

September 6, 2021

Women in Biotech Progress - Yet Challenges Remain

HEALTHCARE/BIO TECHNOLOGY

Update on Female Innovators in Biotech

SUMMARY

Based on continued gender disparity, we update our views on recent dynamics surrounding Women in Biotech subsequent to [our inaugural event](#) in collaboration with Massachusetts Institute of Technology (MIT) highlighting the impressive achievements of leading female innovators (Exhibits 1-2). Recent reports show that female-founded healthcare companies have increased their share of VC deals but struggled to return to 2015 levels (Exhibits 3-4). We dug deeper into additional analyses corroborating the historical gender disparity, which is all the more perplexing in light of the favorable scientific and business performance delivered by female biotech leaders (Exhibits 5-11). On the positive side, [MIT's Future Founders Initiative](#) has made progress toward closing the gender gap. [Please find here a video replay](#) of our event (passcode: aj5#*M?^) and additional details inside.

KEY POINTS

- One of the most striking examples of gender disparity is demonstrated by the [~20 companies founded and led by women through IPO, out of hundreds](#) that have gone public. Across sectors, a record 442 IPOs came to market in 2020 and only four of those had female founders and leaders. Over the past eight years, <20 companies founded by females have gone public under female leadership out of >1000 IPOs during that timeframe (Exhibit 5).
- BIO, the Biotechnology Innovation Organization, published [results from its diversity and inclusion survey](#) of 98 companies showing: 1) biotech companies have not achieved gender parity; 2) gender parity declines at more senior levels with women representing 30% of executives, 18% of board members, and 16% of CEOs. Pre-revenue and smaller (<100 employees) companies have more female CEOs at 22% vs. 9% for profitable biotechs and 20% of small vs. 9% of large organizations (Exhibit 6).
- The [First Round 10-Year Project](#) found female founders across sectors outperform male peers, and investments in companies with a female founder performed 63% better than investments in all-male founding teams. A cross sector study by [Beyond The Billion](#) found female-founded exits increased 16% while male-founded exits declined by 2% and female CEO exit value went up 30% from 2019 to 2020 while the male CEO figure went down 44% in the same timeframe (Exhibits 7-8).
- Our analysis of recent biotech IPOs found that women are underrepresented in board, management, and founder positions vs. their male counterparts. In a [BCG report](#), only 2% of female-led startups received VC funding, but these founders generated 10% more revenue in five years compared to men. Our analysis of performance shows the "SHE" ETF, which tracks female-led companies, is outperforming the S&P 500 (Exhibits 9-11).
- As for recommendations to improve gender parity, [MIT's Future Founders Initiative](#) provides funding opportunities to female founders, which was formed in response to [the MIT report on 40 missing biotech companies](#). A [survey by Nature Biotechnology](#) recommends improvements to the working conditions of professional women, which would contribute to a more diverse and inclusive environment.

Jay Olson, CFA
212-667-8126
Jay.Olson@opco.com

Matthew Hershenhorn
212-667-7590
Matthew.Hershenhorn@opco.com





Cheng Li, Ph.D., CFA
212-667-7187
Cheng.Li@opco.com

Disseminated: September 6, 2021 18:00 EDT; Produced: September 6, 2021 12:34 EDT

For analyst certification and important disclosures, see the Disclosure Appendix.

Exhibit 1. Our Women in Biotech event showcased 4 presentations from current MIT faculty and/or alums working in innovative areas such as precision oncology therapeutics, neurodegeneration, and gene therapy.

Women in Biotech Faculty Presentations

	Professor Angela Koehler Associate Professor of Biological Engineering at MIT, Associate of the Broad Institute, faculty at the Koch Institute for Integrative Cancer Research and the MIT Center for Precision Cancer Medicine
	Professor Li-Huei Tsai Picower Professor of Neuroscience in the Department of Brain and Cognitive Sciences and the Director of Picower Institute for Learning and Memory at MIT, Associate Member of the Broad Institute, co-founder the Aging Brain Initiative at MIT, co-director of the Alana Down Syndrome Center at MIT
	Professor Jungahae Suh Head of Biogen's Gene Therapy Accelerator Unit developing transformative gene therapies for the treatment of neurological diseases, tenured faculty at Rice University Department of Bioengineering
	Professor Paula Hammond Institute Professor at MIT, Head of the Department of Chemical Engineering, member of MIT's Koch Institute for Integrative Cancer Research and the MIT Energy Initiative, founder of the MIT Institute for Soldier Nanotechnology







Oppenheimer's Women in Biotech
Virtual SUMMIT

Supported by:
BioCentury

Source: Oppenheimer Research.

