

EQUITY RESEARCH

October 6, 2022

Industry Update

VC Money Vanishes – Bits & Bytes Weekly

Start-ups Look To Venture Debt To Extend Cash Runway

Our Conclusion

2022 year-over-year public and private market comps look bleak with 2021 marking a record year for valuations. The difficult market has slowed the pace of venture capital cheques as the VC firms digest the bearish IPO exit market and public market sell-off. As a result, many start-ups are turning to venture debt to 1) ease their liquidity pain; and, 2) avoid setting a new, lower valuation through equity down rounds. But debt comes with its own costs and risks, and raising too much of it can be cause for concern.

Key Points

As the public market pullback continues, late-stage companies have been turning to the previously snubbed venture debt as a way to avoid setting a new valuation through equity down rounds. San Jose based Automation Anywhere (AA) recently raised \$200MM in debt from SVB and Hercules Capital. AA raised \$290MM in a Series B equity financing in late 2019, setting the company's valuation at \$7.3B. Meanwhile, the company's public market comp, UiPath, has seen its share price fall 70% this year. And it's not just later-stage private companies that are turning to debt financing to avoid the sting of down rounds. As venture capital funding slows, start-ups in need of funding to maintain their operations are also looking at debt financing, adding additional financing risk as the company scales.

In addition to the interest rate on the loan, venture debt providers typically also receive warrants for shares that give them the right to subscribe to the equity of the company at a specific strike price. Venture debt investors will usually underwrite a loan based on the borrowers enterprise value, versus traditional buy-out deals that focus on cashflows. As such, it is critical to be able to evaluate the enterprise value of the company appropriately as the capital is lent to fund the company's growth (not survival), with the hope of cashing in on the upside through warrants to maximize return.

While venture debt returns are traditionally in the low teens, some can yield very high returns for the lenders, such as when Airbnb borrowed \$1 billion in 2020 from Silver Lake and Sixth Street ahead of its IPO. And with rising rates, this form of funding becomes even more attractive to lenders given that venture debt typically holds floating interest rates. Historically, venture debt did not attract major private equity and hedge fund players, but in recent years Bain Capital, Blackrock and Vista Equity partners have started offering debt products given their lucrative returns. In August 2022, Blackstone joined the crew and announced a \$2B allocation to lending to unprofitable start-ups, while KKR Credit is also exploring developing its own venture debt offering, either through M&A or building out its debt team in-house.

Stephanie Price, CFA
+1 416-594-7047
Stephanie.Price@cibc.com

Scott Fletcher, CPA, CA
+1 416-956-3229
Scott.Fletcher@cibc.com

Javeria Gaya, CPA
+1 416-594-7261
Javeria.Gaya@cibc.com

Natalie Zhang, CFA
+1 416-581-2120
Natalie.Zhang@cibc.com

Sector:
Information Technology

U.S. Venture Debt Deals

The U.S. venture debt market is relatively small when compared to its venture capital peers. In 2021, VC-backed companies in the U.S. received debt financing valued at \$33B which made up less than one-tenth of the total VC dealmaking in the same year, according to PitchBook data.

Exhibit 1: U.S. Venture Debt Deals - Value US\$, 2012 To 2021



Source: Pitchbook and CIBC World Markets Inc.

In the first six months of 2022, venture debt deals hit \$17.1B, up 7.5% from the same period in 2021. VC funding in comparison was down 8% over the same period to \$148B. Venture debt deal flow has closed over 1,900 deals totaling \$22.4 billion through September 29, according to Pitchbook data.

News Impacting Our Coverage

Research Highlight: Software Valuation Monthly

The last day of September closed out a miserable month, with the S&P 500 declining 9.3%, the worst monthly decline since March 2020. As the Fed commits to rate hikes to contain inflation, the macro backdrop continues to impact the equity markets. The technology sector was hit hard again in September, with the S&P Software Index delivering a -12% return, underperforming the broader S&P by 270 bps. ([Link To Note](#))

Research Highlight: DND - Model Updates & Product Demo Takeaways

Following an FQ4 earnings report that mitigated concerns of the impact of slowing housing markets on revenue growth, we have updated our F23 model and introduced F24 estimates. Our updated estimates better reflect the inherent seasonality in the business while also adjusting for the eventual sale of TM Group and factoring in an additional level of conservatism for prolonged weakness in the housing markets. In addition to updating our model, we also had the opportunity this week to view an in-person product demo of DND's eCore and Unity platforms, with the demo highlighting integration capabilities and the value it offers to users by centralizing a variety of conveyancing tasks into a single platform. On October 4, DND also made an offer to acquire Link Group's Corporate Markets and Bank & Credit Management Divisions for A\$1.27B, reflecting 13x F2022 EBITDA multiple. ([Link To Note](#))

Note: The CIBC analyst who covers this security visited the company's office in Toronto on October 5. CIBC World Markets was responsible for all transportation costs to and from the location

CGI To Showcase Metaverse Innovation At 2022 UN Climate Change Conference

The company will demonstrate the role that enhanced virtual collaboration can play in the fight against climate change through interactive presentations. CGI will focus on reduction of the environmental impacts of travel and how the technology industry can partner with organizations in all sectors on their transition to net zero through sustainable technologies and practices.

Ottawa Senators Partner With Kinaxis on a Three-year Agreement as Road Helmet Sponsor

The sponsorship is Kinaxis' first in professional sports. The Kinaxis logo will be displayed on the Senators helmets starting October 13, when Ottawa travels to Buffalo to face the team, in the first 2022-23 National Hockey League regular-season game for both teams.

