



Industry Update
Chemicals
Q4 2021

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Financial Performance

Size Profile, LTM Financials, Forward Estimates

(USD in millions, except per share data)

Company Name	Ticker	Size Profile			LTM Operating Data			Forward Estimates	
		Price at 12/31/21	% of 52 Week High	TEV	Total Assets	LTM Revenue	LTM EBITDA	2021 Est. Revenue	2021 Est. EBITDA
Specialty Chemicals									
The Sherwin-Williams Company	SHW	\$352.16	99.4%	\$87,587	\$20,667	\$19,945	\$3,242	\$19,923	\$3,366
Ecolab Inc.	ECL	\$234.59	98.2%	\$60,383	\$17,926	\$12,434	\$2,706	\$12,716	\$2,676
DuPont de Nemours, Inc.	DD	\$80.78	92.6%	\$50,351	\$46,015	\$22,191	\$5,594	\$16,394	\$4,159
PPG Industries, Inc.	PPG	\$172.44	94.2%	\$43,806	\$0	\$16,802	\$2,372	\$16,671	\$2,614
Celanese Corporation	CE	\$168.06	96.6%	\$21,130	\$11,975	\$8,537	\$2,456	\$8,513	\$2,860
Commodity Chemicals									
Dow Inc.	DOW	\$56.72	79.5%	\$59,060	\$62,990	\$54,968	\$10,961	\$54,122	\$12,273
LyondellBasell Industries N.V.	LYB	\$92.23	78.2%	\$44,801	\$36,742	\$46,173	\$8,752	\$45,368	\$9,343
Westlake Chemical Corporation	WLK	\$97.13	91.2%	\$15,587	\$17,108	\$10,236	\$2,873	\$11,323	\$3,586
Diversified Chemicals									
Eastman Chemical Company	EMN	\$120.91	92.7%	\$20,509	\$0	\$10,476	\$2,397	\$10,140	\$2,186
The Chemours Company	CC	\$33.56	86.3%	\$8,520	\$7,530	\$6,108	\$940	\$6,336	\$1,336
Huntsman Corporation	HUN	\$34.88	98.1%	\$9,620	\$8,569	\$7,814	\$1,035	\$8,284	\$1,325

Source: Capital IQ

Financial Performance (cont.)

Size Profile, LTM Financials, Forward Estimates

(USD in millions, except per share data)

Company Name	Ticker	Size Profile			LTM Operating Data			Forward Estimates	
		Price at 12/31/21	% of 52 Week High	TEV	Total Assets	LTM Revenue	LTM EBITDA	2021 Est. Revenue	2021 Est. EBITDA
Industrial Gases									
Linde plc	LIN	\$346.43	99.8%	\$176,776	\$84,191	\$29,767	\$9,901	\$30,204	\$10,198
Air Products and Chemicals, Inc.	APD	\$304.26	96.2%	\$66,081	\$26,859	\$10,323	\$3,676	\$10,665	\$4,008
Fertilizers & Agricultural Chemicals									
Nutrien Ltd.	NTR	\$75.20	97.2%	\$53,867	\$48,316	\$23,642	\$4,853	\$26,391	\$7,036
Corteva, Inc.	CTVA	\$47.28	94.6%	\$34,767	\$41,122	\$15,383	\$2,155	\$15,614	\$2,570
FMC Corporation	FMC	\$109.89	88.9%	\$17,381	\$10,410	\$4,784	\$1,238	\$5,001	\$1,321

