Megatrend investments—and their potential to outperform

Why we believe the stock values of companies that successfully capitalize on digital transformation, healthcare innovation and sustainability may exceed the benchmarks and analysts' current expectations.

Many market analysts agree that three major global megatrends—digital transformation, healthcare innovation and sustainability—may fuel high growth rates in companies that successfully take advantage of them.

The Nasdaq tech, biotech and clean energy sectors are projected to see earnings growth of 10%, 27% and 17% from 2019 to 2022. If realized, this has the potential to outpace the projected S&P earnings growth.

Yet, we think the megatrend beneficiaries have the potential to do even better than these projections. That's because today's earnings estimates, in our view, do not yet capture the additional upside we believe is likely to come as new revenue streams go from concept to reality.

Specifically, we think investors are underestimating in:

- **Technology**—The value of the new revenue streams that 5G and artificial intelligence (AI) are offering

- **Healthcare**—The confluence of data and gene-based technologies as well as a recent pick-up in biotech R&D, which may push up new molecule approvals and therefore may help increase earnings growth. (Indeed, we think it's likely that biotech performance may break out to the upside, after trading in a five-year sideways range)

- **Sustainability**—The speed of the move toward sustainable economies, which are increasingly dictated by favorable economics

How will we find the potential winners? It won't be easy. But here's why we're convinced it is so worthwhile to make the effort.

WHAT DRIVES OUTPERFORMANCE?

Expected earnings

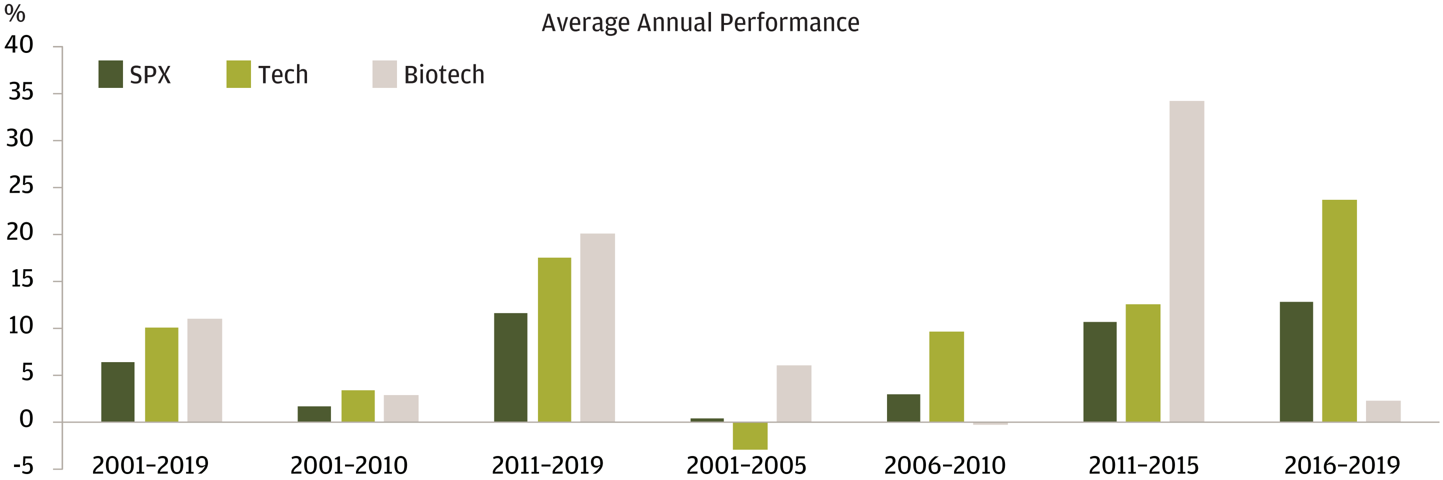
We find that the most significant factor driving outperformance versus benchmark is a sector's expected earnings growth rate. Sectors and stocks with higher expected growth rates have outperformed over the past 20 years, despite valuation fluctuations and earnings revisions.