Enghouse Transportation and Transdev Roll Out Contactless Payments in The Netherlands

Telexis Solutions, a division of Enghouse Transportation, and Transdev (a Netherlands mobility company) are partnering to roll out contactless payments in select regions of the Netherlands. Transdev's subsidiary Conexxion has introduced this new payment method in the Amstelland-Meerland and Haarlem-IJmond regions. With the new service, customers can check in and out of vehicles using contactless debit/credit card or mobile phones.

OpenText Announces Plans To Integrate OpenText Core Content With Google Workspace

OpenText is integrating the public cloud content service platform, OpenText Core Content, with Google Workspace's collaboration services. The integration will enable users to sync content across multiple devices for offline access and edit content within applications including SAP and Salesforce. This will be particularly helpful for remote and hybrid team collaboration.

Exhibit 2: CIBC Software/Services – Coverage Performance, 9/29/2021 - 10/6/2022

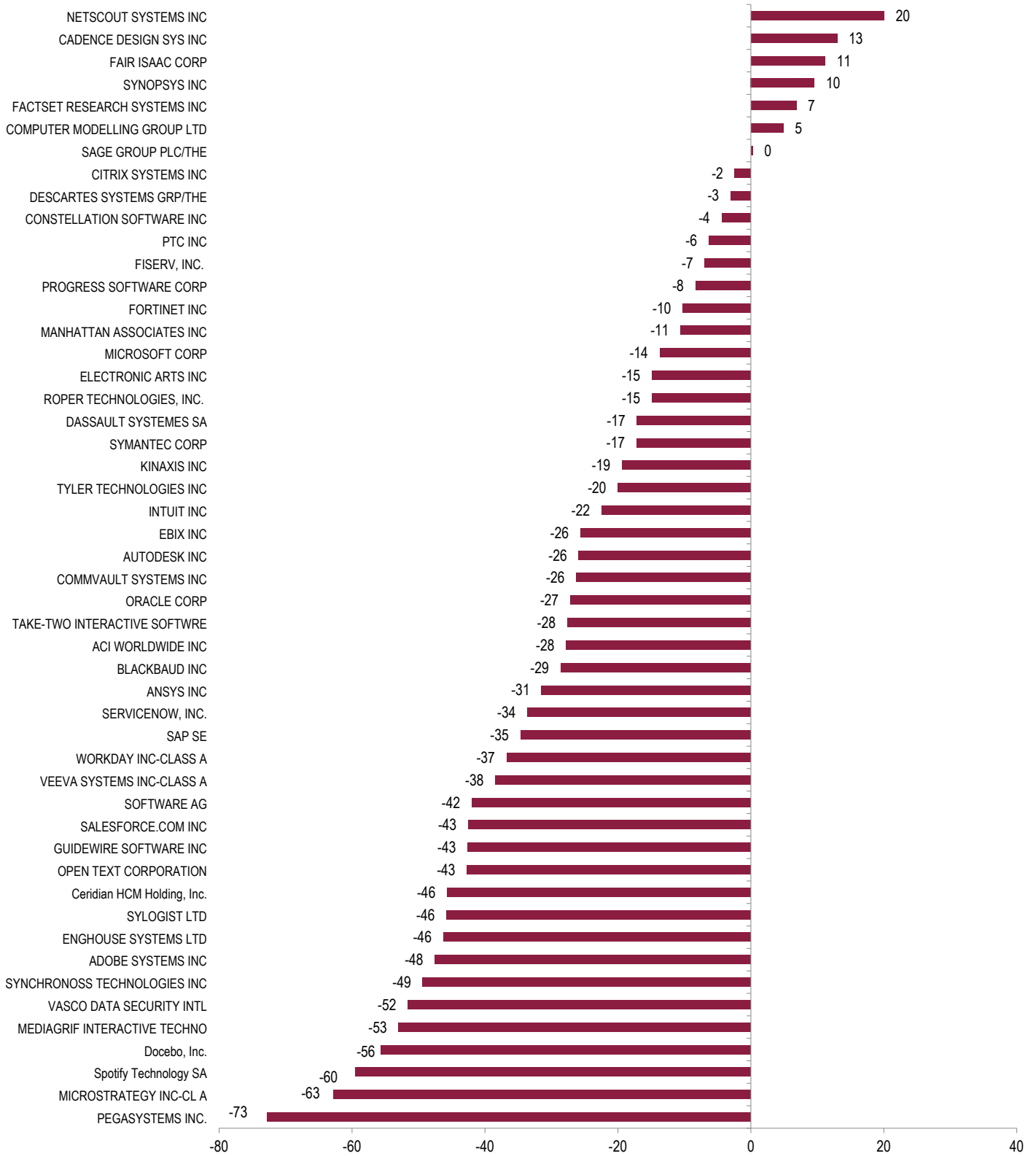
Software & Systems	Price	1 Week	1 Month	3 Month	6 Month	1 Year	YTD	52W High	52W Low
Constellation Software Inc	1,948.25	1.3	(0.9)	0.7	(13.1)	(4.4)	(17.0)	2385.80	1793.93
Descartes Systems	70.16	8.9	2.1	7.9	(6.2)	(10.4)	(15.1)	91.39	56.19
Enghouse Systems Limited	29.30	2.3	(8.6)	(0.8)	(26.3)	(46.3)	(39.5)	61.45	23.96
Open Text Corp	27.85	5.6	(6.4)	(27.6)	(35.3)	(42.7)	(41.3)	52.70	26.40
Kinaxis	143.13	2.1	(1.3)	1.6	(15.3)	(19.4)	(19.3)	229.98	119.48
Docebo, Inc.	39.38	7.6	1.1	3.1	(36.4)	(55.6)	(53.6)	102.93	32.35
Magnet Forensics	23.70	12.6	(3.6)	33.6	(16.6)	(45.8)	(27.9)	44.54	14.89
Q4 Inc.	3.83	(7.8)	(16.6)	(13.2)	(20.2)	NA	(54.9)	12.05	3.66
Average		4.1	(4.3)	0.7	(21.2)	(32.1)	(33.6)		