Source: Capital IQ

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Valuation Metrics

Return Profile, Trading Multiples

Company Name	Ticker	Return Profile					Trading Multiples		
		Return on Assets	Return on Equity	Revenue Growth	EBITDA Margin	EBITDA Growth	5-yr Beta	TEV / LTM Revenue	TEV / LTM EBITDA
Specialty Chemicals									
The Sherwin-Williams Company	SHW	8.1%	61.7%	8.6%	16.3%	-5.7%	1.1x	4.4x	27.0x
Ecolab Inc.	ECL	6.5%	17.6%	3.9%	21.8%	4.9%	1.1x	4.9x	22.3x
DuPont de Nemours, Inc.	DD	2.7%	4.6%	40.5%	25.2%	49.4%	1.2x	2.3x	9.0x
PPG Industries, Inc.	PPG	0.0%	23.6%	21.5%	14.1%	10.1%	1.2x	2.6x	18.5x
Celanese Corporation	CE	11.4%	45.5%	51.0%	28.8%	126.4%	1.3x	2.5x	8.6x
	Mean	5.7%	30.6%	25.1%	21.2%	37.0%	1.2x	3.3x	17.1x
	Median	6.5%	23.6%	21.5%	21.8%	10.1%	1.2x	2.6x	18.5x
Commodity Chemicals									
Dow Inc.	DOW	8.2%	40.4%	42.6%	19.9%	102.0%	1.5x	1.1x	5.4x
LyondellBasell Industries N.V.	LYB	12.8%	55.9%	66.4%	19.0%	151.6%	1.4x	1.0x	5.1x
Westlake Chemical Corporation	WLK	8.6%	21.3%	37.9%	28.1%	160.2%	1.3x	1.5x	5.4x
	Mean	9.9%	39.2%	49.0%	22.3%	138.0%	1.4x	1.2x	5.3x
	Median	8.6%	40.4%	42.6%	19.9%	151.6%	1.4x	1.1x	5.4x
Diversified Chemicals									
Eastman Chemical Company	EMN	0.0%	14.1%	23.6%	22.9%	54.6%	1.5x	2.0x	8.6x
The Chemours Company	CC	5.3%	45.5%	22.6%	15.4%	49.0%	2.0x	1.4x	9.1x
Huntsman Corporation	HUN	5.7%	23.7%	30.1%	13.2%	158.8%	1.2x	1.2x	9.3x
	Mean	3.7%	27.7%	25.4%	17.2%	87.5%	1.6x	1.5x	9.0x
	Median	5.3%	23.7%	23.6%	15.4%	54.6%	1.5x	1.4x	9.1x

Source: Capital IQ

Valuation Metrics (cont.)