Exhibit 2. We hosted a panel discussion moderated by BioCentury Senior Editor Karen Tkach Tuzman featuring female leaders in biotechnology, including Kerry Benenato, Vanessa Bhark, Ginger Johnson, Susan Langer, and Nina Tandon. Our panelists described their diverse backgrounds and experiences, and focused on the evolving landscape for women pursuing biotech careers.

Women in Biotech Discussion Panel

	Karen Tkach Tuzman (Moderator) Head, Discovery & Preclinical Development, Senior Editor BioCentury		Kerry Benenato VP, Platform Chemistry and Formulation Discovery Moderna
	Vanessa Bhark Senior Associate Life Sciences Frazier Healthcare		Ginger Johnson Chief Executive Officer Cello Health BioConsulting
	Susan Langer Founding President Kojin Therapeutics		Nina Tandon Chief Executive Officer, Co-Founder EpiBone

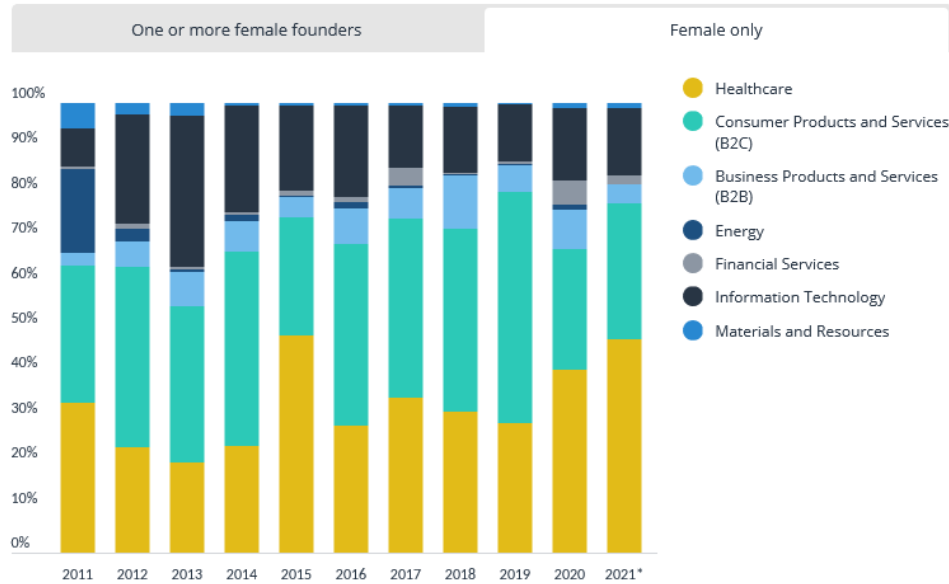
Oppenheimer's Women in Biotech
Virtual SUMMIT

Supported by:
BioCentury

Source: Oppenheimer Research.

Exhibit 3. Female only founded Healthcare businesses made noticeable progress vs. other sectors in 2020 and 2021 but have yet to fully regain lost ground following a high point in 2015.