Business Services	Price	1 Week	1 Month	3 Month	6 Month	1 Year	YTD	52W High	52W Low
CGI Group Inc	107.61	2.4	5.0	4.4	4.0	0.5	(3.8)	116.00	95.45
Converge Technologies	7.10	5.2	25.7	34.7	(30.5)	(24.3)	(34.7)	12.80	4.85
Softchoice Corporation	20.69	1.0	16.4	(7.9)	(21.6)	(28.9)	(3.1)	29.48	17.48
Telus International	37.88	(1.8)	1.8	13.6	24.1	(12.5)	(9.4)	49.43	26.75
Average		1.7	12.2	11.2	(6.0)	(16.3)	(12.7)		

Indices	Price	1 Week	1 Month	3 Month	6 Month	1 Year	YTD
S&P/TSX Composite Index	19,235.09	3.1	(0.2)	2.1	(12.3)	(4.7)	(9.4)
S&P 500 Index	3,783.28	1.7	(3.6)	(1.3)	(16.4)	(12.9)	(20.6)
S&P/TSX Software Index	129.61	2.9	2.4	(2.2)	(25.2)	(39.9)	(38.9)
S&P500 Software Index	4,201.78	3.7	(3.3)	(5.3)	(19.8)	(20.1)	(28.1)

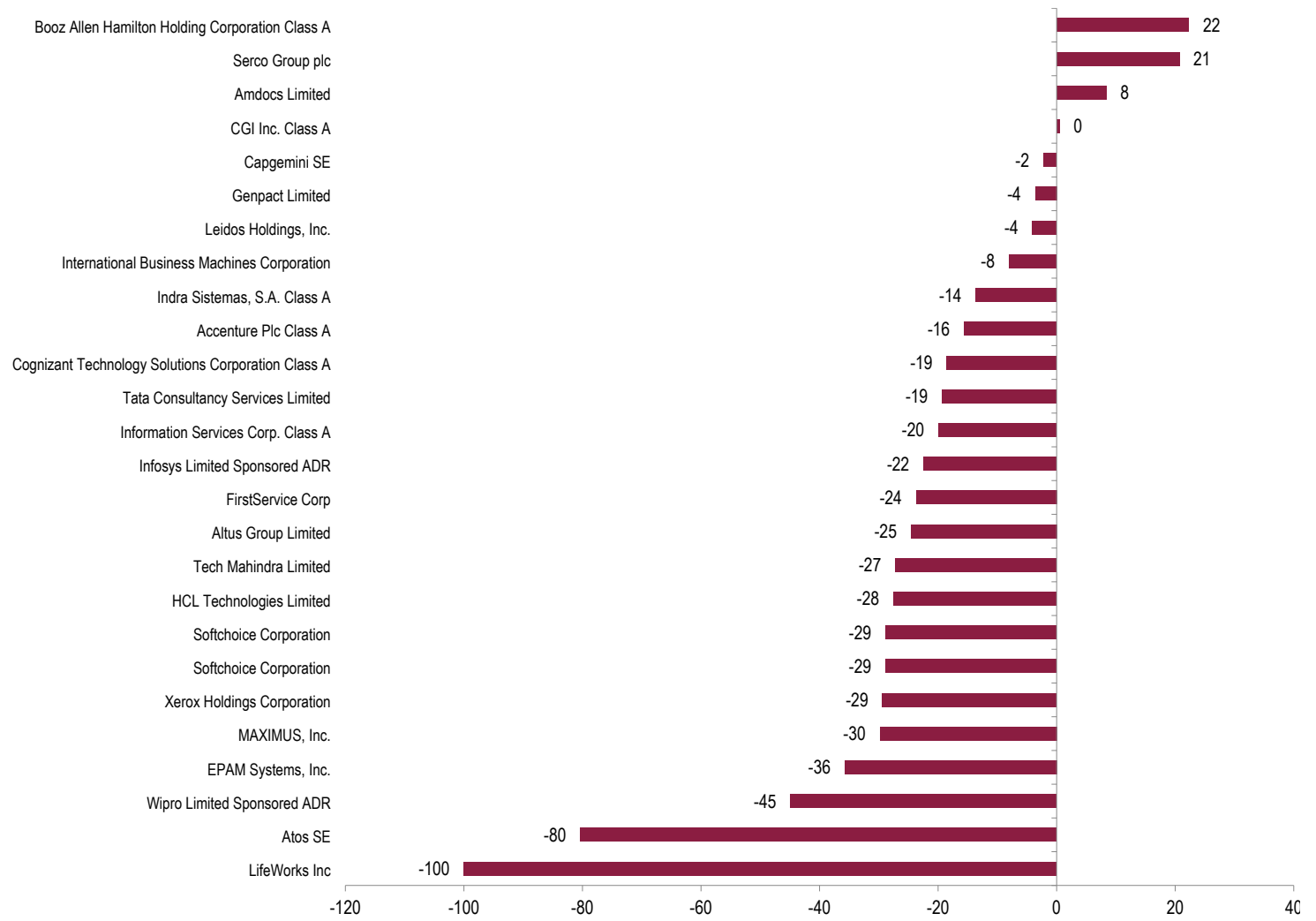
Source: FactSet and CIBC World Markets Inc.

Exhibit 3: Software Stocks – Return Performance (%), 10/6/2021 - 10/6/2022



Source: FactSet and CIBC World Markets Inc.

Exhibit 4: Business Services Stocks – Return Performance (%), 10/6/2021 - 10/6/2022



Source: FactSet and CIBC World Markets Inc.