Return Profile, Trading Metrics

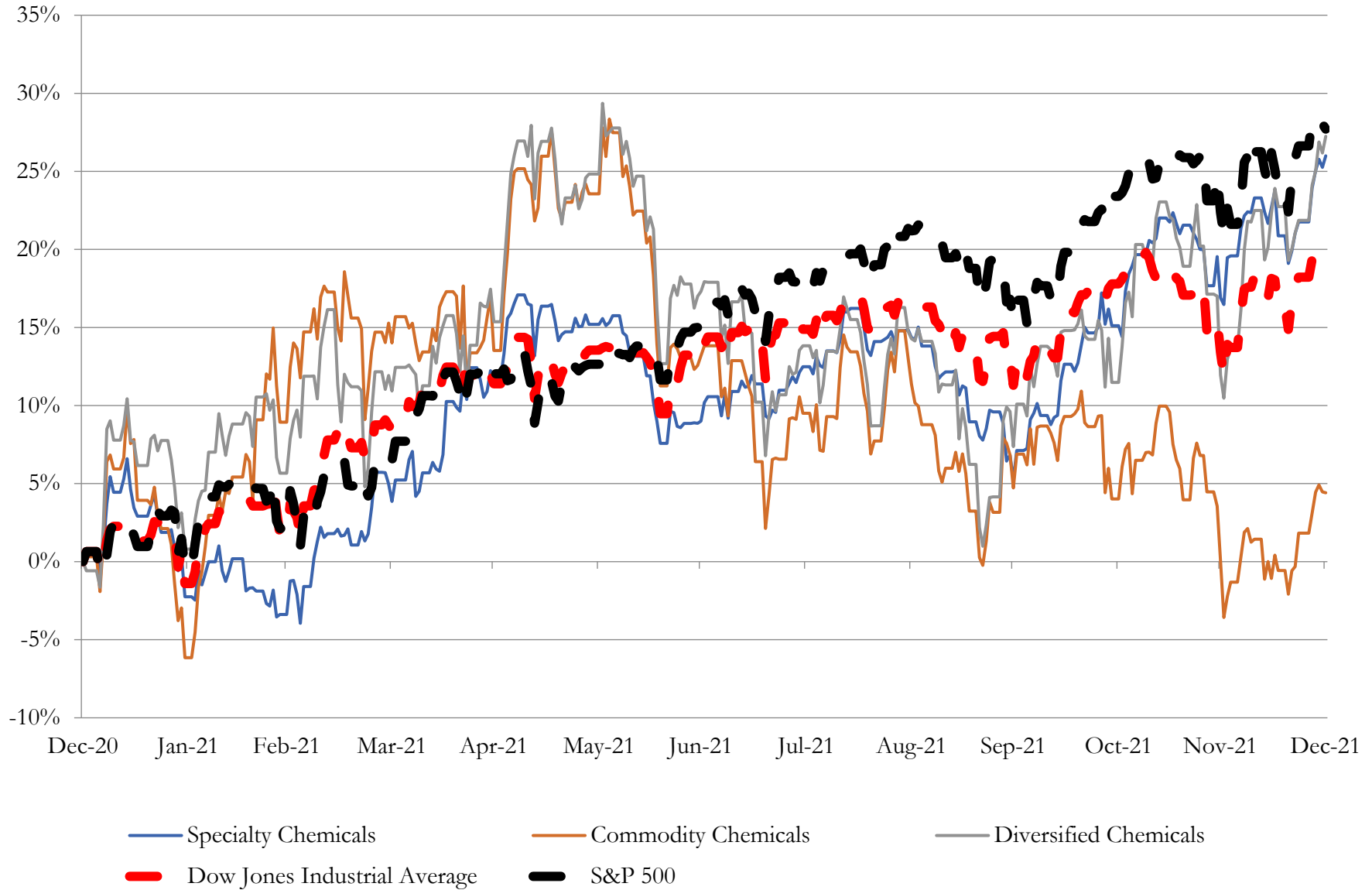
Company Name	Ticker	Return Profile					Trading Multiples		
		Return on Assets	Return on Equity	Revenue Growth	EBITDA Margin	EBITDA Growth	5-yr Beta	TEV / LTM Revenue	TEV / LTM EBITDA
Industrial Gases									
Linde plc	LIN	3.8%	7.9%	10.0%	33.3%	17.8%	0.9x	5.9x	17.9x
Air Products and Chemicals, Inc.	APD	5.7%	15.4%	16.6%	35.6%	7.1%	0.8x	6.4x	18.0x
	Mean	4.7%	11.6%	13.3%	34.4%	12.4%	0.8x	6.2x	17.9x
	Median	4.7%	11.6%	13.3%	34.4%	12.4%	0.8x	6.2x	17.9x
Fertilizers & Agricultural Chemicals									
Nutrien Ltd.	NTR	4.2%	10.0%	21.0%	20.5%	50.1%	0.0x	2.3x	11.1x
Corteva, Inc.	CTVA	1.4%	7.2%	9.9%	14.0%	26.5%	0.7x	2.3x	16.1x
FMC Corporation	FMC	6.6%	20.5%	2.1%	25.9%	-3.3%	0.9x	3.6x	14.0x
	Mean	4.1%	9.3%	15.6%	22.3%	38.8%	0.5x	2.7x	13.8x
	Median	4.2%	8.6%	17.3%	23.2%	38.3%	0.7x	2.3x	14.0x

