and the EU are the largest contributors to global greenhouse gas emissions. With the Biden Administration's new plan, the major players are now all taking meaningful action.

Dr. Mackintosh stressed the need to set a gradually rising price on carbon across the world. He used Sweden as an example of a country that implemented a carbon tax many years ago and, since then, has been very successful at cutting its greenhouse gas emissions while simultaneously experiencing economic growth. Dr. Mackintosh pointed out that a shift in market sentiments is already underway. Leaders need to support that shift and harness the markets to help achieve their climate goals. A move to start pricing carbon now will allow for gradual price increases and the transition will be orderly and manageable; the costs will be much greater if we wait. Dr. Mackintosh urged us, as investors, to ask companies about what they are doing to manage these risks and if they are pricing carbon.

"Can we see a way ahead?" Dr. Mackintosh's answer was, yes, it is possible, but we do not have much time. Further, it will be extremely challenging to get to net zero by 2050 and many of the technologies that we need are only in the prototype phase. Dr. Mackintosh believes public opinion, both in America and internationally, is changing and that once people realize that net zero is a scientific necessity, they will take action.

Dr. Mackintosh indicated that there are positive signs that the transition is underway, especially in the utility and electric vehicle sectors. In the utility sector, there has been rapid investment in solar and wind power resulting in a rapid decline in the cost of these technologies. He expects the energy transition to continue and to speed up. In the electric vehicle sector, we are seeing the markets take action as policymakers set clear phase-out goals. These are only a piece of the story; many other steps need to be taken. For example, Dr. Mackintosh noted that carbon emissions are not being adequately addressed in other industries like agriculture and the cement industry. In the case of cement, greener alternatives are available at comparable cost, but they are not being used. Local governments will have to step in and force change in industries that are slow to act.

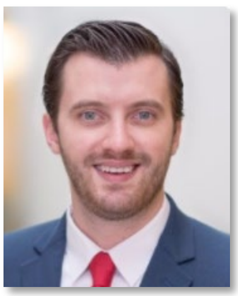
Finally, the shift is being driven and accelerated by younger investors. A massive transfer of wealth from baby boomers to younger generations is occurring and these younger investors are deeply committed to incorporating environmental and social considerations into their investments. According to Dr. Mackintosh, a company's returns will be directly linked to its commitment to achieving net zero; the more committed a company is, the higher its returns will be. In his view, ESG (Environment, Social, and Corporate Governance) will be how we invest. Investors will move away from companies that do not have a net zero plan; carbon intensity will be a negative for returns.

Dr. Mackintosh closed by saying that he thinks "there is a positive story that will emerge out of this crisis that we must respond to and that the next industrial revolution will be green globalization."

ADAM SCHICKLING

Economist, U.S., The Vanguard Group

The Idea Multiplier – An Acceleration in Innovation is Coming



We concluded our Intellectual Capital Conference with a presentation from Adam Schickling, an economist for the Vanguard Investment Strategy Group. Mr. Schickling shared the group's research on a concept they call the "Idea Multiplier"—an indicator that attempts to explain why an era of technological advancement and innovation has coincided with surprisingly muted growth in productivity.

For much of human history, population increases were the sole driver of economic growth. It was not until the mid-18th century with the Industrial Revolution that new technologies allowed for the more efficient use of labor, the integration of capital, and widespread sharing of knowledge, which ultimately led to a global productivity boom. Productivity growth would remain elevated for much of the following century, translating to sustained growth in wages, profits, and living standards. However, over the last two decades, this trend has changed, and developed countries like the United States have experienced levels of productivity growth significantly lower than the historical average.

Widely cited explanations for this period of anemic productivity include an aging demographic, fewer groundbreaking inventions, the shift to a service-based economy, and measurement issues. Mr. Schickling and his research partners acknowledge the role each of these factors have played but also have found that there is more to the story. Their research focuses on what they believe to be the primary driver of productivity growth—the generation and expansion of ideas, termed the "Idea Multiplier." Their research finds that the Idea Multiplier not only helps to explain the current reality of lower productivity levels but can also be used as a leading indicator to project future productivity growth.