Exhibit 5: Software Stocks – Comp Table, 2021 - 2023E

	Enterprise Value (\$mlns.)	EV/S			EV/EBITDA			P/E		
		C21	C22E	C23E	C21	C22E	C23E	C21	C22E	C23E
Enterprise Application Software										
Constellation Software Inc.*	31,793	6.2x	4.9x	4.3x	21.0x	18.7x	16.0x	46.0x	25.9x	23.4x
BlackBerry Limited*	2,723	3.0x	4.0x	2.8x	>50	NEG	NEG	NEG	NEG	NEG
Sage Group plc	7,555	4.1x	3.8x	3.5x	18.2x	16.0x	14.7x	27.4x	26.0x	23.3x
Tyler Technologies, Inc.	16,298	10.2x	8.8x	8.0x	46.3x	34.5x	31.6x	>50	49.2x	45.5x
Roper Technologies, Inc.	48,134	8.3x	9.2x	8.6x	21.7x	22.5x	20.7x	36.9x	28.0x	25.6x
Enghouse Systems Limited	1,410	3.1x	3.4x	3.40x	8.7x	10.4x	10.3x	17.5x	22.2x	22.1x
Oracle Corporation	237,222	5.9x	5.1x	4.6x	12.7x	10.1x	9.2x	14.7x	13.5x	12.5x
SAP SE	110,667	4.0x	3.6x	3.4x	15.4x	13.3x	11.8x	19.6x	18.0x	16.0x
Enterprise Application Software Average		5.6x	5.3x	4.8x	20.6x	17.9x	16.3x	27.0x	26.1x	24.0x
Extended ERP										
Adobe Incorporated	137,127	8.7x	7.7x	6.8x	20.5x	15.7x	14.0x	29.7x	21.6x	18.9x
Open Text Corporation	10,295	3.0x	2.9x	2.8x	8.1x	8.2x	7.7x	8.8x	8.9x	8.2x
Manhattan Associates, Inc.	8,432	12.7x	11.4x	10.3x	>50	43.3x	37.5x	>50	>50	>50
Pegasystems Inc.	3,097	2.6x	2.4x	2.1x	NEG	>50	26.1x	NEG	>50	41.8x
Software AG	1,413	1.7x	1.5x	1.4x	9.1x	7.1x	6.2x	20.4x	14.7x	12.2x
Fiserv, Inc.	85,449	5.3x	5.1x	4.7x	15.4x	11.9x	11.0x	>50	15.5x	13.6x
Extended ERP Average		5.6x	5.2x	4.7x	13.3x	17.2x	17.1x	19.6x	15.2x	18.9x
Software As A Service										
Descartes Systems Group Inc.	5,769	13.6x	11.8x	10.6x	31.2x	26.8x	23.8x	>50	>50	>50
Kinaxis, Inc.*	2,723	10.9x	7.5x	6.7x	>50	41.9x	37.3x	>50	>50	>50
Docebo, Inc.*	742	7.1x	5.1x	3.8x	NEG	NEG	>50	NEG	NEG	NEG
Lightspeed Commerce Inc*	2,061	4.4x	2.9x	2.2x	NEG	NEG	NEG	NEG	NEG	NEG
Veeva Systems Inc Class A	24,445	16.7x	11.5x	10.0x	>50	29.1x	25.1x	>50	41.9x	37.1x
Shopify, Inc. Class A	33,431	7.2x	6.1x	4.9x	>50	NEG	>50	13.5x	NEG	>50
Q4 Inc*	69	1.2x	1.2x	1.2x	NEG	NEG	NEG	NEG	NEG	NEG
Magnet Forensics, Inc.*	603	8.6x	6.4x	5.0x	32.4x	39.3x	22.1x	>50	>50	>50
Ceridian HCM Holding, Inc.	10,228	10.0x	8.3x	7.1x	>50	46.7x	37.6x	NEG	>50	>50
ServiceNow, Inc.	83,863	14.2x	11.5x	9.3x	>50	37.0x	29.6x	>50	>50	45.5x
Workday, Inc. Class A	39,271	9.1x	6.4x	5.4x	>50	25.2x	20.5x	NEG	46.4x	36.7x
Software As A Service Average		9.4x	7.2x	6.0x	31.8x	35.1x	28.0x	13.5x	44.1x	39.8x
Infrastructure Vendors										
Microsoft Corporation	1,832,150	10.9x	8.8x	7.8x	22.7x	17.7x	15.6x	30.9x	25.8x	22.6x
Infrastructure Vendors Average		10.9x	8.8x	7.8x	22.7x	17.7x	15.6x	30.9x	25.8x	22.6x
Software Average		7.4x	6.2x	5.4x	20.2x	23.8x	20.4x	24.1x	25.5x	25.3x

*Share Price Converted to USD

Source: FactSet and CIBC World Markets Inc.