For example, since 2001, technology and biotech (S&P 500 sectors with high levels of innovation and earnings growth rates that outpaced the index) have cumulatively outperformed the SPX by 130% and 355%, respectively.[1] Both tech and biotech delivered earnings growth that outpaced the SPX over time—both in terms of starting consensus earnings projections and subsequent upside revisions. For biotech especially, a good deal of outperformance came from better earnings revisions versus the benchmark. For example, biotech delivered positive earnings revisions in 11 out of the last 19 years—more than half the time—while earnings revisions for SPX were positive only one-third of the time.

All market and economic data is as of May 2020 and sourced from Bloomberg Finance L.P. or FactSet unless otherwise stated.

[1] From 2001 to 2005, the average annual performance of tech trailed the SPX. Yet tech has been a consistent outperformer since 2006; in particular, it has widened its outperformance since 2016. Biotech's track record has been spottier. While it outperformed on average, a lot of that occurred from 2011 to 2015. Since 2016, its average returns have been lackluster. **Past performance is no guarantee of future results.**

TECH AND BIOTECH HAVE CUMULATIVELY (THOUGH NOT ALWAYS CONSISTENTLY) OUTPERFORMED OVER THE PAST TWO DECADES



Source: Bloomberg Finance L.P., FactSet. As of May 1, 2020.
Indices are defined as SPX: S&P 500 Index; Tech: S&P 500 Information Technology Sector Index; Biotech: S&P 500 Biotechnology Industry Index. **Past performance is no guarantee of future results. It is not possible to invest directly in an index.**

Multiples

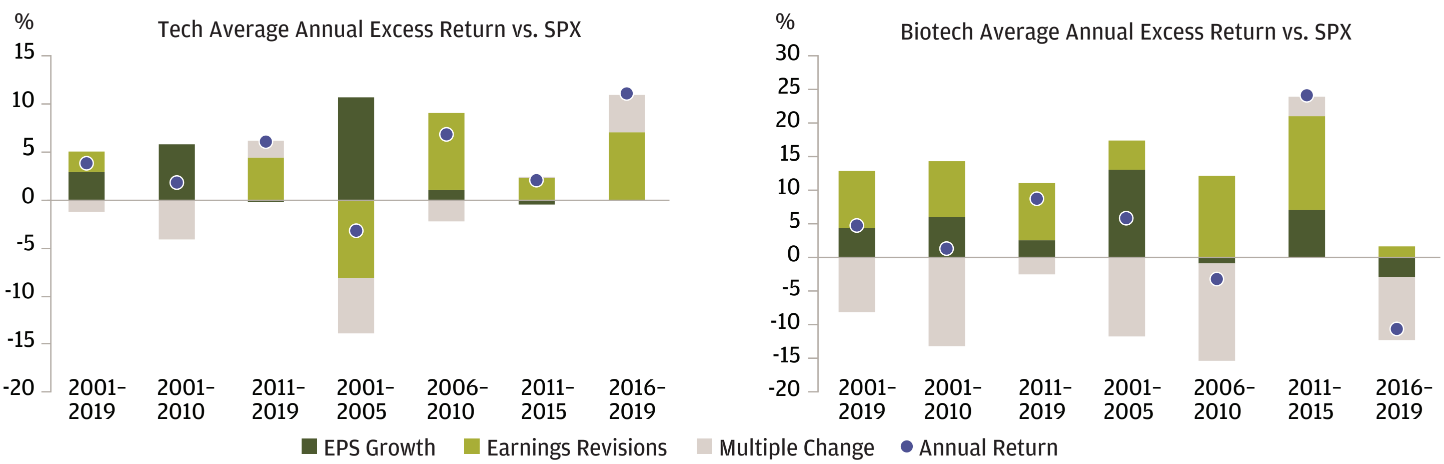
Another factor that determines whether a sector outperforms is how much investors are willing to pay (in multiples) for expectations of growth in earnings.