Share of US VC deal value by industry sector

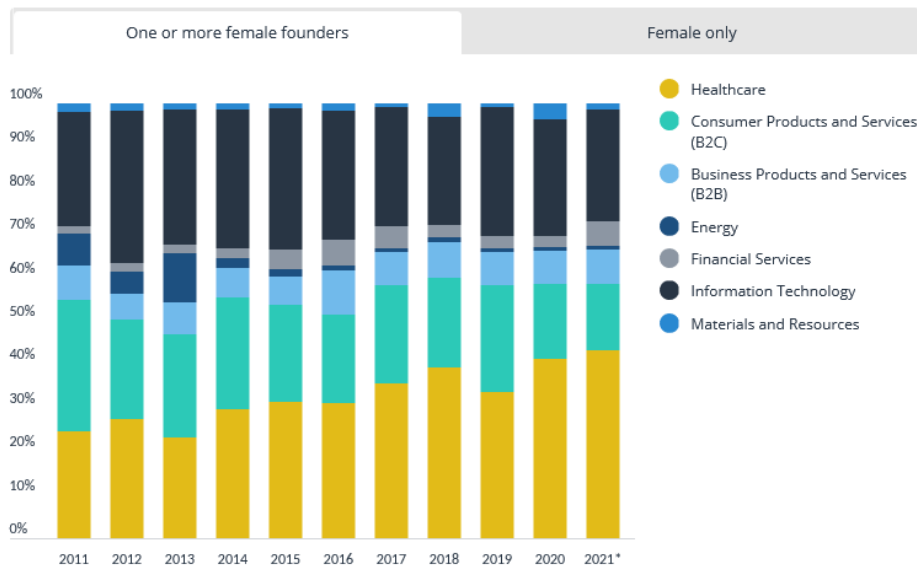


*As of Aug. 10, 2021

Source: Pitchbook.

Exhibit 4. Healthcare companies with at least one female founder have made steady progress with VC funding since 2011 compared to other sectors.

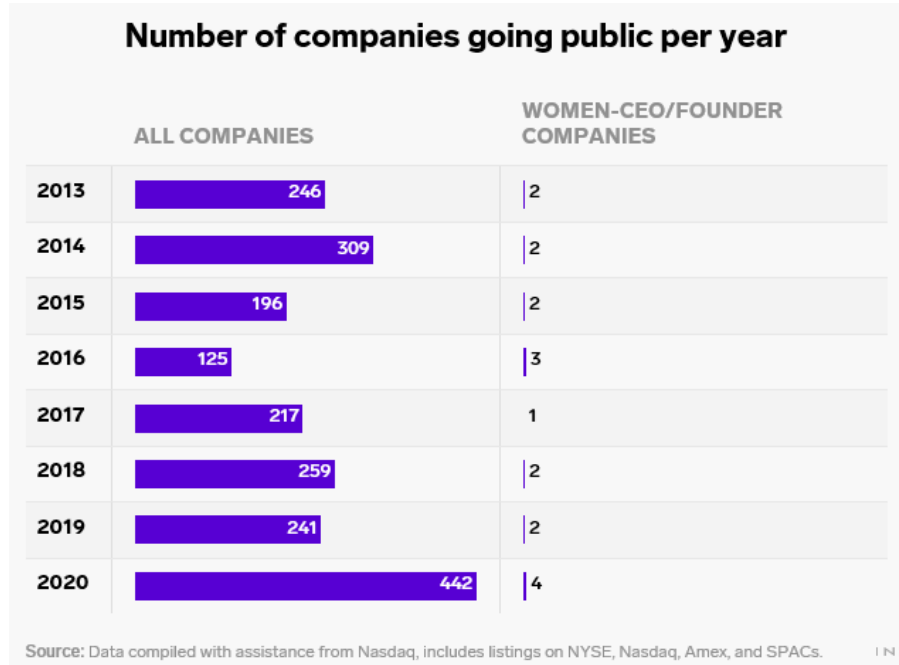
Share of US VC deal value by industry sector