Exhibit 6: Business Services Stocks – Comp Table, 2021 - 2023E

Enterprise Value (\$mlns.)	EV/EBITDA			P/E			EV/S			
	C21	C22E	C23E	C21	C22E	C23E	C21	C22E	C23E	
Business & IT Services										
CGI Inc. Class A	28,746	11.6x	11.2x	10.7x	19.2x	17.4x	16.5x	2.4x	2.2x	2.1x
TELUS International (CDA), Inc.	8,332	15.4x	13.4x	11.4x	27.5x	23.2x	18.4x	3.8x	3.2x	2.8x
Accenture Plc Class A	168,965	17.6x	14.5x	13.8x	30.0x	25.0x	23.2x	3.3x	2.7x	2.6x
Booz Allen Hamilton	15,327	17.2x	15.8x	15.0x	22.4x	22.5x	20.6x	2.0x	1.7x	1.6x
CACI International Inc Class A	8,333	11.2x	12.5x	11.6x	14.8x	15.0x	14.1x	1.4x	1.3x	1.2x
DXC Technology Co.	9,774	4.8x	4.0x	4.0x	NEG	7.7x	6.3x	0.6x	0.7x	0.7x
Genpact Limited	9,565	14.8x	12.2x	10.8x	24.1x	17.0x	15.1x	2.4x	2.2x	2.0x
International Business Machines	161,149	12.0x	10.3x	9.8x	19.8x	13.5x	12.6x	2.8x	2.7x	2.6x
Atos SE	2,745	2.6x	2.8x	2.6x	NEG	10.3x	4.7x	0.3x	0.2x	0.3x
Capgemini SE	35,159	12.2x	10.0x	9.3x	26.0x	16.3x	14.7x	1.9x	1.6x	1.5x
Sopra Steria Group SA	4,004	7.6x	6.6x	6.1x	14.6x	9.8x	9.0x	0.9x	0.8x	0.8x
Converge Technology Solutions Corp	1,530	16.3x	10.3x	8.2x	>50	43.2x	23.7x	1.0x	0.6x	0.5x
Business & IT Services Average		11.5x	10.3x	9.5x	22.0x	16.2x	14.1x	2.0x	1.8x	1.7x
HR Outsourcing										
		EV/EBITDA			P/E			EV/S		
Ceridian HCM Holding, Inc.	10,228	>50	46.7x	37.6x	NEG	>50	>50	10.0x	8.3x	7.1x
Willis Towers Watson	24,156	10.8x	10.2x	9.4x	6.5x	15.7x	13.7x	2.7x	2.7x	2.6x
Aon Plc Class A	69,233	18.1x	17.2x	16.1x	>50	21.5x	19.4x	5.7x	5.5x	5.2x
Automatic Data Processing, Inc.	101,437	26.4x	22.2x	20.0x	39.4x	31.8x	28.3x	6.8x	5.9x	5.5x
Paychex, Inc.	40,930	24.8x	19.0x	17.8x	37.8x	28.6x	26.4x	10.1x	8.5x	8.0x
HR Outsourcing Average		20.0x	23.1x	20.2x	27.9x	24.4x	21.9x	7.0x	6.2x	5.7x
Information Services										
		EV/EBITDA			P/E			EV/S		
Broadridge Financial Solutions, Inc.	21,555	18.5x	16.5x	15.4x	32.4x	22.3x	20.5x	4.2x	3.6x	3.5x
Dye & Durham Ltd.	2,067	13.0x	13.0x	9.1x	>50	>50	25.9x	5.5x	3.6x	3.1x
Deluxe Corporation	2,227	6.0x	5.4x	5.2x	12.3x	4.4x	4.2x	1.1x	1.0x	1.0x
Information Services Corp	397	5.9x	6.1x	6.1x	10.7x	10.6x	11.1x	2.3x	2.1x	2.0x
Information Services Average		10.9x	10.2x	8.9x	18.5x	12.4x	15.4x	3.3x	2.6x	2.4x
Financial Services Technology										
		EV/EBITDA			P/E			EV/S		
Fidelity National Information Services	67,262	11.0x	10.3x	9.5x	>50	11.3x	10.2x	4.8x	4.6x	4.3x
Fiserv, Inc.	85,449	15.4x	11.9x	11.0x	>50	15.5x	13.6x	5.3x	5.1x	4.7x
Jack Henry & Associates, Inc.	13,886	19.9x	22.0x	20.2x	45.7x	37.5x	35.1x	7.9x	6.9x	6.4x
ACI Worldwide, Inc.	3,538	9.6x	8.8x	8.1x	20.6x	16.5x	14.1x	2.6x	2.5x	2.4x
Temenos AG	5,916	10.8x	12.3x	11.3x	28.4x	17.0x	15.2x	6.1x	5.7x	5.2x
Global Payments Inc.	42,995	11.8x	11.0x	10.0x	35.7x	12.4x	10.8x	5.0x	5.3x	4.9x
Financial Services Technology Average		13.1x	12.7x	11.7x	32.6x	18.4x	16.5x	5.3x	5.0x	4.7x
Diversified Real Estate Services										
		EV/EBITDA			P/E			EV/S		
Colliers International Group Inc.	5,070	9.3x	7.7x	6.9x	-10.7x	12.8x	11.8x	1.2x	1.1x	1.0x
Altus Group Limited	2,255	21.8x	21.3x	17.9x	31.7x	31.7x	33.5x	3.6x	3.6x	3.2x
CBRE Group, Inc. Class A	25,195	11.8x	8.1x	7.9x	13.5x	11.8x	11.8x	0.9x	0.8x	0.7x
Jones Lang LaSalle Incorporated	9,814	6.7x	6.8x	6.7x	9.0x	8.6x	8.3x	0.5x	0.5x	0.4x
Diversified Real Estate Services Average		12.4x	11.0x	9.8x	10.9x	16.3x	16.3x	1.6x	1.5x	1.4x
Software Focused IT Solutions/VARs										
		EV/EBITDA			P/E			EV/S*		
Softchoice Corporation* USD	981	40.2x	11.8x	9.7x	NEG	21.5x	16.4x	3.7x	3.0x	2.8x
Softcat Plc*	2,315	13.7x	14.4x	13.7x	18.5x	19.7x	19.5x	6.2x	6.2x	5.6x
Crayon Group Holding ASA*	8,786	>50	>50	>50	>50	>50	>50	>50	22.2x	18.8x
Bytes Technology Group Plc*	978	20.1x	16.0x	14.3x	39.8x	21.7x	20.6x	NA	NA	NA
SoftwareONE Holding Ltd.*	1,318	8.0x	5.6x	4.9x	13.7x	13.8x	12.5x	6.3x	1.3x	1.2x
Bytes Technology Group Plc* Average		20.5x	12.0x	10.7x	24.0x	19.2x	17.2x	5.4x	8.2x	7.1x
Business Services Average		14.0x	12.9x	11.6x	22.4x	17.6x	16.3x	3.8x	3.8x	3.5x

*Software Focused IT Solutions/VARs uses EV/GP metric.