Following the bursting of the 1990s tech bubble, tech sector multiples contracted for a decade. Still, high earnings growth was enough to sustain a marginal outperformance versus the SPX from 2001 to 2010.

Biotech experienced more meaningful contractions in valuations. Yet, given its 10%+ earnings excess over the SPX, biotech still performed in line with SPX from 2001 to 2010. Overall, the persistent story in biotech has been downside pressure on valuations as drug approvals stagnated and policy debates about drug pricing raged. This narrative continued except during the period from 2011 through 2015—when earnings growth outperformance was exceptionally strong and multiples expanded. That boost was due to factors including the enactment of the Affordable Care Act in 2010 and a pickup in the pace of new FDA drug approvals after five years of stagnation.

WHY TWO SECTORS OUTPERFORMED IN THE PAST TWO DECADES

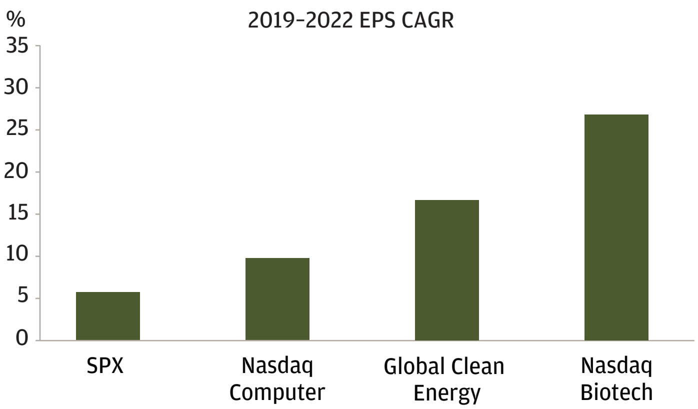
The advantage of strong earnings growth was more than enough to offset multiple contractions and downward earnings revisions



Source: Bloomberg Finance L.P., FactSet. As of May 1, 2020. **Past performance is no guarantee of future results. It is not possible to invest directly in an index.**

Because the most significant factor driving outperformance is a high starting point for earnings, it pays to look at those sectors, subsectors and companies that have high growth rates. What we find—the earnings growth for tech, biotech and clean energy indices is projected to run at a double-digit pace, well ahead of the S&P 500.

EXPECTATIONS ARE HIGH FOR TECH, BIOTECH AND CLEAN ENERGY



Source: Bloomberg Finance L.P., FactSet. As of May 1, 2020. Global Clean Energy is sourced from the iShares Global Clean Energy ETF. Please note that we used the average 2019–2022 CAGR excluding stocks that have negative EPS, or EPS wasn't otherwise available for Global Clean Energy.
Indices are defined as SPX: S&P 500 Index; Nasdaq Computer: NASDAQ Computer Index; Global Clean Energy: iShares Global Clean Energy ETF; Nasdaq Biotech: NASDAQ Biotechnology Index.

DIGITAL TRANSFORMATION IS FUELING ABOVE-BENCHMARK GROWTH IN THE TECH SECTOR.

Nasdaq Computer Index's 2019 to 2022 average annual earnings growth is forecasted to be approximately 10%.

Short-term earnings estimates might be overly optimistic for some sub-sectors of tech, but they are not optimistic enough for others. Already, we see evidence that COVID-19 is accelerating adoption of key technologies such as cloud computing. As for the long term, we think analysts' current projections underestimate the potential of AI and 5G to deliver new streams of revenue and earnings.

Short-term earnings estimates: too optimistic for some sectors, not optimistic enough for others.

Near-term earnings expectations are probably too lofty now. Given the impact of COVID-19, there is likely a risk of downside earnings revisions in the near term for the tech sector generally.

The impact will be felt by some parts of tech more than others. For example, new bookings tied to small business demand are at risk. However, spending should accelerate on computing—especially in the cloud, security and connectivity.