*As of Aug. 10, 2021

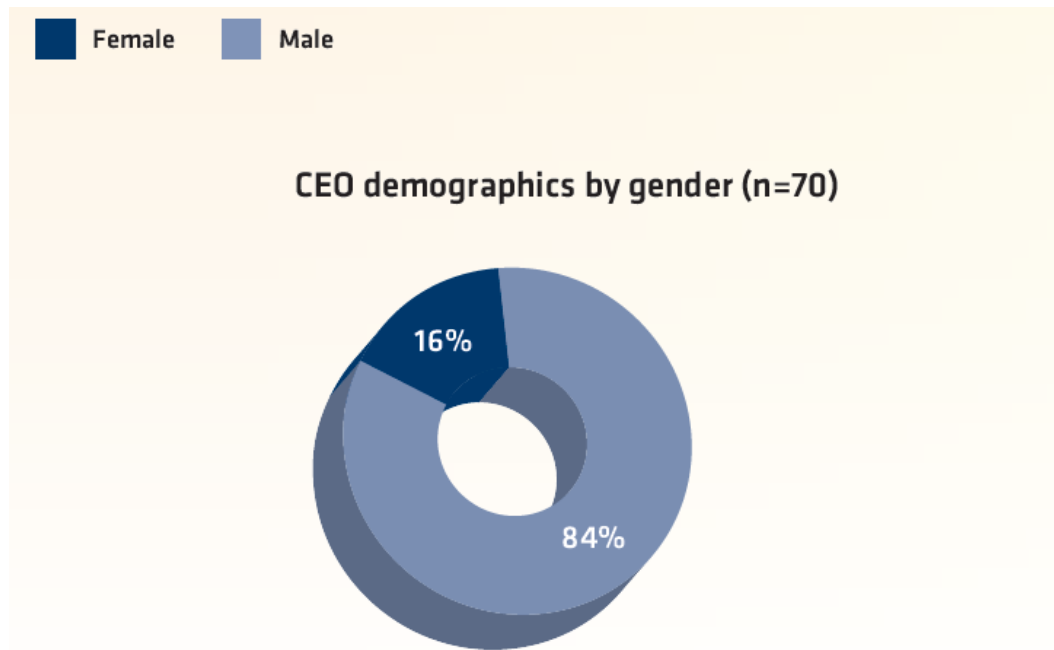
Source: Pitchbook.

Exhibit 5. Across sectors, a record 442 IPOs came to market in 2020 and only four of those were companies with female founders and leaders. Over the past eight years, less than 20 companies founded by females have gone public under female leadership out of over 1000 IPOs during that time period.



Source: Business Insider.

Exhibit 6. A BIO survey of 98 biotech companies found that gender parity declines at more senior levels with women representing 30% of executives, 18% of board members, and 16% of CEOs.



Source: Bio.org.

Exhibit 7. The First Round 10 Year Project found that female founders across sectors outperform their male peers. Their investments in companies with a female founder performed 63% better than their investments in all-male founding teams.



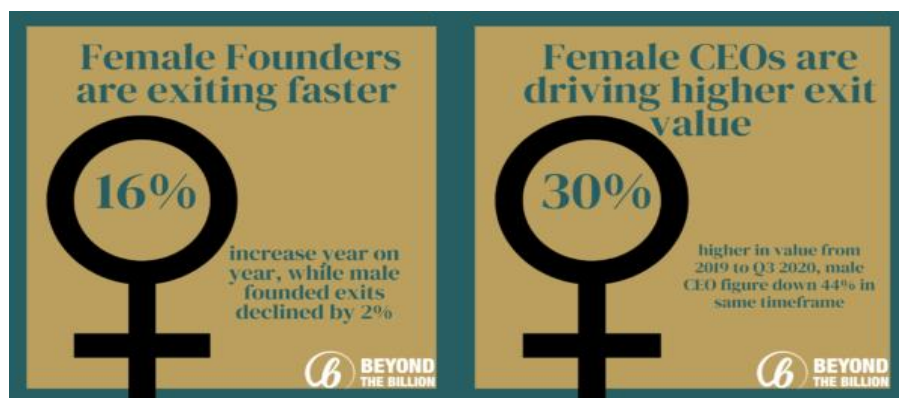
Source: First Round 10 Year Project.

FINDING #1

Women are Winning

Companies with a female founder performed **63% better** than our investments with all-male founding teams.

Exhibit 8. A cross sector study by Beyond the Billion found that female-founded exits increased 16% year-over-year while male-founded exits declined by 2% and female CEO exit value went up 30% from 2019 to 2020 while the male CEO figure went down 44% in the same timeframe.