Source: FactSet and CIBC World Markets Inc.

Exhibit 7: SaaS Stocks – Comp Table, 2021 - 2023E

	LTM Revenue Growth	LTM FCF Margin	NTM Revenue Growth	NTM FCF Margin	LTM Rule Of 40	NTM Rule Of 40	Enterprise Value (\$MM)	EV/S		
								C21	C22E	C23E
Tier 1 SaaS (Rule of 40 > 60)										
Zoom Video Communications	18%	31%	6%	27%	49%	33%	17,756	6.7x	4.1x	4.1x
CrowdStrike Holdings, Inc.	61%	30%	44%	28%	91%	72%	39,636	45.3x	18.3x	18.3x
Shopify, Inc.	30%	1%	21%	-9%	31%	12%	33,489	7.3x	6.1x	6.1x
Zscaler, Inc.	62%	24%	38%	22%	86%	60%	24,492	36.4x	19.4x	19.4x
Lightspeed POS, Inc.	101%	-19%	34%	-5%	82%	29%	2,078	9.4x	2.9x	2.9x
DocuSign, Inc.	30%	20%	11%	15%	51%	27%	11,299	7.8x	4.6x	4.6x
Veeva Systems Inc	20%	38%	15%	37%	58%	52%	24,502	16.7x	11.6x	11.6x
Atlassian Corp. Plc	34%	27%	29%	22%	61%	50%	60,076	28.8x	18.8x	18.8x
Twilio, Inc.	51%	-6%	28%	-2%	45%	26%	10,125	3.6x	2.6x	2.6x
ServiceNow, Inc.	28%	31%	23%	30%	58%	53%	82,039	13.9x	11.2x	11.2x
HubSpot, Inc.	42%	16%	23%	12%	58%	35%	13,860	10.7x	8.2x	8.2x
Tier 1 SaaS (Rule of 40 > 60) Average								16.9x	9.8x	9.8x
	LTM Revenue Growth	LTM FCF Margin	NTM Revenue Growth	NTM FCF Margin	LTM Rule Of 40	NTM Rule Of 40	Enterprise Value (\$MM)	EV/S		
								C21E	C22E	C23E
Tier 2 SaaS (Rule of 40 b/w 40-60)										
Docebo, Inc.	50%	-2%	36%	-4%	48%	32%	751	7.2x	5.2x	3.8x
Qualys, Inc.	17%	40%	18%	36%	56%	55%	5,245	12.7x	10.7x	10.7x
Descartes Systems	20%	37%	10%	37%	57%	47%	5,758	13.6x	11.8x	10.6x
Avalara Inc	33%	3%	21%	3%	36%	24%	7,680	11.0x	8.9x	8.9x
Five9, Inc.	34%	-4%	23%	7%	30%	30%	5,902	9.7x	7.5x	7.5x
Dropbox, Inc.	11%	33%	6%	34%	44%	40%	8,467	3.9x	3.7x	3.7x
Wix.com Ltd.	16%	-1%	8%	3%	15%	11%	4,521	3.6x	3.3x	3.3x
Workday, Inc.	22%	21%	19%	20%	43%	39%	39,156	9.1x	6.4x	6.4x
VMware, Inc.	7%	24%	6%	29%	31%	35%	58,038	4.9x	4.3x	4.3x
Tier 2 SaaS (Rule of 40 b/w 40-60) Average								8.4x	6.9x	6.6x
	LTM Revenue Growth	LTM FCF Margin	NTM Revenue Growth	NTM FCF Margin	LTM Rule Of 40	NTM Rule Of 40	Enterprise Value (\$MM)	EV/S		
								C21E	C22E	C23E
Tier 3 SaaS (Rule of 40 b/w 28-40)										
BlackLine, Inc.	22%	8%	22%	6%	30%	28%	3,835	9.0x	7.3x	7.3x
Zendesk, Inc.	30%	12%	21%	14%	42%	35%	9,666	7.2x	5.8x	5.8x
MongoDB, Inc.	54%	-2%	25%	2%	52%	27%	13,380	22.7x	11.3x	11.3x
LivePerson, Inc.	19%	-27%	5%	-4%	-8%	1%	873	1.9x	1.7x	1.7x
Rapid7 Inc.	33%	5%	23%	11%	38%	34%	3,339	6.2x	4.9x	4.9x
Paylocity Holding Corp.	34%	16%	28%	15%	50%	43%	13,886	21.8x	14.3x	14.3x
Q2 Holdings, Inc.	18%	0%	18%	3%	18%	21%	2,234	4.5x	3.9x	3.9x
Akamai Technologies, Inc.	7%	24%	3%	21%	31%	24%	15,635	4.5x	4.4x	4.4x
Tier 3 SaaS (Rule of 40 b/w 28-40) Average								9.7x	6.7x	6.7x
	LTM Revenue Growth	LTM FCF Margin	NTM Revenue Growth	NTM FCF Margin	LTM Rule Of 40	NTM Rule Of 40	Enterprise Value (\$MM)	EV/S		
								C21E	C22E	C23E
Tier 4 SaaS (Rule of 40 <28)										
RingCentral, Inc.	33%	8%	22%	9%	40%	31%	5,262	3.3x	2.6x	2.6x
Teradata Corporation	-3%	19%	-3%	23%	16%	20%	3,272	1.7x	1.8x	1.8x
Zuora, Inc.	15%	4%	13%	0%	19%	13%	880	2.9x	2.2x	2.2x
New Relic, Inc.	20%	3%	17%	1%	23%	18%	3,767	5.6x	4.2x	4.2x
Kinaxis, Inc.	35%	7%	22%	9%	42%	31%	2,675	10.7x	7.4x	6.6x
Yext, Inc.	8%	3%	3%	-1%	11%	2%	459	1.3x	1.1x	1.1x
Splunk Inc.	26%	7%	21%	14%	33%	35%	15,016	6.7x	4.5x	4.5x
Tier 4 SaaS (Rule of 40 <28) Average								4.6x	3.4x	3.3x
SaaS Average								10.6x	7.1x	7.0x

Source: FactSet and CIBC World Markets Inc.