According to our CIO survey,[2] while only 17.6% of current IT budget dollars are spent on public cloud, CIOs expect to devote 41.1% of their IT budgets to it in five years. That would be an 18%–22% CAGR for public cloud spending. Spending intentions like these should continue to fuel high earnings growth rates for companies likely to benefit as we move from on-premise technology to the cloud and, with it, from hardware to software.

Recently, there have been signs that the pandemic is speeding the transition to the cloud: 89% of respondents to a survey in March said they plan to accelerate cloud adoption this year, up from 54% of respondents in February.[3]

Long-term earnings estimates may not be optimistic enough.

5G is a $700 billion revenue opportunity that we believe is not yet priced into stock values. The $700 billion is the total value of the worldwide 5G-enabled market (beyond mobile broadband) for service providers, including network developers, service enablers and service creators. This market is projected to grow at 50% CAGR through 2026, before tapering off.[4]

A significant opportunity may come from making 5G available for enterprise. And the greatest potential for generating revenue lies in automation and healthcare.

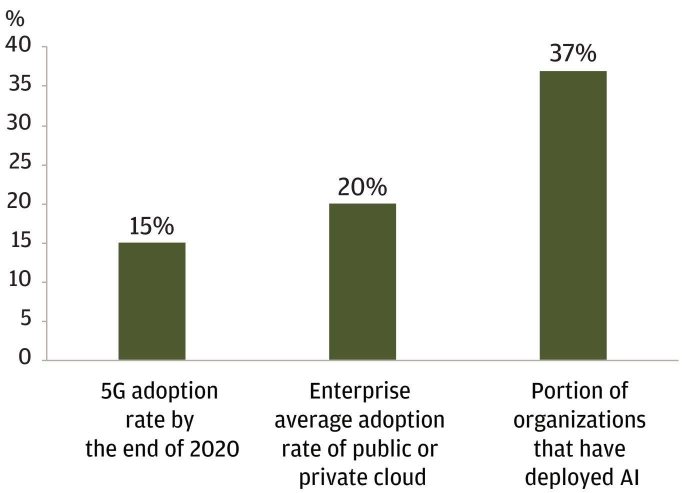
Right now, consensus estimates are not accounting for these new revenue streams because current adoption is still conceptual or low. Yet, there could be a 35% increase in revenue for service providers. This is a significant opportunity not only for companies in telecommunications and the 5G supply chain, but also for enterprises that earn a return on investments in 5G connectivity and applications.

[2] J.P. Morgan CIO Survey 2019, J.P. Morgan North America Equity Research. June 2019.

[3] Morgan Stanley. April 2, 2020.

[4] "5G for business: a 2030 market compass," Ericsson. October 2019. The Service Creator role encompasses the creation of new digital services and collaborates beyond telecoms to establish digital value systems, in addition to providing digital platforms and infrastructure services.

WE ARE STILL IN EARLY STAGES OF ADOPTION OF NEW TECHNOLOGIES



Source: "Global Handset Model," J.P. Morgan North America Research. March 2020. "Cloud Adoption to accelerate IT modernization." McKinsey 2018. "Talent and workforce effects in the age of AI." Deloitte. March 2020.

AI is potentially a $16 trillion opportunity that is not yet priced into stock values. According to the market research firm IDC, spending on AI systems will reach $97.9 billion in 2023, up by more than two-and-a-half times the $37.5 billion that will be spent in 2019. Given that most AI is done in the cloud, and increasingly those who transition to the cloud want AI capabilities as well. Therefore, to the extent there is an increase in cloud adoption due to the COVID-19 crisis, AI adoption also will increase.

What's more, spending on AI has a serious multiplier effect. The potential value-add from AI to the global economy by 2030 is estimated to be $16 trillion, as industries boost productivity and develop personalized services.[5] This figure is more than the size of China's GDP and more than half of the current market cap of the S&P 500.