Source: beyondthebillion.com

Exhibit 9. Our analysis found that women are underrepresented in board, management, and founder positions vs. their male counterparts across the most recent biotech IPOs

Biotech IPOs	Board % Female	Mgmt. % Female	Founders % Female
2019	23%	13%	18%
2020	23%	21%	9%
2021	22%	20%	6%
Wt. Avg.	23%	18%	10%

Source: FactSet; Oppenheimer Research.

Exhibit 10. BCG found that women founders receive less funding but generate more revenue



Source: BCG.

Exhibit 11. The “SHE” ETF tracks female-led companies, and is outperforming the S&P-500

Total Return: 17 Aug '20 - 17 Aug '21



Comparable Returns

	Price Change (%)		Total Return (%)		NAV Total Return (%)	
	Cum	Ann (CGR)	Cum	Ann (CGR)	Cum	Ann (CGR)
SPDR SSGA Gender Diversity Index ETF	35.42	35.42	36.96	36.96	38.33	38.46
S&P 500	32.46	32.46	34.48	34.48	--	--

Note: Return calculations exclude applicable costs, including commissions and interest.

Source: FactSet.

Disclosure Appendix

Oppenheimer & Co. Inc. does and seeks to do business with companies covered in its research reports. As a result, investors should be aware that the firm may have a conflict of interest that could affect the objectivity of this report. Investors should consider this report as only a single factor in making their investment decision.

Analyst Certification - The author certifies that this research report accurately states his/her personal views about the subject securities, which are reflected in the ratings as well as in the substance of this report. The author certifies that no part of his/her compensation was, is, or will be directly or indirectly related to the specific recommendations or views contained in this research report.

Potential Conflicts of Interest:

Equity research analysts employed by Oppenheimer & Co. Inc. are compensated from revenues generated by the firm including the Oppenheimer & Co. Inc. Investment Banking Department. Research analysts do not receive compensation based upon revenues from specific investment banking transactions. Oppenheimer & Co. Inc. generally prohibits any research analyst and any member of his or her household from executing trades in the securities of a company that such research analyst covers. Additionally, Oppenheimer & Co. Inc. generally prohibits any research analyst from serving as an officer, director or advisory board member of a company that such analyst covers. In addition to 1% ownership positions in covered companies that are required to be specifically disclosed in this report, Oppenheimer & Co. Inc. may have a long position of less than 1% or a short position or deal as principal in the securities discussed herein, related securities or in options, futures or other derivative instruments based thereon. Recipients of this report are advised that any or all of the foregoing arrangements, as well as more specific disclosures set forth below, may at times give rise to potential conflicts of interest.

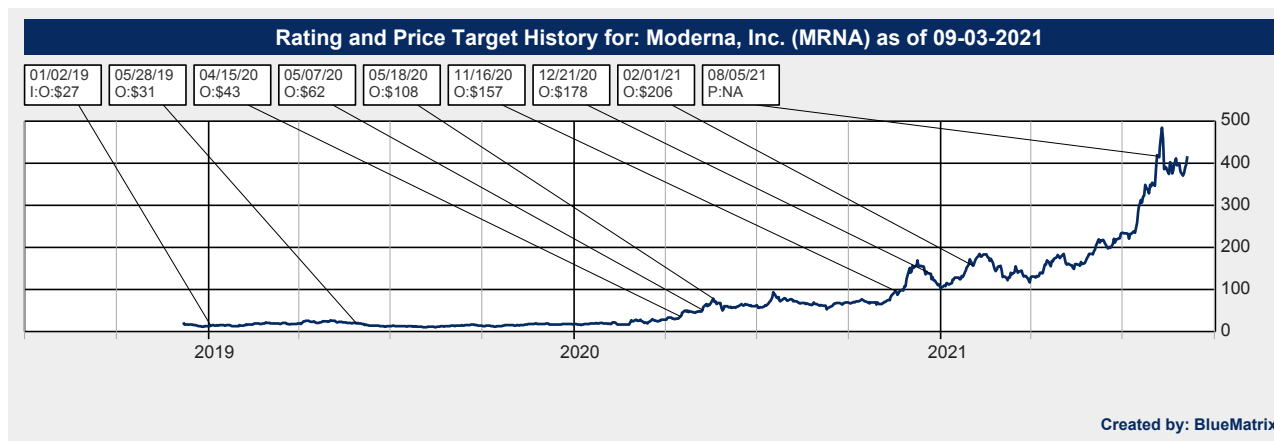
Important Disclosure Footnotes for Companies Mentioned in this Report that Are Covered by Oppenheimer & Co. Inc.:

Stock Prices as of September 6, 2021

Biogen Inc. (BIIB - NASDAQ, \$333.60, OUTPERFORM)

Moderna, Inc. (MRNA - NASDAQ, \$416.70, PERFORM)





All price targets displayed in the chart above are for a 12- to 18-month period. Prior to March 30, 2004, Oppenheimer & Co. Inc. used 6-, 12-, 12- to 18-, and 12- to 24-month price targets and ranges. For more information about target price histories, please write to Oppenheimer & Co. Inc., 85 Broad Street, New York, NY 10004, Attention: Equity Research Department, Business Manager.

Oppenheimer & Co. Inc. Rating System as of January 14th, 2008:

Outperform(O) - Stock expected to outperform the S&P 500 within the next 12-18 months.

Perform (P) - Stock expected to perform in line with the S&P 500 within the next 12-18 months.

Underperform (U) - Stock expected to underperform the S&P 500 within the next 12-18 months.

Not Rated (NR) - Oppenheimer & Co. Inc. does not maintain coverage of the stock or is restricted from doing so due to a potential conflict of interest.

Oppenheimer & Co. Inc. Rating System prior to January 14th, 2008:

Buy - anticipates appreciation of 10% or more within the next 12 months, and/or a total return of 10% including dividend payments, and/or the ability of the shares to perform better than the leading stock market averages or stocks within its particular industry sector.

Neutral - anticipates that the shares will trade at or near their current price and generally in line with the leading market averages due to a perceived absence of strong dynamics that would cause volatility either to the upside or downside, and/or will perform less well than higher rated companies within its peer group. Our readers should be aware that when a rating change occurs to Neutral from Buy, aggressive trading accounts might decide to liquidate their positions to employ the funds elsewhere.

Sell - anticipates that the shares will depreciate 10% or more in price within the next 12 months, due to fundamental weakness perceived in the company or for valuation reasons, or are expected to perform significantly worse than equities within the peer group.

Distribution of Ratings/IB Services Firmwide				
Rating	IB Serv/Past 12 Mos.			
	Count	Percent	Count	Percent
OUTPERFORM [O]	467	70.44	259	55.46
PERFORM [P]	196	29.56	74	37.76
UNDERPERFORM [U]	0	0.00	0	0.00

Although the investment recommendations within the three-tiered, relative stock rating system utilized by Oppenheimer & Co. Inc. do not correlate to buy, hold and sell recommendations, for the purposes of complying with FINRA rules, Oppenheimer & Co. Inc. has assigned buy ratings to securities rated Outperform, hold ratings to securities rated Perform, and sell ratings to securities rated Underperform.

Note: Stocks trading under \$5 can be considered speculative and appropriate for risk tolerant investors.

Company Specific Disclosures

In the past 12 months Oppenheimer & Co. Inc. has received compensation for investment banking services from MRNA.

Additional Information Available

Company-Specific Disclosures: Important disclosures, including price charts, are available for compendium reports and all Oppenheimer & Co. Inc.-covered companies by logging on to <https://www.oppenheimer.com/client-login.aspx> or writing to Oppenheimer & Co. Inc., 85 Broad Street, New York, NY 10004, Attention: Equity Research Department, Business Manager.