Source: Capital IQ

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LTM Equity Performance

Major Indexes



Source: Capital IQ

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Recent M&A Activity

Last Twelve (12) Months as of December 31, 2021

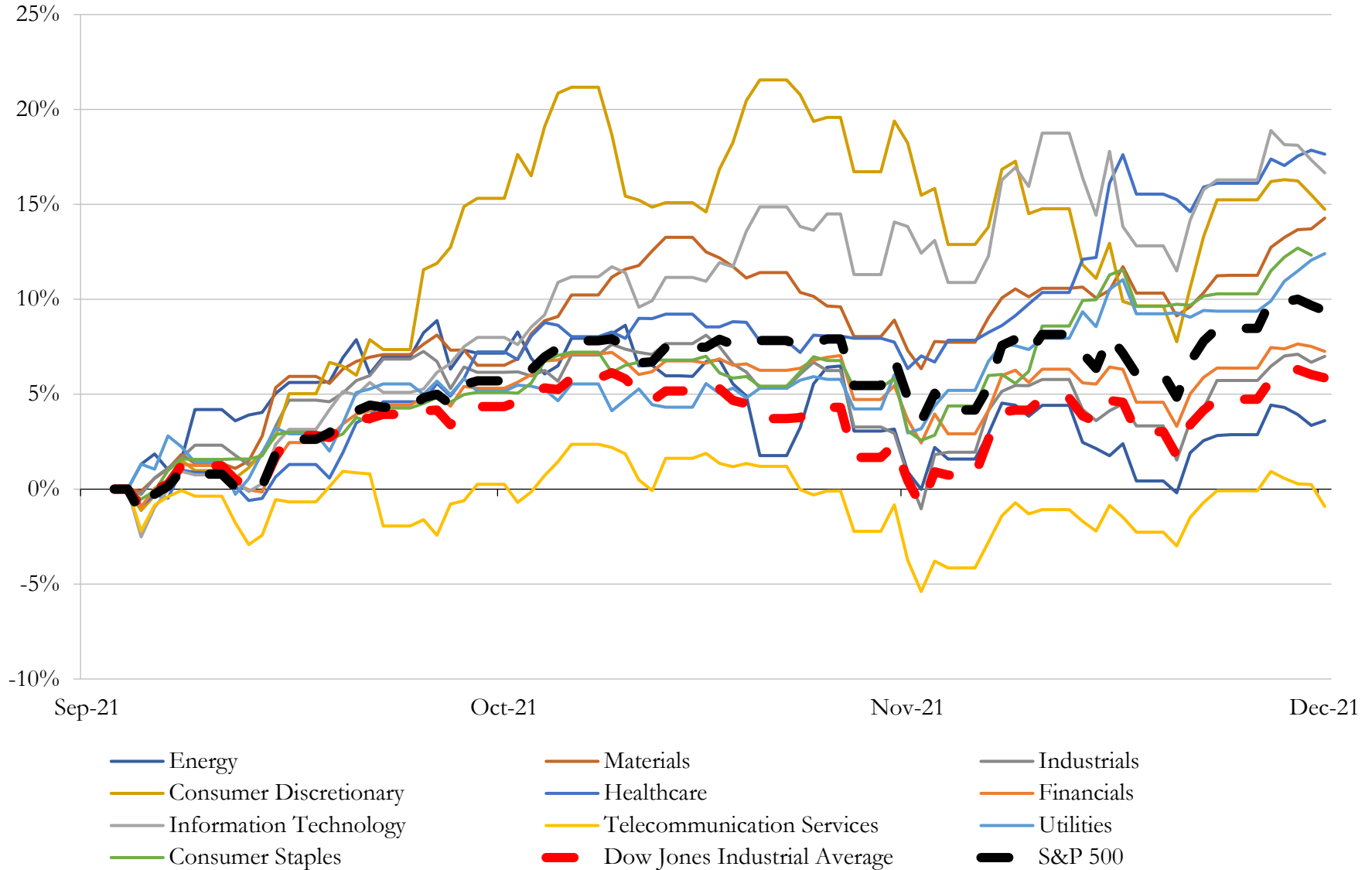
(USD in millions)