These are industry projections. In sharp contrast, analysts' equity model projections tend to be conservative. They capture the revenue stream only when it becomes a meaningful contributor. This is the reason why the considerable projected growth and value-add are not yet reflected in consensus estimates. But as adoption increases in line with the industry forecasts, there should be upside earnings revisions and significant opportunities for shareholder value creation. For example, note the sizable opportunity from private value creation. We project that the top 100 AI startups[6] (companies that are not widely heard of today, but some of which could become household names) currently have an aggregate value of approximately $31 billion. Assuming 60% of these companies have a successful exit (IPO or M&A) and attributing no value to the remaining 40%, we estimate potential value creation of approximately $22 billion in five years (1.7X multiple on invested capital).

BIOTECH'S ACCELERATING INNOVATION SHOULD DRIVE UPSIDE EARNINGS REVISIONS.

Biotech's 2019 to 2022 earnings are projected to grow at 27% CAGR. Still, we believe the current consensus is not fully capturing the long-term potential of healthcare R&D to produce sales for an increasing number of new treatments.

A confluence of healthcare data and AI is accelerating the speed of innovation in healthcare and shrinking the time to develop a treatment. Breakthroughs in gene-based technologies and significant increase in computational power and analytics are helping identify new targets for drug development, leading to innovative solutions to treat and maybe cure diseases. Regulatory approvals of new treatments are expected to rise, and peak sales from these treatments are yet to be fully reflected in company and industry valuations.

Innovation is not new in healthcare—but the speed of it is.

In 2003, it took 13 years to complete the first reference sequence of the full human DNA blueprint. Today, we can sequence the full human genome in less than 24 hours.[7] We correctly sequenced the full genome of COVID-19 less than one month after the first case was identified.[8]

This faster pace means that scientists and biotechs can have a more granular and real-time understanding of diseases and, with that, a larger pool of potential drug targets to explore. They then use AI computational capabilities to accelerate the "trial and error" process of early-stage R&D. Many more new clinical trials and FDA drug approvals are likely to follow.

[5] "Sizing the prize: What's the real value of AI for your business and how can you capitalise?" PwC. June 2017.

[6] "AI 100: The Artificial Intelligence Startups Redefining Industries," CB Insights. March 2020.

[7] "Whole-genome sequencing plus AI yields same-day genetic diagnoses," National Institutes of Health. May 7, 2019.

[8] "How innovation is helping mitigate the coronavirus threat," Stat News. March 4, 2020.

Drug approvals are, of course, the key to biotech stocks outperforming. The reason biotech underperformed early in the decade, was a stagnant pace of new drug approvals, which accelerated meaningfully from 2011 to 2015, fueling average annual 27% EPS and revisions growth, well in excess of the SPX.

The increasing pace of new treatment approvals in the next five years could yield $255 billion in additional revenues by 2024.[9]