Important Disclosures

Analyst Certification: Each CIBC World Markets Inc. research analyst named on the front page of this research report, or at the beginning of any subsection hereof, hereby certifies that (i) the recommendations and opinions expressed herein accurately reflect such research analyst's personal views about the company and securities that are the subject of this report and all other companies and securities mentioned in this report that are covered by such research analyst and (ii) no part of the research analyst's compensation was, is, or will be, directly or indirectly, related to the specific recommendations or views expressed by such research analyst in this report.

Potential Conflicts of Interest: Equity research analysts employed by CIBC World Markets Inc. are compensated from revenues generated by various CIBC World Markets Inc. businesses, including the CIBC World Markets Investment Banking Department. Research analysts do not receive compensation based upon revenues from specific investment banking transactions. CIBC World Markets 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, CIBC World Markets 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, CIBC World Markets 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.

CIBC World Markets Inc. does and seeks to do business with companies covered in its research reports. As a result, investors should be aware that CIBC World Markets Inc. 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.

Analysts employed outside the U.S. are not registered as research analysts with FINRA. These analysts may not be associated persons of CIBC World Markets Corp. and therefore may not be subject to FINRA Rule 2241 restrictions on communications with a subject company, public appearances and trading securities held by a research analyst account.

CIBC World Markets Inc. Stock Rating System

Stock Ratings	Abbreviation	Description
Outperformer	OP	Stock is expected to outperform similar stocks in the coverage universe during the next 12-18 months.
Neutral	NT	Stock is expected to perform in line with similar stocks in the coverage universe during the next 12-18 months.
Underperformer	UN	Stock is expected to underperform similar stocks in the coverage universe during the next 12-18 months.
Tender	TR	Shareholders are advised to tender shares to a specific offer as we do not believe a superior offer will materialize.
Not Rated	NR	CIBC World Markets does not maintain an investment recommendation on the stock.
Restricted	R	CIBC World Markets is restricted (due to potential conflict of interest) from rating the stock.

Sector Ratings	Abbreviation	Description
Overweight	O	Sector is expected to outperform the broader market averages.
Marketweight	M	Sector is expected to equal the performance of the broader market averages.
Underweight	U	Sector is expected to underperform the broader market averages.
None	NA	Sector rating is not applicable.

Note: Broader market averages refer to S&P 500 in the U.S. and S&P/TSX Composite in Canada.

CIBC World Markets Inc. Price Chart

For price and performance charts, please visit CIBC on the web at <https://researchcentral.cibccm.com/#/disclaimer-central-new> or write to CIBC World Markets Inc., 161 Bay Street, 4th Floor, Toronto, ON M5H 2S8, Attn: Research Disclosure Chart Request.

Important Disclosure Footnotes

For important disclosure footnotes for companies mentioned in this report that are covered by CIBC World Markets Inc., click here: [CIBC Disclaimers & Disclosures](#)

Ratings Distribution*: CIBC World Markets Inc. Coverage Universe

(as of 06 Oct 2022)	Count	Percent	Inv. Banking Relationships	Count	Percent
Outperformer	162	52%	Outperformer	162	100%
Neutral	139	44%	Neutral	139	100%
Underperformer	7	2%	Underperformer	7	100%
Tender	3	1%	Tender	2	67%
Restricted	2	1%	Restricted	2	100%

Important disclosures for each issuer can be found by visiting the Research Central website at <https://researchcentral.cibccm.com/#/disclaimer-central-new> and then entering the issuer name. Access to our research dissemination policy can be found on the same website at <https://researchcentral.cibccm.com/#/dissemination-policy>. These important disclosures can also be obtained by writing to CIBC World Markets Inc., 161 Bay Street, 4th Floor, Toronto, ON M5H 2S8, Attention: Research Disclosures Request.

Access to CIBC Equity Research

Clients may access CIBC Equity Research online at Research Central at <https://researchcentral.cibccm.com/>, or at the following research aggregators: Bloomberg, Refinitiv, Capital IQ, and FactSet.

Legal Disclaimer

This report is issued by CIBC Capital Markets.

CIBC Capital Markets is a trademark brand name under which Canadian Imperial Bank of Commerce (“CIBC”), its subsidiaries and affiliates (including, without limitation, CIBC World Markets Inc., CIBC World Markets Corp. and CIBC Capital Markets (Europe) S.A.) provide different products and services to our customers around the world. Products and/or services offered by CIBC include corporate lending services, foreign exchange, money market instruments, structured notes, interest rate products and OTC derivatives. CIBC’s Foreign Exchange Disclosure Statement relating to guidelines contained in the FX Global Code can be found at <https://cibccm.com/en/disclosures/fx-disclosure-statement/>. Other products and services, such as exchange-traded equity and equity options, fixed income securities and futures execution of Canadian securities, are offered through directly or indirectly held subsidiaries of CIBC as indicated below.