"There are these innovations…electricity, the telephone, the internet…they're discovered but it takes time to permeate throughout the rest of the economy."

Prior research on the connection between technological advancement and productivity focused on patents as a proxy for innovation. While relatively easy to track and quantify, Mr. Schickling and his team believe patents to be a flawed measure of innovation, and, therefore, a poor predictor of productivity. For one, not all ideas become patented, and for those that do, there is often a long and complicated process before a patent is ever awarded. Ultimately, it is the idea behind the patent that spurs enhanced productivity, so that is where the Vanguard research team set their focus. Generally, new ideas first appear in academic journals. Those ideas are then debated and developed further, leading to a synergistic cycle of idea creation and expansion. At the end of the day, the best ideas become the building blocks for future groundbreaking innovations.

While measuring ideas and the expansion of those ideas may seem like an abstract concept, the Idea Multiplier captures this phenomenon by focusing on reappearing theories seen in academic journals and forward citations of those articles. The research group also incorporates an "Idea Diffusion" index into their model to further assess the impact of an influential idea by measuring its spread and the length of time it takes for it to be applied in a given industry. After developing and testing their model, Mr. Schickling and his research team found a statistically significant relationship between changes in the Idea Multiplier and the Idea Diffusion index with forward five-year productivity growth at both the industry and country level.

Mr. Schickling explained how their research could be used to understand why the U.S. has found itself in a prolonged period of low productivity growth despite the technological advancement and innovation that has seemingly occurred over that same period. By taking a closer look at Idea Diffusion, they found that as late as the early 2000s, the U.S. generated about half of the world's ideas. However, with globalization and new technologies increasing the efficiency of information sharing, this trend has changed. Now, instead of being a net exporter of ideas, the U.S. may benefit from greater access to foreign knowledge from around the world. Another factor is the delay between idea creation and its eventual translation to productivity growth. Mr. Schickling explained that there is a common misconception that a groundbreaking invention will immediately lead to a surge in productivity. In reality, it takes time for these new technologies to permeate the economy and be implemented into business processes.

"We're optimistic heading into the 2020 decade."

Their model paints an optimistic picture for U.S. productivity growth going forward. The Idea Multiplier increased by 0.02 units in the last year, translating to an expected annual productivity increase of 1.2% over the next five years. This is double the post-2000's average and higher than the productivity growth seen during the 1990's technology revolution. Higher productivity growth would be a clear positive for the U.S. economy and could translate into higher profits for companies, higher wages for workers, and increases in overall wealth.

Mr. Schickling and the Vanguard team recognize that despite their progress, research on this topic is far from complete. Accordingly, they will continue to expand on and update their work going forward. Furthermore, when the data becomes available, they hope to explore the impact the pandemic has had on idea generation and sharing, particularly in relation to the development of the COVID-19 vaccines. We will follow their progress closely.

1919 Investment Counsel Contributors

Warwick Carter

Alex Gordon

Erika De La Rosa Hennessey, Ph.D.

Miller Kreider

Baylor Lancaster Samuel

Lauren Schmaltz

Ryan Schutte

We hope you enjoyed reading a condensed version of the remarks made by our speakers who addressed our virtual Intellectual Capital Conference. In order to have a solid understanding of a problem and feel confident in making decisions, we have to hear all facts and opinions concerning the issue we are studying. In our attempt to accomplish this goal, we invite speakers with varied opinions concerning the subjects we are examining. We encourage our speakers to be candid and express their opinions to the fullest. It is clear then that the opinions expressed by the speakers are not necessarily ours, but we need to hear them in order to make the best decisions possible.

A great debt of gratitude is owed to the seven bright people who acted as reporters.

To all our clients and friends, thank you and we hope you have gained knowledge and enjoyment from this effort.

- Michael O. Clark, Senior Advisor
1919 Investment Counsel