Other Disclosures

This report is issued and approved for distribution by Oppenheimer & Co. Inc. Oppenheimer & Co. Inc. transacts business on all principal exchanges and is a member of SIPC. This report is provided, for informational purposes only, to institutional and retail investor clients of Oppenheimer & Co. Inc. and does not constitute an offer or solicitation to buy or sell any securities discussed herein in any jurisdiction where such offer or solicitation would be prohibited. The securities mentioned in this report may not be suitable for all types of investors. This report does not take into account the investment objectives, financial situation or specific needs of any particular client of Oppenheimer & Co. Inc. Recipients should consider this report as only a single factor in making an investment decision and should not rely solely on investment recommendations contained herein, if any, as a substitution for the exercise of independent judgment of the merits and risks of investments. The analyst writing the report is not a person or company with actual, implied or apparent authority to act on behalf of any issuer mentioned in the report. Before making an investment decision with respect to any security recommended in this report, the recipient should consider whether such recommendation is appropriate given the recipient's particular investment needs, objectives and financial circumstances. We recommend that investors independently evaluate particular investments and strategies, and encourage investors to seek the advice of a financial advisor. Oppenheimer & Co. Inc. will not treat non-client recipients as its clients solely by virtue of their receiving this report. Past performance is not a guarantee of future results, and no representation or warranty, express or implied, is made regarding future performance of any security mentioned in this report. The price of the securities mentioned in this report and the income they produce may fluctuate and/or be adversely affected by exchange rates, and investors may realize losses on investments in such securities, including the loss of investment principal. Oppenheimer & Co. Inc. accepts no liability for any loss arising from the use of information contained in this report, except to the extent that liability may arise under specific statutes or regulations applicable to Oppenheimer & Co. Inc. All information, opinions and statistical data contained in this report were obtained or derived from public sources believed to be reliable, but Oppenheimer & Co. Inc. does not represent that any such information, opinion or statistical data is accurate or complete (with the exception of information contained in the Important Disclosures section of this report provided by Oppenheimer & Co. Inc. or individual research analysts), and they should not be relied upon as such. All estimates, opinions and recommendations expressed herein constitute judgments as of the date of this report and are subject to change without notice. Nothing in this report constitutes legal, accounting or tax advice. Since the levels and bases of taxation can change, any reference in this report to the impact of taxation should not be construed as offering tax advice on the tax consequences of investments. As with any investment having potential tax implications, clients should consult with their own independent tax adviser. This report may provide addresses of, or contain hyperlinks to, Internet web

sites. Oppenheimer & Co. Inc. has not reviewed the linked Internet web site of any third party and takes no responsibility for the contents thereof. Each such address or hyperlink is provided solely for the recipient's convenience and information, and the content of linked third party web sites is not in any way incorporated into this document. Recipients who choose to access such third-party web sites or follow such hyperlinks do so at their own risk.

This research is distributed in the UK and elsewhere throughout Europe, as third party research by Oppenheimer Europe Ltd, which is authorized and regulated by the Financial Conduct Authority (FCA). This research is for information purposes only and is not to be construed as a solicitation or an offer to purchase or sell investments or related financial instruments. This research is for distribution only to persons who are eligible counterparties or professional clients. It is not intended to be distributed or passed on, directly or indirectly, to any other class of persons. In particular, this material is not for distribution to, and should not be relied upon by, retail clients, as defined under the rules of the FCA. Neither the FCA's protection rules nor compensation scheme may be applied. <https://opco2.bluematrix.com/sellside/MAR.action>

Distribution in Hong Kong: This report is prepared for professional investors and is being distributed in Hong Kong by Oppenheimer Investments Asia Limited (OIAL) to persons whose business involves the acquisition, disposal or holding of securities, whether as principal or agent. OIAL, an affiliate of Oppenheimer & Co. Inc., is regulated by the Securities and Futures Commission for the conduct of dealing in securities and advising on securities. For professional investors in Hong Kong, please contact researchasia@opco.com for all matters and queries relating to this report. This report or any portion hereof may not be reprinted, sold, or redistributed without the written consent of Oppenheimer & Co. Inc.

This report or any portion hereof may not be reprinted, sold, or redistributed without the written consent of Oppenheimer & Co. Inc. Copyright © Oppenheimer & Co. Inc. 2021.