CIBC World Markets Inc. is a member of the Canadian Investor Protection Fund and the Investment Industry Regulatory Organization of Canada. In the United States, CIBC World Markets Corp. is a member of the Financial Industry Regulatory Authority and the Securities Investor Protection Fund. In Luxembourg, CIBC Capital Markets (Europe) S.A. (RCS Luxembourg: B236326) is authorised by the European Central Bank (the “ECB”) and supervised by the Luxembourg Financial Supervisory Authority (Commission de Surveillance du Secteur Financier) under the oversight of the ECB. CIBC Australia Ltd (AFSL No: 240603) is regulated by the Australian Securities and Investment Commission (“ASIC”). CIBC World Markets (Japan) Inc. is a member of the Japanese Securities Dealer Association. CIBC (TSX/NYSE: CM) is a bank chartered under the Bank Act (Canada) having its registered office in Toronto, Ontario, Canada, and regulated by the Office of the Superintendent of Financial Institutions. CIBC New York Branch is licensed and supervised by the New York State Department of Financial Services. In the United Kingdom, CIBC London Branch is authorised by the Prudential Regulation Authority and subject to regulation by the Financial Conduct Authority and limited regulation by the Prudential Regulation Authority. Canadian Imperial Bank of Commerce, Sydney Branch (ABN: 33 608 235 847) is an authorised foreign bank branch regulated by the Australian Prudential Regulation Authority (APRA). Canadian Imperial Bank of Commerce, Hong Kong Branch is a registered institution under the Securities and Futures Ordinance, Cap 571, and a limited liability foreign company registered with the Hong Kong Companies Registry. Canadian Imperial Bank of Commerce, Singapore Branch is a wholesale bank licensed and regulated by the Monetary Authority of Singapore.

This report is issued and approved for distribution by (a) in Canada, CIBC World Markets Inc., a member of the Investment Industry Regulatory Organization of Canada (“IIROC”), the Toronto Stock Exchange, the TSX Venture Exchange and a Member of the Canadian Investor Protection Fund and (b) in the United States either by (i) CIBC World Markets Inc. for distribution only to U.S. Major Institutional Investors (“MII”) (as such term is defined in SEC Rule 15a-6) or (ii) CIBC World Markets Corp., a member of the Financial Industry Regulatory Authority (“FINRA”). U.S. MIIs receiving this report from CIBC World Markets Inc. (the Canadian broker-dealer) are required to effect transactions (other than negotiating their terms) in securities discussed in the report through CIBC World Markets Corp. (the U.S. broker-dealer). CIBC World Markets Corp. accepts responsibility for the content of this research report.

Distribution to Institutional Customers Only

Canada

This report is provided, for informational purposes only, to institutional investor and retail clients of CIBC World Markets Inc. in Canada, 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.

Legal Disclaimer (Continued)

United States

This report is provided, for informational purposes only, to Major US Institutional Investor clients of CIBC World Markets Corp. in the United States, 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.

United Kingdom

The distribution of this report in the United Kingdom is being made only to, or directed only at, persons falling within one or more of the exemptions from the financial promotion regime in section 21 of the UK Financial Services and Markets Act 2000 (as amended) (“FSMA”) including, without limitation, to the following:

- authorised firms under FSMA and certain other investment professionals falling within article 19 of the FSMA (Financial Promotion) Order 2005 (“FPO”) and directors, officers and employees acting for such entities in relation to investment;
- high value entities falling within article 49 FPO and directors, officers and employees acting for such entities in relation to investment; and
- persons who receive this presentation outside the United Kingdom.

The distribution of this report to any other person in the United Kingdom is unauthorised and may contravene FSMA. No person falling outside such categories should treat this report as constituting a promotion to them or rely or act on it for any purposes whatsoever.

This report is distributed solely to eligible counterparties or professional clients and not retail clients as defined in point (8) of Article 2 of Regulation (EU) No 2017/565 as it forms part of UK domestic law by virtue of the European Union (Withdrawal) Act 2018.

All other jurisdictions

This report is distributed solely to institutional clients and not retail clients as defined by the applicable securities legislation and regulation to which CIBC Capital Markets may be subject in any jurisdiction, and only in compliance with all applicable laws and regulations.

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 CIBC World Markets. 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. CIBC World Markets suggests that, prior to acting on any of the recommendations herein, Canadian retail clients of CIBC World Markets contact one of our client advisers in your jurisdiction to discuss your particular circumstances. Non-client recipients of this report who are not institutional investor clients of CIBC World Markets should consult with an independent financial advisor prior to making any investment decision based on this report or for any necessary explanation of its contents. CIBC World Markets will not treat non-client recipients as its clients solely by virtue of their receiving this report.

Legal Disclaimer (Continued)

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. CIBC World Markets 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 CIBC World Markets.

Information, opinions and statistical data contained in this report were obtained or derived from sources believed to be reliable, but CIBC World Markets 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 CIBC World Markets 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. CIBC World Markets 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.

Although each company issuing this report is a wholly owned subsidiary of CIBC, each is solely responsible for its contractual obligations and commitments, and any securities products offered or recommended to or purchased or sold in any client accounts (i) will not be insured by the Federal Deposit Insurance Corporation ("FDIC"), the Canada Deposit Insurance Corporation or other similar deposit insurance, (ii) will not be deposits or other obligations of CIBC, (iii) will not be endorsed or guaranteed by CIBC, and (iv) will be subject to investment risks, including possible loss of the principal invested. CIBC Capital Markets and the CIBC Logo Design are trademarks of CIBC, used under license.

© 2022 CIBC World Markets Inc., CIBC World Markets Corp. and CIBC Capital Markets (Europe) S.A. All rights reserved. Unauthorised use, distribution, duplication or disclosure without the prior written permission of CIBC World Markets is prohibited by law and may result in prosecution.