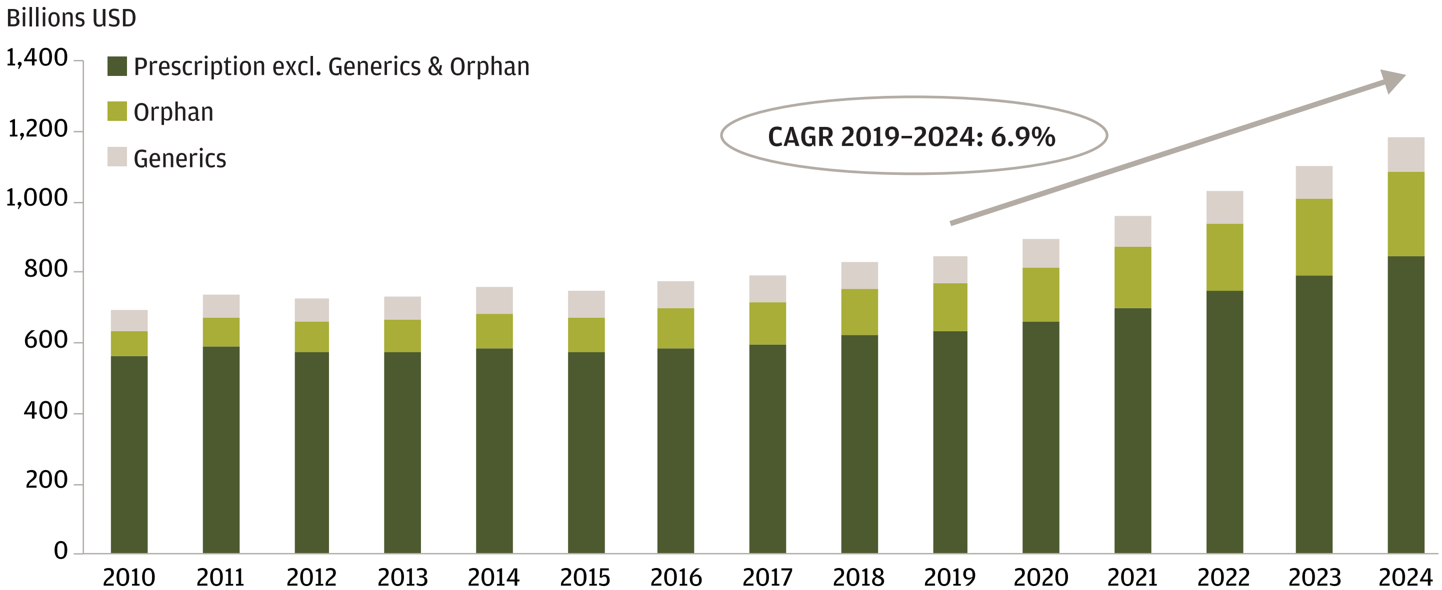
This industry projection is based on the current level of R&D and clinical trials, which have risen significantly in the last five years. According to some estimates, the current clinical pipeline could produce 431 new, FDA-approved molecules from 2019 to 2024.

Yet, we believe current valuations fail to capture this upside potential. Consensus projections do see a 27% earnings growth from 2019 to 2022 for healthcare. However, typically, the full value of future sales are not recognized until they are a reality. Expect upward revisions as drugs go through required stages, from clinical trials to approvals, until the projected $255 billion in additional revenue is realized.

Keep the vast potential in mind: The current revenues for the Nasdaq Biotech Sector Index is $186 billion. If half of the projected additional revenue can be attributed to biotechs, the sector revenues could grow 1.7X—almost double by 2024.

Still, we recommend proceeding with caution. While some stocks will surprise to the upside, many won't. Failure rates are high. If you want to invest in biotechs, you must be discerning.

SALES SHOULD REBOUND, ORPHAN DRUG MARKET TO ALMOST DOUBLE



Source: "World Preview 2019, Outlook to 2024," EvaluatePharma Vision. May 2019.

[9] Evaluate Pharma, World Preview 2019, Outlook to 2024. June 2019.

SUSTAINABILITY WILL CHANGE THE WORLD SOONER THAN PEOPLE THINK.

Clean energy earnings are projected to grow 17% from 2019 to 2022.