Close Date	Target	Acquirer	Implied TEV
Sep-21	W. R. Grace & Co.	Standard Industries Inc.	\$6,436
Nov-21	Solenis International LLC	Sigura Water	\$5,250
Apr-21	Americas Salt Business of K+S Aktiengesellschaft	Stone Canyon Industries Holdings Inc.	\$3,200
Dec-21	Santoprene TPV Elastomers Business of ExxonMobil Chemical Company, Inc.	Celanese Corporation	\$1,150
Aug-21	Performance Chemicals Business of PQ Group Holdings Inc.	Cerberus Capital Management, L.P.; Koch Minerals & Trading, LLC	\$1,100
Aug-21	Emerald Kalama Chemical, LLC	LANXESS Aktiengesellschaft	\$1,075
Sep-21	Niacet Corporation	Kerry Group plc	\$1,015
Dec-20	Gemini HDPE LLC	INEOS Olefins & Polymers USA, LLC	\$808
Nov-21	Tire Additives Business of Eastman Chemical	One Rock Capital Partners, LLC	\$800
Nov-21	Tire Additives Business of Eastman Chemical	One Rock Capital Partners, LLC	\$800
Apr-21	Specialty Chemicals Business of Superior Plus	Birch Hill Equity Partners Management Inc.; Birch Hill Equity Partners (Global)	\$637
Jun-21	Fine Chemistry Services Business of Albemarle Corporation	W. R. Grace & Co.	\$570
Dec-21	Mining Solutions Business of The Chemours Company	Draslovka Holding A.S.	\$521
Dec-21	Clean Technologies Business Of Dupont De Nemours, Inc. (nka:Elesent Clean	Dussur; Asia Green Fund; BPGC Management LP	\$510
Mar-21	Flavor And Fragrance Bio-Based Intermediates Business Of Amyris, Inc.	Koninklijke DSM N.V.	\$300
Sep-21	Aristech Surfaces LLC	Trinseo S.A. (nka:Trinseo PLC)	\$275
Jan-21	Gabriel Performance Products, LLC	Huntsman Corporation	\$250
Jul-21	Aurora Innovations Inc./Aurora International, Inc./Gotham Properties LLC	Hydrofarm Holdings Group, Inc.	\$182
Jan-21	Oro Agri SEZC Limited	European Crops Products 2 S.à R.L.	\$153
Aug-21	Novomer Inc.	Danimer Scientific, Inc.	\$152
Jul-21	Prevenio	John Bean Technologies Corporation	\$127
Jun-21	Recycled Polyethylene Terephthalate Plant In Reading	DAK Americas LLC	\$98
Dec-20	acpo, ltd.	Avery Dennison Corporation	\$88
May-21	Field 16, LLC	Hydrofarm Holdings Group, Inc.	\$80
Jun-21	Recycled Polyethylene Terephthalate Assets in Texas	Indorama Ventures Public Company Limited	\$68
May-21	Adaptive 3D Technologies, LLC	Desktop Metal, Inc.	\$62
May-21	Certain North America Micronutrient Assets of Compass Minerals	Koch Agronomic Services, LLC	\$60
Oct-21	Plymouth Foam Inc.	Foam Fabricators, Inc	\$56
Mar-21	Chem32 LLC	PQ Group Holdings Inc. (nka:Ecovyst Inc.)	\$44
Jun-21	Substantially all assets of CarbonLite Industries, LLC related to the Riverside	TSG Shelf II Acquisition, LLC	\$44