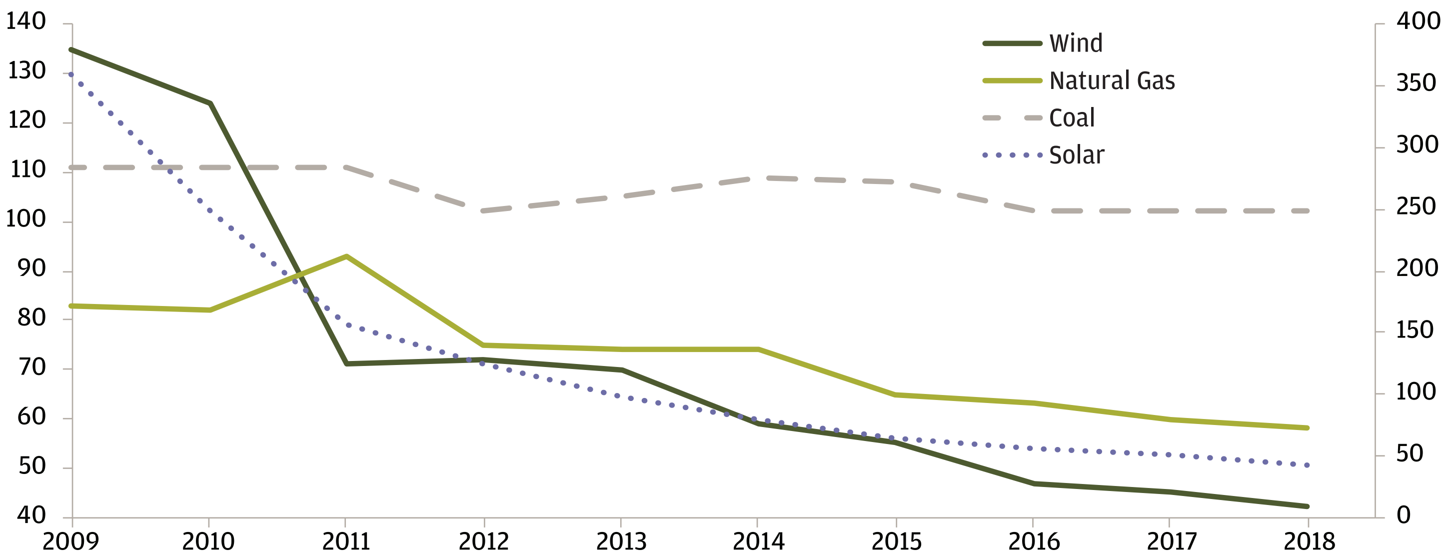
Yet, we believe consensus is underestimating the speed at which sustainability practices will be adopted by governments, consumers—and especially companies. Investing in sustainability is not only a responsible choice, but also, increasingly, an economic one.

Much like digital transformation and AI, the move to sustainability is still very early in its life cycle. For example, only 27% of our global energy mix is from renewables.[10, 11] In 2019, only 9% of the world's companies and governments were designed for the circular economy.[12] The opportunity to increase these percentages is immense.

While the opportunity has been well telegraphed, a historical look at forecasts reveals consistent underestimations of both capacity build and generation. Moreover, these underestimations were made when the costs of renewables were much higher. Today, the costs for wind and solar energy have converged with the cost of gas generation; it is increasingly becoming economical for companies to adopt sustainability practices.

COST OF WIND, SOLAR, NATURAL GAS AND COAL

Mean LCOE,* dollar per megawatt hour



Source: Lazard, Bloomberg, J.P. Morgan Asset Management. *LCOE is "levelized" cost of energy, the net present value of the unit-cost of electricity over the lifetime of a generating asset. It is often taken as a proxy for the average price that the generating asset must receive in a market to break even over its lifetime. Data is based on availability as of November 30, 2019.

[10] New Energy Outlook 2019, Bloomberg New Energy Finance.

[11] Only 13% of plastic containers and packaging generated is recycled; only 50.1% of generated packaging and containers is recycled, according to the U.S. Environmental Protection Agency.

[12] "Our world is now only 8.6% circular..." Circle Economy. January 2020.

NEXT STEPS

With high earnings growth rates and underappreciated long-term opportunities, we believe the beneficiaries of the megatrends tailwinds may outperform and provide earnings for investors.

So how do you seek out potential winners?

We see three paths:

1. Sector—Identify emerging trends within each sector likely to have earnings growth rates that are above the average

2. Company—Analyze companies' fundamentals and growth drivers to select those likely to surprise to the upside

3. Private opportunity—Invest in largely undiscovered private companies before they go public and become widely relevant

It will take a lot of research, analysis and monitoring to stay on top of subtrends and identify the companies most likely to benefit. Speak with your J.P. Morgan team to hear our latest insights into opportunities and how investing in megatrends might fit into your overall wealth plan.

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The NASDAQ Biotechnology Index is designed to track the performance of a set of securities listed on the Nasdaq Stock Market that are classified as either biotechnology or pharmaceutical according to the Industry Classification Benchmark (ICB).

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