Source: Capital IQ

5 Change in Market Capitalization by Sector

Last Three (3) Months as of December 31, 2021

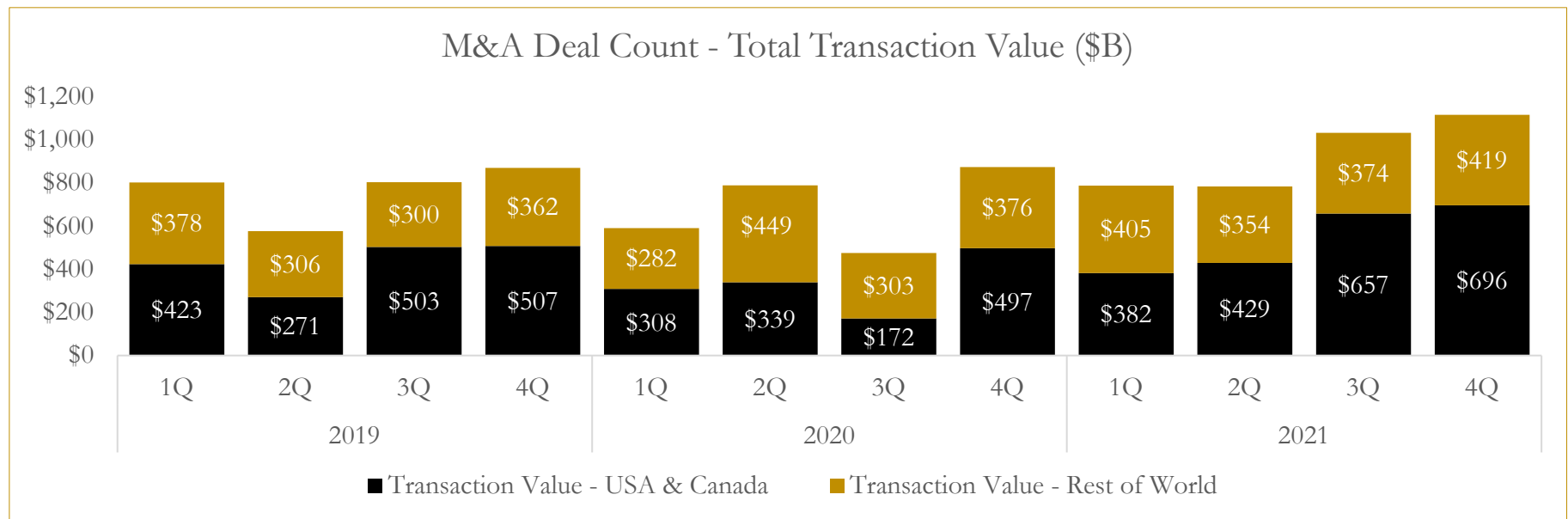
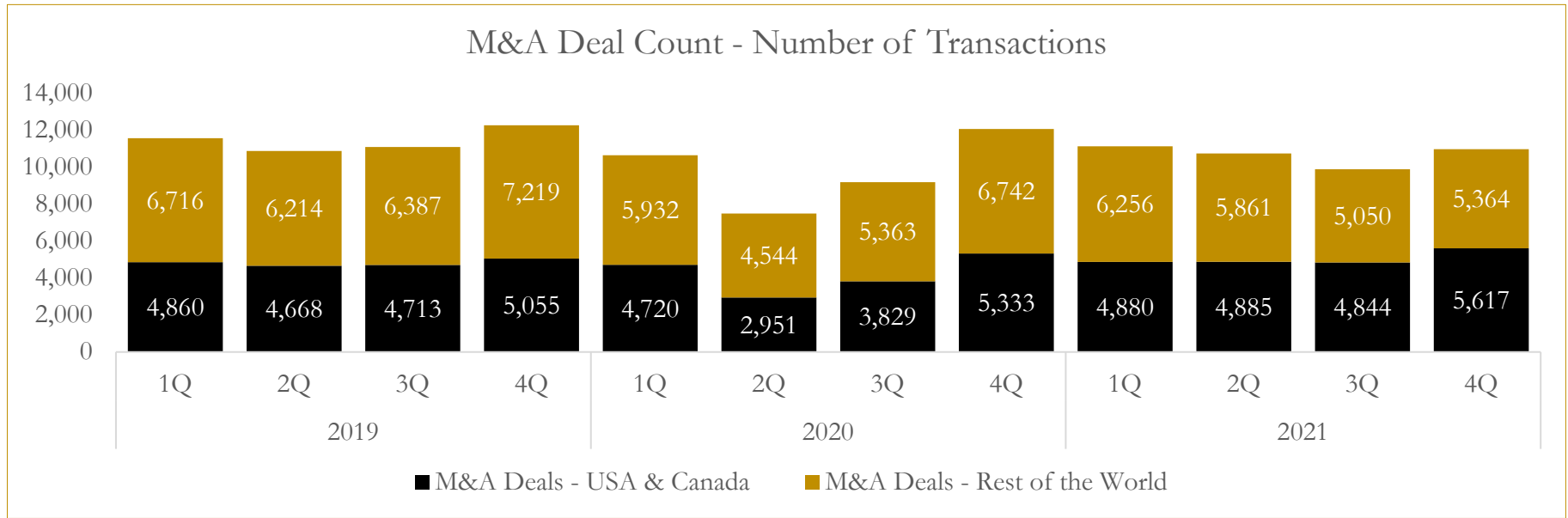


Source: Capital IQ

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M&A Deal Flow Statistics

Last Three (3) Years as of December 31, 2021



Source: Capital IQ

About Houlihan Capital

Houlihan Capital is a leading, solutions-driven valuation, financial advisory and boutique investment banking firm. We pride ourselves on being thought leaders in an ever-changing landscape.

Houlihan Capital is SOC-compliant, a FINRA and SIPC member and committed to the highest levels of professional ethics and standards.

Valuation & Financial Advisory

We provide an array of services that include enterprise valuations, portfolio valuation, valuation of carried interest, transaction opinions, tax and financial reporting compliance, purchase price allocations, and a wide variety of consulting services through our Financial Advisory Group.

Investment Banking

Through our Investment Banking Group, we offer sell-side/buy-side advisory and capital raises. Through our Special Situations desk, we provide services that fit outside the archetypal verticals, including liquidity solutions, transactional advisory, and secondary market advisory and trading.

Litigation Support

Our team provides support for a wide variety of situations including commercial and shareholder disputes, derivatives and structured finance litigation, and fraudulent conveyance.

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